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THE
LONDON MEDICAL DICTIONARY;

INCLUDING, UNDER DISTINCT HEADS,

EVERY BRANCH OF MEDICINE,

VIZ.

ANATOMY, PHYSIOLOGY, AND PATHOLOGY,

THE PRACTICE OF

PHYSIC AND SURGERY,

THERAPEUTICS, AND MATERIA MEDICA;

WITH WHATEVER RELATES TO MEDICINE IN

NATURAL PHILOSOPHY, CHEMISTRY,

AND

NATURAL HISTORY.

BY **BARTHOLOMEW PARR, M. D.**

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DEVON AND EXETER HOSPITAL.

Creditur, ex medio quia res arcessit, habere
Sudoris minimum; sed habet———tanto
Plus oneris, quanto veniæ minus. **HOB.**
Lexican contexat, nam cætera quid moror, omnes
Pœnarum species, hic labor unus habet. **SCALIGER.**

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A NEW MEDICAL DICTIONARY.

N Æ V

N. In prescription signifies number.

NA'BEA. See CENOPLIA.

NA'BIT. See SACCHARUM.

NA'CTA. See ABSOESSUS PECTORIS, and MAMMÆ.

NA'DUCEM. See MOLA.

NÆVUS, (from *gnævus*,—*à geno*, because it appears from the birth). *Nævus maternus*, A MOTHER'S MARK, *macula matricis*, *stigma*. (See MACULA.) The same term is applied to the WEN, *encystis*. Dr. Cullen gives the wen the general name *lupia*, places it in the class *locales* and order *tumores*, defining it an extubérance under the skin, moveable, soft, and without pain.

All preternatural tumours on the skin, in the form of a wart or tubercle, are called *excrecences*; by the Greeks *acrothymia*; and when observed at the birth, *nævi materni*, *metrocélides*, MARKS FROM THE MOTHER. Larger tumours depending from the skin are denominated *sarcoma*. The *nævi* appear on any part of the body, differing in their colour from the rest of the skin, sometimes resembling strawberries, grapes, &c. Heister advises their removal by means of a ligature, a cautery, or a knife, according to circumstances.

Dr. Aitkin, in his Elements of Surgery, divides the wen into the following species. 1. *Atheroma*. 2. *Meliceris*. 3. *Steatoma*, to which M. Litre adds the *lipome*, which contains fat. The *atheroma* is colourless, void of pain, containing in a cyst a matter like curds, intermixed sometimes with hard corpuscles, and sometimes with a hardish substance, like the macerated bones of chickens. It is of an irregular shape, not easily impressed with the finger, and very slightly elastic. If the contained matter resembles honey, it is named *meliceris*; if suet, *STEATOMA*, q. v. M. Litre describes the contents of the *lipome* to have all the qualities of common grease; and, though the fat of the *lipome* resembles in appearance that of the *steatoma*, yet the former melts and is inflammable. When the man who had the *lipome* was fatigued, or had drunk freely, it inflamed for some days after, and its contents increased the size of the tumour. See *Memoires de l'Academie Royale des Sciences*, l'Ann. 1709.

Mr. Bell, speaking of these tumours, observes, that they each have various degrees of consistence. In judging of their nature, some advantage may be derived

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from attending to their situation. Thus, in some parts, fat is more apt to be secreted and deposited in the cellular substance than in others, and the steatomatous tumours are seldom, if ever, he thinks, met with in those parts of the body which are not usually in a state of health supplied with fat. The head, indeed, is more liable than any part of the body to encysted tumours, but they are very universally atheromata or meliceris. The meliceris, which is distinguished by the free fluctuation of its contents, must be treated as a common abscess, or as directed for the hydrocele of the tunica vaginalis. See HYDROCELE.

When a cyst containing matter adheres so firmly to the contiguous parts as to require much time to remove it by dissection, it should never be attempted, except the patient is firm and resolute. It will be sufficient to lay it freely open through its whole extent by an incision, and to remove any loose portion. The contents of the tumour will, in this manner, be completely removed by suppuration, and the cure may either be effected in the usual way, by preserving the wound open till it fills up with granulations from the bottom, or it may be attempted by drawing the divided edges of the skin together, and trusting to moderate pressure with the ordinary effects of inflammation. This plan, however, will often fail, and the whole degenerate into a malignant ulcer. If on a gland, it should never be attempted; and extirpation is, in general, the safest mode, if, from the distance of any large vessel, it is practicable.

See also the article STEATOMA for the method of dissecting the whole tumour out; which, when not very large, may be submitted to.

See Wiseman, Turner, White, Bell, and Heister's Surgery; Warner and Gooch's Cases and Remarks, p. 281, &c.

NA'I CORO'NA. See PHASEOLUS ZURATENSIS.

NA'KIR. A violent flatulence passing from one limb to another with pain. Schenkus.

NA'LUGN. A bacciferous shrub of an unknown genus in Malabar, which flowers twice a year. Its different parts are used by the natives in flatulent and spasmodic disorders. See Raii Historia.

NA'NDIA. See LYCIUM.

NANDI-E'RVATAM. A small East Indian shrub, the whole of which is lactescent; the juice destroys worms: but this plant also has not yet been noticed by the systematic botanist, or the indigenous name has not been preserved. See Raii Historia.

NANDI-ROBA, *fewillea scandens* Lin. Sp. Pl. 1457, used in St. Domingo, where it grows, as a remedy for the bites of serpents.

NAP, or **NAPE'CA**. See **ÆNOPLIA**.

NAPE'LLUS, (from its bulbous root resembling the turnip *napus*).

NA'PHÆ AQ. See **AURANTIUM HISPANICUM**.

NA'PHTHA, an Arabian word, applied by the Arabians to AMBER, (see AMBRA,) *nasa, terræ oleum*. It is the thinnest of the liquid bitumens, perfectly fluid, clear, colourless, of a strong smell, not highly fragrant, extremely subtile, so light as to swim on water, spreading to a large surface, exhibiting prismatic colours, and highly inflammable. It has the same appellation whether it is separated by nature or art from thick petroleum or grosser bituminous matter. There are three kinds as it arises naturally, the white, the reddish, and the grosser deep coloured, but each, by keeping, seeming from the addition of oxygen, becomes a dark resin.

Naphtha issues from the earth, at Baku, in Persia, on the borders of the Caspian; is collected from the surface of wells in the same regions, and sometimes found on the waters of Italy. Naphtha and petroleum are probably formed by the decomposition of bitumens by subterraneous fires; and the lighter fluid naphtha usually appears on the surface.

The true naphtha dissolves resins and balsams, but not gum resins or elastic gums: it is useful as an external application for removing old pains, chilblains, nervous disorders, cramps, contractions of the limbs, paralytic affections, &c. See **PETROLEUM**.

NA'PIUM, (from its resemblance to *napus, navew*). See **LAMPSANA**.

NA'PTA. (See **NAPHTHA**.) A name also for the tumour, called *nata* or *natta*.

NA'PUS, (a Rabbinical term). The seeds of this plant furnish a stimulating oil, called **RAPE OIL**, used in liniments. See **BUNIAS**.

NA'PY, (from *να, not*, and *παιω, to eat*; because it was thought not eatable from its pungent taste). See **SINAPI**.

NARCE, *ναρκη*, the **TORPEDO**, (from *ναρκω, to stupify*). A torpor, stupor, or dulness of sensation, either from disease or medicine.

NARCI'SSUS LUTÆUS SYLVE'STRIS, (from the youth, who, in poetical fable, is said to have been changed into this flower). *Bulbus sylvestris, narcissus pseudo-narcissus Anglicus* Lin. Sp. Pl. 414. **WILD DAFFODIL**. The roots are slightly purgative and emetic; the dose two drachms in infusion.

NARCO'SIS, (from *ναρκω, to stupify*). A **STUPEFACTION**.

NARCO'TICA, (from the same). See **ANODYNA**.

NA'RDUS CE'LTICA, (from the Syriac word *nard*). *Spica celtica, seliunca, CELTIC SPIKENARD, valeriana celtica* Lin. Sp. Pl. 46, is a small species of valerian, with uncut, oblong, obtuse, oval, leaves, a native of the Alps, from whence we have the dry roots, consisting of a number of blackish fibres, with the lower parts of the stalks adhering: the last are covered with thin yellow scales, the remains of the withered leaves. Its

virtues resemble those of valerian, which it possesses in a less degree.

The mountain nard is only the root of the large valerian. See Raii Historia.

NA'RDUS I'NDICA, NA'RDUS SYRI'ACA. *Spica, spica Indica, spica nardi*, **INDIAN SPIKENARD, NARD**, or **SYRIAN NARD, andropogon nardus Lin. Sp. Pl. 1482.**

Dioscorides thinks, without reason, the Indian and the Syrian nard to be different. They are the bushy top of the root, or the remains of the withered stalks and ribs of the leaves of an Indian grassy leaved plant. Linnæus, as just mentioned, has referred it to the genus *andropogon*; and Dr. Blane, in the Philosophical Transactions for 1790, considers it as another species of the same genus, of which the trivial name is the native appellation, viz. *jwarâncusa*. Sir W. Jones, however, in the second and fourth volumes of the Asiatic Researches, refers it, with much reason, to the genus *valeriana*, with the trivial name *jatamansi*. The error of supposing it a grass arose seemingly from the term *spica*; but this species of valerian rises from the ground in hairy spikes like ermines' tails. Dr. Roxborough, in the fourth volume of the Researches, has given a figure of this appearance, and indeed of the whole plant.

The nard, as brought to us, is a congeries of small, tough, reddish brown fibres, cohering close together, but not interwoven so as to form a bunch or spike, about the size of a finger. The spikenard of India and Syria alike resemble valerian in their virtues; but the Indian is warmer than the Syrian, and somewhat pungent and bitterish. It also agrees very nearly in its virtues with cypress.

The nard was highly valued in the east as a spice and perfume; and it was an ingredient in the theriaca and mithridate. Among the ancients the unguentum nardinum was used at the baths and feasts. All the ancient physicians recommended it in dropsy, gravel, and pains of the stomach, both internally given, and externally applied on wool. In the latter mode Galen relieved the emperor Marcus Aurelius in cholera. It is used in India as a febrifuge.

NA'RDUS ITA'LICA. See **LAVENDULA LATIFOLIA**.

NA'RDUS RUSTICA et MONTANA. See **ASARUM**.

NA'RES, (from the Hebrew, *naker*). The **NOSTRILS; nycteres**. The internal nares, or cavity of the nose, *hiator narium*, comprehend the whole space between the external nares and the posterior openings immediately above the arch of the palate, by which a probe may be passed from the nose to the fauces. From thence these cavities reach upwards to the lamina cribrosa of the os ethmoides, where they communicate forward with the frontal, and backward with the sphenoidal sinus. The two frontal sinuses, the two antra highmoriana, the cellulae of the os cuneiforme under the upper spongy bone of the nose, open into the nostrils, and from thence discharge their mucus. The spongy bones, two in each nostril, are covered with the mucous membrane also, and thus the secreting surface of the nostrils is enlarged. The olfactory nerves, without the dura mater, pierce through the holes in the os ethmoides, and spread themselves on the mucous membrane of the nostrils, with a branch from the fifth pair also. The membrana pituitaria, which lines the nose, is very vascular and papillous at those parts where it is most exposed to the stream of the air. The whole membrane is full of small glands which separate mucus; and from this membrane polypous excrescences

arise. The arteries of the nares are branches of the internal maxillary; the veins discharge their contents into the internal jugulars. The nerves are branches of the olfactory, ophthalmic, and superior maxillary.

The nostrils of infants are sometimes obstructed, and some unctuous substance is applied for relief; but three or four grains of white vitriol, dissolved in half an ounce of water, solicit more effectually a discharge of the too viscid mucus.

When the nostrils, after the small pox, are closed up, an opening may be made into them with a small knife, and kept distended until the wound is healed.

NARIFUSO'RIA, (from *nares*, the nostrils, and *fundo*, to pour). Medicines which are instilled into the nostrils.

NASA'LE, (from *nasus*, the nose). See ERRHINA.

NASA'LIS ARTE'RIA. See MAXILLARIE ARTERIE.

NASA'LIS, *musculus compressor naris, rinæus*, rises fleshy from the extremity of the os nasi, and adjacent parts of the os maxillare, and is inserted into all the cartilages of the ala. It dilates the nostrils.

NASA'LIS PROCE'SSUS. See MAXILLARIA SUPERIORA OSSA, and FRON'TIS OS.

NASCA'LE, (from *nasus*, the nose). A pessary made of wool or cotton to raise the nose when compressed.

NA'SI O'SSA. Two small bones which compose the upper part of the nose, and are supported by the septum nasi.

NA'SI A'LE. See PINNÆ.

NA'SITAS, (from *nasus*, the nose). A speaking through the nose.

NA'SO PALA'TINI DUC'TUS. See INCISORII DUCTUS.

NASTU'RTIUM. *Quasi nasi tormentum*, because the acrimony of the seed, while bruising, excites sneezing. It resembles the Mithridate mustard, distinguished by a less foliaceous margin, and multifid leaves. A name also for *barbarea*, *sophia*, and several other plants.

NASTU'RTIUM AQUA'TICUM, *laver odoratum, sisymbrium, cratevæ sium, cressio, cardamines*. WATER-CRESSES; *sisymbrium nasturtium* Lin. Sp. Pl. 916. A juicy plant with brownish, oblong, obtuse, leaves, set nearly in pairs, without pedicles, on a middle rib, terminated by an odd one larger and longer pointed than the rest. The stalks are hollow, pretty thick, channelled, and crooked; on the tops grow tufts of small tetrapetalous white flowers followed by oblong pods, which, bursting, throw out a number of roundish seeds. It grows in rivulets or the clearest standing waters, and flowers in June. The leaves remain green all the winter, but are in the greatest perfection in spring.

The leaves are to the taste moderately pungent: when rubbed between the fingers, their smell resembles mustard, though weaker. It is a mild, aperient antiscorbutic, supposed to purify the blood, and to open visceral obstructions. The expressed juice contains all the virtue of the plant; but whether eaten as a salad, or the juice drunk, its use should be long continued, since as a medicine it is inert. Water cresses form one of the ingredients for the *succus cochleariæ compositus*.

NASTU'RTIUM HORTE'NSE. *Lepidium sativum* Lin. Sp. Pl. 899. COMMON GARDEN CRESSES, a low plant, with variously cut winged leaves, bearing, on the top of the round stalk and branches, tufts of tetrapetalous white flowers, followed by roundish capsules, flattened on

one side, and full of reddish round seeds. It is annual, and raised in gardens, and an useful dietetic herb in scorbutic cases, and in debilities of the chylopoietic organs. It is milder than the water cresses: the seeds are more pungent than the leaves, and agree in their general qualities with those of mustard.

NASTU'RTIUM I'NDICUM. *Acriviola, nasturtium Peruvianum, cardamindum ampliori folio, and major flore, tropæolum majus* Lin. Sp. Pl. 490. GREATER INDIAN CRESS, or YELLOW LARK SPUR. The leaves are round, umbilicated, and placed alternately; the stalks trailing; the flowers consist of five petals, formed like violets; the seeds round and rough, three in each flower; a native of Peru. The young shoots are used as pickles; but the leaves and flowers resemble water cresses, emitting when bruised the smell of horse radish. Their medical virtues are similar to those of the sort common with us. See Raii Historia; Lewis's Materia Medica.

NA'SUS, (probably from the Hebrew *nasafih*, to blow). The NOSE; *mycter*. The external parts of the nose are the root, the arch, the back or spine, the sides, the tip, *acre*; the wings, *alæ*, or *pinne*, the external nares, and the part under the septum. The internal parts are, the internal nares, *septum narium*, the circumvolutions, the *conchæ superiores*, the *conchæ inferiores*, the posterior openings of the internal nares, the *sinus frontales*, *maxillares*, and *sphenodales*; *ductus lachrymalis* and *palatinus*. The nerves are the olfactory, and a branch from the fifth pair. The cartilaginous part of the nose is always open to admit of respiration; but grows gradually narrower. See NARES.

NA'TA, or NA'TTA; *nafhtha*, or *nafta*. A WEN, with a narrow basis. Linnæus speaks of it as rooted in a muscle.

NATA'TIO, (from *nato*, to swim). SWIMMING is a laborious exercise, and should not be continued to exhaust the strength. It is not natural to man as to quadrupeds, for the motions of the latter in swimming are the same as in walking. To man, however, it is by no means difficult, for the body is specifically lighter than water; so that to float it is only necessary to keep the head above the surface, for the body falls naturally forward with the head downward. A slight motion of the hands produces this effect, and the body is propelled by the impulse of the feet. Oribasius gives some directions on the subject, lib. vi. cap. 27. The dangers from swimming are spasms, which sometimes arise from the cold, sometimes from the great exertions, and the inconveniencies arising from the abuse of cold BATHING, q. v. It promotes perspiration, and attenuates the fluids if used in moderation.

NA'TES, (from *nato*, to flow; because the excrements are discharged from them). The BUTTOCKS; and a name of two prominences on the brain. See CEREBELLUM.

NA'TRIX TORQUA'TA, (from *nato*, to swim). See ANGUIS.

NA'TRON, (a lake in Judea, from whence it was produced). BARILLA, SODA, MINERAL and FOSSIL ALKALI. The mineral kingdom offers this alkali in large masses, though contaminated, usually, with sea salt, which shows its origin. It is also found in various plants, as the *salsola*, *kali*, *sativa*, *soda*, and *tragus*; *salicornia herbacea* and *arabica*; *mesembryanthemum nodiflorum*; *plantago squarrosa*; and *fucus vesiculosus*.

Lin. The *salsola kali* is the plant from which it is chiefly procured in the east; but the best is from the *s. sativa*; and the worst kind from the *s. tragus*. Where the natron forms a considerable article of commerce, the seeds of the *salsola* are regularly sown, the plants burnt, and the salt calcined. It always contains some common salt, Glauber's salt, sometimes a sulphurated kali, and occasionally a little iron. The pure crystals are of a rhomboidal figure, transparent, laminated. One hundred parts contain twenty of salt, sixteen of aerial acid, and sixty-four of water. An ounce of water, at 62° of Fahrenheit, dissolves about five drachms, fifteen grains of the crystals. See ALKALI.

NA'TRON MURIATUM. COMMON SALT. See MARI-NUS SAL.

NA'TRON PREPARATUM, i. e. SAL SODÆ. See ALKALI.

NA'TRON TARTARISATUM. See RUPELLENSIS SAL.

NA'TRON VITRIOLATUM. See GLAUBERI SAL.

NATSIA'TUM. See COCCULUS INDICUS.

NATU'RA, (from *nascor*, to proceed). NATURE. On this subject we find much unnecessary minuteness in various authors, which it would be useless to transcribe or examine. The term is sometimes used for the Author of nature, or the Supreme Being; sometimes for the whole of his works; occasionally for essential qualities of a body, or the usual series of causes and effects.

The atheists of the continent have exalted nature into a supreme power, forgetting that in this change of name they voluntarily admit the existence of a deity, and give the most unequivocal testimony of the necessity of an omnipotent superintending power. In this work, however, we must speak of nature in a more limited view; and it means, in medicine, the constitution which a man derives from his parents, or those powers, inherent in the whole system, by which deviations are corrected and losses repaired. We say a man is by nature weak; and that nature cures. In each case we express an effect only, without, by the reference to nature, assigning a cause. These changes may perhaps be the necessary consequences of structure; and in some cases, they appear to be so; but we know of no principle in the constitution by whose superintending power these salutary effects are produced, and we sometimes see such efforts really injurious. It is certainly more honourable to an all powerful author, that a system, like that of the human machine, shall be formed so as to correct accidental deviations, and to repair injuries, rather than to raise a subordinate agent, to interfere in every error or accident to which the functions of the body may be subject.

NATURA'LIA, (from *natura*, nature). See PUDENDA.

NAU'SEA, (from *navis*, a ship; because it is produced by the motion of a ship). CACOSITIA: its least degree means a loathing; or, according to Linnæus, a fixed aversion to food. This proceeds to nausea, retching, and vomiting.

Nausea is one of those irregular exertions, which we have described as arising from debility, and is accompanied by a slight degree of inversion of the natural peristaltic motion by which the food is swallowed.

A nausea always precedes a vomiting, and is attended with a tremulous motion of the lips; and a slight nausea is often followed with a discharge of a limpid mucus,

coming apparently from the œsophagus, which is certainly susceptible of the inverted peristaltic motion, without any affection of the stomach; as the upper part of the stomach is without the whole organ joining in the action. (See EMETICA.) Nausea may be excited by a variety of causes, and in particular habits by circumstances often scarcely, if at all, connected with the stomach. It accompanies also different affections of the brain, particularly every cause of irritation or oppression.

An emetic will often for a time relieve it; but when nausea continues, warm bitters with rhuarb or aloes are the best remedies. The effervescing draughts, sometimes warm opiates, and, when from bile, the juice of lemons, will often be successful. It is an almost constant attendant on fevers, and seldom is permanently relieved till the fever recedes. If it continues after the fever, an emetic is peculiarly necessary.

NAU'TICUS. A muscle chiefly used by sailors in climbing ropes. See TIBIALIS POSTICUS.

NAVICULA'RE, or NAVIFO'RME OS, (from *navicula*, a little vessel,) from its supposed resemblance to a boat; and from *navis* and *forma*. See SCAPHOIDES.

NAVIGA'TIO, (from *navigo*, to sail). SAILING is beneficial to weak persons. When the ship's motion is gentle, and steadily progressive, an uncommon alacrity, an increased perspiration, a keener appetite, and a quicker digestion, are the consequences; but when a patient is weak, violent agitation in a rough sea is dangerous. Sea voyages have been recommended in hypochondriac affections, visceral obstructions, scrofula, and particularly in consumptions; in the last, if properly conducted, it has been considered as a very valuable remedy. When speaking of exercise, we mentioned sailing as the most advantageous mode for those who could not bear bodily fatigue. The constant exertion to preserve the equilibrium keeps various muscles in action, and promotes, as we have seen, perspiration. This with the free open air will sufficiently account for all the advantages of a sea voyage. See ŒORA and GESTATIO. The Use of Sea Voyages in Medicine, by E. Gilchrist, M. D.

NEAPOLITANUM UNGUE'NTUM. NEAPOLITAN OINTMENT; an old preparation of mercury, for which the unguentum hydrargyri mite is usually substituted.

NEAPOLITA'NUS MO'RBUS, (because it is said to have been first observed among the French soldiers at the siege of Naples). See LUES VENEREA.

NE'BI POU'LI. See BILIMBI.

NE'BULA, (from *νεφελη*, a cloud). See ALBUGO.

NECRO'SIS, (from *νεκρωω*, to destroy). DRY GANGRENE, a slow mortification of a part, without any previous softness, and fetid dissolution, attended often with violent pain and stupor: induration and blackness of the parts succeed. It is slower in its progress than gangrene, becomes offensive, and soon terminates. (See MORTIFICATIO.) Sauvages enumerates six species.

1. NECRO'SIS USTILAGINEA, when it arises from eating corrupted grain. See RAPHANIA.

2. NECRO'SIS A VIRU, from virus generated in the habit, or poison thrown into it.

3. NECRO'SIS FEBRILIS, and

4. NECRO'SIS SCORBUTICA, when it succeeds the attack of a fever, or scurvy.

5. NECRO'SIS EPIDEMICA.

6. NECRO'SIS INFANTILIS. This complaint, according to Bell, never arises from inflammation; but

generally from some obstruction in the principal arteries, consequently from a defect of fluids. See Bell on Ulcers, edit. 3. p. 94. Edinburgh Medical Commentaries, vol. ix. p. 78. London Medical Journal, vol. iii. p. 369; vol. vii. p. 263.

NECTA'RIUM, (from *nectar, honey*), the melliferous part of the vegetable, peculiar to the flower. It commonly makes a part of the corolla, but is sometimes entirely distinct from it, and is then more strictly a nectary. It is frequently in the form of a horn, or spur, sometimes in that of a cup.

NE'DUM SCHE'TTI. The name of a bacciferous shrub which grows in the East Indies, of which an ointment is made by boiling in oil, used to relieve pruriginous disorders. It does not occur in the systematic authors.

NEDY'IA, NE'DYS, (from *νῆδυς, the belly*). See STOMACHUS and ABDOMEN.

NEDYU'SA, (from the same). See SITIS.

NEE'DLE. A surgical instrument of considerable importance, for securing arteries, for sewing wounds, and for sutures. The largest are used for the first, and the smallest for the last purpose. The instrument employed in depressing the cataract is styled a *needle*. For depressing the lens Mr. Ware advises the needle to be somewhat larger in its tongue than usually made.

NEFRE'NDES. SUCKING PIGS; but applied to young children, or old people, who have no teeth; quasi *nefrangentes*.

NE'GRO. See HOMO.

NEI'ÆRA, (from *νεῖσπος, farthermost*). See ABDOMEN.

NEIEM-EL-SALIB. See GRAMEN CRUCIS.

NELU'MBO. See FABA ÆGYPTIACA.

NEMORO'SA, (because it grows in woods). See ANEMONOIDES.

NE'NUFAR. See NYMPHÆA.

NE'PA. A CRAB, a SCORPION, and the name of the *genista spinosa major*.

NE'PA THEOPHRA'STI. See GENISTA SPARTIUM.

NEPE'NTES, (from *νῆ, a negative particle*, and *πενθος, morning*, from its exhilarating qualities). The nepenthes of the Egyptians is supposed to have been a preparation of opium and Datura, both the produce of Egypt. It was, according to Homer, the draught which Helen prepared to dissipate the uneasiness of her husband. Schultz's *Historia Medicinæ*. See also BANDURA.

NEPE'NTES DISTILLATORIA of Linnæus, Sp. Pl. 1354, is a singular plant of Ceylon, which has, at the extremities of its branches, a membranous cup, always in the morning covered with a lid, and full of water. The lid rises during the day, and the water is half evaporated; but restored before the next morning. See, says Linnæus, the true nepenthe for the exhausted botanist! The roots are said to be astringent, and the leaves are cooling. The water, in the urn, is used by the Indians in obstructions of urine.

NE'PETA, (from *nepete, German*). See MENTHA CATARIA.

NEPHRA'LGIA, (from *νεφρος, the kidney*, and *αλγος, pain*). Pain in the kidneys or ureters.

NEPHRA'LGIA CALCULO'SA. *Nephralgy*, from a STONE IN THE KIDNEYS. This differs from a nephritis

from the same cause, as it consists in a fixed pain in the region of the kidneys or ureters, without any acute febrile affection, and seems to depend on a large stone fixed in either part. It seldom happens in both sides, and the pain usually extends along the track of the ureter in the abdomen towards the bladder, attended with a painful drawing up of the testicle of the same side, or with a stupor, or numbness of the thigh. In the violence of the pain, a nausea and frequent vomiting come on: by lying on the pained side the uneasiness is mitigated, but on that which is opposite, increased. The urine, in the beginning, is watery, and small in quantity; afterwards turbid and copious, often extremely hot and bloody. The chief relief arises from bleeding, rest, diluting mucilaginous liquids, decoctions or infusions of lintseed, marshmallows, barley and gum arabic, anodynes, camphor, oily medicines, the warm bath, and a thin cooling diet. See CALCULUS and NEPHROTOMIA.

NEPHRA'LGIA RHEUMA'TICA. See RHEUMATISMUS.

NEPHRELMINTICA ISCHU'RIA, (from *νεφρος, the kidney*, and *ελμινξ, a worm*). A suppression of urine from worms. See ISCHURIA.

NEPHRI'TICA, (from *νεφρος, the kidney*). A suppression of urine from inflammation in the kidneys. See ISCHURIA.

NEPHRI'TICA A'QUA. See NUX MOSCHATA.

NEPHRI'TICUM LI'GNUM, (from *νεφρος, the kidney*), *peregrinum lignum*, NEPHRITIC WOOD, *guilandina moringa* Lin. Sp. Pl. 546; and probably the *nux behen* is a production of the same tree. (See BEN.) It is brought from America in large compact pieces, of a whitish or pale yellow colour without, and of a dark brownish or reddish colour within. If bruised, and macerated in water, it imparts a deep tincture, appearing, when placed betwixt the eye and the light, of a golden colour; but in other situations, of a fine blue; a property by which it differs from all other known woods. Other woods are often mixed with it, which only give a yellow tincture. With rectified spirit of wine the same blue tincture is procured, becoming yellow by adding an acid, but again blue by an alkali.

To the taste it is slightly bitter, and the raspings have a faint aromatic smell. A strong infusion in water is gently astringent, recommended in dysury, nephritic complaints, and all disorders of the kidneys and urinary passages. It does not, like the warmer diuretics, increase inflammation; but it is seldom employed. See Raii *Historia*; Lewis's *Materia Medica*.

NEPHRI'TICUS, (from *νεφρος, a kidney*). Belonging to the kidneys; and applied to the disorders of the kidneys or their remedies.

NEPHRI'TIS, (from *νεφρος, a kidney*). *Inflammatio renum*. AN INFLAMMATION IN THE KIDNEYS, placed by Dr. Cullen in the class *pyrexia*, and order *phlegmasia*. He defines it a febrile affection, attended with pain in the region of the kidney, often following the course of the ureter; frequent micturition, voiding water either thin and transparent, or very red; vomiting, numbness of the thigh, and retraction or pain of the testicle on the same side as the kidney affected. The pain is seldom very acute unless combined with rheumatism. The true species he calls *nephritis vera*: the symptomatic are; 1. *Nephritis calculosa*;

2. *Nephralgia calculosa*;—3. *Arenosa*;—4. *Purulenta*; and 5. *Arthritica*; from the various causes.

The general causes are, whatever obstructs the circulation in these vessels; as a wound, contusion, abscess, tumour, long continued defluxion, spasm, or a small stone; any impediment to the conveyance of the urine into the pelvis, ureters, and bladder; violent riding; excessive heat; a plethora; acrid diuretics, and poisons. When these vessels are inflamed, the constriction is so great that no urine can be discharged, or only in a small quantity. If this is pellucid, it is unfavourable. Pains and convulsions are often produced in the stomach, intestines, and uterus, from the irritation of the neighbouring nerves; and from hence arise eructation, nausea, vomiting, diarrhoea, iliac passion, retentions of urine, stupor, immobility of the legs, and preternatural heat in the loins.

A stone in the kidney usually excites inflammation in its internal membrane, and in the tubuli uriniferi.

Inflammation in the kidneys is distinguished from the gravel, or a stone obstructing the ureter, by the fever and the acute inflammatory pains; from an inflammation of psoas muscle, or other adjacent parts; by the pain which attends erecting the body, and the difficulty of putting either leg forward, which attend psoas inflammation, and the absence of the distinguishing signs of nephritis; from the colic, and other inflammatory and spasmodic pains in the intestines; by the seat of the pain.

If the disease is protracted beyond the seventh or eighth day, and there is a stupor or heaviness of the part, with frequent returns of chilliness and shivering, &c. there is reason to suspect that an abscess will ensue.

If the urine becomes higher coloured, is secreted in a larger quantity, and at last is copious, thick, and mixed with mucus, a gradual relief follows, and the cure is effected by affusion. It may also terminate in an abscess, a mortification, or pass off by a metastasis. Mortification is, however, uncommon, and more frequently the kidney gradually wastes. Inflammations in this part often suppurate on the fourth day, but an abscess may begin so late as the fourteenth. The pus may be discharged into the pelvis of the kidney, the abdomen, or externally through the integuments and the skin: in the first or last case a cure sometimes follows; the second is fatal.

When the inflammation is violent, bleeding in large quantities is absolutely necessary, though the pulse is seldom full or hard. Copious and repeated discharges from the bowels by means of the purging salts, or the oleum ricini, are indispensable. Relaxing, and occasionally anodyne clysters, are highly useful. With the same views a semicupium is often serviceable.

Decoctions of parsley roots, infusions of lintseed, or the Arabic emulsion, with a double quantity of the gum, are proper as common drink; and to prevent their palliating the appetite, a little lemon juice and sugar may be added.

In case of a suppuration, the treatment is nearly the same as in a suppuration of the liver. After the abscess is burst, the patient should drink freely of diluting and mucilaginous liquors, taking the bark freely.

If pains are excessive, opiates may be allowed; but care must be taken to prevent constipation. If the

vomiting is troublesome, saline draughts in a state of effervescence, with a few drops of laudanum, will relieve it. Small doses of nitre largely diluted are useful; and the camphor might, perhaps, be a serviceable remedy. The disease, however, is rare.

If a gangrene takes place, it is known by the violence of the cause and of the symptoms, the want of relief from medicine, and the sudden remission of the pain without apparent cause, cold sweats, a weak intermittent pulse, hiccoughs, urine black, fetid and foul, or retained, with a sudden and considerable loss of strength. In those cases, no cure can be expected.

See Boerhaave's Aphorisms, and Van Swieten's Commentary; Fordyce's Elements, part the second; Cullen's First Lines, edit. 4. vol. i. p. 387.

NEPHROLITICA ISCHURIA, (from *νεφρος*, the kidney, and *λίθος*, a stone). A suppression of urine from the stone in the kidneys. See ISCHURIA.

NEPHROME'TRÆ, (from *μήτρα*, womb). See Psoæ.

NEPHROPLETHORICA ISCHURIA. ISCHURIA, q. v. from a plethora.

NEPHROSPASTICA. ISCHURIA, q. v. from a spasm.

NEPHROTHROMBOIDES. ISCHURIA, q. v. from grumous blood.

NEPHROPYICA. ISCHURIA, q. v. from purulent matter in the kidneys.

NEPHROPHLEGMA'TICA. ISCHURIA, q. v. from pituitous or mucous matter.

NEPHROPLEGICA. ISCHURIA, q. v. from a paralytic state of the kidneys.

NEPHROS, (from *νεω*, to flow, and *φερω*, to bear, as conveying the urine). See REN.

NEPHROTOMIA, (from *νεφρος*, and *τεμνω*, to cut).

NEPHROTOMY, the extraction of a stone from the kidneys by an operation. Rousset first advised this operation, and in Mezeray's History of France there is an instance of its having succeeded on a convict; but from the course of the renal artery it does not appear to be possible without destroying the patient. (See RENES.) Heister has indeed told us that wounds in the kidneys are not mortal; and if a stone or an abscess can be felt externally, so as to be opened without exposing the cavity of the abdomen, there is no reason why the operation should not be attempted. See Avicenna, Serapion, Wedelius, Meckren, Heister; Medical Museum, vol. ii. p. 370; Bell's Surgery, vol. ii. p. 144; White's Surgery, p. 368.

NEPONES. See BARONES.

NERANTIA. See AURENTIA HYSPALENSIS.

NERIUM, (from *νερος*, humidus, because it grows in moist, generally maritime places). *Rhododaphne*, *rhododendron*, *oleander*, *laurus rosea*. The DWARF ROSE BAY, *nerium oleander* Lin. Sp. Pl. 305. Its flowers resemble a rose, and its leaves the bay; and it is rather a tree than a shrub. The branches are divided and subdivided by threes, and the leaves grow three together. The leaves and flowers are poisonous; the muscles of the pharynx become paralytic; and vomiting with purging soon comes on. Vinegar is said to be its antidote. See Raii Historia.

NERIUM ANTIDYSENTERICUM. Lin. Sp. Pl. 306. The plant which probably affords the cones or codagapala bark.

NEROLI O'LEUM. See AURANTIA HISPALENSIA.

NERONIA'NA. See PHLEBOTOMIA.

NERVALIA O'SSA, (from *nervus*, a nerve). See ARQUALIA OSSA.

NERVE'A SPONGIO'SA, (from the same). See CORPORA CAVERNOSA PENIS.

NERVI, *neuri*, (from *vivu*, to extend, because originally applied also to the tendons and sometimes even to the ligaments). Nerves are the prolongations of the medullary substance of the brain; and, though in their progress their whole bulk seems to be greater than the nervous cord, when it escapes from the cranium, this is apparently owing rather to the separation of the nervous by cellular substance, than any addition to their medullary portion. We shall find, however, some sources, from which additions may accrue.

To take a more distinct view of the nervous system than any anatomical author will afford, we must examine it comparatively, in the different animals of a lower order. In the human body we have described the brain, and found the spinal marrow a vast trunk, arising as from a root, from which the nervous filaments are the branches; and have seen another system, the sympathetic or great intercostal. This we shall term, for the sake of convenience in expression, the ganglionic system; for in this alone are the nerves united in ganglia, which are subsidiary masses of medulla with its attendant ciceritious substance, or communicate freely in a net work, styled a *plexus*. The ganglionic system is destined to the vital organs. The sensations it conveys are indistinct, and its activity, though subject to remissions, constant; while the cerebral system destined to the organs of sense, and to the voluntary muscles, conveys distinct sensations, requires repose, and is disposed in a regular order. As we descend in the scale of animated beings we find the cerebral system gradually lessen, till it disappears, and the ganglionic alone remains. As the former disappears, the functions of nutrition and generation are more active, while those of sensibility and intelligence diminish in the same proportion. There are consequently two nervous systems in vertebral animals, and one only, with some slight exceptions, in those without vertebræ, which are, at the same time, without voluntary loco-motion. If zoophytes have no visible nervous system, their sensibility shows that they contain nervous molecules, which may be compared to isolated ganglions.

Animals which have the ganglionic system only, possess no centre of vitality, but are often propagated like vegetables, by buds. Each ganglion is, to a certain extent, independent, and each can apparently supply the place of the other, in reproducing any part which has been lost.

In man, the ganglionic system begins in the neck by the superior cervical ganglion, the largest of the whole body. It is this which supplies the place of a brain in animals which have none. Below is the inferior cervical ganglion, which is often double. In the breast, the grand sympathetic nerve forms almost as many ganglia as it meets with nerves; and the nervous fibres scattered in every direction form two or three cords which descend to the abdomen, and there assume the appellation of the *splanic nerve*. This forms a considerable gan-

glion near the diaphragm. In the lower orders the ganglia are equally numerous in the abdomen.

The substance of the nerves appears, at first sight, a pulpy mass, but, if examined with a microscope, each nerve is found to consist of fibres in a parallel direction. Dr. Monro thought the fibres convoluted; a circumstance which no anatomist has since confirmed, owing apparently to optical illusion. When spread in the organs of sense, the fibres are no longer discerned, but the whole becomes a nervous membrane of peculiar delicacy. We have no reason, however, to suppose the structure changed, but the fibres discovered by the microscope are probably only fasciculi of more minute ones covered with a proper coat; and when this is deposited the fibrous structure eludes our sight. It is estimated, from the angle which the least visible object subtends, that the fibre which becomes sensible of a visible impression must be less than the thirty-two thousandth part of a hair. Every nerve is covered at its passage through the cranium by coats of the dura and pia mater, and tunica arachnoidea; the two latter are said to accompany the nervous fibrils in their course. This is, however, probably true only to a certain extent, for the nerves have also a fine coat from the cellular membrane, which may be expanded by inflation, so as totally to obscure the nervous fibres: these shrink also in drying, and almost disappear. The strong dura mater is absolutely necessary to enable them to bear the pressure of the bones, in passing through their foramina, and the shocks they are subject to in the extremities. Anatomists have, however, in general supposed, that the pia mater accompanies the nerves in their minuter ramifications; but, whatever the membrane may be, Reil thinks that he has discovered it by dissolving the medullary substance in an *alkaline* lixivium, and, on the contrary, has separated the nervous fibre by dissolving the coat in an *acid*. It is at least certain that we do not see the nervous substance distinct from its coverings, but in the retina, and the nerve dispersed on the cochlea, vestibulum, and semicircular canals of the ear. The nerves are probably in the same state when dispersed on the muscular fibres.

The arteries of the nervous chord are very numerous, and, as hinted in the article *MUSCULUS*, are necessary perhaps to give that tone or tension which is consistent with the due discharge of their functions; but it is sufficient in this place to remark, that the arteries are so numerous as with the usual fine injection to render the nerve of an apparently uniform colour. Though we have, however, employed the term tension, we mean not to insinuate that the nerves convey sensations as musical chords. They are incapable of *such* tension, and the term is rather used analogically, than strictly. The arteries are accompanied by veins, and probably also by lymphatics.

The ganglions have thicker coats, more numerous, and larger blood vessels than the nerves. They are larger than the nerves which form them; and, in general, when nerves unite, they are larger at their union than the cords of which they are composed. In the ganglion, the fibres are united, crossing each other in different directions, and the consequences have been already noticed.

We need not now stay to record the experiments which show that sense and motion depend exclusively

on the nerves, or rather on the nerves as accompanied by their arteries. It is not only certain, that to tie the artery will render a muscle paralytic, or destroy the sensation of an organ, but that a more active circulation will increase both tone and sensibility. Yet the latter has its bounds; and, in the organs of sense particularly, an increased fulness of the vessels will compress the nerve, and destroy its functions. May we not, however, distinguish between a more active circulation, and distention from fulness, in consequence of less irritable fibres? This is probable, and merits consideration, as it will influence the practice; but it is not our present object. Compressing, however, the nerve, will not immediately destroy the sensibility or irritability of a part, unless the pressure be near the organ. If at a distance, motion at least will remain some time, and be more quickly lost in proportion as the pressure advances nearer. The first *Monro* relates a similar experiment more pointedly. Grasp the phrenic nerve somewhat above the diaphragm, and draw the other hand along it, with some pressure towards the muscle. It will contract, and the experiment may be repeated; but the effect will soon cease, unless the pressure from the hand above be removed. If the pressure, however, at whatever distance, is long continued, the power of the muscle is not recovered. In the organs of sense, pressure has a more rapid effect; we allude particularly to the amaurosis from plethora, which may perhaps arise from its acting so near the extremity of the nerve, divested of its defences. Independent, however, of pressure, various vegetable and animal substances will destroy the functions of the nerves, by an action wholly distinct from any change in the organization, and, so far as we can perceive, from any chemical affinity: some gases will have a similar effect. Substances also which affect only the simple solid, as warm water astringents, or will give increased mobility or tone.

Affections of the medullary substance of the brain will, of consequence, affect the nerves. Irritation will increase their action, pressure destroy it, deleterious substances acting on any sensible organ, whose sympathy with the brain is strong and well established, be equally fatal to it. Disputes have arisen, whether any injury on the brain is felt in the nerves on the same or on the opposite side, for authors have imagined that the fibres of the brain cross each other within the cranium. This argument has been supported by some facts; and in the eye, by the fibres of the optic nerve evidently crossing each other in fish. In the human body, however, the rule is by no means without exception, even in the eye. Minute anatomists have, however, traced the fibrils of a nerve far beyond the spot, from whence it separates in a cord; and *Soëmering* has traced the roots of the nerves, particularly those of the organs of sense, to the eminences in the parietes of the ventricles. We shall, however, speak of them in the common language of anatomists, as arising from the spot where they first appear distinct from the cerebral mass. They, however, separate from the brain at very acute angles, and can, for a time, be easily traced within its substance, and indeed all their divarications are equally at acute angles.

Is sympathy between nerves of distant parts owing to this connexion within the brain? This has been the opinion of many authors; and, as it is wholly inexplicable

in any other view, there is less reason for rejecting it. We shall soon return to the subject.

Before we speak more particularly of the functions of the nerves, and the source of their energy, we shall enumerate the principal branches, and in this part we shall chiefly follow the first *Monro*, and *Viq. d'Azyr*, in the order of *Willis*.

From the encephalon ten pair of nerves proceed. The first pair are the OLFACTORY, arising from the corpora striata, but by the older anatomists said to arise from the processus mamillares; because in brutes these points projected, and from the extension of the lateral ventricles they were hollow; consequently, in their opinion these nerves were designed to convey the mucus from the cold, moist, brain. They become larger as they pass under the anterior lobes of the brain, and are joined, at the os ethmoides, by a branch of the fifth pair. They are very tender, and, suddenly expanding on a large surface, cannot be traced far. These tender nerves are defended from the weight of the anterior lobes of the brain, by being sunk in hollows, which give them a triangular shape, and, from the varied depth of either sulcus, one nerve seems occasionally larger than the other. Towards the fore part, these nerves expand into an oval lobe containing cineritious matter, which lies on the bone. They are apparently the organs of smelling. The branches of the fifth pair appear to supply the arteries and the mucous glands; the first pair only conveying the sensation.

The second pair, the OPTIC NERVES, arise from the thalami nervorum opticorum, or more directly, according to *Sabatier*, from the tubercula quadrigemina, and, after a long curve under the brain, unite at the fore part of the sella turcica, apparently blended. They then divide, and each running forward and outward, passes at its proper foramen into the orbit, to expand in the retina. It is, as we have said, sufficiently certain, on the whole, that the fibres do not decussate, though this certainly in some instances, takes place. We have ourselves seen from a blow on the head an affection of the opposite eye. With the optic nerve the ocular artery enters the orbit, and occasions an insensibility at that point, which may be ascertained by an easy experiment. It is, however, equally probable that the nerve is not fitted for sensation till it is expanded in the very delicate web, the retina. This membrane is, as usual, plentifully supplied with arteries, and the active circulation, through them, greatly increases its sensibility, while distention, for any time, destroys it.

The third pair MOTORES OCULORUM, first appear at the anterior part of the processus annularis, and, going out at the foramen lacerum, are dispersed on the muscles of the globe of the eye. In a more minute examination they seem to arise from the internal margin of the crura cerebri, and the perforated medullary matter, between them; and they pass between the posterior artery of the cerebrum, arising from the division of the basilar artery, and the anterior artery of the cerebellum. Each diverges, passing under the anterior part of the tentorium by the cavernous sinus. The situation of this nerve, near the artery, accounts, in the opinion of *Sabatier*, for the weight on the eyes at the approach of sleep; in fevers and states of inebriation.

The fourth pair, PATHETICI or TROCHLEARES, are the smallest of the encephalon, not exceeding in

size a common thread. They arise from the base of the testes, and running half round the root of the crura medullæ oblongatæ, adhere, by a membrane, to the anterior lateral part of the processus annularis, pass through the foramina lacera, and are spent on the muscoli trochleares, the superior oblique muscles of the eye. They are called *pathetici* from their rolling the eye with violence or fury. The origin of the trochleares is, however, various, and they seem to have a more intimate connection with the brain than any other nerves; yet no part of their office shows such a connection, or appears important.

The *fifth pair*, TRIGEMINI, arise from the annular process, where the medullary processes of the cerebellum are joined to the tuber. This nerve seems to arise in two portions: the anterior is small, and somewhat elevated above the other; the posterior originates a little lower. These portions are connected by a cellular membrane in which a little artery often creeps. In fact, though in a few individuals connected with the cerebrum, this is truly a nerve of the cerebellum. It enters the dura mater, near the point of the petrous process of the temporal bone, and sinking close by the receptacula at the sides of the sella turcica, each becomes thicker, forms a distinct ganglion, and passes from the skull in *three great branches*; one to the orbit of the eye and forehead, through the foramen lacerum; one to the upper jaw and face through the foramen rotundum; and another to the lower jaw and tongue, through the foramen ovale.

The *first*, the *ophthalmic*, before it passes through the foramen lacerum, sends off a branch to the intercostal, and forms the first connection between the two systems. It is then distributed to the glands, fat, membranes, and muscles of the eye, with a twig to the forehead, sending a considerable branch through the internal anterior orbital hole to the brain, in order to join the olfactory nerve. These very extensive connections explain various morbid phenomena, as the watering of the eyes, from a stimulus to the nerves of the nostrils, the effect of sneezing from a strong light, and stopping the same convulsion, by a pressure on the internal canthus, or indeed why sneezing itself, a convulsive action of the muscles of respiration, is occasioned by a stimulus to the nostrils.

The *second branch*, *maxillaris superior*, passes out at the foramen rotundum of the sphenoidal bone, and gives nerves to the palate, sphenoidal sinus, and nostrils, supplies the antrum maxillare, and the upper teeth. It comes out at the external orbital foramen, previously sending a branch through the substance of the os maxillare, which comes out at Stenos duct, to be distributed on the fore part of the palate. The remainder, which passes through, is lost on the orbicular muscle of the eyelids, the nose and upper lip, where it seems to unite with some branches of the seventh pair.

The *third*, *maxillaris inferior*, goes out at the foramen ovale of the sphenoidal bone, and supplies all the muscles of the lower jaw, and those between it and the os hyoides. It sends a branch to the tongue, where it meets the ninth pair, and from the root of this last branch the chorda tympani is reflected, or rather the chorda is added to the lingual nerve. It then supplies the salivary glands, the tonsils, the external ear, where it joins a branch of the portis dura of the seventh pair, the teeth of the lower jaw, and from thence the chin and under lip. From these connections, convulsions of the lower jaw are attended with salivation, angina, with

a pain of the ear and teeth, and the senses of smelling and tasting are probably related. If true, that compressing the nostrils will destroy the sensation of the palate, the reason will be sufficiently evident from this description, and we shall equally see why the toothach produces convulsions, as well as why cauteries to the external ear, or blisters behind it, sometimes relieve pains of the teeth.

The *sixth pair*, the ABDUCENTES, the smallest, except the fourth, arise from the fore part of the corpora pyramidalia; and, in their passage below the dura mater, where they are contiguous to the carotid, appear to send off a reflected branch, and when joined with some from the ophthalmic branch of the fifth pair, to form the original of the intercostal. The sixth pair, somewhat enlarged, now pass through the foramina lacera to be lost on the abductor muscle of the eye. A dispute has been maintained with obstinacy whether the sixth pair sends or receives this branch from the sympathetic; but anatomists have not decided the fact, and the knife probably cannot decide. The eye, of all the external organs, is, however, the only one whose motions are sometimes involuntary, and the intercostal system is exclusively destined to those muscles which are not under the influence of the will. It is singular that this circumstance, though so obvious, and useful in determining the controversy, should not have occurred; but the distinction is in a great measure new. We may add, at this place, that the third, fourth, fifth, and sixth pair of nerves, pass a considerable way under the dura mater, along the sides of the sella turcica, surrounded with a reticular plexus of vessels, and very near the large trunks of the internal carotid, before they pass through the foramina of the cranium.

The *seventh pair*, the AUDITORY, appear to come from the side of the root of the annular process, behind the conjunction of the medullary processes of the cerebellum with the tuber, accompanied by an artery of an unusual size, and entering the meatus auditorius, divides into two branches, the *portio mollis* and the *portio dura*. These two branches, however, on a minute examination, seem to have two distinct origins, the portio dura from the crus cerebelli, and the portio mollis from the striæ in the fourth ventricle. Prochaska indeed observes, that he has not been always able to trace their origin so far as these striæ; and, though many former anatomists of credit have supported this source, he thinks the striæ in the fourth ventricle by no means essential to the auditory nerve. The portio mollis soon loses its firm coats, and from this circumstance it is denominated. It enters the petrous bone, and in this softer state is disseminated on the internal ear. The other, supported by its harder coats, passes through Fallopius' aquæduct, in its passage by the side of the tympanum, where a nerve, sent to the lingual branch of the inferior maxillary nerve, along the outside of the Eustachian tube, and across the cavity of the tympanum (chorda tympani), is joined to it. The portio dura comes from the encephalon between the styloid and mastoid processes of the temporal bone, giving branches to the smaller muscles, and then passing through the parotid gland, supplies the muscles of the face, neck, and cranium, including the external ear. Its branches having thus a connection with the three branches of the fifth, and, as we shall see, of the second cervical, occasion numerous instances of sympathy, obvious to every one who reflects on their distribution.

The *eighth pair*, which, from its principal branch, is styled *PAR VAGUM*, rise from the superior and lateral part of the medulla oblongata, near the bases of the corpora olivaria, in distinct fibres. Strictly speaking, this pair of nerves consists of three distinct ones. The uppermost fibres, which may be traced separate from their origin, to their passage from the skull, is the *glossopharyngeal nerve*, which supplies the tongue and the pharynx. The chief medullary substance is the *par vagum*, and there is an additional portion, from the spinal marrow, the *nervous accessorius*. The *par vagum*, after its escape from the encephalon, gives nerves to the larynx, pharynx, and the ganglion of the intercostal nerve. Then separating from the ninth and intercostal, which seemed to accompany it, merely to receive additional branches for the superior cardiac plexus, it runs down the neck, at the outer side of the carotid, between it and the jugular vein. As it enters the thorax, by passing before the subclavian artery, it divides into two. The principal nerve accompanies the trachea to the root of the lungs, while the right branch turns round under the subclavian artery, on the left, under the arch of the aorta, and ascends behind the trachea to the larynx. This ascending branch is styled the *recurrent*, and on the right side is sometimes double. It ascends behind the carotid, and sometimes passes round the root of the thyroid artery. On the left, which is lower, in consequence of its running round the arch of the aorta, it gives off filaments, which go to the lower cardiac plexus, after having united with the branches of the sympathetic. Branches are also sent to this plexus from the recurrent, under the subclavian of the right side; and, on both, communicating branches are observable from the recurrent to or from the intercostal, for it will be recollected, that the functions of the lungs are not wholly voluntary. When the recurrent has turned round the artery, it ascends in a direction to pass between the trachea and œsophagus, giving branches to each, but its final distribution is to the larynx; though Sabatier describes a branch, which sometimes ascends and joins the sympathetic, high in the neck. Cutting the recurrent, and internal laryngeal nerves, it was supposed, would destroy the voice; but, in consequence of the numerous nervous communications, it is weakened only. When the latter is cut, the voice is weaker, but acute; when the former, which chiefly supplies the cartilages, it is graver and hoarse. The *par vagum*, in its progress downwards, forms the posterior pulmonic plexus, and, passing into the abdomen, with the œsophagus, supplies the stomach, particularly its upper part, and is at last lost in the numerous plexuses of the abdomen. In this extensive course it almost rivals the intercostal; but its functions are not so distinctly appropriated. We must regard it, however, as the great link between the cerebral and the ganglionic system, between the voluntary and involuntary functions of the body.

The last portion of the eighth pair is the *accessory nerve* of Willis. It arises from the cervical nerves, passes up through the foramen magnum, and comes out with the *par vagum*, like a nerve of the brain. When it has escaped from the encephalon it leaves the *par vagum*, and attaches itself to the ninth pair, sometimes by a filament, passes behind the jugular vein obliquely downward and backward, perforates the mastoid muscle, giving branches to it, and then, as if still wishing for support, entangles its branches with the third and

fourth cervical nerves, terminating in the posterior part of the trapezius muscle of the scapula. This peculiar distribution of the eighth pair will contribute to explain the reason, why tickling the fauces excites vomiting; the connection of vomiting and coughing, particularly in the hooping cough; the sensation of a ball in the throat, from distention of the stomach, perhaps the shrugging of the shoulders; and reply to the problem of Sabatier, why the more violent passions excite involuntary gesticulations.

The *ninth pair*, the *LINGUALES*, appear, first, at the inferior part of the corpora pyramidalia, between these and the corpora olivaria, rise in fasciculi, and in this disgregated state pass through the dura mater. They then unite and come out of the skull, by the condyloid foramen of the occipital bone, are connected with the eighth pair, and the ganglion of the sympathetic nerve. From its vicinity to the internal jugular vein, it is supposed to be compressed by it when full, as in paralytic, apoplectic, and even in drunken persons, occasioning a fulness and indistinctness of speech; for, as the name imports, it is at last dispersed on the tongue, united with the branch of the fifth pair, already mentioned as going to the tongue. When it comes out from under the occipital branch of the internal carotid, it gives off a branch called *descendens noni*, which passes over the trunk of the carotid, and under the thyroid vein. Two slender twigs, from the second and third cervical nerves, sometimes from the first origin of the phrenic nerve, uniting to this descending branch, together forming a ganglion, or plexus, from which many slender nerves go to the neighbouring muscles. Thus the ninth pair of nerves appears to have most extensive connections with the eighth pair, the spinal accessory, the sympathetic, the cervical, and the phrenic nerves. Shall we prove from this, that "out of the abundance of the heart the tongue speaketh?" At least we know, that the motions of the tongue are sometimes involuntary. This nerve seems to supply the motions of the tongue, while the sense of taste, which is by no means confined to the tongue, is derived from the branch of the fifth pair. It will be evident, however, that tremors of the tongue, and a loss of voice, often occasioned by hysteria, paralysis, and fevers, may, in a great degree, be accounted for, from these connections.

The *tenth pair*, or *SUBOCCIPITAL* nerves, which modern anatomists style the first of the cervical nerves, rise by two roots from the medulla spinalis, differing in many minute respects, which need not detain us in this place. The roots of this nerve are connected with the spinal accessory nerve, but seldom form a ganglion with it, and rather unite with the posterior roots of the second cervical nerve. The suboccipital nerve, passing transversely, and a little obliquely upward, goes out under the vertebral artery between it and the first vertebra of the neck. The trunk then rises a little way upward, swells into a kind of ganglion, and divides into two branches; the latter goes to the muscles of the head, the former chiefly adds to the ganglionic system. The following verses from an old anatomist, comprehend the principal uses of each pair of nerves in their order.

Olfaciens Cernens, oculosque Movens, Patiensque,
Gustans, Abducens, Audiensque, Vagansque, Loquensque.

We shall add a table of the synonyms of all these nerves, for which we are indebted to Mr. C. Bell.

- 1st pair—Olfactory nerves.
- 2d pair—Optic nerves.
- 3d pair—Motores oculorum.
- 4th pair—Trochleares.
- 5th pair—Trigemini.
- 6th pair—Abductores.
- 7th pair { Auditory nerves.
Nervus communicans faciei.
- 8th pair { Glosso pharyngeus.
Par vagum.
Spinal accessory nerve.
- 9th pair—Lingual.
- 10th pair—Suboccipital nerve.
- Caruncula mamillares* Math. de Grad.
Processus ad nares. Gonth d'Andernac.
8^{um} par, Spigel.
1st pair of Willis.
Nervus visivus, seu visorius. Carpi.
1^{um} par antiquorum.
2d pair of Willis.
2^{um} par, Fallopii et Vesalii.
Nerfs moteurs communs des yeux. Winslow.
3d pair of Willis.
Minor propago 3ⁱⁱ Paris, id est 5ⁱ recentiorum, Fallopii.
Gracilior radix 3ⁱⁱ Paris, id est 5ⁱ recentiorum. Vesalii.
Nervus qui prope nates oritur. Eustach.
9^{um} par, Cortes; et Columb.
4th pair; or, pathetic nerves of Willis.
Nervus anonymous trigeminus multorum.
3^{um} par, Fallopii, et Vesalii.
5th pair of Willis.
Trijumeaux of Winslow.
4^{um} par Fallop.
Radix gracilior 5ⁱ Paris, id est 7ⁱ recentiorum Vesalii.
Par oculis prospiciens.
8^{um} par Casp. Bauhini.
6th pair of Willis.
Nerfs oculo musculaires, ou moteurs externes de Winslow.
2^{um} par Alexand. Benedict.
4^{um} par Carol Stephan.
5^{um} par Vesal. et ameliorum.
6^{um} par V. Horne.
Portio mollis, of the Moderns.
Distinctus a molli nervus. Fallop.
Portio, ut præcedens, 5ⁱ Paris, id est 7ⁱ recentiorum. Vesal.
Portio dura, of the Moderns.
Le petit sympathique, of Winslow.
Facial nerve.
Qui ad musculos linguæ et faucium tendet. Fallop.
Le rameau lingual de la 8^e paire of Winslow.
8th pair d'Andersch.
Superior fasciculus of the 8th pair of Willis.
Glosso Pharyngeus. Haller.
Nervus sextus Galeni et aliorum.
5^a conjugatio Carol. Stephan.
7^{um} par Alex. Benedict.
6^{um} par Casp. Bauhini.
9^{um} par Bidloo et Andersch.
8th pair of Willis.
Le moyen sympathique of Winslow.
The spinal nerve.
7^{um} par Fallop. Vesal et aliorum.
11^{um} par Bidloo.
10^{um} par Andersch.
Par linguale medium, vel nervus lingualis medius.—Haller. Soemmering et aliorum.
The hypoglossal, sublingual, or gustatory.
The 9th pair of Willis.
10th pair of Willis.
1st spinal, or cervical nerve, of Haller.

The general course of the intercostal we have already described. To make, however, the view of the nerves more complete, we shall add a somewhat more particular account from the first Monro.

When the intercostal has escaped from the os petrosum it is joined by branches from the eighth, ninth, and tenth, and from the first and second cervical, to form the largest ganglion in the body, from which the nerve goes out to descend down the neck with the carotid artery. We have remarked, however, that this supposed origin is rather a branch sent upward, to it; but minuteness is here unnecessary. The intercostal, in its course down the neck, supplies the flexor muscles of the head and neck, and communicates with the cervical nerves; nor will it escape observation, that the motion of the head is often involuntary;

E'en mitred Rochester would nod his head.

As it is about to enter the thorax it again forms a ganglion, from which nerves are sent to the trachea arteria, and to the heart; those designed for the heart joining with the branches of the eighth pair, and passing between the two great arteries and the auricles to the substance of that muscle. The intercostal then runs down on the side of the *vertebræ* of the thorax, having additional nerves constantly sent to it from between these *vertebræ*. Where the addition is made to it from the fifth dorsal nerve, a branch goes off obliquely forward, which joined with others from the sixth, seventh, eighth, and ninth, forms the anterior trunk which passes through its own proper hole in the diaphragm, when it again forms a ganglion immediately above the *cæliac* artery, into which the eighth pair enters. From this, the nerves of the intestines, liver, spleen, pancreas, kidneys, and *glandulæ renales*, are derived. The posterior trunk continues in its straight course downward, communicating with the inferior dorsal and lumbar, and sending off branches to the kidneys and testicles. Some of its branches join with others, from the anterior trunk to form a ganglion, close to the inferior mesenteric artery, to supply part of the colon and rectum. The extremity of this nerve is even sent to the pelvis, to furnish the other parts there. In this progress the plexuses are numerous.

The SPINAL NERVES seldom rise in cords, but in separate fibres from the front and back part of the spine. They soon run into a ganglion, which is, however, chiefly formed by the posterior fibres, and they then acquire the firm coats peculiar to the other nerves. They are distinguished by the numbers of the *vertebræ* through which they pass, and the foramen is in the *vertebra* above. Seven come from the cervical *vertebræ*, twelve from the dorsal, five from the lumbar, and six from the false, *vertebræ*.

The first cervical pair come from between the first and second *vertebræ*, and its branches are immediately connected with the tenth pair of the head, the second cervical and intercostal. It supplies the flexors of the neck; but its larger branches are sent to the extensors, though not lost on them, as a few pass through them, and are spent in the teguments of the occiput. Some of its fibres are connected forward with the fifth pair of the head, and the *portio dura*. Thus a pain in the neck is sometimes felt in hysteria; and, in tetanus, the first

of the voluntary muscles affected are those of the neck.

The second *cervicals* unite, by branches, with the ninth of the head, the intercostal, and the first and third of the neck; and, by a large branch which comes out at the outer edge of the *sterno mastoideus*, with the accessory nerve. It is afterwards distributed to the muscles and glands of the head and neck, as well as the external ear, where it is connected to the *portio dura*, sometimes to the first cervical. The remainder passes to the levator *scapulæ*, and the extensors of the head and neck; but, at this place, another branch is usually sent off to join the accessory, near the superior angle of the *scapulæ*. These connections occasion the pain to extend to the clavicle in inflammations of the parotid, and the head to be drawn toward the shoulder of the affected side.

The third *cervical*, on its passing from between the *vertebræ*, unites with the second; and a branch passing down, uniting with the fourth cervical, forms the *phrenic nerve*, which enters the thorax, between the subclavian artery and vein. It passes by the pericardium, in a sulcus, and is lost on the diaphragm. The last *phrenic* goes outward, to pass over the apex of the heart. From this circumstance, palpitations of the heart are often attended with an acute pain, which is referred to the left orifice of the stomach. The other branches of this nerve are distributed to the muscles and teguments of the lower part of the neck, and top of the shoulder. The consequence is, that any disease of the diaphragm, or the parts immediately contiguous, if they irritate this muscle, are attended with pain on the top of the shoulder. This is particularly the case in inflammations of the liver.

The fourth *cervical* sends off a branch, as we have said, to join with one of the third, to form the *phrenic*, and sends filaments to the neighbouring parts. It then runs to the armpit, where it meets the fifth, sixth, and seventh *cervicals*, and the first dorsal. These unite and again separate in a complicated plexus, supply the teguments of the thorax, and then divide into different branches to the muscles of the upper extremity. These groups we shall describe.

The first of these, the *scapularis*, passes to the semi-lunar cavity of the upper costa of the scapula, a hole formed by a ligament passing between the angles of the scapula. It next supplies the *supra spinatus* and the muscles at the back of the scapula.

The *articularis* sinks in the axilla to avoid the head of the os humeri, to rise again at the back part of it, and is dispersed on the muscles which draw the arm back or elevate it. The name is derived from its surrounding the joint.

The *cutaneus* runs, superficially, down the fore part of the arm, giving branches to the skin, and divides on the inside of the fore arm to supply the teguments and the palm of the hand. The branches of this nerve are sometimes injured by opening the basilic vein.

The *musculo cutaneus* passes through the coracobrachialis muscle, supplies the biceps cubiti and brachialis internus; and passing behind the tendon of the biceps, and over the cephalic vein, is distributed on the teguments of the outside of the fore arm and hand. This is the nerve sometimes hurt in opening the cephalic vein.

The *muscularis* runs in a spiral direction from the axilla, under the os humeri, and backward to the external part of the bone supplying the extensors of the fore arm. A branch from the upper part of the fore arm, accompanying the supinator longus to the wrist, proceeds obliquely over the radius to supply the muscles on the back of the hand and fingers. The principal part, however, penetrates the supinator radii brevis to reach the extensors of the hand and fingers; and one part is sent to the ligament of the wrist.

The *ulnaris* extends along the inside of the arm to supply the extensors of the fore arm and the teguments of the elbow. At the lower part its course is somewhat oblique, that it may pass out at the groove behind the internal condyle of the os humeri, through which it runs to the ulna, supplying the neighbouring muscles and teguments till it reaches the wrist, when a branch is sent obliquely over the ulna to the back of the hand and the outside of the fingers. The largest portion of the nerve goes to the os pisiforme on the internal side of the wrist, where it sends off a branch which passes through the tendons to supply the interossei and lumbricales, terminating in the muscles of the thumb and fore finger. The remainder supplies the little finger, and divides into three branches, two of which pass with the sheath of the flexor tendons of the little finger to furnish its inside; while the other is disposed in the same way on the side of the ring finger. Some of the branches, however, from the last cervical and first dorsal run distinct to the ring and little finger, since these are sometimes affected independent of the other fingers, and a pain or a violent paralysis of these, when they are exclusively affected, has been removed by a caustic at the internal angle of the scapula. A numbness of the fingers often arises from leaning on the internal condyle, and a blow on it gives a tremulous sensation through the fore arm and hand.

The last bundle, the *radialis*, passes with the humeral artery to the elbow, supplying the flexors of the cubit in its way. It then pierces the pronator teres, supplies the muscles on the fore part of the fore arm, and continues its course to near the wrist, giving branches to the muscles in its way. Near the wrist it sometimes gives off a nerve to the back of the hand and fingers, instead of a branch of the *muscularis*. The larger part of the nerve, however, passes behind the annular ligament of the wrist, supplies the thumb, and sends a branch on each side of the sheath of the tendons of the flexors of the thumb, fore finger, and middle finger, and one to that side of the ring finger next the middle one. In each instance of these groups passing through muscles the action of these do not seem to affect the sensibility of the nerve, and we have already stated that the action of the muscles consists of contraction in length only.

The *twelve dorsal nerves* send each a branch to the intercostal, and others to the muscles behind. The principal trunk passes outward to the furrow in each rib, where they pass between the external and internal intercostals to supply the muscles and integuments of the thorax. The first dorsal having contributed its branch, forms with the two branches of the intercostal, as they come down the thorax, a considerable ganglion. The six lower dorsal nerves give branches to the diaphragm and abdominal muscles. The twelfth

joins with the first lumbar, and gives nerves to the quadratus lumborum and iliacus internus.

The *five lumbar nerves* on each side communicate with the intercostal and with each other, giving branches backward to the loins. The first joining with the last dorsal supplies the abdominal muscles, the psoas, iliacus, and the teguments of the fore part of the thigh, while its principal branch, with other nerves, forms the crural nerve. The second passes through the psoas, and is distributed like the former. The third has a similar distribution. Branches of the second, third, and fourth make up the *obturator or posterior crural nerve*, which passing through the pelvis, goes to the thigh at the notch of the foramen magnum, between the pubis and the ischium, and is lost on the adductores and the teguments on the inside. The *anterior crural* is formed by united branches from the first, second, third, and fourth lumbar nerves, runs along the psoas, and escaping with the iliac vessels under the tendon of the external oblique, supplies the muscles and teguments on the fore part of the thigh. One branch of this nerve runs down on the inside of the leg, near the vena saphæna to the upper part of the foot; and is sometimes wounded in opening this vein, near the ankle. The remainder of the fourth and fifth lumbar join in composing the sciatic nerve. From this distribution we see the reason why a stone passing through one of the ureters, which crosses the psoas obliquely, will occasion pain when the body is erected; a paralysis of the thigh; a swelling, and a convulsive retraction of the testicle.

The *six pair*, which come from the *false vertebræ*, are composed of small nerves sent posteriorly to the hips, and larger branches anteriorly. The three first joining with the fourth and fifth of the loins, form the sciatic nerve; which, after sending large nerves to different parts of the pelvis, organs of generation, and the thighs, passes behind the great tuber of the os ischium, and over the quadrigeminus muscles, down the back part of the thigh, close to the bone, supplying in its way the teguments and muscles. When it approaches the ham, it has the name of *popliteus*, and sends off a considerable branch, which passes over the fibula, and sinking among the muscles on the outside of the leg, goes to the foot, and is lost in the upper part of the larger toes, having supplied the muscles and teguments in its passage. The larger branch of the sciatic, after having been equally liberal to the muscles, &c. sends a large cutaneous nerve down the calf of the leg to supply the outside of the foot, and upper part of the lesser toes. It then sinks below the gemellus, and distributes nerves to the muscles of the back of the leg, continuing among them till it passes behind the inner ankle: in the internal hollow of the os calcis it divides into the external and internal plantar nerves, of which the first is divided among the sole of the foot and toes, nearly as the ulnar nerve is distributed on the concave side of the hand; and the second is distributed nearly as the radial nerve.

The fourth, fifth, and sixth nerves from the false vertebræ are much smaller than the others. The fourth is soon lost in the vesica urinaria and rectum; the fifth is chiefly distributed to the levatores ani. The sixth, which may be considered as the substance of the ligamentum, denticulatum, advances forward, and is

lost in the sphincter ani and the neighbouring teguments.

In general, the size of the nerves sent to the extremities are proportionally larger than those distributed to the different viscera; and the nerves of the inferior are larger than those of the superior extremities. We see, from the distribution of the nerves in the former, the cause of the numbness from sitting on one side, and why, in sciatica, the limb is not only weakened but wasted.

Such is the distribution of the nerves and the observations which they suggest. The nerves themselves, we have often hinted, do not differ from the simple solid, so far as chemical analysis has ascertained their nature; and the brain is apparently the same. When kept from the air it scarcely undergoes any spontaneous change; but in the air it soon becomes fetid, of a green colour, exhaling copiously ammonia. It contains phosphate of lime, of soda, and ammonia, though together in a very small proportion. The rest is apparently albuminous, though different in some of its affinities from albumen, and its real nature has hitherto eluded chemical investigation.

In our examination, therefore, of the NERVOUS INFLUENCE we must be guided by observation. We see cords extended from a common sensorium, consisting of pulpy matter, apparently fibrous, confined or defended by firm strong coats. These cords evidently convey impressions to the brain, and derive from it an active power, which a principle residing in the brain can direct to a determined end. Yet, for the purposes of mere animal life, a brain seems unnecessary, and what is a subordinate system in the human body, alone supplies the lower orders of animals: in them there is no common sensorium, apparently in the lowest, no volition. They seem to obey a principle which in the middle ranks of animated nature we call instinct, probably a necessary consequence of given stimuli in a system suitably organized. We must look then to the nerves themselves for the principles of sensation and of motion; for the brain is only a common centre, the residence of volition.

The phenomena of sensation and motion require a rapid communication from the extremities to the brain, or to that origin of nerves which supplies its place. The nerves are not elastic, and the idea that they convey impressions by tremors similar to those of a musical chord is consequently improbable. We acquire our ideas of solidity from resistance, and it may be said that this resistance which, variously modified, gives some information of the nature of the resisting body, may be the mean of conveying the impression to the mind. The numerous modifications, however, conveyed by the nerves, particularly by the nerves of the eye and the ear, are wholly incompatible with this system, and except, perhaps, the simple resistance, we obtain our knowledge of the nature of the resisting body by the medium of some fluid. It is at least generally agreed that the nervous power is a fluid. Dense fluids are incapable of rapid motion, so that it must be one of peculiar rarity; and as the effect continues for a short time after the object is removed, it is equally certain that this fluid is elastic. When we pursue the nerves to their extremities, where

their peculiar functions are exerted, we find them depositing all their coats, so that the peculiar properties of nerves cannot reside in these; on the contrary, as they do not appear in their course, it is highly probable that this fluid, whatever it may be, is confined by the coats. We may perhaps adduce as an argument for the opposite nature of the nerve, and the coat, the experiment just mentioned of Reil, who found the one soluble in an alkali and the other in an acid. Again, when we compare the appearance of the nervous cords in the best microscopes with the delicate pulpy membrane in their sentient extremities, we are led to suspect, as already hinted, that the fibres, which appear in the greatest magnifiers, are in reality fasciculi of more delicate ones; and that, therefore, it is highly improbable they should be hollow, or contain, within cavities, any fluid. Yet the fluid adheres to the nerves with some force. The language of the first Monro respecting the phrenic nerve is, that it must be "*gripped*" with one hand, and with the other "*stripped*" down in a direction below. Mr. Caverhill gives an equally strong representation of the necessary force; yet we must add, that these were applications to the nerves through their dense coats, the resistance of which it was necessary to overcome.

Every fact, every observation, as well as the most careful deductions from both, seem to show that the nerves are fibrous, that their power resides in a subtle, elastic fluid inherent in them, permeating freely through them, and confined by their coats, either from waste or an improper direction. This is no peculiar phenomenon in nature. The magnetic fluid is confined to iron in a peculiar state, and its direction is preserved by an armature of brass; the electric passes freely through metals, but is confined by glass or wax. Suppose, then, we now speak analogically, a metal divided into the minutest fibres, each coated with wax, and that coating deposited at one extremity: If the superior extremity is charged, the fluid will be conveyed with undiminished, possibly with increased, energy, to the lower. This analogy is realized in the torpedo. The galvanic shock, we have said, is of the nature of the electrical; it is peculiar to the nerves, which are disposed so as to confine it, and the principal nerves pass, in the electrical ray, commonly called the *torpedo*, under a muscle, which can check its influx. When the muscle is relaxed, apparently at the will of the animal, the whole force is directed to a given point. Like the nervous power, it is more active in proportion to the vigour of the animal; its activity is diminished by exertion, and is lost by death. We have said, that this is analogy only, but we may be allowed to add, it is analogy so close that it may assume a better name, and reason cannot revolt at its being styled a probable theory. Once more: electricity in activity excites the powers of a nerve following its fibres, equally confined by their coats. In a kindred fluid it will probably excite a similar activity, and the effect is the same with that of all inordinate stimuli, exhaustion, with a loss of irritability, which we commonly perceive from excessive excitement, or from deleterious miasmata; that it arises from excess of excitement is evinced by its causing pain and muscular contraction when not immediately fatal. See ELECTRICITAS and GALVANISMUS.

Whence then does this principle originate, how is it continued, how supported, and in what manner destroyed? These may be styled unfair questions, when we have professed to step, but a little way, beyond the confines of analogy. Yet we have no scruple to answer them. We consider then this fluid inherent in the nerves in their original germ, excited by the action which gives life, supported by the natural stimuli of food, warmth, &c. exhausted by too great excitement, or causes which at once destroy its activity, and ceasing finally to act when the solid which it accompanies loses its organization by the gradual diminution of its arteries. When we speak of the natural stimuli we may be accused of using the jargon of Brown. But, in his system, life itself is a forced state: we contend only that the *support* of life depends on causes of excitement, a fact rather than an opinion; and these stimuli appear to act exclusively by supporting the circulation, while the decay of old age arises from the obliteration of the arteries. The arteries, however, not only give activity to the nerves in their extremities, but seem to have a considerable influence on them in their origin. The brain, we have seen, is coated to a certain depth with cineritious substance, a colour derived from numerous minute vessels; but in various parts of the substance of the brain, in the ganglionic system, even in the nerves themselves, striæ of a similar colour are discoverable. This circumstance has led to the idea that the brain was a gland, and the nervous a secreted fluid. The glandular apparatus appeared to Dr. Cullen so striking, that while he would not admit a secreted fluid for the purposes of sensation and motion, he thought it assisted *NUTRITION*: vide in verbo.

There is, however, another view to be taken of this subject. We allowed the fibrin of the blood to be the most highly animalized of our fluids; we admitted its contraction by the Galvanic stimulus, and gave its full force to the argument, though we disclaimed the conclusion that contraction was the result of such organization. May it not then be said that the brain, a fibrous mass, is supplied with blood in vessels so exceedingly minute, that the circulation must be languid, and the fibrin strongly disposed to separate; that if animalization be connected with a fibrous structure, the cause will here be found adequate to the effect? It cannot, however, escape even a superficial inquirer that the animation of the fibre must be previous to the circulation; and every view which we have hitherto been able to take of the subject seems to show that the primordial germ is fibrous, and that it is animated in the moment of conception. If this be true, the separation of the fibrin is an effect only. But may it not supply nervous substance once lost? The question will arise, is nervous substance *ever* supplied with its original powers and functions? We think not. Nerves are united like any other simple solid; but from the experiments of Fontana, and his microscopical views of the united nerve, it seems to be only joined by a dense cellular substance. If the sensation below is not destroyed it is weaker, and we have every reason to believe that neighbouring nerves, when one is destroyed, acquire additional powers to supply its place. The fact recorded by Santorini is a very strong one, that the origin of the

portio mollis was particularly large in a blind man, whose hearing was peculiarly acute.

We have seen various communications between the nerves after escaping from the encephalon, and the influence of these communications in exciting what have been styled sympathetic motions. Many others (see *SYMPATHIA*.) cannot be explained by any known nervous connection, and physiologists have supposed with great reason that the nervous fibres communicate in the brain. We have seen that such communications are very extensive.

The sensibility and importance of a part must not be estimated by its proportion of nerves. Those of the heart are few and small, and some parts of the body, particularly the more compact ones, are acutely sensible when inflamed, though very inconsiderable fibres have been traced to them. This has appeared so striking to some physiologists, that they have been inclined to believe a nervous aura, from neighbouring organs, could give sensibility. Such is the opinion of Reil, but a highly improbable one. Many animals, as leeches, were said to be destitute of a nervous system, till they had been more accurately examined, and some parts of the body equally so, till the small nervous branches had been more minutely investigated. It is not at present asserted that the generation of mosses is equivocal, because the fructification of some kinds has not been indisputably demonstrated. We may be allowed in this place to sum up very shortly the whole doctrine which we have endeavoured to establish on this subject; though it will lead to some repetition, we are now by the additional steps enabled to give a complete view of the whole.

The primordial germ exists seemingly in the female. It is animated by the male, who certainly influences the form, the habits, the temperaments, and constitutional diseases. This germ contains in embryo the fibrous parts of the body only, convoluted into a form so minute as to escape for a time the assisted sight, and of this fibrous germ the principal part is the brain and nervous system, the *carina* of Malpighi. This animated nervous system gives vigour and activity to the other fibrous portions, the muscles, which soon impel a fluid, received from the maternal part of the uterus, and gradually evolve the rest of the body in succession. While the nervous power animates the arteries, it receives from them in turn a greater degree of vigour and activity. Inorganic matter is gradually added between the fibres, which is either loose in a cellular substance, or compacted with the fibres into membranes. Thus the body by degrees acquires a bulk. Its shape and form depend on that of the original fibrous, or more strictly the nervous, germ; for the body cannot expand beyond the point to which the convoluted nerves are able to extend, without death ensuing. That they will occasionally admit of a somewhat greater extent we see from painful tumours, which are supplied with arteries at times apparently of recent formation. If there is a power in the constitution to form new arteries, probably it is limited to the power of extension in the nerves. If it was unlimited, deformities and irregularity of figure would destroy the peculiar dignity of the human frame, and we should be justified in attributing all to chance.

Man thus slowly expands, and successive organs of peculiar structure, destined for their varied functions, are gradually evolved. The arteries, however, after a certain period begin to lose their energy; the blood is accumulated in the veins, the smaller vessels are obliterated, sensibility and irritability proportionally decrease, till the animation of the brain can be no longer supported, or some important vital function be discharged. The whole machine is then no longer in action, and the affinities of unanimated matter reduce it again to earth, to oil, to salts, and air!!

See Winslow's Anatomy; Monro's Dissertation on the Nerves, annexed to his Osteology; Steno, Vieussens, Willis, Ridley, Leuwenhoeck, and Ruysch; Whytt on the Sympathy of the Nerves and Nervous Disorders; Kirkland's Dissertation on the Brain and Nerves, and on the Sympathy of the Nerves; Monro's Observations on the Nervous System; Vicq. d'Azyr Anatomie du Cerveau; Soemering de Cerebro et Nervis; Scarpa Tabulæ Neurologicae.

NERVI VA'GI, NERVI SYMPATHE'TICI MEDII, NERVI STOMA'CHICI. See PAR VAGUM.

NERVI'NA, (from *nervus*, a nerve). See NEURITICA.

NERVOSA FE'BRIS; *morbis cardiacus*. Nervous fever is the milder typhus of Cullen, and might perhaps with propriety have been referred to that head; but it is also so nearly connected with those slow fevers which sometimes arise from a sedentary life, from internal obstructions, and other causes, that it can, perhaps, be more advantageously considered in this place.

NERVOUS FEVER, the typhus mitior of Dr. Cullen, is defined, a contagious disease in which the heat is not much increased; the pulse small, weak, and generally frequent; the urine little changed; the functions of the sensorium much disturbed; and the strength greatly diminished. In the early stages there is no particular symptom to distinguish it from nervous diseases with fever, except the constitution of the patient, the existence of an epidemic, or occasionally a marked attack. In general, nervous fever comes on slowly, with occasional chilliness, so light as often to elude the attention and escape the recollection. It is, however, from the beginning attended with giddiness, or a mist before the eyes by day, and a want of sleep by night. A great lassitude, frequent yawnings, with flying pains, increased greatly towards the evening, want of appetite rising even to loathing and nausea, sighing, oppression at the region of the stomach, with dyspnoea, in succession come on. This gradual increase of symptoms, with the peculiar pale, sunk, countenance attending fever, will give the alarm, even when other nervous diseases with which the earlier symptoms have been confounded are present. The tongue continues for a time with little change, but is occasionally rough and dry, and after a few days white, at last assuming a browner hue. The pulse are usually quick and small from the beginning, and perhaps Dr. Cullen has been too cautious in stating it only, as "for the most part" frequent. The skin is generally dry, though profuse, clammy, debilitating sweats come on about the third day, and the heat is at no time considerable. After about the tenth day the weakness increases considerably; the tremors become convulsive; with despondency and alien-

ation of mind, at first observable only in the night, but soon continuing with little intermission. It is, however, only the mild delirium of pathologists; wandering rather than phrensy.

The disease is often protracted to the twenty-first day, and often to even a longer period. It seems seldom to have a regular crisis, but gradually proceeds to a fatal termination in debility and convulsions, or a gradual restoration to health, evinced by more natural sleep, a more favourable appearance of the look, the tongue more florid at the edges, the mind more collected, the nausea disappearing or changing to an appetite, often whimsical and unsteady, but still distant from the former loathing.

We have stated sufficiently the distinction of *nervous fever* from *nervous diseases with fever*. If the chilliness is not observable, the look and the evening exacerbation will generally decide, for purely nervous diseases are easier towards night. Another distinction is not less striking. Though in nervous diseases the appetite is capricious, yet food of a proper quality, and in moderate quantities, is borne with ease and even advantage. In fever it always overloads. In the former, wine cheers; in the latter, it heats and oppresses. Yet in the beginning of nervous fever, error is often unavoidable.

Nervous fever is seldom sporadic, and when epidemic usually proceeds from the common causes of epidemic fevers, viz. miasmata; nor is there any doubt of its being occasionally contagious. The form of this fever arises probably from the constitutions it affects, viz. the languid, the studious, and the sedentary. What in a crowded jail, in a camp, or in a besieged town, would be typhus petechialis, in a city where the air is free but the constitution debilitated, is probably typhus mitior or nervous fever. The disease is not, however, essentially different, and every cause of weakness predisposes to it.

The cause of fever we have endeavoured to show is debility, perhaps more strictly a debility of the sensorial power, attended with irregular action of the whole muscular system, and its consequences internal congestion, particularly, for the reasons stated, in the liver and the brain. We should not have repeated this opinion were it not to show how nearly it approaches to that of Dr. Clutterbuck, which in the moment of writing has reached us. He supposes fever a local disease, and to consist in inflammation of the brain, which, from its connection with the whole system, induces the various disorders in the vital, the animal, and the natural functions. We mean not to urge, in contradiction to his fair and well drawn inductions, that the intercostal system is distinct from the cerebral, and not likely to be affected by it, for this at present is untried ground, but to remark, that in his argument he seems not to have attended to the distinction between active inflammation and congestion. He distinctly proves the latter, but not the former. The best practitioners at this time will not admit of any practical distinction between membranous or parenchymatous inflammations, but no doubt can arise respecting the greater or less degree of inflammatory action. If this object had been in our view, we could not have pursued the distinction more closely than we have done in the article INFLAMMATION, q. v. and in the various parts of this

work where we have pointed out the effects of congestion as distinct from inflammation. The real difference arises first from age, where the congestion is chiefly venous; secondly, from the degree of the vis a tergo, excited by the obstruction. In the brain the limits in the first case, are the apoplexies in advanced life, and those cases which Hoffman calls *hemorrhagiæ cerebri*; in the second, the languid inflammation from Concussion. q. v. and the active ones which produce phrenitis. To come nearer the present point, the state of the brain in violent delirium from inflammatory fever, and in the mild delirium of the nervous, seems to be equally at the extremes of the beam; and though the former approaches phrenitis, the latter is far distant from it. With these distinctions we fully agree with Dr. Clutterbuck in his ideas of the state of the brain during fever; nor do we wish for more able supports of our opinion than the facts which he has so industriously collected, or so ingeniously applied.

There is, however, yet another view which we have taken of the subject, and which we think requires equal attention, viz. the state of the epigastric region, and particularly of the liver. This seems, in the treatment of every fever, to require a very particular attention, nor will the arguments which show the influence of the brain on the digestive organs, explain the fulness, the tension of the region of the liver, or explain the necessity or the good effects of laxatives. In the disease before us, the epigastric region is generally tense; and stools are easily borne. The affection of the head is the delirium mite only of pathologists. In fact, the debility is so great that the alteration in the balance of the circulation is less obvious, and the practice has been generally feeble and inefficacious; or mistaken and ill-directed.

We might refer, in general, to the observations on the remedies of fever (see FERRIS); but some modifications are necessary. Even when *bleeding* was considered as indispensable, the lancet was dreaded, or employed in this disease with a timid caution. Practitioners have since found it injurious, and even fatal; nor is there any period when it appears truly indicated. *Emetics* are useful in the beginning, but the active exertions of vomiting prevent their frequent repetition, as they seem to exhaust the strength and diminish the excitability: nauseating doses of antimonials exhaust it still more, and are highly injurious. *Purgatives* seem also to have been forbidden, as lowering the strength and lessening the vital powers; yet, at a time when in more active fevers clysters were chiefly trusted, and we were told, with the most frigid caution, that if stools were necessary, they must be procured by their means only, we shall not be surprised to find that in cases of such great debility the increase of the alvine discharge was dreaded. Nervous epidemics are, however, peculiarly rare, nor have we had an opportunity of bringing the use of purgatives to the test. In the last we saw they appeared injurious; but in the sporadic cases of this nature we have found them rather beneficial: but in such the practitioner must be "with caution bold."

The Peruvian bark would appear to be strongly indicated, and it has had powerful recommendations. Yet the period at which these recommendations appeared give us some room for doubt. It was when fevers of the continued kind were supposed to consist

of repeated paroxysms, and to be as easily checked by this remedy as intermittents. Practitioners too often see what they wish, and medicines always appear to answer a preconceived opinion.

The management, in which all seem to agree, is to check *colliquative sweats*, which often arise, by free cold air and cold drinks; to give wine with caution, according to the state of debility, and *opiates*, with or without stimulants, which alone seem to act as cordials. Yet to these we would add *blisters*, which are certainly necessary to lessen the accumulation in the brain, and *laxatives* at least to such an extent as will prevent or lessen the infarctions of the liver, which are inseparable from every fever which we have seen. The power of the laxative should be adapted to the patient's strength; but his feelings and his pulse, after every evacuation, should be carefully examined, for from thence we should draw our indications for their repetition. We strongly suspect that the bark would have been found a more useful medicine had laxatives been properly premised; but in the use of this remedy practitioners have been peculiarly timid.

Camphor is a medicine which has been spoken of differently, according, perhaps, to the nature of the epidemic, or the prejudice of the practitioner. In general, it promises to be effectual; and the ether, which seems never to have had a fair trial, is a remedy of equal, apparent, value. While the colliquative sweats have been often a troublesome symptom, practitioners have greatly feared the semicupium or warm fomentations; yet, in a low temperature, when the sweats do not come on, they may be useful. They should never be higher than 96° nor below 92°. The cold affusion has not been tried, though sponging the body with cold water, or water and vinegar, was no uncommon remedy among the ancients. The heat of the body is, however, so inconsiderable, that sponging only can be admitted, and this should be employed with caution.

When convulsions come on, either camphor, castor, or opium, are necessary; and these in combination are often highly useful. In this state also, mosch and the fetid gums have been employed with considerable advantage. Whatever be the inconveniences of the bark during the fever, it greatly assists the recovery of the strength during convalescence. The debility is often considerable, nor have we seen any fever where the mind is reduced to more infantine weakness.

NERVOSI MORBI, the *neurodes* of Dr. Cullen may seem to require some particular notice. These, however, occur under their respective heads; but a term so generally employed may be sought for in a dictionary, and we shall endeavour, on the foundation of our nervous pathology, to give some general and more distinct views than may be found in former authors, in the most concise, comprehensive, form.

The two great divisions of the morbid states of the nervous system are increased or diminished sensibility, connected with increased mobility and torpor in the moving fibres, with tenderness or firmness in the simple solid. The deranged state of the nervous system is chiefly considered in the article MANIA, q. v.

Nervous diseases, in the common meaning of the term, chiefly consist in the former state, in which, to

prevent prolixity, we shall constantly include its connections. This constitutes the hysteric constitution, and indeed, in imagination, "all the evils flesh is heir to." In hysteria, we considered that marked definite affection, distinguished by its appropriate symptoms; but there are many complaints depending on excess of excitement, sometimes within the limits of health, though occasionally stepping beyond the first boundaries of disease. As they are so numerous, we must pursue them in the different functions, distinguished as *vital*, *animal*, and *natural*.

The vital functions suffer numerous inconvenient deviations from their natural regularity. The circulation is usually rapid, but often greatly accelerated and irregular, not only in the synchronism of the action of the heart, but in the direction of the circulating fluids. We thus find, from the slightest excitement, the pulse unusually rapid; the heart fluttering with irregular beats; the face flushed, while the extremities are cold, or a sensation of cold water pouring down the back is felt. The respiration is equally irregular; the lungs are ineffectually expanded, and inspiration repeated, to relieve the anxiety thus occasioned. At times, the respiration and circulation cease, and a death like faintness, attended occasionally with convulsions, supervenes.

These symptoms recur at irregular intervals, and sometimes vanish spontaneously, leaving the usual delicacy of infirm health, but no particular inconvenience. They are induced and carried off by causes equally slight, and leave the patient subject to the charge of caprice, fancy, or dissimulation. Thus they are brought on by a sharp noise, a fetid odour, a disagreeable object, and carried off by similar means. To rouse the attention, to keep it suspended by anxiety and expectation, in fact, to take the patient from herself, since the morbid affection is almost peculiar to females, furnishes the best plan for relief. To bring on misfortunes is not the province of the physician, but accidental ones raise her above herself.

In the animal functions, the tendency to disease is no less conspicuous. The sensibility is extreme, and the "Miseries of Human Life," overcharged perhaps in the modern popular publication, are wholly the patient's own. The wind blows with too suffocating or too chilling a breeze; the birds chirp with too shrill a sound; the odour of new mown hay is offensive; and the glaring sun blinds the too tender eye. As the Indian is all face, the nervous patient feels in every organ as if that organ had no defence.

The affections of the *natural functions* are mixed with those of the vital and animal. The muscles, in general, are susceptible of sudden and violent contractions, no longer obedient to the will. These arise to hysteric, sometimes to epileptic, paroxysms. The appetite is capricious, irregular, and occasionally depraved; the stomach often distended with flatulence, and disturbed with borborygmi; the bowels unequal in their exertions; the kidneys occasionally yielding to the impulse of the blood, and secreting a serous fluid with little change, sometimes resisting the usual impulse, or obeying it, after some delay, when the urine is highly charged with its animal salts and oil.

Nervous patients, in this way, suffer acutely with little commiseration, and few attempts at relief. They are told that they must be their own physicians, and are

left to the pity, often to the ridicule, of the world. Yet, though not diseased, they nearly approach disease; and the only remedies are those which blunt too great sensibility, and those which restore the balance of the circulation.

To begin with the latter. An equable warmth is necessary, and every means by friction, by rubefacients, and by exercise, of keeping the lower extremities in a due temperature, are highly salutary. Exercise, however, should be employed with caution. If so violent as to fatigue, and a little *will* fatigue, it is injurious; nor can nervous patients often endure the requisite degree of bodily exercise without inconvenience. A carriage, or a horse, are therefore required, but, in each, the mind preys on itself, and it may be literally said, *post equitem sedet atra cura*. No general rules can be therefore laid down: the prudent physician will adapt his advice to the circumstances and the disposition of his patient; but, in general, a journey, cheerful company, a change of scene and of engagements, will best succeed. Thus do the fashionable watering places, the chalybeate springs, triumph.

Another mode of keeping up the due balance of the circulation is by the use of laxatives. The convulsive motions of the muscular organs take place in the stomach, and distention of this organ, followed by eructations, are often a most distressing symptom. It is necessary then to keep up the peristaltic motion of the bowels, which, while it contributes to carry down the flatulence, relieves the fulness of the vessels above. The medicines which succeed most effectually for this purpose are the stimulant cathartics, which increase the action, the peristaltic motion of the intestines, particularly the aloes and the rhubarb, and the effects of these are greatly increased by uniting them with the fetid gums.

Too great sensibility is blunted by various narcotics and carminatives. The complaints of the stomach are relieved by the fetid tinctures, by the warmer carminatives, and by every stimulus. It is painful to be obliged to add, that what was first resorted to as a medicine is often continued from habit, and the officinal tincture is exchanged for common spirits. Let therefore every nervous female be cautious in this respect, for thousands have been thus incautiously enticed to their ruin—the ruin of their constitutions and of their moral character. Let them recollect that aqua ammonia is less dangerous than brandy, and that infusions of pepper-mint, of rosemary, or the warmer aromatics of the east, though injurious in excess, are far less so than what are styled indirect stimulants, which lull rather than relieve pain, which intoxicate the senses, instead of removing the disease. In such cases, for this purpose, opium is often an useful remedy, but it should be confined to medical exhibition. In excess it acts only as a dram, and we fear, like spirit of lavender, is often used as such, under the name of medicine; many a patient "*pretextit nomine culham*."

Other narcotics are the henbane, the cicuta, perhaps the bayberries, and the narcotic bitters. The two former have been recommended as not producing costiveness, and the henbane seems particularly useful. The bayberries, though stimulant, unite the narcotic powers of the plant, and are often useful remedies. To restore the strength is rather to repress the mobility; and, in

this latter view, bitters appear chiefly useful. The narcotic ones are most effectual, and those which unite astringency often fail of producing the expected benefit. If the bark is ever useful, it is when combined with valerian. Acid in the stomach is corrected by lime water, by magnesia, often by the acid of vitriol, and sometimes even by columba root; occasional spasms by the fetids and carminatives. The metallic preparations, particularly iron, often recommended, are two powerfully astringent; and zinc, lately introduced in union with columba, often injurious. We have lately learnt from Dr. Bardsley that the oxide of bismuth is highly useful in these complaints, and that it calms the irritability of the stomach more effectually than any other medicine. This medicine was originally recommended by Dr. Odier, and communicated to the public by Dr. Marcel. (See *BISMUTHUM*.) It is particularly adapted, however, to the increased irritability in consequence of a scirrhus pylorus; and perhaps before we arrive at the article *SCIRRHUS*, we may be able to communicate the result of our own experience. Free air and large rooms are indispensable; and sea bathing often gives tone without increasing the inflammatory tendency. To discharge accumulations of phlegm, emetics are occasionally necessary, but should not be too often repeated.

What may be styled the moral treatment of such complaints requires a steady hand. While to ridicule fancies, not in the patient's power, is inhuman, to humour them is an indulgent cruelty. Every imagined feeling is to them a reality, every whim a want. Reason is often unavailing, authority is harshness, and a cold indifference cruel insensibility. Their own reason is inadequate to the task of correcting their wanderings, for they are truly such, nor will they hearken to that of others. In general, a kind indulgence in trifles, and a steady firmness in opposing the wilder eccentricities, is useful; and to point out with an affectionate mildness the errors, and their apparently certain consequences, will often succeed. Much, however, must be left to the prudence and judgment of the attendant, which must be regulated by the patient's temper and habits. The attendant should, however, have the confidence of the patient, which she should never forfeit by unnecessary harshness, or abuse by injurious indulgences.

Nervous diseases of the opposite kind are, we have said, those of torpor. Less varied in their forms and symptoms, we need not so studiously distinguish the functions affected, though we shall silently follow the same order. In these diseases, then, the circulation is slow, and sometimes sufficiently regular; but the equilibrium is by no means properly balanced. The liver and the brain, as usual, when the fluids are not properly distributed to the surface, have a large share; and as the muscular fibres are with difficulty excited to action, congestions, in each, take place. In the brain these appear by all the marks of compression, languor, inactivity, and insensibility: in the liver, by costiveness, indigestion, and a dark yellow hue on the skin. "Thick coming fancies" disturb the mind; the sleep is interrupted, or a torpor resembling sleep, in all but its refreshing power, succeeds. The appetite is inconsiderable, but sometimes voracious and indiscriminate, and the bowels generally torpid. It is the disease, as we have had occasion to remark, of the sedentary and the studious, who are found by the midnight lamp, and cheer or

instruct the world at the expense of their health and constitutions; for the mind is often vivid, when the body is depressed. The divine particula auræ will often appear then to burn with peculiar lustre; nor is this, when properly considered, an objection to our former opinions.

The remedies of this state are exercise, blended with some interesting occupation; an attention to the state of the bowels; and, above all, every method of keeping up the balance of the circulation, particularly directing it to the extremities. In general, the conduct in cases of *MELANCHOLIA*, q. v. of which this is a less degree, will be proper. The tepid bath, for reasons which will be readily understood, is a valuable remedy.

For nervous fever, see Huxham, Gilchrist in the *Edinburgh Medical Essays*, and Sydenham.

For nervous diseases, Whytt, and the authors referred to under the article *HYSTERIA*.

NERVO'SUS, (from *nervus*, a term in botany,) applied to a leaf whose vessels extend in lines from the base to the top without meeting. Nosologically, an epithet annexed to fever, and other diseases, where the nerves are supposed to be chiefly, and often primarily, affected. See *NERVOSA FEBRIS* and *NERVOSI MORBI*.

NERVO'RUM RESOLUTIO'NES, (from *resolvō*, to loosen). See *COMATA*.

NERVO'RUM TUM'ORES, are discovered by the pain being felt only in the direction of the nerve, particularly below. They may be extirpated without danger, but it is safer to divide the nerve than to run the risk of inflammation, unless it is large or highly important. See Home, in the *Transactions for the Improvement of Medicine and Surgery*.

NERVO'RUM VUL'ERA. Wounds of the nerves are often attended with very troublesome symptoms, and trismus or tetanus have been the consequence. The general opinion has decided, that if the nerve be wholly divided, the effect may be avoided or lessened, and with the remedies proper for these spasms, a division of the nerve is also necessary. In bleeding, the nerves, as we have shown, may be easily wounded; and when it is seen which vein has been cut, the injured nerve is immediately known, and it may be readily traced by dissection, so as to divide it above the wound. Mr. Pott supposes, that, as the wound must be at the upper or under angle of the orifice, it may be sufficient to enlarge it either above or below. In fact, however, the injury first produces inflammation, probably from the external air being admitted into the sheath of the nerves, and it will be therefore preferable to divide it above. Mr. Bell thinks a transverse incision above the original wound a sufficient security: but the dissection and division of the nerve above is the preferable plan. See *TRISMUS*.

NE'STIS, (from *est*, *non*, and *estēa*, to eat). See *JEJUNUM*.

NEU'RI. See *NERVI*.

NEUROCHONDRO'DES, (from *νευρον* and *χονδρος*, a cartilage). A hard round, cartilaginous ligament; sometimes a substance harder than a cartilage, and softer than a ligament. *CASTELLI*.

NEUROLO'GIA, (from *νευρον* and *λογος*). *NEUROLOGY*. A description of the nerves.

NEUROME'TORES, (from *νευρον* and *μετρα*, *metrix*). See *PSOE*.

NEURO'SES, (from *νευρον*, a nerve). **NERVOUS DISEASES** form the second class in Dr. Cullen's nosology, comprehending preternatural affections of sense or motion without fever, as a primary disease; and those which do not depend upon a topical affection of the organs, but upon a more general affection of the nervous system, and of the powers on which sense and motion more especially depend.

NEURO'TICA, vel **NERVI'NA**, (from *νευρον*, or *nervus*). By nervous medicines are meant those suited to relieve the diseases or correct disorders of the nervous system. The obscurity which still attends the mode of the operation of medicines upon the nervous system might excuse this term; but it is too general, and the whole subject will continue in obscurity until more precision is attained.

NEUROTO'MIA, (from *νευρον* and *τομω*, to cut). An anatomical dissection of the nerves.

NEUROTRO'TOS, from *νευρον* and *τιρωσχω*, to wound). A person who has received a wound of a nerve.

NEU'TRALIS, (from *neuter*, neither). **NEUTRAL**. Salts, formed of such proportions of acid and alkalies that neither predominates in the compound. They are in general *evacuants*; i. e. cathartics, diaphoretics, and diuretics; refrigerants or anti-emetics. Those which are formed of an acid and an earth, or an acid and a metal, are less strictly neutral, since they admit of very different portions of acid without materially altering their qualities.

NHA'MBI BRASILIE'NSIBUS, Lin. Sp. Pl. 1457? A plant in Brasil, whose leaves, when chewed, taste like mustard or nasturtium, and, if rubbed on a bubo, presently remove it. See Raii Historia.

NHA'MBU GUA'CU. See CATAPUTIA.

NHA'NDU, *piper caudatum*, a small shrub which grows in the woods in Brasil, and bears a species of katkins, full of round blackish seeds, as large as those of the poppy, and with a taste resembling that of pepper. The plant is little known, but it seems to be a cubeb, and by later authors has been referred to the genus *piper*, with the trivial name of CUBEBA, q. v. See Raii Historia.

NI'CKEL. See CHEMIA.

NI'CON. See HELLEBORUS.

NICOTIA'NA, (from Nicot, the name of the man who first brought it to France). *Petum; tabacum; hyoscyamus Peruvianus; picelt; nicotiana tabacum* Lin. Sp. Pl. 258; a plant with alternate leaves and monopetalous tubulous flowers, divided into five sections, followed by an oval capsule, which opening longitudinally, sheds numerous small seeds. It is an annual, sown in spring, and flowers in July.

NICOTIA'NA AMERICA'NA. **AMERICAN OR VIRGINIAN TOBACCO**, hath large sharp pointed, pale, green short leaves, about two feet in length, joined immediately to the stalk without pedicles. First brought from the island of Tobago, about the year 1560, and from thence called *tabacum*, now cultivated in many parts of Europe. Sir Francis Drake first brought it into England, and Sir Walter Raleigh rendered it fashionable. M. Thevet disputes with Nicot the honour of having introduced it into France.

The history of tobacco is singular. The production of a little island, or a little district in America, it has

fascinated the whole world. The Arab cultivates it in the burning desert; the Laplanders and Esquimaux risk their lives to procure this delicious refreshment; the seamen endures every privation while he can obtain this luxury: and the financier collects from it a copious revenue. Yet its fame has not been without occasional diminution. It has been opposed by physicians, proscribed by governments, and yet the fashion long prevailed; nor, until men were more humanized by female society, was the custom of smoking at least less prevalent.

The leaves have a strong disagreeable smell, and a burning acrid taste, yielding their active parts both to water and to spirit, but most perfectly to the latter; a very small proportion of its virtues, however, rise in distillation from either; but the watery extract is less pungent than the leaves, and the spirituous not greater. The American tobacco is stronger than that raised in England, and affords a more pungent extract, though in less quantity. This plant is evidently a narcotic, as is evinced by its botanical analogy, and effects. Small quantities snuffed up the nose have produced giddiness, stupor, and vomiting; and in a larger quantity there are instances of its being even a poison. But with these narcotic qualities it is said to stimulate, especially in the stomach and intestines, so as readily, in no great doses, to prove emetic and purgative, occasioning extreme anxiety, vertigo, stupor, and disorders of the senses: in proper quantities, it is, however, an effectual purgative in clysters. See HERNIA.

This stimulus is, however imaginary, for we have learnt that every narcotic will produce irregular action; and the vertigo and faintness, which always attends, when it produces vomiting, show it to be exclusively narcotic, except in the nostrils and mouth.

From its sedative power arises all the fascination of this plant. It gives that calm serenity always occasioned by the abstraction of stimuli, and, like tea, opium, and the betle nut, composes the mind under the greatest distress. It is necessary, however, to examine its effects in all the varieties of its use.

It certainly stimulates the nostrils, for it produces a pungent sensation and a discharge of mucus; but, as we have remarked, stupor and vertigo, and, in those accustomed to it, a tranquillity and a pleasing delirium.

Its stimulus to the salivary glands is more doubtful, for the action of chewing will alone excite their action. Yet it seems to produce the discharge more powerfully than the motion of the jaws will explain; and the tobacco, thus dissolved in the saliva, is always in some degree, and often copiously, swallowed. It then acts on the stomach, producing all the inconveniences of a narcotic poison, acidity, flatulence, indigestion, depraved appetite, &c. The same symptoms follow taking snuff, as a portion of the tobacco generally falls through the posterior fauces into the stomach. The advantages of each mode are nearly the same. The discharge of phlegm which they produce relieves accumulations in the head, and all the diseases depending on them. See ERRHINA and SIALAGOGA.

In *smoking*, the oil of the tobacco is separated, rendered empyreumatic by the heat, and of course applied to the fauces and lungs in its most active state. Musing over a pipe assists, it is said, reflection: its smoke accompanied Newton's "patient thinking," and added

to the wisdom of the politician; but it is now forbidden in the drawing room, as well as the dining parlour, and confined to the ale house. Like other forms of taking tobacco, smoking occasions a tranquillity, a freedom from care, a slight and harmless intoxication, increasing also the discharge of saliva.

Smoking generally produces a considerable discharge of this fluid, and from it, as well as the warmth, has been occasionally useful in pains of the teeth, in rheumatic affections of the head and jaws, and in asthmas both serous and spasmodic. It lessens, however, the appetite, blackens the teeth, and renders the whole person most offensive to those who possess the slightest delicacy of smell, or to whom a clean appearance is acceptable. The advantages of tobacco, in each mode, may be attained by errhines, sialagogues and expectorants of less equivocal nature, and of more certain operation.

If considered as a medicine it will be found a valuable one, though its emetic power often defeats the benefits we expect from it. In the form of infusion and of smoke it is introduced into the rectum, and is often effectual as an enema, when every thing else has failed. Its smoke probably penetrates farther than any liquid, and is more useful on this account, as well as from the oil acting in its separate state. Its operation is, however, generally attended with faintness, and therefore peculiarly useful in ileus and hernia, less so as a means of reviving those in asphyxy from drowning, or any other cause. Ascarides also, in the same form, it certainly kills. It is seldom employed as an emetic, as its sickness is peculiarly distressing; yet, in nauseating doses, we suspect, from its other qualities, that it may be equally effectual with, and less dangerous than, the digitalis, which stands very near it in the natural systems of the botanists. Its emetic power prevents it from acting as a laxative, except in clysters, and as a diuretic, except in the form of its alkali, after burning. The oil which remains adhering to the salts, adds to the diuretic power of the alkali, and it has been supposed useful in dropsies. In the days of its fashion we used it, but without such decided success as tempted us so continue it. Though boiling lessens this emetic property, it is not destroyed; and, though it is nearly lost in the extract, there is much doubt whether its virtues are not diminished in the same proportion. This extract and a syrup of tobacco appear in the foreign pharmacopœias, which are said to have cured epilepsy and mania. Twenty-five grains of powdered tobacco diluted with wine are said to have cured even quartans. The Edinburgh Pharmacopœia has preserved a vinous tincture.

The tobacco is in its purest state in the *segars*, which are only the leaf when in perfection, rolled up for the purpose of smoking. When in rolls, it has undergone a slight change from fermentation, and is probably rendered more acrid by some additions. In the manufacture of snuff numerous additions are probably made, which are kept secret. The varied acrimony of different snuffs are in part owing to the leaf being in greater or less perfection, in part to its having undergone some fermentation. The additions are common salt, for the purpose probably of increasing its weight, and it is said urine, to add to the pungency.

Tobacco is sometimes used in lotions and unguents for cleansing foul ulcers, and destroying cutaneous insects.

It is destructive to all insects, whether in the vegetable or animal world; on the skin, in the hair, or the intestines; beat into a poultice with vinegar, and applied to the hypochondria, it is said to have discussed tumours. Bergius recommends a fomentation of it in paraphymosis. Cullen's *Materia Medica*.

NICOTIA'NA MI'NOR, *hyoscyamus luteus*; *frisaheia*, YELLOW HENBANE, ENGLISH TOBACCO. *Nicotiana rustica* Lin. Sp. Pl. 258. Its leaves are short, sharp, and set on pedicles. It resembles the American tobacco, but is weaker. See Raii *Historia*; Lewis's *Materia Medica*; Neumann's *Chemical Works*; Edinburgh *Medical Essays*, vol. ii. art. 5.

NI'DI CYNI'PIDIS. See GALLÆ.

NI'DOR, (from *nideo*, to give a savour). The smell of burnt animal substances. Eructations, which resemble in smell and taste rotten eggs, are called *nidorous*.

NIGE'LLA, (from its black seed). *Nigella sativa* Lin. Sp. Pl. 753, is a plant whose root is annual, leaves capillaceous, and flowers rosaceous. It was formerly used as an expectorant and a deobstruent, a diuretic and a carminative. The species employed were *nigella damascena* Lin. Sp. Pl. 753.

NIGE'LLA ARVE'NSIS, *melanthium*; *nigella arvensis* Lin. Sp. Pl. 753. WILD FENNEL FLOWER.

NIGE'LLA ROMA'NA, *gith, git, melaspermum*, from its black seed. FENNEL FLOWER.

NIGELLA'STRUM, (from its resemblance). *Pseudomelanthium, lychnis segetum major, gethago, nigella officin lychnoides segetum*, COCKLE, or CORN CAMPION, *agrostemma calirosa* Lin. Sp. Pl. 624. The seeds are said to be useful in flatulent disorders, but are never given. The plant grows amongst corn, and flowers in June and July. See Raii *Historia*.

NIGRI'TIES OSSIUM, (from *niger*, black). See CARIÆ.

NI'GRUM PIGME'NTUM. See CHOROIDES.

NI'GUS. The worms which burrow under the toes of the Indians, and which are destroyed by the oil from the shells of cashew nuts.

NI'HIL A'LBUM, NI'HIL GRI'SEUM. See ALBUM GRÆCUM, and POMPHOLYX.

NI'IR-NO'TSJIL. A kind of shrub in Malabar, the leaves of which, when eaten with rue, are said to cure the lues venerea; but no such plant occurs in the systematic botanists. See Raii *Historia*.

NI'IR PONGE'LION. A tree of Malabar, resembling the pear tree. The seeds are used, with other ingredients, for making an antispasmodic liniment. See Raii *Historia*.

NI'L. See INDICUM, and COLINIL.

NI'NZIN. The *sium ninsi* of Linnæus, Sp. Pl. 361, inferior but similar to the GENSING, q. v.

NI'RLES. See MORBILLI.

NIRUA'LA. A large tree in Malabar, whose leaves externally applied are diuretic; probably a species of *phyllanthus*. See Raii *Historia*.

NI'TRAS. NITRAT, NITRIS, and NITRIT. Salts formed by nitrous and nitric acid with different bases.

NI'TRI PU'LVIS COMPO'SITUS. See DYSURIA.

NI'TRO DE PI'LULÆ. See DIACOLOCYNTHIDOS PILULÆ.

NI'TRUM, or NATHAR; Hebrew terms. NITRE. *Sal petræ, halinitrum*, and SALT PETRE; a neutral salt,

formed by the vegetable fixed alkali with the nitrous acid. It has a sharp though cooling taste, is soluble in seven times its weight of temperate, and an equal weight of boiling, water. The crystals are octagonal prisms, solid and not deliquescent, terminating in similar pyramids, sometimes dihedral. In a moderate heat it melts, and, when heated to ignition, deflagrates on the contact of any inflammable substance, with a bright flame, and a considerable hissing noise; leaving, after detonation, its fixed alkaline salt, the acid being decomposed in the process. Oxygen and nitrogen gas are produced, and the result is the *nitrum fixum* of the older chemists; in fact, the kali.

The origin of the acid of nitre has not been long known. When animal and vegetable substances, mixed with absorbent earths, have been exposed to the air till they are thoroughly decayed, they are found to contain a small portion of nitre, or to give out a little nitre to water, on being supplied with the proper alkaline basis. On this foundation nitre is prepared in several parts of Europe; where they expose earth, wet with urine, or animal dung, with every kind of animal and vegetable substance, open to the air, but covered from rain: on the surface of these heaps a nitrous crust is found. The greatest quantities are brought to us from Persia and the East Indies, crude and of different colours; but the best is blackish, as it requires only solution and crystallization. When mixed with sea salt it is purified as follows:

Filtre a solution of nitre, evaporate, and set it to crystallize in a cool place. The crystals will remain sufficiently pure, for the sea salt remains dissolved after the greatest part of the nitre hath crystallized.

Nitre, according to Mr. Kirwan, when dried at the temperature of 70°, consists of forty-four parts of nitric acid, fifty-one of kali, four and a half of water. It is decomposed by the sulphuric acid, by barytes, by the muriat and acetat of barytes, and the vitriolated salts. See CHEMIA, vol. i. p. 414.

Nitre is in part decomposed in the *sal prunellæ*, more completely in the *sal polycryst*; but in each it acquires different portions of the vitriolic acid, from the sulphur with which it is deflagrated. In the former preparation one half, and in the latter an equal part, of sulphur is employed, which makes the *sal polycryst* wholly a vitriolated kali.

The nitrous acid, formerly called *Glauber's spirit of nitre*, is made by adding to sixty ounces of nitre twenty-nine of a vitriolic acid. The mixture is then distilled. If two parts of nitre are added to one of oil of vitriol, the remaining alkaline basis of the nitre will be completely saturated with the acid, forming the vitriolated kali. If more nitre is used, part of it will remain blended with the vitriolated salt; if less, the residuum will not be neutral, but very acid. See CHEMIA.

The vitriolated nitre, *ducis holstatitiæ sal*, *sal de duobus*; *panacea duplicata*; *arcanum duplex*; *kali vitriolatum*, is usually made by decomposing the acid in the residuum, after the distillation of nitrous acid. It is the same with the *sal polycryst*.

The simple *aqua fortis* of the shops is made by mixing nitre and green vitriol, not calcined, of each three pounds, with a pound and a half of calcined green vitriol. This mixture is distilled with a strong fire, while any red

vapours arise. The product is a spirit of nitre, containing so much more water than Glauber's spirit, as the vitriol employed does more than an equivalent quantity of the oil of vitriol, and is liable to an admixture with the vitriolic acid, some of which generally passes over. For this the college order nitrous acid and distilled water, a pound of each, to be mixed together, and call it *acidum nitrosum dilutum*. Ph. Lond. 1788.

In the *aqua fortis duplex*, the green vitriol is calcined, and in equal quantity with the nitre, but is used only in the arts.

The *nitro muriatic acid*, called *aqua regia*, sometimes *aqua stygia*, and by Van Helmont *chrysulea*, is made by adding gradually to an ounce of crude sal ammoniac in powder four ounces of the spirit of nitre. They should be mixed in a large cucurbit, and stand in a sand heat until the salt is entirely dissolved. Or, the salt may be powdered and gradually added to spirit of a middle strength, between single *aqua fortis* and strong spirit of nitre.

The acid obtained from common nitre contains some of the marine and vitriolic acids: the first is discovered and separated by dropping in a little solution of silver; the latter by a solution of chalk, in the pure nitrous acid; the silver absorbing the marine acid, and the chalk the vitriolic, forming, with those acids, indissoluble compounds. The solutions may be slowly dropped in, until no more milkiness appears. If the spirit is required pure, it must be re-distilled.

The *cubic nitre* is a combination of the nitrous acid with soda, and is prepared according to the following process. Dissolve chalk or lime in purified *aqua fortis*, and add the solution, by degrees, to a solution of natron vitriolatum in water, while each fresh addition produces any milkiness. A white powder will be precipitated, which must be separated by a filtre, and the fluid set to crystallize.

The *nitrum flammans* of the elder chemists is the nitrated ammonia of the moderns. It is very pungent, and dissolves in rectified spirit of wine.

Solutions of calcareous earths in the nitrous acid are bitterish and pungent, crystallize with difficulty, and are deliquescent. The nitrous acid dissolves zinc, iron, copper, lead, bismuth, mercury, and silver, the most readily of all the acids, tin imperfectly, and it only corrodes the regulus of antimony, though the latter most readily. When diluted with spirit of wine, it produces a light fluid called *Æther*, q. v.

The nitrous acid agrees in its tonic power with the other mineral acids, but from its oxygen being more loosely connected with the other component parts, or from the acid being more easily borne on the stomach, it has lately been preferred to the vitriolic and marine, in cutaneous complaints, and other cases where a larger proportion of oxygen appears to be wanting (see MORBI FLUIDORUM) in the system. Its virtues in syphilis we have already noticed. See LUES.

Nitre is a very useful refrigerant, in the language of late pathologists as a powerful antiphlogistic. It restrains the too rapid current of the blood, reduces the pulse and heat of the body, and is not only a very valuable medicine in INFLAMMATORY FEVERS, and in INFLAMMATIONS, but also in HÆMORRHAGES, q. v.

In active inflammations of the throat and fauces, nitre, held in the mouth, will soon relieve. It is styled

diuretic, but it has this property only in a slight degree; and when the dose is increased, it often produces a difficulty and pain in making water. The inconveniences felt in the stomach from a large dose prevent it also from being used as a laxative. It seems to add to the virtues of camphor in removing pains in the head, and in the more violent fevers of the inflammatory kind; and, thus united, they have been celebrated, perhaps with little reason, for curing ulcers of the legs. In large doses it occasions violent pains in the stomach, bloody urine and stools, convulsions, and death. Pure nitre in solution is not affected by nitrates of silver and barytes. It should seldom be given in larger doses than fifteen grains; about ten grains is the most common and most effectual.

See Hoffman de Salium Medicorum, et de Præstantissima Nitri Virtute; Stahl de Usu Nitri Medico; Neumann's Chemical Works; Lewis's Materia Medica.

NI'TRUM ANTIQUO'RUM. See ANATRON.

NI'TRUM ARTIFICIA'LE HOFFMA'NI is made of the spirit of sal ammoniac and spirit of nitre. It perfectly dissolves in rectified spirit of wine.

NI'TRUM CALCA'REUM VE'RUM, a solution of calcareous earth in the nitrous acid. See also ACTON.

NI'TRUM FACTI'TIUM and NATI'VUM. See BORAX.

NI'TRUM STIBIA'TUM, *anodynum minerale* the salts collected by washing the residuum after making the calx of antimony. They contain but little of the antimony.

NIX. SNOW, a name given to substances which resemble snow in their colour and lightness.

NIX FU'MANS. See CALX.

NIX ANTIMONI'ALIS. See ANTIMONIUM.

NOCTAMBULA'TIO, (from *nox*, night, and *ambulo*, to walk). See SOMNAMBULO.

NOCTUI'NI O'CULI, (from *noctua*, the owl). GREY EYES, like those of the owl.

NOCTILUCA TERRE'STRIS, (*quia noctu luceat*). See CICINDELA.

NODOSA, (from *nodus*). KNOTTED. In surgery an epithet for a suture, for various bandages, and for gout, as attended with knots in the joints, in consequence of calcareous depositions. See ARTHRITIS.

NO'DULUS, (from *nodus*). A knot tied on a rag, including some medicinal ingredient with which an infusion or decoction is intended to be impregnated, as well as a bag, in which such ingredients are included.

NO'DUS, (from the Hebrew term *anad*, to tie). See GUMMA. A protuberant joint in the stem of some plants, particularly in corn and grapes, in order to strengthen their hollow culms.

NOE'LA TA'LI. The INDIAN BARBERRY TREE, with an orange leaf. It grows in Malabar; its fruit resembles barberries in their taste and virtues. See Raii Historia.

NO'LI ME TA'NGERE. *Formix*. TOUCH ME NOT. In botany, the *persicaria siliquosa*, or the *mimosa*. In surgery, a species of ulcer, and a kind of wart on the eyelid, which appears blackish, and, if touched, mortifies. Sometimes it means a cancerous sore, exasperated by medicines, or a species of *scirrhus* and *herpes*. See HERPES, POLYPUS NARIUM.

NO'MA, NO'ME, (from *nuw*, to eat away). A

phagedenic ulcer, sometimes a species of *herpes*. See HERPES.

NOMENCLA'TURA. It was the opinion of a poet of the middle ages, *Nomina si fiereunt, perit et cognitio rerum*; and the history of science shows, in the strongest light, that no impediment has so powerfully arrested its progress as a vague, imperfect, or a fanciful nomenclature. The list of synonyms has been thus unreasonably extended; and the student, misled by a name, has often found it difficult to recover the proper track. As this subject has lately engaged the particular attention of philosophers, a somewhat fuller account of their improvements, than would otherwise be necessary, may be required.

The nomenclature of a science implies its peculiar and technical terms. These have been generally kept distinct from the language of common life, perhaps at first from a wish to preserve an air of mystery, and give to the author a fancied pre-eminence above the world in general. There are, however, better reasons. In medicine we thus avoid the indelicacy of common appellations, and, in general, we escape the varying caprices of fashion; *quem penes arbitrium et jus et norma loquendi*. Some authors have adopted arbitrary appellations, particularly Van Helmont and Paracelsus, as we have seen in various articles; though it is not improbable that they had some fanciful allusion to the sources and action of the diseases and the remedies they designated. Later and more rational pharmacutists have sometimes also adopted these arbitrary terms. Modern botanists, in their appellations of new genera, have equally employed them in honour of different cultivators of their science, though probably without giving that perspicuous lustre to it which an opposite conduct might have afforded. How much superior, for instance, is the generic term *epilobium*, *επι λοβος* *ιον*, a violet on a silique, to Linnæa, Thunbergia, and Commersonia. Mineralogists have in general preferred announcing the quality and appearance by an euphonous appellation; and we hope to make some advances in the same way in the neglected doctrine of nosology. Such descriptive appellations have been preferred by anatomists, though not always formed with the most accurate precision, and more lately in the improved nomenclature of the chemists.

The object of a scientific nomenclature is to convey in one word a sufficiently distinct idea of the body or organs, to preclude a repetition of the description whenever it is mentioned. When, however, objects are numerous, and the discriminating points with difficulty seized, one word is not sufficient. This induces us, in botany, to adopt the first natural associations, styled genera, and the appellation of the genus must accompany that of the species. In nosology it is generally less necessary; in pharmacy it would be perhaps useless, as the form itself supplies the place of a genus, which in anatomy is understood from the part described.

As nomenclature has received the last polish from philology, in the chemical department, we shall first notice the improvements in its language lately introduced. We there find, among some absurdities, the descriptive language laboured with no common care, and the numerous synonyms of former systems are only retained as keys to the works of the elder chemists. The

genus is, in this case, preserved in the epithet. It is vitriolated kali, arsenical soda, sulphurated ammonia; and though we may dispute the propriety of some terms, as hydrogen or azot, they must be considered as constantly discriminating substances of distinct properties. One great difficulty arises from some of these being indeclinable. There is a want of euphony in oxygen gas, which disgusts the nicer ear; and these harshnesses pervade every branch of pneumatic chemistry. Another error in this part of the subject is a want of uniformity: thus the azot generally implies a substance in a gaseous form; but though we use the term azotic gas, oxygenated or nitrogenated gas are not allowable. Was chemistry more peculiarly our object, we might point out other anomalies which require correction. It is enough to notice those already adduced to lead chemists to a still farther reform. Dr. G. Pearson has laboured successfully in this field, and to his attention we would willingly leave it. The subject cannot be in better hands.

The improvements in the nomenclature of pharmacy have not kept pace with those of chemistry. The awkwardness arising from the indeclinable substances, kali and natron, might have been easily avoided by adopting the terms *lixivia* and *trona*; the former adopted in one of the older editions of the Edinburgh Dispensatory, and the other by Dr. Black. Many errors in nomenclature might be noticed, of which a prominent one is the *aquæ*, when applied to salts and earths in a liquid form. These are strictly solutions; and a distinction is necessary between these and the distilled waters, which are properly *aquæ*. The wines are also anomalies, which should have been avoided. They are properly infusions or solutions; but if a distinction was necessary, the old word *elixir* would have been applicable. Botanists employ single names as genera, and very generally a single epithet as a trivial distinction. These, as we have remarked, are sometimes descriptive, and the latter generally such. Single words strike the mind at once, and convey the idea unimpaired. When such single words, therefore, are sanctioned by custom, and readily understood, science is, we think, injured by a change. Thus *philonium*, *theriaca*, *cinnabar*, and some other appellations which had become denizens in the language of pharmacy, might have been, like alcohol, ether, and some others, properly retained, or at least, if changed, might have received euphonous titles *græco fonte parce detorta*; nor is it easy to say why we should deny to the pharmacists what has been so liberally granted to the botanists, the honour of giving an appellation from a name. We might consequently have retained the *confectio Fracastorii* and the *pillulæ Rufi*, when the nature of these compositions are generally understood, without any injury to science. The Edinburgh College, peculiarly eager and zealous in reform, have made their titles descriptions. We, in general, want only the vehicle and the proportions to supply the whole formula from them; and we have sometimes not only the nature of the formula, but often the means of preparing it. Another redundancy in their nomenclature is, the introduction of the trivial, as well as the generic names of plants. In pharmacy, the pharmaceutical term is only necessary. The botanical appellations are taught in other systems. The London College seems also to have refined too far, in adopting

the genitive case of the substantive instead of the adjective, according to the sound principles of the new chemical nomenclature, as *tinctura scillæ*, instead of *tinctura scillitica*. It is, in fact, a tincture possessing the nature and qualities of squills. Pharmacy is, however, a science in which method has not been introduced; but its objects are so few that arrangement is less necessary. We may, however, make some attempts to give it a more regular form in that article.

In anatomy the nomenclature is still very defective, and the synonyms, particularly of the muscles, consequently numerous. The terms superior and inferior, anterior and posterior, are fixed with little precision, and their meaning varies in different systems. Muscles are named from their shape, from their action, or the occupations in which they are used. Were the whole of the nomenclature reformed, much of minute and uninteresting description might be avoided. Vicq. d'Azyr made some unsuccessful attempts to attain greater accuracy. Chaussier's improvements were more judicious, and in osteology they merit great, though not unreserved, commendation. The same principle, however, viz. expressing by the terms the relations of proximity and connection, does not succeed so well in the myology; and the nomenclature of Chaussier, and his coadjutor Dumas, when applied to the muscles, exhibits an inelegant, unharmonious, combination of unpleasing sounds. The error is not in the principle, but in the authors' pursuing it with too great rigour. If they had aimed at less exactness they would have succeeded better.

Our countryman, Mr. Barclay, has attempted to reform the anatomical nomenclature with more success; and though the change cannot be rapidly made, we trust it will be gradually introduced. We at first intended to have employed it in the present work; but language so singular to the student would have perplexed, and might have misled him.

The terms superior and inferior are generally used with relation to the different parts of the human body in an erect position. Their force is, however, lost in a reclined one, and neither is peculiarly applicable to the relative organs in other animals. In the *TRUNK*, therefore, for these Mr. Barclay proposes the terms *atlantal* and *sacral*, from the two extremities of the spine; for anterior and posterior, which are subject to similar ambiguities, *sternal* and *dorsal*; for internal and external, *dermal* and *central*; or, with respect to an organ, *peripheral* or *central*. When external and internal signify the side and middle of a surface, suppose a plane, styled *mesion*, to pass along the middle of the neck, the *mediastinum* and *linea alba*, through the body parallel to the surface, then *lateral* and *mesial* may be the terms employed. Instead of right and left, Mr. Barclay employs *dextral* and *sinistral*, as less equivocal in some parts of comparative anatomy, or, when there is no occasion for distinction, *lateral* will be sufficient. In the *HEART*, what anatomists have styled the right and left ventricles are neither; and the terms anterior and posterior, though more correct, are not always applicable to comparative anatomy. Mr. Barclay's distinction in this case, perhaps less simple than the others, is to term the vessels which convey the blood *from* the lungs to the whole body, viz. the pulmonary veins, the left sinus, auricle, and ventricle, with the aorta and its branches,

systemic; those which carry it to the lungs, the *pulmonic*; and in marking their relative situation to the trunk, or to each other, the terms *atlantal*, *sacral*, &c. already mentioned, may be employed.

The *EXTREMITIES* are termed *atlantal* or *sacral*; the ends of the bones nearest or farthest from the trunk, *proximal* and *distal*. In the *atlantal* extremities the two lateral parts are, with Winslow, styled *radial* and *ulnar*, the two others *anconal* (from *ancon*, the Greek word for *olecranon*) and *thenal* (from *thenar*, the Greek appellation of the *palm*); but the peculiar term for the palm, in Mr. Barclay's system, is *vola*. The distinguishing aspects of the *sacral* extremities will, by similar reasoning, be *proximal* and *distal*; *dermal* and *central*; *tibial* and *fibular*; *popliteal* and *rotular*. *Planta* is the term for the sole on the popliteal side of the foot.

The usual terms of superior and posterior, &c. when applied to the *HEAD*, become very equivocal in those general discussions where the heads of animals, as well as men, are described. Mr. Barclay, therefore, proposes that the axis of the vertebral column should be, in imagination, prolonged till it meets some bone in the head or face. This bone he would call the *atlantal*; those opposite to them, at the basis of the skull, *sacral*. The terms *sternal* and *dorsal*, when applied to the *head*, are those parts in the same plane, or in planes parallel to the sternum and dorsum. Where these are parallel, the planes on the sternal side will always be *sternal*, and the contrary. In the human species the whole face and lateral sides of the head will be *sternal*; in sheep and oxen the maxillary curves will be so only; and in frogs and serpents the basis of the skull will be *sternal*, and the maxillary curves *dorsal*.

With respect to the particular bones of the *FACE*, *dermal*, *central*, *distal*, *sinistral*, and *mesial*, are applicable; but five new ones are required; for the base and crown, the hind fore part of the cranium, and for the face. The two first are to be styled the *basilar* and *coronal* aspects; the occiput, the *inial*, from *inior*, its Greek name. The opposite side to the inial, where the bones of the nose are united to the os frontis, he styles *glabellar*, from its Latin appellation *glabella*. The part of the face, at the greatest distance from the occiput (*inion*), in a straight line, is styled the *antinion*. If lines are drawn through these aspects, or from the right and left, they will form the *corono-basilar*; the *inio-glabellar*, the *inantilial*, and the *dextro-sinistral* diameters. The measure of these different diameters will show the varying proportions of the heads of different animals, of the same species, or of others in the lower scales. The facial angle and its variations we have already noticed. (See *CRANIOLOGIA*.) These terms, by altering the termination, may be used adverbially so as to signify a direction towards either aspect, and this termination is in *ad*, instead of *ab* and *ar*; and by changing it to *en*, it may express connexion. Thus a radial artery or muscle may be either with a radial aspect, while a radien artery enters the radius itself.

Such is the plan of Mr. Barclay, which, it may be observed, is in embryo only, neither co-extensive with what anatomy has demonstrated, nor with the great variety of animated nature in its different branches. Yet, in its present state, this nomenclature merits particular commendation; and, if divested of some refinement, par-

ticularly the mesion, which should perhaps be rendered more simple and familiar, might with great advantage be adopted. We know nothing less easily comprehended by the untutored mind than the doctrines of planes.

The nomenclature of muscles he has only slightly noticed in his introduction. We have already remarked, that the fixed point is named the origin, and the muscle is "*inserted*" into the bone to be moved. This, however, is at times with difficulty ascertained; nor is the motion usually performed by a single, or by a few, muscles. Many concur in fixing the origin; others in giving force and direction to the motion. Mr. Barclay proposes that the muscles should be classed from their origin and their insertion, and the name fixed from the most obvious distinction, neglecting the origin of the minuter bundles of fibres. Thus the *sterno-humeral* can mean nothing but the *pectoralis major*, which, in the nomenclature of Chaussier, is the *sterno-costoclavio-humeral*. In the blood vessels he points out the necessity of an uniformity of language; for the appellations of arteries often differ, as the names of the organs to which they are distributed vary. This, of course, requires an uniformity in the appellations of the organs themselves. The same name is at present often employed also to express two different relations, as the artery which runs along the humerus, and that which enters it is equally called *humeral*. Branches of arteries, and often minute branches, are sometimes honoured with a name, while the trunk from which they proceed is not distinguished by any. Such anomalies require a remedy; and we should be happy to find the language of anatomy freed from its great uncertainty and barbarous language.

Nosology, yet in its infancy, has had the advantages of the attention of Linnæus and Cullen, who have laboured to render its language euphonous, without greatly departing from the received appellations. They had, indeed, before them the Greek terms, which they could easily reduce to the Latin orthography, and they wanted no more. Selection was alone necessary, and we find no proofs of defective taste. In generalizing the inferior groups, it has been sometimes necessary to employ terms in a new signification, in the nosological sketch offered in the present volume. We trust that they have been selected with sufficient care.

See Barclay's *New Anatomical Nomenclature*; Chaussier's *Tabular View of the Skeleton*; Pearson's *Chemical Nomenclature*; Dickson's *Essay on Chemical Nomenclature*, with Kirwan's *Observations*; Linnæi *Critica Botanica*; Culleni *Nosologia*.

NONA'NA, (from *nonus*, the *ninth*). An erratic intermittent, returning every ninth day.

NON-NATURA'LIA. The *NON-NATURALS*. A fanciful term given to functions or accidents not strictly belonging to man: as, air; aliment; exercise and rest; passions and affections of the mind; wakefulness and sleep; repletion and evacuation.

See Dr. Fr. Clifton's *Translation of Hippocrates on Air, Water, and Situation*; Wainwright on the *Non-naturals*; Sanctorius's *Medical Statics*; Keil's *Animal Economy*; Mackenzie on *Health*.

NO'NUS HU'MERI MU'SCULUS PLACE'N-TINI. The ninth muscle of the shoulder. See *CO-RACO-BRACHÆUS*.

NORLANDICÆ BACCÆ. The cooling subacid fruits of the *rubus arcticus* Lin. Sp. Pl.

NORTHAW, or NORT HALL WATER, is of the purging kind, and similar to that of Epsom, but not so strong or so nauseous. It contains a little calcareous earth, selenite, with a small proportion of sea salt, and is slightly purgative.

NOSOCO'MIUM, NOSODO'CHIUM, (from νοσος, a disease, and κομω, to take care of, or δεχω, to receive). AN HOSPITAL.

The institution of hospitals, coeval probably with the era of Justinian, was the first effort of Christian charity, taught by its great master, who commanded us to love one another, and that HE was our neighbour who showed mercy. It is impossible to conceive a more pure philanthropy than the institution of a receptacle where the only claim to admission is the immediate necessity of relief; where to want is the only requisite to demand a supply. Ancient philosophy offers nothing so exalted; and even the benevolent host of Homer, who sat by the way side to assist travellers, *παῖς γὰρ φιλεῖσκε*, can scarcely exceed it. With regret, however, we learn, that the mortality of hospitals exceeds even the calculation that can be made from the state of the objects admitted. We allude not to the mortality of the Hotel Dieu, which may literally be said to contain the victims of the Almighty, but to modern institutions, where, perhaps ancient regulations are still too strictly followed. To consider the subject carefully, we shall first add some remarks on the construction of hospitals generally, and then apply them with those modifications which their particular object may seem to suggest; nor will this attempt be thought presumptuous in one who has been physician in a large hospital for thirty-three years.

Were a situation to be chosen for an hospital, it should be an elevated, dry spot, facing, as near as possible, east and west, for the sake of alternate changes of air and warmth. The building, at least the wards, should be single, so as to admit of transverse ventilation, and the windows should be from the top to the bottom, open at either extremity, carefully secured, however, at the bottom, to prevent air from crevices. The length of the ward should not exceed thirty feet, and it should be rather more than half that breadth. The beds should be placed at right angles to the wall, and there should be a window between every second bed. If the door is at one end, and the fire place at the other, one fire will be sufficient: if in the middle, there should be two. In this way the ventilation will be complete. The windows may be opened on either side, in different degrees, according to the state of the wind or weather, either above or below. The under windows should be opened for a short time every day, on either, or on both, sides, according to external circumstances; for carbonic acid gas is heavy. A ward, when opened, cannot always smell fresh and pure; but it should not be offensive or close. If the beds are parallel and close to the sides, the floor cannot be ventilated; if more numerous, the air cannot be admitted to each patient. We have not mentioned ventilators on the top; for if the temperature be moderate they will be useless, and they cannot be applied to a ground floor.

The privies should be at each extremity of the ward; but if that is impracticable there should be one in each,

and always separated from the ward by a short passage, in which there should be a ventilator or a window. If possible, each should be a water closet; but the dressings and the contents of the night boxes should be always immediately immersed under water.

The separate apartments for particular complaints should not be small, but should never contain more than two beds on the opposite sides of the room, while the door and the window on the two other sides will contribute to the ventilation. The chimney, if one is necessary, may be in the angle. If required for patients who may be occasionally in violent pain, in convulsive paroxysms, and delirium, they should be separated from the ward by a short passage. For the sake of attendance, they must be contiguous.

The offices containing the baths, the brew and bake houses, the elaboratory, &c. should be separated from the principal building, that they may not render it too warm; and the apartments for hectic and asthmatic patients should be also separated. These may be in pavillions, joined to the house by a colonade, which the architect may render ornamental, though this is of less importance. If any apartments are connected with the offices, it should be those adapted for chronic rheumatism, for syphilis, and for amenorrhæa. The colonade may furnish covered walks open to the north and south, and over these the apartments just mentioned may be situated. From this sketch it will be easy, we think, to construct an hospital, which will unite every advantage to be expected from such an institution.

In the arrangement of the house every impurity should be immediately removed, and every noxious matter immediately immersed in water; and, after the dressing of the sores, the upper and lower windows should in turn be for a short time opened, while the patients are secured from their effects by their bed clothes. The linen should be changed, not from the regulations of time, but of circumstances, under the directions of a judicious apothecary. Air and cleanliness will make all aspersions with vinegar and all fumigations useless.

Ointments afford an offensive smell; for the axunge cannot be long preserved free from rancidity. It is, therefore, highly proper that those plasters only which are employed in peculiar circumstances should be spread in the ward; and Dr. Percival's advice of using mucilage with neatsfoot oil, occasionally united with Gowland's extract, instead of the common plasters, is judicious. If lintseed meal be used, even the oil will be unnecessary.

The diet of hospitals is regulated by custom, which it is heresy to attack; nor is it indeed necessary to notice it particularly, since any occasional errors may be corrected by the physician. Perhaps, according to Dr. Percival's advice, salep may be occasionally substituted for rice, and malt infusion for beer; but his other observations in this respect rest too strongly on a disputable foundation, experiments out of the body.

Iron bedsteads will neither retain infection nor bugs; and their upper ends should be raised with a screw. It would be always proper to have supplementary wards; for nothing should hinder each ward from being white-washed, thoroughly cleaned, and the window frames painted, in distemper, every year. The beds also should be repeatedly ripped, and their contents aired.

See Percival's Thoughts on Hospitals, and the Memoires de la Societ  Royale de Medecine.

NOSOLOGY, (from *nosos*, a disease, and *logos*, a discourse). NOSOLOGY. When the numerous advantages of arrangement were so conspicuous in the advancement of botany, it was soon extended to many other branches of natural knowledge; and as the great end to be obtained from it was a ready and accurate distinction of species, it was soon suspected that it might be highly useful in sciences where discrimination was equally difficult and important. Yet, except in the arrangement of the vegetable kingdom, method has seldom been found singularly useful. In zoology it has connected animals of a nature very discordant, and living in elements essentially different: in mineralogy it has been obliged, till lately, to borrow assistance from the laboratory; and in medicine it has connected the most trifling with the most important diseases, and maladies of a nature very dissimilar. Even in botany, where its utility is acknowledged, the endless disputes which have arisen respecting the principles of arrangement, have at last subsided in the establishment of an artificial system, chiefly because it has been extended with the rapidly increasing bounds of our knowledge. Many of these difficulties, as well as their source, are easily understood. Systems are the work of our own minds; for nature advances by almost imperceptible shades; and where we can point out the termination of one family, and the commencement of another, it is only confessing that the intermediate link is unknown: thus, when our knowledge advances, the advantages of our systems lessen, for our limits are lost.

This disadvantage is felt even at the first step of our analysis of the objects of nature, namely, in our discrimination between the animal, vegetable, or mineral kingdom, and follows, with equal inconvenience, every subordinate distinction. It is felt less in artificial arrangements, and affords a strong argument in their favour; so as, in the opinion of many naturalists, even to counterbalance the advantages of a natural method. It is very inconvenient in mineralogy, where the component parts and the obvious qualities often differ very strikingly.

What, however, was so useful an assistant in botany, what was at least not injurious in zoology, and advantageous in the lower orders of animated nature, was tried with very unequal effect in mineralogy and diseases; but of mineralogy we have already spoken. The arrangement of diseases is still in a very imperfect state. To the inconveniences which attended the arrangement of minerals, some difficulties, apparently insurmountable, were added. If the forms, the hues, and other properties of the mineral forbade us to expect uniformity, the infinitely more fleeting, the more minutely varied forms of diseases seemingly mocked every attempt to bring them within the limits of a definition. If a foundation could be obtained, it was apparently by considering the disorder as connected with an internal change, which would then afford what might be styled an object, whose properties we might examine. This, however, increased the difficulty, for few would agree respecting this change; and the system must vary with the opinion, perhaps the fancy, of physicians respecting what we now call the immediate or proximate

cause. To this must be added, that, in a strict systematic view, the error would not be less than in classing minerals from their component parts, in other words, their chemical nature, as we have already observed. (See CAUSA and MORBUS.) It was necessary then to consider each disease as a concurrence of symptoms, in general fixed, leading to an injured function, and to some permanent change in the system, whatever it might be. In this way the disease is the unknown algebraical quantity designated by a letter; but this letter, in the hands of the mathematician, may be managed as readily as a determined object. It may have powers and proportions ultimately depending on the value to be discovered; but, at the same time, independent of it. Thus we can speak of a fever, its degree, its changes, and cure, without attempting to examine in what it consists. We can distinguish an unknown change by symptoms, and can arrange it from these alone. The importance of distinction will be at once obvious, when we recollect the extensive disquisitions in which every practical author engages under the head of diagnosis. Sydenham, certainly no friend to fanciful refinements, was seemingly the first author who suggested this method; and Gaubius, who had seen the systems of Sauvages, of Linn us, and probably of Vogel, hopes that an attempt so happily begun will soon be perfected. Since the time of Dr. Cullen, we have witnessed few attempts of this kind; and the neglect certainly has not arisen from the degree of perfection his arrangement has attained.

Nosology is seldom mentioned, but to be ridiculed or despised. Some late authors who have pretended to oppose it, have, in their arguments, shown not only their ignorance, but the necessity of the study; and those who have adopted systems of arrangement, have demonstrated that they have little attended to its principles. If nosology does not render the distinction of diseases easy and comparatively obvious; if, by bringing disorders of a similar nature together, it does not elucidate them as well as the method of treatment, it is useless, and will be deservedly neglected. We shall endeavour to show that each end may be readily obtained.

The reasons which have impeded the advancement of nosology are numerous; but it is needless to examine them minutely: even Linn us, by whom method had been so much improved, has wholly lost sight of his own rules, when applied to the arrangement of diseases; and Dr. Cullen, who has formed a system, imposing from its simplicity, elegance, and perspicuity, has erred in the threshold, by his first separation of general from local diseases. Yet no distinction appears more clear, more obvious, or on a more secure foundation: the difficulty is felt only in the application, and is soon perceived when we find the same disease sometimes general, sometimes local, and varying, with almost undistinguishable shades, from one to the other. To connect the feverish disorders into one class is equally judicious in appearance; but a similar objection recurs. The same disease is often attended with fever, and is occasionally without it, and this in almost every degree. Even in the genus *cynanche*, which he laboured with no common care, and in which he thought himself peculiarly successful, he has erred against his own principles; and formed, as we have

seen, *vide in verbo*, an association wholly discordant, merely from the vicinity of the parts affected.

It is singular that even in botany Linnæus began with establishing classes and orders; Ray and Jussieu in their more natural systems did the same, and perhaps it is unavoidable. The mind catches at the larger associations, and, captivated with their simplicity, or their theoretical connections, makes the subordinate parts bend to their powerful influence. The error is probably unavoidable: the fault consists in continuing to wear the fetters, when their weight and inconvenience is felt. Dr. Cullen, for instance, had an order of profluvia, which he placed in the class *pyrexia*, and thus limited the genera, omitting the catarrhus vesicæ, gonorrhœa, leucorrhœa, and many similar diseases. When this inconvenience was felt, he should perhaps have rejected the class. If he retained it in order to have an association strictly natural, his system was defective; for the nature of the other complaints was the same, the treatment in many respects similar.

The great difficulty which has, however, been felt by every systematic author, is to ascertain what individuals are species, and what varieties. Even in botany, where the species are now clearly distinguished, it was once so difficult, that in the system of the accurate Tournefort, one third of the species have been found varieties. In mineralogy the species are not yet clearly fixed; and, for obvious reasons, many fluctuations in the arrangement must take place before these can be ascertained. This difficulty is peculiarly felt in nosology, and it will be advantageous to consider the subject more fully.

Linnæus has justly observed, that the species are, in number, equal to the individuals created. Yet this remark affords little assistance to the systematic botanist. If he finds a plant differing in bulk and size only, with the more essential parts in some degree imperfect, he will readily suppose it to be a variety, changed in consequence of a less genial climate. In any greater difficulty he sows the seed, and finds, by degrees, the variations less. Though the botanist has many other resources in ascertaining the distinction between species and varieties, yet these are the more important methods, and peculiarly applicable to the present subject. Thus the erysipelas, which in the north assumes a phlegmonous appearance and nature, in a crowded metropolis must be treated with cordials and tonics. The remittent fever, which chiefly requires evacuations, with a moderate proportion of bark in temperate climates, soon proves fatal without a very different treatment within the tropics. The diseases are confessedly the same, and these are consequently varieties. The erysipelas and the remittent fever are therefore species.

Again: the small pox is a disorder propagated by infection. The seminum may be consequently considered as the seed of a plant. We know that the most distinct kind, in a bad constitution, and, by experiments probably not strictly justifiable, that the worst matter in a good one, will produce respectively a bad and good kind. Similar instances occur in the epidemic measles. These are cases analogous to the mode in which the botanist distinguishes species from varieties, and the variola and rubeola are consequently species,

If a botanist meets with a plant to him unknown, he at once supposes it a new species, or a variety of one formerly known. If it does not agree with any known group of species, for these constitute a GENUS, *q. v.* he supposes it a new one, or at least the fixed point to which others may be referred. It is a common error to say that a naturalist has discovered a new genus; for a genus is an association. If this be true, and we fear no contradiction, the real source of nosological error and difficulties is at once cut off, and we may proceed with the same steadiness and success which has crowned the labours of the botanist. The difference only is, that the sub-species or the varieties are of more importance than in other departments.

The great advantage of nosology is distinction, and the discussions connected with arrangement are so many points of discrimination, which the proper order has suggested. If the place of a disease cannot be ascertained, it is evident that the symptoms have been inaccurately described. One circumstance is, however, still wanting; the accurate discriminate language of description so useful in botanical arrangement. We still want a delineatio morbi in imitation of the delineatio plantæ in Linnæus.

The first attempt at classification of diseases was made by Sauvages. It was published in a more abridged form in octavo, before that vast mass of medical erudition, his two quarto volumes, were completed. It was first styled *pathologia*, and the name was changed to prevent its being confounded with a branch of the institutions of medicine. His first class was VITIA, slight cutaneous diseases, or such as require chirurgical assistance. The second, FEBRIS; the third, PHLEGMASIÆ; the fourth, SPASMI; the fifth, ANHELATIONES (difficult respiration); the sixth, DEBILITATES; the seventh, DOLORES; the eighth, VESANIÆ; the ninth, FLUXUS; and the tenth, CACHEXIÆ. Linnæus brought to this office all his comprehensive accuracy, with a quaintness of language which, when explained, is no longer displeasing. The EXANTHEMATICI are eruptive; the CRITICI, common fevers; and the PHLOGISTICI, fevers attended with inflammation. The DOLORESI are painful diseases; MENTALES consist in the abolition of judgment; the QUIETALES of motion; the MOTORII in involuntary motions; the SUPPRESSORII in obstructions of the natural passages; and the EVACUATORII in evacuations. The DEFORMES are changes in the solids, and the VITIA those of the surface. The classes of Vogel, whose work appeared in 1764, are, FEBRIS, PROFLUVIA, EPISCHESES (suppressions); DOLORES, SPASMI, ADYNAMIÆ (debilities); HYPERÆSTHESES (more acute or depraved sensations); CACHEXIÆ, PARANOIÆ (aberrations of mind); VITIA, superficial, and DEFORMITATES, more solid deformities.

Sagar, who published his nosology in 1776, has divided diseases into thirteen classes; VITIA; FLAGRÆ (wounds); CACHEXIÆ; DOLORES; FLUXUS; SUPPRESSIONES; SPASMI; ANHELATIONES; DEBILITATES; EXANTHEMATICA; PHLEGMASIÆ; FEBRES; and VESANIÆ. Dr. Cullen's classes are few: PYREXIÆ, NEUROSES, CACHEXIÆ, and LOCALES.

The last general work on this subject is the philosophical nosography of Pinel, differing little in its outlines

from the common systems, but with too great refinement, and, we think, useless minuteness in the subdivisions. The classes are FEVERS, INFLAMMATIONS, ACTIVE HÆMORRHAGES, NŒUROSES, LYMPHATIC DISEASES, with an indeterminate class. The existence of the last shows a want of those comprehensive views which every systematic author should possess; but as the work is not generally known, we shall pursue our account of it in the more subordinate divisions.

The first class of FEVERS contains six orders; the *angi-stenic* (inflammatory); the *meningo-gastric* (bilious); the *adeno-meningeal* (pituitous, containing the hectic and intermittents); the *adynamic* (putrid); the *ataxic* (malignant); and the *adeno-nervous* (the plague). We need scarcely observe, that in this arrangement fevers of the same type, of similar appearances, which are relieved by the same remedies, are scattered in different orders, from the occurrence of an accidental symptom: the genera are consequently, in many instances, varieties only. The plague is perhaps properly a fever; but it should have been arranged among the ataxic or adynamic diseases of our author.

The inflammations are divided into five orders; 1. the inflammation of *mucous membranes*; 2. of *diaphanous* ones; 3. of the cellular substance, the glands, or the parenchyma of the viscera; 4. of the muscles; 5. cutaneous inflammations, including the exanthemata.

The active hæmorrhages are those common to both sexes, and uterine hæmorrhages.

The nervous diseases contain four orders; 1. the *vesaniæ*, not febrile; 2. *spasms*; 3. *local anomalies of the nervous functions*; and 4. *comatous* affections.

The fifth class contains three orders; 1. *cutaneous diseases*; 2. *diseases of the lymphatic glands*, including phthisis, lues, and rachitis; 3. *dropsies*.

The undetermined class contains the jaundice of new born children: *diabetes*; *worms*; the bites of insects and serpents.

We need not add any remarks on this arrangement. Its imperfections will be at once obvious, nor is it one of the least, that often the general, frequently the subordinate, divisions, rest on the uncertain foundation of a theory; of theory, at least, not generally admitted in this country.

Were we to proceed to the genera we should find them badly arranged, imperfectly distinguished, with numerous omissions. Indeed, for many diseases, the author's system has no place.

A more limited system is that of Selle, whose *Rudimenta Pyretologiæ Methodicæ* was the subject of his thesis, and re-published at Halle in 1770, under the title of the *Methodi Febrium Naturalis Rudimenta*, and afterwards in a more extensive form, under the first title, at Berlin in 1786. As it is highly commended, and often quoted, we shall give a somewhat more extensive view of it than of the former systems.

The first order of fevers is styled *continentes*, divided into two genera, the *inflammatory continent*, and the putrid. The second order contains the *remittentes*, divided into the *gastric* or *bilious*, the *bilious inflammatory* fever, the *bilious putrid*, and the *pituitous* fever. The last is sub-divided, as it is combined with α , a wormy colluvies, ϵ , a metastasis of milk to the abdominal viscera, γ , internal ulcer, δ , obstruction of the viscera.

The third order is styled the *ataxiæ*, viz. the nervous and putrid fevers; and these are divided into the *sporadic*, *nervous* fever; the *epidemic from contagion*; and the *slow nervous* fever.

The fourth order is entitled *intermittentes*; and the genera are, the *inflammatory*, *bilious*, *pituitous*, *wormy*, and *nervous* intermittents.

The active inflammations are included under the inflammatory continent fever; and to these are added, in separate sub-divisions, *erysipelas* and *rheumatism*. Under the same genus we find the complications of *catarrh*, *dysentery*, and *exanthemata*. Many of these are repeated under the putrid continent fever, and under the different genera of remittents, with little accuracy of distinction.

Under the acute sporadic nervous fever we find as species, *phrenitis*, *hydrophobia*, and *febris soporosa*; and, under the contagious nervous fever, the *plague*, which in its mildest form is placed as a variety of putrid nervous fever.

To the last edition Selle has added natural classes of diseases. These are INFLAMMATORY, PUTRID, BILIOUS, PITUITOUS, WORMY, MILKY, NERVOUS, PERIODICAL, OBSTRUCTIONS, GOUTY, RICKETY, SCROFULOUS, CANCEROUS, VENEREAL, SCABIOUS, SCORBUTIC, POISONOUS, and ORGANIC. This is evidently only an outline, for the genera are not filled in, and it will be obvious that they depend almost exclusively on causes, and are consequently theoretical. They approach nearly in the manner of their formation the natural orders of plants by Jussieu.

These are the chief systems founded, or pretended to be founded, on symptoms; for the arrangement of Macbride into universal, local, sexual, and infantile diseases, scarcely merits our attention in this place. If we were to examine each system, it would appear that, except in those of Linnæus and Cullen, there is no arrangement of classes, no traces of what in the article botany we have styled a *methodus*. The *methodus* of Linnæus is somewhat fanciful, that of Dr. Cullen into universal and local diseases, as we have remarked, injurious. In all, the fundamental error appears of forming classes without having ascertained species; so that in reality the classes are orders, and the orders, in general, claim no higher rank than the first associations of species, *genera*. In general we may remark, that there are some associations so obvious, that they at once seize the attention of every nosologist, for no one thinks of separating fevers or inflammations, and, except Dr. Cullen, the passive hæmorrhages and profluvia from the active. Each slides into each other by such insensible shades, that we know not where the one begins and the other ends.

Another error, which seems to pervade every system, consists in the definitions. The symptoms are seldom scientifically arranged so as to facilitate investigation. In botany, either the character of the sections, or the first part of the character, at once informs the student whether the plant belongs to that species or to one far below. The nosologists have collected their symptoms with little care, and in their anxiety to distinguish diseases have rendered their definitions almost complete descriptions. This is particularly the error of Vogel and Sagar. To render their works also complete, they

have included the minutest deviations from the natural appearance, forgetting that it was an arrangement of diseases, the essence of which consists in injured functions.

Reflecting on these natural groups, and having established in our minds the distinctions between varieties, species, and genera, it occurred to us whether diseases might not be arranged in imitation of the natural orders of the botanists; and having succeeded at least to our own satisfaction in this attempt, we laid the foundation of it in what may have appeared the disproportioned or inapplicable inquiry into the foundation of natural methods in BOTANY, q. v. We shall therefore add

a new, and what appears to us an improved classification of diseases on the same principles.

The orders in this arrangement are twelve: PYREXIE, PHLEGMASIE, ERUPTIONES, PROFLUVIA, SUPPRESSORII, SPASMI, ADYNAMIE, PARANOIE, CACHEXIE, INTUMESCENTIE, ECTOPIE, PLAGE. In this arrangement there is a concealed methodus, which, as it is not an object of importance, we need not explain farther than by adding, that feverish complaints, increased and diminished evacuations, increased, diminished, and irregular nervous excitement, diseased fluids, appearing either in increased or diminished bulk, the displacements and solutions of continuity, follow in order.

Order I. PYREXIE.

Genus I. INTERMITTENS.

- Sp. 1. Quotidiana.
2. Tertian.
3. Quartana.
4. Erratica.
5. Complicata.

Genus II. EXACERBANS.

- Sp. 1. Mitis.
2. Maligna.
- α *Autumnalis.*
- β *Icterodes,*
- γ *Asthenica.*
3. Hectica.

Genus III. CONTINUA.

- Sp. 1. Synocha.
2. Typhus.
- α *Carceraum.*
- β *Neurodes.*
- γ *Gastrica.*
3. Synochus.

Order II. PHLEGMASIE.

Genus I. INFLAMMATIO.

- Sp. 1. Phlegmon.
2. Ophthalmia.
- α *Epidemica.*
- β *Sporadica.*
- γ *Tarsi.*
3. Phrenitis.
4. Cynanche.
- α *Faucium.*
- β *Tracheæ.*
- γ *Parotidea.*
5. Pneumonia.
- α *Pleuritica.*
- β *Peripneumonica.*
- γ *Diaphragmatica.*
- δ *Hepatica.*
- ε *Rheumatica.*
6. Hepatitis.
7. Carditis.
- α *Mediastina.*

β *Pericarditis.*

8. Gastritis.
9. Enteritis.
- α *Mesenterica.*
- β *Epiphloitis.*
- γ *Peritonitis.*
- δ *Rheumatica.*
10. Nephritis.
11. Cystitis.
12. Hysteritis.
13. Odontalgia.

Genus II. PHLOGOSIS.

- Sp. 1. Erythema.
2. Phrenitica.
3. Anginosa.
4. Pneumonica.
5. Puerperalis.

Genus III. CATARRHUS.

- Sp. 1. Coryza.
- α *Contagiosa.*
- β *Senilis.*
- γ *Arthritica.*
- δ *Trachealis.*
2. Dysenteria.
- α *Epidemica.*
- β *Sporadica.*
3. Phthisis.
4. Cœliaca.
5. Leucorrhœa.
6. Cystirrhœa.
7. Gonorrhœa.
8. Leucorrhœis.

Genus IV. ARTHRITIS.

- Sp. 1. Rheumatismus.
- α *Lumbago.*
- β *Ischias.*
- γ *Pleurodyne.*
2. Arthrodynia.
3. Podagra.
4. Hydrarthrus.
- α *Coxarius.*
- β *Genu.*

Genus V. EXOSTOSIS.

- Sp. 1. Perioste.

Order III. ERUPTIONES.

Genus I. EXANTHEMA.

§ I. Epidemicum.

- Sp. 1. Variola.
- α *Confluens.*
- β *Crystallina.*
2. Vaccina.
3. Rubeola.
- α *Maligna.*
- β *Variolodes.*
4. Varicella.
5. Milliaria.
- α *Purpura.*
- β *Alba.*
6. Scarlatina.
- α *Cynanchica.*
7. Erysipelas.
8. Pestis.
9. Pemphigus.
10. Aphtha.
- α *Maligna.*

§ II. Sporadicum.

11. Urticaria.
12. Strophulus--Infantum.
13. Achor.

Genus II. EFFLORESCENTIA.

- Sp. 1. Psora.
2. Prurigo.
- α *Pudendi.*
- β *Senilis.*
3. Lichen.
4. Petechia.
5. Vibex.
6. Phlyctena.
7. Herpes.
8. Tinea.
9. Eczema.

Order IV. PROFLUVIA.

Genus I. HÆMORRHAGIA.

- Sp. 1. Epistaxis.
 2. Stomacace.
 3. Hæmoptysis.
 α Febrilis.
 β Asthenica.
 4. Hæmatemesis.
 5. Melæna.
 6. Hæmorrhœis.
 7. Mænorrhagia.
 8. Hæmaturia.
 α Febrilis.
 β Senilis.
 9. Vicaria.
 α Narium.
 β Pulmonum.
 γ Ventriculi.
 δ Venarum Hæmorrhoidalium.
 ϵ Vesicæ.
 ξ Gingivarum.

Genus II. APOCENOSIS.

- Sp. 1. Vomitus.
 α Cholera.
 β Pyrosis.
 γ Atonica.
 2. Diarrhœa.
 α Lienteria.
 β Aquosa.
 3. Diabetes.
 α Mellitus.
 β Mucilaginosus.
 4. Diuresis.
 α Chronica.
 β Spasmodica.
 5. Ephidrosis.
 6. Plica.
 7. Epiphora.
 8. Ptyalismus.
 α Hydrargyratus.
 β Paralyticus.
 γ Mellitus.
 9. Exoneirosis.

Order V. SUPPRESSORII.

Genus I. CONSTRICTORIA.

- Sp. 1. Dysphagia.
 2. Obstipatio.
 α Pylori.
 β Intestinorum.
 γ Recti.
 3. Polypus.
 α Narium.
 β Cordis.
 γ Uteri.

Genus II. ANHELATIO.

- Sp. 1. Asthma.
 α Spontanæum.
 β Plethoricum.
 γ Senile.
 2. Dyspnœa.
 α Catarrhalis.

- β Terrea.
 γ Aquosa.
 δ Organica.
 ϵ Venenata.

Genus III. EPICHESES.

§ I. Sanguinis.

- Sp. 1. Amenorrhœa.
 2. Dyslochia.
 3. Dyshæmorrhœis.

§ II. Excretorum.

4. Icterus.
 α Calculosa.
 β Biliosa.
 γ Spasmodica.
 5. Ischuria.
 α Renalis.
 β Ureterica.
 γ Vesicalis.
 δ Urethralis.
 6. Dysuria.
 α Ardens.
 β Spasmodica.
 γ Compressionis.
 δ Irritata.
 7. Sitis.
 8. Dyspermatismus.
 α Organicus.
 β Spasmodicus.
 9. Agalaxis.

Order VI. SPASMI.

Genus I. TONOS.

- Sp. 1. Trismus.
 α Infantum.
 β Traumatica.
 2. Tetanus.
 α Opisthotonus.
 β Emprosthonus.
 γ Catochus.
 3. Contractura.
 α Colli.
 β Artuum.
 4. Priapismus.
 5. Strabismus.

Genus II. CLONOS.

- Sp. 1. Epilepsia.
 α Cerebralis.
 β Sympathica.
 γ Irritata.
 2. Convulsio.
 α Idiopathica.
 β Irritata.
 3. Hysteria.
 α Asthenica.
 β Irritata.
 4. Chorea.
 5. Raphania.

6. Palpitatio.
 α Hysterica.
 β Irritata.
 7. Pertussis.
 8. Colica.
 α Stercoraria.
 β Venenata.
 9. Hydrophobia.
 10. Pandiculatio.
 11. Beriberia.

Order VII. ADYNAMIÆ.

Genus I. COMA.

- Sp. 1. Carus.
 α Catalepsis.
 β Ecstasis.
 2. Apoplexia.
 α Sanguinea.
 β Serosa.
 γ Hydrocephalica.
 δ Asthenica.
 ϵ Suffocata.
 ξ Metastatica.
 3. Paralysis.
 α Hemiphlegia.
 β Paraplegia.
 γ Partialis.
 δ Venenata.
 4. Syncope.
 α Cardiaca.
 β Metastatica.
 γ Occasionalis.
 δ Angens.

Genus II. ANEPITHYMIA.

- Sp. 1. Anorexia.
 2. Dyspepsia.
 α Idiopathica.
 β Metastatica.
 3. Chlorosis.
 4. Amentia.
 5. Amaurosis.
 α Intermittens.
 β Nyctyalopia.
 6. Agenesia.
 7. Atrophia.

Order VIII. PARANOIÆ.

Genus I. MOROSITAS.

- Sp. 1. Bulimia.
 α Helluonum.
 β Syncopalis.
 γ Convalescentium.
 2. Pica.
 α Chlorotica.
 β Pregnantium.
 γ Afrorum.
 3. Hypochondriasis.
 α Nostalgia.

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Genus II. HALLUCINATIO.

- Sp. 1. Satyriasis.
2. Nymphomania.
3. Erotomania.

Genus III. VESANIA.

- Sp. 1. Melancholia.
2. Mania.
 α *Mentalis*.
 β *Metastatica*.
 γ *Venenata*.
 Paraphrosyne. Auc-
 torum.
3. Oniroidynia.
 α *Activa*.
 β *Gravans*.

Order IX. CACHEXIÆ.

Genus I. IMPETIGO.

- Sp. 1. Scorbutus.
2. Syphilis.
3. Aurigo.
4. Phænigmus.
5. Melasma.
6. Rubigo.

Genus II. MACULA.

- Sp. 1. Echymosis.
2. Petechia.

Order X. INTUMESCENTIÆ.

Genus I. TUBER.

§ I. *Universi*.

- Sp. 1. Polysarcia.

§ II. *Partium*.

2. Rachitis.
3. Exostosis.
4. Physconia.
 α *Hepatica*.
 β *Splenica*.
 γ *Renalis*.
 δ *Uterina*.
 ϵ *Visceralis*.
 ζ *Mesenterica*.
 η *Externa*.

§ III. *Cutis*.

5. Elephantiasis.
6. Framboesia.
7. Pellagra.
8. Lepra.
9. Verruca.

10. Ganglion.

§ IV. *Glandium*.

11. Sarcoma.
 α *Pterygium*.
 β *Hordeolum*.
12. Scrophula.
13. Encystis.
 α *Atheroma*.
 β *Steatoma*.
 γ *Testudo*.
 δ *Meliceris*.
14. Scirrhus.
15. Cancer.
16. Parotis.

Genus II. PHLEGMATIA.

- Sp. 1. Anasarca.
 α *Opilata*.
 β *Exanthematica*.
 γ *Anæmia*.
 δ *Dolens*.
2. Hydrocephalus (ex-
 ternus).
3. Hydrorachitis (Spina
 Bifida).
4. Hydrothorax.
5. Ascites.
 α *Asthenica*.
 β *Metastatica*.
6. Hydrometra.
7. Hydrocele.
8. Exomphalos.

Genus III. CYSTIS.

- Sp. 1. Aneurisma.
2. Varix.
3. Mariscus.
4. Staphyloma.
5. Hydatid.
6. Abscessus.

Genus IV. EMPHYSEMA.

- Sp. 1. Pneumatosis.
 α *Traumatica*.
 β *Venenata*.
2. Tympanites.
 α *Intestinalis*.
 β *Abdominalis*.
3. Physometra.

Order XI. ECTOPIÆ.

Genus I. HERNIA.

- Sp. 1. Enterocoele. *Intestini*.
2. Epiplocele. *Omenti*.
3. Gastrocele. *Ventriculi*.
4. Hepatocoele. *Hepatis*.

5. Splenocoele. *Lienis*.
6. Hysterocele. *Uteri*.
7. Cystocoele. *Vesicæ*.
8. Encephalocoele. *Cere-
bri*.

Genus II. PROLAPSUS.

- Sp. 1. Exophthalmia. *Oculi*.
2. Blepharoptosis. *Pal-
pebræ*.
3. Hypostaphyle. *Uvulæ*.
4. Paraglossæ. *Lingua*.
5. Exania. *Recti*.
6. Exocyste. *Vesicæ*.
7. Hysteroptosis. *Uteri,
vel Vaginæ*.

Genus III. LUXATIO.

- Sp. 1. Calcis.
2. Capitis.
3. Carpi.
4. Claviculæ.
5. Coccygis.
6. Colli.
7. Costarum.
8. Digitorum.
9. Femoris.
10. Fibulæ.
11. Genu.
12. Humeri.
13. Malleoli.
14. Manus.
15. Maxillæ.
16. Metacarpi.
17. Nasi Ossis.
18. Olecrani.
19. Patellæ.
20. Tali.
21. Vertebrarum.

Order XII. PLAGÆ.

Genus I. DIALYSIS.

- Sp. 1. Vulnus.
2. Ulcus.
3. Punctura.
4. Excoriatio.
5. Ruptura.
6. Sinus.
7. Fistula.

Genus II. CLASIS.

- Sp. 1. Fractura.
2. Fissura.
3. Rhagas.
4. Arthrocace.

Genus III. DIASTASIS.

- Sp. 1. Symphysis Pubis.

Though from mature reflection we are convinced of the advantages of this plan, we have not ventured to disturb, through this work, the usual nomenclature, nor the received definitions. We have also, in general, avoided nosological disquisitions, as we wished to confine all our observations on these points to a single article; and, consequently, if our ideas are rejected, we shall occasion no difficulty to the student, either by innovations of language or arrangements. We shall, therefore, now proceed to the definitions, and shall close this article with some remarks in defence of the present system; and the definitions now introduced.

Order I. PYREXIÆ. Heat, after coldness and shivering; debility; mind unsteady; tendons of the wrist tense; pulse either preternaturally quick or weak.

Genus I. INTERMITTENS. "Fever," returning after various and generally regular intervals, having each paroxysm apparently terminated by sweating.

- Sp. 1. *Quotidiana*. Intermittent fever, returning after an interval of twenty-four hours.
 2. *Tertian*. Returning after an interval of forty-eight hours.
 3. *Quartana*. After an interval of seventy-two hours.
 4. *Erratica*. After intervals generally uncertain, but always longer than seventy-two hours.
 5. *Complicata*. Irregularly returning paroxysms, from a complication of a tertian and a quartan, two tertians, or two quartans.

Genus II. EXACERBANS. "Fever," exacerbating and remitting, without ever disappearing; remissions distinguished by sweating, or a cloud in the urine; one paroxysm only occurring in twenty-four hours.

- Sp. 1. *Mitis*. "Exacerbating fever," without remarkable debility or putridity.
 2. *Maligna*. With great debility, often with putrefactive symptoms, rapid and usually fatal.
 3. *Hectica*. Exacerbations distinctly returning every evening, terminated very commonly by sweating.

Genus III. CONTINUA. "Fever," with remissions less evident, and seldom marked by critical discharges; having usually two exacerbations in twenty-four hours.

- Sp. 1. *Synocha*. "Continued fever," with great heat, frequent, strong and hard pulse, urine red; mind but slightly affected.
 2. *Typhus*. "Continued fever," with pulse and heat, in the beginning moderate, and remissions unusually distinct; mind very unsteady; debility considerable; urine clear; in the advanced stages, putridity, tremors, and convulsions.
 3. *Synochus*. "Continued fever," commencing like synocha; in its progress resembling typhus, though more mild, and often attended with bilious discharges.

Order II. PHLEGMASIE. Local fixed pains, with a læsion of the functions of the diseased organ, an increased discharge from its vessels, usually attended with "fever." When external, the parts affected are floridly red, generally swollen; the tumour often circumscribed, ending in effusion, suppuration, or gangrene.

Genus I. INFLAMMATIO. Local "phlegmasia" with fever, usually inflammatory.

Sp. 1. *Phlegmon*. "Local inflammation" on the surface, pain generally throbbing.

2. *Ophthalmia*. Inflammation in the eye, or its lids; light painful, and the pain peculiarly acute.

Var. α *Epidemica*, Egyptian ophthalmia.

β *Sporadica*, accidental inflammation of the eye.

γ *Tarsi*, inflammation of the eye lids.

3. *Phrenitis*. Pain of the head; the pain from light and sound highly acute; face flushed; eyes red; synocha, with watchfulness and delirium.

4. *Cynanche*. Redness and pain of the fauces and throat; swallowing painful and difficult, often impossible; swelling in the tonsils, and sometimes in the neck; breathing occasionally difficult, and stridulous.

Var. α *Faucium*. Redness at the back part of the throat, conspicuous and considerable.

β *Tracheæ*. Redness less conspicuous, breathing difficult and stridulous.

δ *Parotidæa*. Tumours external, difficulty of swallowing slight, often alternating, with tumours of the testes; in females of the mammæ.

5. *Pneumonia*. Pain in some parts of the chest; cough, at first day, afterwards attended with expectoration, often bloody.

Var. α *Pleuræ*. Pulse full and hard; pain violent; synocha severe; often without expectoration.

β *Pulmonum*. Pulse less hard, and pain less pungent; dyspnœa acute; suffocation on lying down; face purple; sputum glutinous, green, and yellow; towards the solution white and equable.

γ *Diaphragmatis*. Pain at the lower ribs, extending to the back; breathing interrupted and painful; hic-cough, without expectoration.

ϵ *Hepatica*. Pain extending downward toward the right side; pulse less full and hard; sputum yellow.

ζ *Rheumatica*. Pulse hard and strong, without cough; side affected, externally sore.

6. *Hepatitis*. Tension and often soreness in the right hypochondrium, extending occasionally to the right shoulder; expectoration generally yellow.

7. *Carditis*. Pain under the sternum, sometimes

pungent; violent palpitation, with great anxiety; pulse small, and generally unequal.

Var. α *Mediastina*. Pain more strictly confined to the middle of the sternum, with less palpitation and anxiety; without expectoration.

β *Pericarditis*. Pain more acute; palpitation violent.

8. *Gastritis*. Pain with frequently a circumscribed tumour, and soreness at the pit of the stomach; vomiting, even of the mildest fluids, incessant; pulse soft, weak, and sometimes fluttering.

9. *Enteritis*. Violent colic, with soreness of the abdomen; costiveness obstinate, often with vomiting, frequently with ischuria.

Var. α *Mesenterica*. Pain deeply seated, without soreness of the abdomen; costiveness and ischuria less violent.

β *Epiploitis*. Tumour more sensible; seldom with ischuria.

γ *Peritonitis*. External soreness, and pain extreme, increased on raising the body; without constipation or relief from stools.

δ *Rheumatica*. Great external soreness and acute pain, chiefly felt at the lowest ribs, and the spine of the ileum.

10. *Nephritis*. Pain shooting from the loins into the thighs; micturition painful and frequent, with a retraction of either testicle, and a numbness of the thigh on the same side; often with vomiting.

11. *Cystitis*. Inflammation, pain, and swelling of the hypogastrium; micturition painful or obstructed; frequently with tenesmus.

12. *Hysteritis*. Swelling and pain of the hypogastrium; micturition slightly affected; the os tincæ sore and painful.

13. *Odontalgia*. Pain of the teeth and jaws, extending to the ear, and often to every part of the head on the side affected; at first increased, afterwards relieved, by heat.

Genus II. PHLOGOSIS. Inflammation; pain less violent; tumour inconsiderable; redness less florid, irregular, extending; with debility, often with typhus; terminating generally and rapidly in gangrene.

Sp. 1. *Erythema*. External "Phlogosis" of a pink colour, disappearing on pressure; pain burning; terminating generally in branny scales, often in phlyctenæ or vesicles, at last in gangrene.

Var. α *Mitis*.

Pernio. From cold, generally in the fingers, toes, or heel.

Combustio. From violent heat.

β *Maligna*.

Anthrax. A hard deep seated tumour with a burning heat, of a dark colour, rapidly hastening to gangrene.

2. *Phrenitica*. Pain of the head inconsiderable;

face pale; restlessness, low delirium, with occasional fits of violence.

3. *Anginosa*. "Phlogosis" of the throat and fauces, frequently with ulcerations, deep and ragged at the edges; severe typhus; delirium; often with erythema on the skin.

4. *Pneumonica*. Symptoms of pneumonia, but with the face pale, the features sunk, and a pulse, though apparently strong, stopped by a slight pressure; delirium, particularly after discharges.

5. *Puerperalis*. Typhus, usually attacking on the third day after delivery; pain and soreness of the abdomen; face pale; eyes sunk; a tensive pain in the forehead, with a retrocession of the milk.

Genus III. CATARRHUS. Inflammation of the glands of the mucous membrane, with an increased discharge of mucus, at first thin, acrid and discoloured, afterwards whiter and of a greater consistence.

Sp. 1. *Cozyra*. Catarrhal inflammation of the membrane of the nose, fauces, and bronchiæ, with sneezing and coughing; occasionally epidemic and infectious.

Var. α *Contagiosa*, with typhus, and considerable depression of strength.

β *Senilis*, with fever slight and inconsiderable, but with great discharge of mucus.

γ *Arthritica*. From gout repelled or irregular, with a copious discharge of an acrid, greenish, mucus.

δ *Trachealis*. Great difficulty of breathing, with a stridulous sound, terminating in suffocation from a concreted effusion.

2. *Dysenteria*. Violent colic, with tenesmus; very frequent stools, mucous and often bloody, rarely, except in the decline of the disease, feculent; often epidemic; generally infectious.

Var. α *Epidemica*. With typhoid fever, great dejection of spirits, and loss of strength.

β *Sporadica*. With milder fever, and less debility; not epidemic.

3. *Caliaca*. Colic generally without fever, except after some continuance; without tenesmus; the discharges mucous without infection.

4. *Phthisis*. Cough, at first short and dry, afterwards more violent, with a mucous, and at last a purulent, expectoration; great debility and emaciation; fever exacerbating in the evening, pulse unusually quick.

5. *Cystirrhæa*. A light, white, flocculent discharge accompanying the urine, not fetid; micturition painful without tenesmus.

6. *Leucorrhæa*. A mucous discharge from the vagina, of a yellowish white colour, verging to green; without infection, or pain in

making water; disappearing during menstruation.

7. *Gonorrhœa*. A discharge resembling that of leucorrhœa, from the penis or vagina, generally with inflammation at the orifice of the urethra, and pain in making water; not disappearing during menstruation.

Var. α *Veneræa*. From venereal infection; contagious.

β *Benigna*. With little pain in making water; not contagious.

8. *Leucorrhœis*. A whitish discharge from the anus, often with hæmorrhoidal tumours, sometimes periodical.

Genus IV. *ARTHRITIS*. Inflammation usually confined to the joints, occasionally extending to the adjoining muscles; generally with fever; often with hectic.

- Sp. 1. *Rheumatismus*. "Articular inflammation," chiefly of the large joints, with pain; synocha; generally increased heat of the part; not terminating in suppuration.

Var. α *Lumbago*. Rheumatic pain in the loins, not shooting down the thigh; chiefly felt on motion.

β *Ischias*. Pain in the hip joint; without peculiar debility, emaciation of the nates on the affected side, or elongation of the limb.

γ *Pleurodyne*. Pneumonia rheumatica, q. v.

2. *Arthrodynia*. "Articular inflammation," with little or no fever; limb cold and rigid, without swelling.

3. *Podagra*. Inflammation and pain, chiefly of the smaller joints, preceded by anorexia, dyspepsia, a dejection of spirits, or want of sleep; returning after intervals, sometimes regular, and alternating with atonic, occasionally with inflammatory, affections of the head, stomach, or bowels.

4. *Hydrarthrus*. Deep-seated pain in the joints; swelling slight, without discoloration, often ending in suppuration, sometimes within the capsular ligament; attended with hectic.

Var. α *Psoadicus*. Pain beginning in the back, increased by stooping, or extending either leg; the suppuration pointing in the groin, the thigh, or the back; with hectic.

β *Coxarius*. Pain in the coxendix, at first slight and obtuse, afterwards acute; nates of the side affected extenuated, leg elongated, attended at last with hectic.

γ *Genu*. Hydrarthrus affecting the knee, attended in the latter stages with acute pain and hectic fever; in favourable circumstances terminated by ankylosis.

Genus V. *EXOSTOSIS*. A swelling apparently of the bone, generally near the middle, painful,

in the heat of the bed, and sore to the touch, generally from lues.

- Sp. 1. *Periosteæa*. Chiefly confined to the periosteum.

Order III. *ERUPTIONES*. Erythematous or phlegmonous eruptions on the surface, or the fauces, generally distinct; the latter rising above the skin, circumscribed, roundish; generally containing a fluid, sometimes in the decline purulent.

Genus I. *EXANTHEMA*. Eruptions generally depending on specific contagion, often epidemic, usually with fever.

- Sp. 1. *Variola*. Synocha, followed on the third day by the eruption of small phlegmons, completed on the fifth, suppurating, and forming crusts on the eighth, frequently leaving cuticular cicatrices or depressions.

Var. α *Confluens*. Phlegmons numerous and crowded, not rising in separate heads.

β *Crystallina*. Phlegmons filled with a clear watery fluid, seldom or imperfectly suppurating.

2. *Vaccina*. Phlegmon only on the part affected, from inoculation or infection in consequence of milking diseased cows; the phlegmon nearly round, with a dark brown depression in the middle; fever usually inconsiderable.

3. *Rubeola*. Catarrhus, with synocha; cough harsh; eyes inflamed and watery; followed by red papulæ, running together, scarcely rising above the skin; terminating in branny scales.

Var. α *Maligna*. Catarrhus with typhus; the papulæ dark, interspersed with dark coloured petechiæ; great oppression at the breast, without expectoration.

β *Variolodes*. Papulæ resembling phlegmons, catarrhal symptoms absent or inconsiderable.

4. *Varicella*. Pustulæ resembling the variolous, following a slight fever, after no definite period; seldom suppurating, but disappearing in branny scales.

5. *Miliaria*. Fever typhoid, with sighing, anxiety, and sweat of a sour smell; followed by numerous distinct papulæ, terminating in points.

Var. α *Purpura*. Apices of the papulæ purple; with typhus.

β *Alba*. Apices of the papulæ white, with slight synocha.

6. *Scarlatina*. Fever, often at night with delirium; on the fourth day a swelling, and a scarlet effusion on the face, with a similar effusion soon afterward on the breast, and in succession on the body and legs; the effusion often in large spots, frequently coalescing and terminating in branny scales.

Var. α *Cynanchica*. Scarlatina, "with phlogosis anginosa."

7. *Erysipelas*. After a fever of three or four days, phlogosis in the face, occasionally in other parts, accompanied, more often succeeded, by delirium; terminating in branny scales.

Var. α *Intermittens*. Erysipelas irregularly returning at distant intervals, chronic, with little fever.

8. *Pestis*. Asthenic fever, with great internal heat, terminating in bubos of the groin or axilla, sometimes in anthrax.
9. *Pemphigus*. Fever generally typhoid, terminating in vesicles filled with thin ichor; sometimes with a lighter coloured serum.
10. *Aphtha*. Fever followed after a few days by a swelling in the tongue, and a purplish colour on the fauces, terminating in white, frequently distinct, sloughs on the fauces and palate; frequently with diarrhoea and cœliaca, sometimes with hæmorrhage.

Var. α *Maligna*. The sloughs of a darker colour, leaving, when abraded, a dark ragged ulcer.

β *Sporadica*. Seldom attacking numbers at the same time; the eruption more slightly connected with fever.

11. *Urticaria*. Exacerbating fever; eruptions after each attack, sometimes resembling the stinging of nettles, sometimes rising in small papulæ; seldom suppurating, but terminating in dry scabs.
12. *Strophulus*. After sickness and uneasiness in new born children, an eruption of red papulæ, rising above the skin, frequently coalescing, though sometimes distinct, and filled with a serous fluid.
13. *Achor*. Swellings in different parts of the body, resembling phlegmons, discharging sebaceous, sometimes puriform, matter, from minute foramina; fever slight, often indistinct.

Genus II. *EFFLORESCENTIA*. Eruptions not rising, or rising slightly above the skin, without fever; not epidemic.

- Sp. 1. *Psora*. Pustules, at first white, afterwards filling with serum, degenerating into little red inflamed papulæ, chiefly between the fingers; itching, particularly when warm in bed; contagious.

2. *Prurigo*. Itching in different parts, often without pustules, or with pustules not filling with serum; terminating in branny scales.

3. *Lichen*. An extensive eruption of papulæ, generally connected with internal disease, usually terminating in scurf; recurrent; not contagious.

Var. α *Purpura chronica scorbutica Hoffmani*.

4. *Herpes*. Efflorescence, consisting of clusters of small red pustules, itching with a burning heat, and terminating in a branny crust.

5. *Phlyctena*. Vesicles pellucid, filled with a serous fluid, inflamed at the base; painful when burst.

6. *Petechia*. Spots not rising above the skin, re-

sembling the bites of fleas, at first red, afterwards of a cinnamon colour, in succession brown and black, often with spontaneous hæmorrhage.

7. *Vibex*. Marks on the skin in stripes, of a dark brown colour, often mixed with petechiæ.

8. *Tinea*. Ulcers in the hairy scalp, pouring out a fluid concreting into a white friable crust; generally rounded in its figure.

9. *Eczema*. Small vesicles with considerable itching; vesicles scarcely distinguishable from papulæ, with often an erysipelatous swelling; from the use of mercury.

Order IV. *PROFLUVIA*. A flow of blood, or of secreted fluids, from their respective vessels or ducts; often with fever.

Genus I. *HÆMORRHAGIA*. A discharge of blood.

- Sp. 1. *Epistaxis*. "Hæmorrhage" from the nose, preceded by headach, and often a burning heat in the nose.

2. *Stomacace*. Blood oozing from the gums, without fever.

3. *Hæmoptysis*. Blood thrown up by coughing, preceded by flushed cheeks, dyspnœa, a sense of weight in the head and breast.

4. *Hæmatemesis*. Blood thrown up by vomiting, preceded by sickness and faintness; seldom coagulated, generally in considerable quantity.

Var. α *Febrilis*, preceded or attended by fever.

β *Asthenica*, in weak or scorbutic habits.

5. *Melæna*. A discharge of a blackish substance from the stomach or intestines often foliated or filamentous, sometimes verging to a yellowish brown colour.

6. *Hæmorrhoids*. Blood flowing from the anus, often preceded by pain and load in the head; frequently accompanied by painful, livid tumours near the verge of the anus, or a painful weight within the rectum.

7. *Ménorrhagia*. An unusual flow of blood from the vagina, often with a sense of weight in the loins, and occasionally with a sensation of weight forcing down on the os externum.

8. *Hæmaturia*. A considerable discharge of blood with the urine, often with violent forcing pains, felt at the extremity of the penis; tenesmus, without sickness.

9. *Vicaria*. Discharges of blood from different organs, in consequence of suppressed evacuations, or the natural ones not taking place.

Var. α *Narium*, from the nose.

β *Pulmonum*, from the lungs.

γ *Ventriculi*, from the stomach.

δ *Venarum hæmorrhoidalium*, from the hæmorrhoidal veins.

ϵ *Vesicæ*, from the urinary bladder.

ξ *Gingivarum*, from the gums.

Genus II. *APOCENOSIS*. Increased discharges from

glands, or the cavities into which their contents are usually poured; in general without fever.

Sp. 1. *Vomitus*. A discharge from the stomach, either bilious, mucous, or watery.

Var. α . *Cholera*. A discharge of bile, often with colic; when violent and incessant, attended with spasms of the legs.

β . *Pyrosis*. A discharge of cold water, generally preceded by acute pain.

γ . *Atonica*. Constant vomiting of whatever is taken in, with a large proportion of heavy mucus; often after repelled gout and eruptions, generally in old age; the consequence often of high living, and the abuse of spirituous liquors.

2. *Diarrhœa*. Frequent discharges by stool; often with colic; generally without fever.

Var. α . *Lienteria*. The discharge apparently chylous.

β . *Aquosa*. Without fœces or scybala.

3. *Diabetes*. An immoderate discharge of urine, with thirst, anorexia, and emaciation; without pain or fever.

Var. α . *Mellitus*. Urine sweet, without any portion of the urea or animal matter.

β . *Aquosus*. Urine differing little from water; discharged often involuntarily.

γ . *Mucilaginosus*. Containing a large proportion of mucilage or gluten.

4. *Diuresis*. A discharge of limpid urine, returning at intervals, without emaciation.

5. *Ephidrosis*. An immoderate discharge of sweat without fever.

6. *Plica*. The hair twisted in cirrhi, in consequence of a discharge of blood or serum from the bulbs into the cavities of each hair; with fever; contagious; and in Poland endemical.

7. *Epiphora*. An increased discharge from the lachrymal glands.

8. *Ptyalismus*. An increased discharge of saliva.

Var. α . *Hydrargyratus*. In consequence of large doses of mercury, often continuing after the medicine has ceased to act.

β . *Asthenicus*. The drivelling of idiots, or those affected with palsy.

γ . *Mellitus*. With a sweetness or mucilaginous taste in the mouth.

9. *Exoneirosis*. An involuntary discharge of semen during sleep, independent of lascivious dreams.

Order V. SUPPRESSORII. Obstructions of natural passages, and of natural or morbidly critical discharges.

Genus I. CONSTRICTORIA. "Obstruction" from organic disease.

Sp. 1. *Dysphagia*. Difficulty of swallowing from a sensible obstruction of the œsophagus.

2. *Obstipatio*. Obstruction in the track of the stomach and intestines below the œsophagus.

Var. α . *Pylori*. Food taken into the stomach, often returned by vomiting, eructations, loss of strength and flesh; with costiveness; frequently unconquerable, always obstinate.

β . *Intestinorum*. Bowels obstinately costive, without vomiting; fulness often in some part of the abdomen, to be felt through the integuments.

γ . *Recti*. A retention of solid feculent matter, with tenesmus, and a slight watery diarrhœa; a contraction often within the reach of the finger.

3. *Polyphus*. Obstructions in the heart or other natural passages.

Var. α . *Narium*. Breathing through the nose difficult or impossible; sometimes with load in the head, or symptoms of hydrocephalus.

β . *Cordis*. Palpitation of the heart, with anxiety and dyspnœa.

γ . *Uteri*. Weight and bearing down of the uterus, generally with amenorrhœa, often with a serous discharge resembling leucorrhœa; generally without pain.

Genus II. ANHELATIO. An obstruction to the passage of air into the lungs.

Sp. 1. *Asthma*. A difficulty of breathing, with a sense of constriction in the breast; hissing sound in respiration; cough, terminated by expectoration; temporary; recurrent.

Var. α . *Spontanæum*. Suddenly, often unexpectedly, recurring without any other disease; seldom terminated by expectoration, or at least expectoration in any considerable quantity.

β . *Plethoricum*. From suppressed sanguineous discharges, or from plethora.

γ . *Senile*. Frequently recurring, with copious expectoration.

2. *Dyspnœa*. Difficulty of breathing constant, with a sensation of weight, rather than constriction on the breast; cough constant, with little or insufficient expectoration.

Var. α . *Catarrhalis*. Chronic catarrh of old people.

β . *Terrea*. Dyspnœa from calculous concretions, frequently discharged.

γ . *Aquosa*. With a scanty discharge of urine, in leucophlegmatic habits.

Genus III. EPISCHEISIS.

§ I. *Sanguinea*.

Sp. 1. *Amenorrhœa*. A deficiency or obstruction of the menstrual discharge, at the time of life, or the periods, when it should naturally take place.

Var. *a. Dolorifica*. A deficient discharge, attended with violent pain.

2. *Dyslochia*. A want or suppression of the lochial discharge.

3. *Dyshæmorrhœia*. A suppression of the hæmorrhoidal discharge, attended with head-ach, dyspepsia, and fever.

§ II. *Excretorium*.

4. *Icterus*. An obstruction of the bile, known from unfrequent, white stools, and a yellowness of the skin; urine of a yellow red colour, tinging linen immersed in it of a yellow colour.

Var. *a. Calculosa*. With acute pain at the pit of the stomach.

β Biliosa. In persons of a studious, sedentary life, often attended with hypochondriasis.

γ Spasmodica. Following violent fits of anger.

3. *Ischuria*. An obstinate, and often a complete, suppression of urine.

a Renalis. With a pain and weight in the loins, without tumour in the hypogastric region.

β Ureterica. With a sense of weight in the lower part of the pelvis, without hypogastric tumour.

γ Vesicalis. With a tumour in the hypogastrium, a frequent desire to make water; a pain felt at the extremity of the penis.

δ Uræthralis. With a tumour in the hypogastrium, a frequent desire to make water, and a sense of obstruction in the urethra, not admitting the introduction of a catheter.

ε Paralytica. Without symptoms of accumulation in any part of the urinary track.

6. *Dysuria*. A painful, and in some degree an obstructed, discharge of urine.

Var. *a. Ardens*. With pain, and often inflammation of the bladder and urethra.

β Spasmodica. From spasm in other parts, communicated to the neck of the bladder.

γ Compressa. From tumours in the neighbouring parts, compressing the neck of the bladder.

δ Irritata. From calculus.

ε Arthritica. In gouty habits, with a discharge of greenish mucus.

7. *Sitis*. An unconquerable desire for liquids, sometimes accompanying diabetes or fever.

8. *Dyspermatusmus*. An obstruction to the excretion of semen, or a slow, painful, and insufficient discharge of it.

Var. *a. Organicus*. From strictures of the urethra, or neighbouring tumours.

β Spasmodicus. From terror, apprehension, or sudden surprise.

9. *Agalaxis*. A suppression of milk, either when first expected, or after the secretion has come on.

Order VI. SPASMI. Violently continued or irregular action of the muscular fibres of different parts.

Genus I. TONOS. Muscular contractions, sometimes remitting, but not succeeded by complete relaxation.

Sp. 1. *Trismus*. A violent and continued action of the muscles which close the lower jaw.

Var. *a Infantum*. Trismus of newly born infants, with usually a retention of the meconium.

β Traumatica. From wounds, particularly lacerated ones in hot climates; sometimes from ulcers.

2. *Tetanus*. Tonic spasm of the voluntary muscles, beginning with pain and tension on the back of the neck, occasionally confined to one side, or, at least, a considerable portion of the body.

Var. *a Emprosthotonus*. Tetanus of the flexor muscles.

β Opisthotonus. Tetanus of the extensors.

γ Catochus. Tetanus gradually approaching without dyspnœa.

3. *Contractura*. Tonic spasm of particular muscles.

Var. *a Colli*. Of the sterno mastoid, producing the wry neck.

β Artuum. Of different limbs, chiefly from confinement or the irritation of abscesses.

4. *Priapismus*. Tonic spasm of the erectores penis, with violent pain.

5. *Strabismus*. Tonic spasm of the abductores, the adductores, occasionally of the other muscles of the eye, usually at first attended with double vision.

Genus II. CLONOS. Muscular contractions rapidly and repeatedly succeeded by relaxation.

Sp. 1. *Epilepsia*. Clonic spasm of all the muscles, generally with carus, returning after intervals, often regular.

Var. *a Cerebralis*. Without evident cause, or preceding symptoms, except sometimes a slight giddiness.

β Sympathica. Preceded by an obscure feeling in a distant part, and a sensation of cold air, rising from that part to the head.

γ Irritata. From irritation in different parts, particularly the stomach and the head, without the sensation of cold air.

2. *Convulsio*. Clonic spasm of all the muscles, without carus, seldom recurrent.

Var. *a Irritata*. From the stomach, injuries of the brain, teething, &c.

3. *Hysteria*. Clonic spasm, preceded frequently by a rumbling sound of the stomach, with a sensation of a ball in the throat, impeding deglutition; urine copious and limpid; temper variable.

Var. α *Asthenica*. In weak mobile habits, often without any evident cause.

β *Irritata*. From any sudden affection of the mind, or irritations in the stomach and bowels.

4. *Chorea*. Clonic spasm, particularly in the fingers, legs, and lips, producing strange gesticulations and grimaces; with a weakness of either leg; often insensibility.

5. *Raphania*. Clonic spasm, with often a contraction of the joints; pain very violent; intermitting.

6. *Palpitatio*. Violent and irregular action of the heart.

Var. α *Cardiaca*. From diseases of the heart, or larger arteries.

β *Hysterica*. Occurring in the mobile habits, subject to hysteria.

γ *Irritata*. From irritations chiefly in the stomach and bowels.

7. *Pertussis*. Cough violently convulsive; inspiration sonorous; recurring in paroxysms; contagious; at the end with expectoration.

8. *Colica*. Violent pain in the bowels, remitting and exacerbating, chiefly felt about the navel, with vomiting and costiveness.

Var. α *Stercoraria*. From accumulated contents of the intestines, preceded by costiveness or slight watery stools.

β *Venenata*. From poisons, often of lead.

9. *Hydrophobia*. Convulsions of the pharynx, excited by an attempt to drink water or any fluid, preceded by melancholy, and increased sensibility; in consequence of the bite of a mad animal.

10. *Pandiculatio*. The extension of almost all the limbs; involuntary, generally with gaping.

11. *Beriberia*. A convulsive retraction of the knees in walking, with tremor, a sense of creeping, and a hoarseness of voice.

Order VII. ADYNAMIÆ. A defect or a diminution of sensation, motion, or the natural functions; often with stupor.

Genus I. COMA. A deep and continued stupor, with a diminution or loss of muscular power; often with stertor.

Sp. 1. *Carus*. A continued stupor, and insensibility without stertor.

Var. α *Cataleptis*. Limbs flexible, continuing in the posture in which they were placed.

β *Ecstasis*. Limbs rigid, retaining the position in which the person was seized.

2. *Apoplexia*. Coma with stertor.

Var. α *Sanguinea*. After heat, violent exercise, or blows on the head; in the young and plethoric.

β *Serosa*. Coma gradually approaching in advanced life.

γ *Hydrocephalica*. Coma, with scanty

urine, obstinate costiveness, and strabismus.

δ *Asthenica*. Coma, rapidly, often suddenly approaching in impaired constitutions; frequently with convulsions.

ϵ *Suffocata*. From noxious gases, hanging or drowning.

ζ *Metastatica*. From serous, excretory, or sanguineous obstruction, gout or repelled eruptions.

3. *Paralysis*. A loss of motion in some of the limbs, and impaired natural functions; without stertor; sometimes, without stupor.

Var. α *Hemiplegia*. With loss of motion on one side.

β *Paraplegia*. With loss of motion in the lower extremities without stupor.

γ *Partialis*. With loss of motion in particular limbs, without stupor or stertor.

δ *Venenata*. From poison of lead, tobacco, or deleterious gases.

4. *Syncope*. A diminished motion of the heart and arteries, often with stupor; occasionally recurring.

Var. α *Cardiaca*. From some defect in the heart or larger vessels.

β *Metastatica*. From retrocession or repulsion of exanthemata, or gout; sometimes from fever or scurvy.

γ *Angens*. With violent pain in the breast, shooting down to the arms, often with a sense of stricture, on the breast.

Genus II. ANEPITHYMIA. A diminution of power in the different functions.

Sp. 1. *Anorexia*. Loss of appetite, with languor, flatulence, and a sense of sinking in the stomach.

2. *Dyspepsia*. Flatulence with sour eructations; often with sickness, and a putrid taste at the back part of the fauces.

Var. α *Idiopathica*. Without any previous disease.

β *Metastatica*. From repelled eruptions, obstructed discharges, depressing passions, atonic gout, &c.

3. *Chlorosis*. Languor and debility, with pale complexion, often dyspepsia; without fever; generally attendant on amenorrhœa.

4. *Amentia*. Impaired mental functions from excessive evacuations, irregular living, or old age; generally with debility.

5. *Amaurosis*. Impaired sight, with an enlarged pupil, not contracting on the approach of a strong light.

Var. α *Intermittens*. Blindness sometimes recurring at night; at others only on the return of daylight, nyctylopiæ auctorum.

6. *Agnesia*. The power of generation impaired.

7. *Atrophia*. Emaciation of the whole body,

F

often with hectica, frequently with a swelling of the abdomen.

Order VIII. PARANOLÆ. Violent or irregular exertion of the different corporeal or mental functions, often alternating with languor and depression of body or mind.

Genus I. MOROSITAS. Violent or irregular derangements of the appetite, occasionally of digestion.

Sp. 1. *Bulimia*. A craving appetite for a larger proportion of food than the stomach can digest, or oftener than the system requires.

Var. α *Helluonum*. From indulgence of gluttony.

β *Syncopalis*. From a sense of inanition.

γ *Convalescentium*. After fevers, or excessive discharges.

2. *Pica*. An aversion to common food, and an eager desire for substances not esculent or alimentary.

Var. α *Chlorotica*. Attending amenorrhœa, often about the age of puberty.

β *Pregnantium*. The pica of pregnancy.

γ *Afrorum*. Cachexia, Africana, dirt eating; a disease of negroes in Jamaica.

3. *Hypochondriasis*. Dyspepsia with costiveness, fancies irregular, mind desponding.

Var. α *Nostalgia*. Hypochondriasis, with a longing for home, when in a foreign country.

Genus II. HALLUCINATIO. Violent or irregular sexual passions.

Sp. 1. *Satyriasis*. Violent and excessive lust, with priapism.

2. *Nymphomania*. Satyriasis of females, with inflammation of the nymphæ.

3. *Erotomania*. Chaste love in excess, when the object is unattainable; with melancholy, sleeplessness, and often hectic.

Genus III. VESANIA. Irregular exertion of the mental functions, occasionally with excess of excitement, sometimes of depression; without coma or fever.

Sp. 1. *Melancholia*. Depression of the mental powers with erroneous judgment, though in general with correct perceptions, without dyspepsia.

2. *Mania*. Erroneous perceptions or judgment, often of both; with great violence.

Var. α *Mentalis*. Apparently from passions of the mind only.

β *Metastatica*. From repelled eruptions, gout, or obstructed discharges.

γ *Venenata*. From narcotic poisons, paraphrosyne auctorum. Van Helmont.

3. *Oneirodynia*. Disturbed sleep, sometimes with an imagination peculiarly active, at others, with a sense of oppression.

Var. α *Activa*. Sonambulism.

β *Gravans*. Ephialtes, night mare.

Order IX. CACHEXIÆ. A change in the colour of

the skin, generally from a chemical change in the nature of the fluids.

Genus I. IMPETIGO. A change of colour in the whole body.

Sp. 1. *Scorbutus*. Livid spots over the whole body, particularly at the roots of the hair, with great loss of strength, and bleeding from the gums; generally from food not alimentary.

Var. α *Nautarum*. The scurvy of sailors on long voyages, without a supply of vegetables.

β *Asthenica*. Occurring in besieged towns, or from poor living in confined apartments without exercise.

2. *Syphilis*. Spots sometimes level with the skin, but occasionally rising in small tubercles, particularly at the roots of the hair, degenerating into crusty ulcers; pains in the middle of the bones, particularly when warm in bed, with exostosis; generally after some local complaint of the genitals.

3. *Aurigo*. A dark yellowness of the skin, with dyspepsia, generally terminating in dropsy; stools natural; urine not tinging linen yellow.

4. *Phenigmus*. Redness of the skin, either diffused or in spots; without fever.

5. *Melasma*. A dark blue or purple colour of the skin, generally with dyspnoea and palpitation, from the blood not flowing freely through the lungs.

6. *Rubigo*. A general redness of the skin: often with coma.

Genus II. MACULA. A partial change of colour.

Sp. 1. *Ecchymosis*. A blue colour in particular parts, sometimes black, changing to a brown and yellow; from fluids effused in consequence of a bruise.

2. *Nevus*. Irregular marks on the skin, sometimes of a bright red, at other times yellow or brown, absurdly attributed to the mother's longing.

Order X. INTUMESCENTIÆ. Enlargement of the whole body, or of particular parts.

§ I. Total.

Sp. 1. *Polysarcia*. General enlargement, usually from accumulated fat.

§ II. Partial.

2. *Rachitis*. Bones of the joints enlarged, head swollen, particularly in front; with physconia.

3. *Exostosis*. See PERIOSTEÆ.

4. *Physconia*. Enlargement of the abdomen, without fluctuation.

Var. α *Hepatica*. A hard tumour in the right hypochondrium, verging towards, and sometimes appearing at, the pit of the stomach.

β *Splenica*. A little below the false ribs, on the left side, and towards the spine of that side.

- γ *Renalis*. Oblong; in the loins on either side, near the spine.
- δ *Uterina*. In the hypogastrium on either side; hard, with unequal edges.
- ε *Visceralis*. Filling more generally the abdomen.
- ζ *Mesenterica*. In irregular masses, yielding to pressure.
- η *Externa*. Distinct tumours, not referrible to any other species, of very different degrees of hardness and size.

§ III. Cuticular.

5. *Elephantiasis*. Skin thick and rough; hair falling off; face deformed by hard tuberosities; insensibility in the limbs; voice harsh and nasal; contagious.
6. *Frambesia*. Small tubercles resembling mulberries, chronic; often contagious.
7. *Pellagra*. Inflation of the skin, with tubercles, in parts exposed to the air except the face; at first remitting; preceded by melancholy and debility; at last constant, with increased irritability and an alienation of mind.
8. *Lepros*. Skin covered with hard, branny, white crusts; hair thin, or falling off; voice harsh and weak; contagious.
 Var. α *L. Ichthyosis*. Crusts imbricated like the scales of a fish.
 β *L. Furfuracea*. Crusts branny, deciduous, leaving an inflamed, often an ulcerated, surface.
9. *Verruca*. Hard cuticular swellings, circumscribed and distinct; red at the base; painful when bruised.
10. *Ganglion*. Soft round swellings on the tendons, elastic.

§ IV. Glandular.

11. *Sarcoma*. Soft swellings of the consistence of flesh, frequently in the sebaceous glands.
 Var. α *Pterygium*. In the canthus of the eye.
 β *Hordeolum*. At the edge of the eyelids.
12. *Scrofula*. Swellings of the conglobate glands, chiefly in the neck; with a florid complexion, fair smooth skin; upper lip usually enlarged; tumours seldom suppurating, or the wounds with difficulty healed.
13. *Encystis*. A moveable soft swelling without pain or inflammation.
 The varieties are not easily distinguished; or synonymous.
14. *Bronchocoele*. A swelling of the glands in the fore part of the neck without inflammation or scrofula, never suppurating, sometimes occasioning dyspnoea.
15. *Scirrhus*. A tumour of any gland, hard, and unequal to the touch.
16. *Cancer*. An ulcer in any glandular organ, sometimes in other parts, frequently following scirrhus; swelling large and livid, veins full and dark, pains acutely lancinating.
17. *Parotis*. A large, hard, irregular swelling below the ear; suppurating with difficulty, forming a malignant ulcer, without much pain, generally with hectic.

Genus II. PHLEGMATIA. Increased bulk from accumulated fluids, generally with a dry parched tongue, and a diminished secretion of urine.

Sp. 1. *Anasarca*. A pale inelastic swelling at first in the legs, afterward extending over the whole body, generally serous.

Var. α *Opilata*. From compression of the veins, in consequence of tumours either natural, as in gravidity, or morbid, which prevent the return of venous blood.

β *Exanthematica*. After erysipelas or scarlatina, occasionally after other eruptions if suppressed.

γ *Anæmia*. In constitutions exhausted after long fevers.

δ *Dolens*. Tumour of one leg painful, inelastic; after parturition.

2. *Hydrocephalus*. A soft inelastic swelling of the head, with the sutures of the skull preternaturally open.

3. *Hydrorachitis*. A soft inelastic tumour on the loins; vertebræ deficient; lower extremities paralytic.

4. *Hydrothorax*. A sense of fulness and tension in the chest; dyspnoea on lying down; sleep disturbed by epialtic symptoms.

5. *Ascites*. A swelling of the belly, tense, imperfectly elastic; with a sense of fluctuation if the hand be placed on one side of the belly, and a slight stroke given to the other.

Var. α *Asthenica* in exhausted constitutions.

β *Metastatica*. From repelled gout or eruptions.

γ *Opilata*. From diseased viscera.

δ *Imperfecta*. Fluctuation partial, with irregular hardness in the other parts of the abdomen.

6. *Hydrometra*. A circumscribed tumour in the hypogastrium; urine in small quantities, without ischuria or pregnancy.

7. *Hydrocele*. Soft pellucid pyriform tumour of the scrotum, gradually increasing without pain.

8. *Exomphalos*. A soft inelastic tumour at the navel, yielding to the touch with a sense of fluctuation.

Genus III. CYSTIS. Increased bulk, without the affection of any large portion of the body; generally from a fluid.

Sp. 1. *Aneurisma*. A soft tumour in the course of a large artery, with pulsations, synchronous with those of the heart; not steatomatous nor glandular.

2. *Varix*. A soft tumour on and connected with a vein; veins above indistinct.

3. *Mariscus*. Small, soft, and often livid tumours round the anus.

4. *Staphyloma*. A watery tumour on the eye.

5. *Hydatis*. A cuticular vesicle full of a clear fluid in the viscera, often the causes of ascites. Vide in verbo.

6. *Abcessus*. A circumscribed phlegmonous

tumour, at first hard, afterward with a feeling of fluctuation, generally with a peculiarly soft point at one particular part.

Genus IV. EMPHYSEMA. Increased bulk; tumour elastic; with a crackling sound when pressed.

Sp. 1. *Pneumatosia*. Emphysema of the whole body.
Var. α *Traumatica*. From a wound of the thorax.

β *Venenata*. From fish poison, or other narcotics.

2. *Tympanites*. Emphysema of the abdomen, sometimes with costiveness and atrophy.

α *Intestinalis*. From wind confined in the intestinal canal, relieved by discharges of flatus, or by stools.

β *Abdominalis*. From wind in the cavity of the abdomen, without costiveness.

3. *Physometra*. A smooth elastic tumour in the hypogastrium, with occasional discharge of flatus through the os tincæ.

Order XI. ECTOPIÆ. Parts removed from their proper place, with tumour in the region usually below, and disordered functions of the displaced organ; with superficial, sometimes with deep-seated inflammation; generally painful.

Genus I. HERNIA. Displaced viscera covered with the integuments.

For the species, see general classification.

II. PROLAPSUS. Organic displacements without integuments.

See general classification.

III. LUXATIO. Displacement of any joint from its socket, or articulation. See LUXATIO.

Order XII. PLAGÆ. A separation of parts naturally united.

Genus I. DIALYSIS. A disunion of soft parts.

Sp. 1. *Ulcus*. Dialysis, with purulent or ichorous discharge, and generally loss of substance.

2. *Vulnus*. Dialysis by mechanical force, generally bloody.

3. *Punctura*. A division of the skin extending inwards.

4. *Excoriatio*. A separation of the cuticle or skin not extending inwards.

5. *Ruptura*. A separation of tendon or ligament, without displacement of the joint.

6. *Sinus*. An ulcerated cavity, extensively sinus, terminating in a narrow orifice.

7. *Fistula*. A sinus with callous sides often reaching an ulcerated or carious bone.

Genus II. CLASIS. A disunion of hard parts.

Sp. 1. *Fractura*. A violent and mechanical disunion of bone.

α *Complicata*, combined with "Vulnus."

2. *Fissura*. Bone not wholly divided, but partially split.

3. *Rhagas*. A hardened crustaceous wound.

4. *Arthrocace*. An ulcer in the marrow, or in the epiphyses, with caries, exostosis, pain and hectic.

Genus III. DIASTASIS. Separated cartilages.

Sp. 1. *Symphysis pubis*.

Having thus offered those definitions which, in the generality of diseases, are sufficiently descriptive for the purpose of discrimination, we shall add a few remarks in defence of our arrangement and nomenclature, limiting their extent chiefly to necessary explanations.

We have observed, that the natural groups of diseases, like the natural orders of the botanists, were too obvious not to be caught at by every nosologist. Fevers, inflammations, and hæmorrhages, are as evidently connected as the tetradynamizæ, siliquosæ, or umbellatæ; and it is only necessary either to escape from confines purposely narrowed, or from wanderings too extensive.

Fevers form certainly one of these natural groups, and we have separated them from inflammation, since, in many diseases which decidedly merit the latter appellation, the fever is occasionally slight or inconsiderable; so that complaints sometimes attended with considerable fever, if we wear the strict fetters of Dr. Cullen, must be placed at an immeasurable distance. The definition of fever has been supposed a task of peculiar difficulty, but this has been enhanced by refinements, perhaps quibbles. The previous shivering is sometimes not observed, but, in such cases, it ushers in the paroxysms, which are at first distinct: the pulse is not always quickened, but this exception is peculiarly rare, and, if not quickened, they are extremely weak. In every case of fever, the powers of the mind are, in some degree, impaired, the tendons, at the wrist, tense. Headach, which occurs in many definitions, is here omitted, as unnecessary to the distinction, and as connecting fevers with inflammation. According to Dr. Clutterbuck's idea (see *NERVOSA FEBRIS*) it would be indispensable, but it certainly is owing to congestion in the brain, and, consistently with the ideas offered, is more connected with active inflammation than with pure fever.

The first genus is *intermittens*, and, from the view formerly given, it must be strictly a genus, since it is composed of individual diseases, which are varied only by accidental circumstances. A question has arisen, whether a febrile attack, terminated by one paroxysm, is truly a fever. We have not included an ephemera, as it is often an accidental circumstance, and admits of no practical directions, which will not apply to intermittents, consisting of repeated paroxysms. Were an ephemera to be admitted, the sudor anglicus, terminating either in returning health or in death, within twenty-four hours, should be a species; but the disease is no longer known, and the circumstances relating to it are not ascertained with such precision as to ensure our confidence.

It was necessary to introduce the terms "generally regular," since the quintana, sextana, &c. of authors are confessedly irregular, and these are included under the "erratica." The last species, *complicata*, includes the tertianæ and quartanæ duplices or duplicatæ of authors. Each occasions an apparent irregularity, and the succession of the double intermittents may give some

ambiguity to the character, as it precludes, in a few instances, the termination by sweating.

If a specific distinction can be established in any branch of natural history, it must be so in the separation of *remittents* from *intermittents*. The fever, in no period wholly disappears, and one paroxysm only occurs in twenty-four hours. It is chiefly necessary to remark, that by *icterodes* is meant the yellow fever of America, and by *asthenica*, highly debilitating remittents, which De Hahn observed at Breslaw, and sir John Chardin experienced at Gombron. These are generally epidemics, and we have introduced the *hectica*, to discriminate that kind of exacerbating fever which arises from causes *within* the system. It is indeed generally symptomatic, but when the original disease is not obvious it is itself original. Indeed this fever merits particular attention, since it so frequently attends weak and irritable habits as to give to chlorosis often the appearance of phthisis, and it admits of accurate discrimination.

The genus *continua*, continued fevers of authors, is sufficiently established, and the species are those of Dr. Cullen. The existence of *synocha*, independent of topical affection, has been doubted, but the subject has been already considered. See *INFLAMMATORIA FEBRIS*. The varieties of typhus are sufficiently obvious, but we may add, that the *neurodes* is the *NERVOSA FEBRIS*, q. v. and the *gastrica*, the common bilious epidemic. The only doubt which will arise is, whether this is not a species of *synochus*. Perhaps it ought to be so; and, in general, the greater number of typhi are truly *synochi*.

We reserved, when treating of fever, for this place, a very obvious subject of discussion, viz. how far the numerous varieties described by authors really merit particular distinction. To examine it fully, however, would require a reference to each, and an examination of the peculiar symptoms of the fever, which every author has described; an inquiry that might fill a volume. In general, however, it would be found, that these numerous fevers are chiefly distinguished by some leading symptom; that the epidemic is, in other respects, the same; nor can any be discovered, which is not either intermittent, exacerbating, or more continued, which has not one or two remissions in twenty-four hours. (See *PITUITA*.) Dr. Cullen, with almost every practitioner of discernment, rejects the *continent* fever of authors, viz. fever which continues without variation.

Phlegmasiæ constitute an order so strictly natural, that it could not escape the attention of any nosologist. Yet there are such obvious anomalies in the order, as established by each author, that if comprehensive, it must be in the same proportion less natural. If active inflammations are arranged in this order, many of the erythemata must be included: if inflammations of the mucous membrane form a subordinate group, we cannot separate *leucorrhœa* and *gonorrhœa*, because general fever is occasionally wanting. It was necessary to guard the definition with peculiar care, and the diseases of this kind are distinguished by fixed pain, læsion of the functions of the part affected, with increased discharge from its vessels. When this increased discharge is not immediately obvious, it is discovered from the consequences, as adhesions, &c. The diseases of this order are the true inflammations; the erysipelatous; inflammations of the mucous membranes; of the joints,

of the muscles chiefly felt in the joints; and in the bones, often the periosteum. These are distributed in five genera; *inflammatio*; *phlogosis*, a term derived from the burning heat; *catarrhus*, a title taken in its more general sense; *arthritis*, rescued also from its more confined meaning; and *exostosis*, a word commonly employed. *Inflammatio* is chiefly distinguished by the character of the order, and the species are the usual genera. I shall add only some remarks, which may be less obvious.

The chances of war have obtruded on our notice an epidemic and contagious *ophthalmia*, the Egyptian; the sporadic is the common disease from cold; and the *o. tarsi*, the inflammation of the lids, usually a symptom of scrofula, though sometimes a truly epidemic disease. The *cynanche* has only two varieties in the strictest sense, yet, as a febrile disease, sometimes obstructing swallowing from local inflammation, the *parotidæa* (the mumps) could not be excluded; though, from what we have observed, we should be inclined to include it under *exanthema*. There are certainly doubts respecting the second, the *trachæalis*, for it generally accompanies the erythematous *cynanche*: it would, however, be rash to assert, that it never is seen from active inflammation of the upper part of the larynx. The difficulty of breathing generally arises from the tumour. The *crophi* is more properly referred to *catarrhus*.

The species arranged as varieties of *pneumonia* are, in almost every author, raised to the rank of *genera*; but the cause is the same, the part affected contiguous, the symptoms very nearly alike, and they often pass into each other. We have seen the same fever successively attended with each. These varieties cannot, indeed, be always discriminated; nor, in a practical view, is distinction necessary.

The *mediastina* of authors cannot, we think, be separated from *carditis*; and the *pericarditis* is equally undistinguishable. The varieties of *enteritis* cannot probably be always distinguished, though we have endeavoured to discriminate, with care, the one which more particularly requires distinction, the *c. peritonitis*, as its practical treatment differs. We are by no means confident that the other varieties can be distinguished, except the *rheumatica*, in which the pain is felt at the origin and insertion of the muscles. We have often distinctly observed this pathognomonic symptom.

The character of *nephritis* is certainly confined to one species, the *n. calculosa*, from a stone either in the pelvis of the kidney, or escaping through the ureters into the bladder. It is difficult, if not impossible, to distinguish real inflammation of the kidney, as the organ is, in general, insensible; and when inflamed, from its deep seat, the disease is generally confounded with *enteritis*: perhaps minute distinction is unnecessary. *Odontalgia* is generally considered as *rheumatic*, and it seems more properly to belong to articular inflammations. If disputed, however, there will be little inconvenience in removing it.

To include the erysipelatous inflammations, which we have connected under the genus *phlogosis* in this order, may appear improper, as the topical affection and the fever are so essentially different. Yet, in different climates, the same disease approaches to either genus. *Phlogosis* also is attended with topical redness, a læsion of the functions of the part, and a discharge from the neighbouring vessels. An additional advantage

arises from this arrangement, as it brings together diseases nearly resembling each other, which require distinction, as the inflammatory and putrid sore throat, the more active and putrid pneumonia. We see the distinction externally, in phlegmon and erythema, which are equally accounted inflammations; and authors have so generally acknowledged the connexion, that they have divided inflammations into membranous and parenchymatous. Dissection does not, however, countenance this arrangement; and if we examine minutely their definitions of the latter, they often seem to point out the diseases we have united in the present genus, which is a perfectly natural association, nor do the species require a comment. The number might perhaps be increased, since every active inflammation may be occasionally erysipelatous.

It has been remarked, that we have extended the meaning of *catarrhus*; and for this we have the authority of Schneider and Hoffman; indeed the etymology of the complaint. It was necessary to distinguish what is usually called *catarrhus*, therefore, by a new term, and we have adopted one of its synonyms, *coryza*. The varieties require some particular remarks. Of these, the first is, that, in nosological arrangements, the fever cannot always form a discriminating mark, since it even differs in the varieties of one species which cannot be excluded from it. Thus the *c. senilis* and *c. arthritica* are seldom attended with fever, while the common and contagious coryzae are accompanied with violent febrile symptoms, though of opposite kinds. 2. Even in diseases most apparently similar, the practice must be often different and even opposite, for the contagious and common coryzae require medicines very dissimilar, the *senilis* and *arthritica* still different ones. It does not, however, follow from hence, that methodical arrangement is of no utility, since it is not one of the least of its advantages to prevent prescribing to a name, and to obviate a general, indiscriminating, practice. The addition of the *croup* to this species is a step which requires some apology. It is, however, certainly an inflammation of a mucous membrane, attended with a discharge from the vessels of the part: the organs affected are the same as in coryza; this complaint very generally precedes, and the disease differs only in the nature of the discharge, which is gluten. The peculiar symptoms arise wholly from its inspissation.

The definition of *dysentery* is laboured with peculiar care, to distinguish it from diarrhoea, cœliaca, and leucorrhœis, with which it is very often confounded. *Phthisis*, if diseases are to be distinguished by symptoms, must belong to the genus *catarrhus*, for, though we know from dissection, that it sometimes arises from suppurating vomicæ, yet the symptoms are through its whole course truly catarrhal, as limited in the definition of the genus; and there certainly are cases which prove occasionally fatal, in which purulent matter is never discharged. (See *PHTHISIS*.) The definitions of the other species scarcely require a remark.

Arthritis is rescued from its limited sense, and extended to a generic association from its etymology. It is a genus strictly natural, for each species is attended with fever occasionally exacerbating. The *arthrodynia* is too intimately connected with rheumatism to be separated, though it approaches very near to palsy; and indeed we have remarked, that in the most violent pains

of gout, there is a weight and numbness of the limb, which distinguish it from other inflammatory affections. The *hydrarthrus* consists in that chronic inflammation of the muscles or joints which insidiously hastens on to suppuration, and destroys by its peculiar fever. If odontalgia be admitted in this genus, where few perhaps would look for it, as the union of the teeth with a jaw, though a pure articulation, would scarcely occur without some reflection, it should follow rheumatismus, or perhaps be included among its varieties.

Exostosis scarcely deserves the rank of a genus, yet it could not with great propriety be arranged under phlegmon, and its peculiar appearance as well as its cause required a particular distinction.

The greatest difficulty in constructing the third order, which is certainly a natural one, consisted in finding a title. *ERUPTIONES* is, in no respect, scientific or euphonous, but a better could not be discovered, except at the risk of occasioning confusion. The definition is sufficiently discriminating, and includes all the diseases, except the eighth species of exanthema. *Pestis*, included in this order from the authority of Dr. Cullen, should perhaps have been arranged under asthenic fever. In connecting diseases of the skin, nosologists have erred by contracting their limits too rigorously, or extending them too liberally. While Dr. Cullen confined himself to febrile exanthemata, and from specific infection, his inferior associations would be necessarily few, and those not strictly limited by the definition of his order. If every cutaneous disease, on the contrary, be included under the title, the list will be too miscellaneous to deserve the appellation of natural, and many appearances within the limits of health will find a place, as in the systems of Sauvages, Linnæus, and Vogel. In limiting this order, it was necessary at first to select the febrile exanthemata, without confining our views to specific infection, or, in reality, without contracting them within the common idea of eruptions. This was the real reason for our originally including *pestis*, which, on reflection, appears improper. *Aphtha* is more strictly related to cynanche, but we have seen a mild kind, more than once, epidemic, without any affection of the throat. This seems to justify its insertion.

The diseases which can be traced to specific infection consequently are first introduced, and others, usually epidemic, are added, though no peculiar virus is suspected. These are included in the first section. In the second are the sporadic eruptions, attended with fever, though less distinctly depending on it. The genus *exanthema* includes both. Of the *variola* two varieties are marked, the *confluent* from the difference of the appearance, and the *crystalline* for the same reason, and as there appears some probability that the second attacks of small pox have been pustules of this kind. Were the fact well ascertained, it would justify the formation of a new species, and we thus perceive one of the numerous advantages of nosology in suggesting circumstances of inquiry. *Vaccina* will now be acknowledged a distinct species, since doubts have arisen whether it be really a security from small pox. We have formed the definition with some hesitation, uncertain if it will in all cases clearly distinguish the vaccine pustule; yet its peculiarly rounded figure, and the brown depression (the Latin word *coccineus* would probably discriminate it more distinctly) appear to be sufficient for

his purpose. The *malignant* rubeola, in Dr. Willan's opinion, is a scarlatina; yet, as authors have pointed out a disease of this kind, and as, from the analogy of other fevers with topical affection, such may occur, we have inserted it. The other variety has not been very clearly distinguished, and the absence, or the very slight appearance, of catarrhal symptoms, render us somewhat sceptical on the subject. It seems more probably the *essere* included under urticaria. It has been supposed owing to an union of small pox and measles, but this is not true; for, when these diseases are present in the system, at the same time, they are never mixed. We have seen two epidemics of this kind, and have found, that, if small pox was the first disease, measles would stop its progress; and on their recession the small pox has resumed its course. If small pox preceded, both would go on together, but the pustules of each would preserve their own character.

Miliaria we have mentioned at some length, and have considered it as sometimes an idiopathic disease. The definition is collected from authors who have seen it more frequently than ourselves. But we can add, from our own observation, that the sour smell is often owing to an overflow of milk. The *scarlatina* sometimes occurs without an affection of the throat; and, on the other hand, during the prevalence of *scarlatina*, the throat is sometimes diseased with very inconsiderable, general fever, and no eruption. It will scarcely be credited, that in such circumstances children have experienced very little inconvenience, though the throat has been full of ragged deep ulcers. The distinction of the variety of *cynanchica* is thus obvious, but the disease, without eruption, belongs to another species, the *phlogosis anginosa*. If the definition be compared with that of rubeola, no difficulty of distinction can be felt.

As erythema, externally, is opposed to phlegmon, so is erysipelas to variola. We have no doubt of its being an idiopathic disease, as we have twice seen it epidemic. The delirium, which sometimes follows the complaint, occasionally attends it, and there is no reason for thinking it owing to metastasis, as the inflammation of the head and face continue at the same time. There may be doubt, whether the chronic, intermitting erysipelas should not be rather referred to erythema; but some fever we think generally attends, and this is the most proper place for its insertion. The only other species, which requires a remark, is *urticaria*. The definition is left somewhat too open, to include numerous papular eruptions, which require notice. We need not, however, add to what we have said, under the article *ESSERE*, q. v.

The genus *efflorescentia* is designed to include those cuticular diseases in which fever is not a constant attendant, or with which it is not indispensably connected: these, however, so nearly resemble the exanthemata, as to render a distinction necessary. As we have thus extended the limits of eruptions in a general view, it will be reasonably asked why we do not include lepra, pellagra, and similar complaints in the same rank. The reason was that the species included in the genus *efflorescentia* were diseases of the extreme vessels, not depending on a general state of the fluids, while the lepra appears in the constitution, before the defecation of the surface comes on. The voice is previously observed to be shrill and tremulous; the complaint can

be traced to an hereditary disposition; the faculties of the mind decay with the impaired health. The same general disease appears more strongly in the pellagra, as described by Strambio, in his collections on this disease (Mediolani 1786-89, 3 vols. 4to.) We have observed the same previous changes in elephantiasis; and the Cretins are equally distinguished by imbecile minds, and weak bodies.

To enumerate all the species of *efflorescentia*, however strictly limited, would be a difficult task. They appear in every form and every variety; and we have left one species open, as already remarked, to include the anomalies. In general, they are chronic diseases, and connected with effusions on, or under, the skin. In prurigo, indeed, there is no evidence of this effusion; but the itching seems to show that it probably exists. The only ambiguity arises from syphilitic eruptions, which ought, perhaps, strictly, to be included in this order, from the appearances; but, as connected with depraved fluids, is grouped with other associations. The eruption, however, is only symptomatic, and the difficulty may be removed by a comparison of the additional symptoms.

The definitions of the species will sufficiently distinguish them. The only circumstance of doubt respects the *lichen*, which, perhaps, is only the chronic, intermitting, erysipelas. The purple colour of the more violent species, and its general appearance, seem to indicate a disease in some measure distinct; but it is sufficient to suggest the question for further examination. *Petechiæ* are often symptomatic, yet they sometimes appear independent of fever and of any considerable debility. The *morbus petechialis sine febre* is noticed by the French and German authors, of which we have seen several instances.

The title of the fourth order, *profluvia*, is limited to its simple obvious sense, morbid discharges; and the association requires no comment. *Profluvia* differ either as the discharge is bloody, or excrementitious; a fever, though occasionally a leading symptom of hæmorrhages, is but slightly connected with this order, as they most commonly happen independent of it, or at least, its degrees are so various, and its appearance so fleeting, as often to evade the possibility of distinguishing it in any given profluvium, and prevent us from availing ourselves, except in the marked instances of active hæmorrhage, of such distinction in practice.

The species require no comment; but the insertion of *vicaria* is scarcely regular in a systematic view, for all vicarious hæmorrhages must be symptomatic. Yet so numerous are these discharges, and so important are they in a practical view, that we trust the physician will commend, what the nosologist must disapprove. The definitions of *hæmoptysis* and *hæmatemesis* are peculiarly contrasted, as distinction is sometimes difficult. We mean not to defend what in each may appear doubtful, but only to observe, that such are the respective symptoms as they have occurred to us; such at least we have thought the distinguishing circumstances of hæmorrhage from either organ. It is difficult sometimes to distinguish the hæmorrhage from the bladder, from the blood discharged in consequence of the irritation of a calculus; but the quantity of the discharge, and the absence of the more striking symptoms of calculus, will prevent any error. The two varieties will be easily

distinguished. It will be obvious from the character of *melænu*, that we rather consider it as a bilious than a bloody discharge; but we need not add to what we have observed in that article, *vide in verbo*. In compliance with the language and opinions of practitioners, its insertion in this place was indispensable.

The title of the next genus is borrowed from Dr. Cullen, but used in a more limited sense. The definition requires neither apology nor defence, and the species are sufficiently connected. *Vomit* may appear a simple object, but it involves some contradictions, at least some subjects of disquisition. It may be said, that the aliment, not the excrementitious fluids are discharged, and sometimes no fluid which is naturally carried to it. The first objection is, however, guarded against, in the definition of the genus; and it may be fairly observed, that no vomiting takes place without some evacuation of the mucus of the stomach. The *pyrosis*, however, consists in a discharge not naturally contained in that organ, viz. a cold fluid; but however difficult the explanation may be found, the variety is obviously connected with the species, and the latter with the genus. The atonic vomiting, the consequence of retrocedent gout, repelled eruptions, &c. is equally a subordinate affection inseparable from the rest.

Diarrhæa is usually divided into different species from its causes, but it seems, in practice, or in its symptoms, to require only two subdivisions, viz. where the discharge is chylous, or where it is watery, in which the truly feculent matter is retained. The mucous discharges from the intestines would appear to be properly inserted in this place, but these are more generally attended with fever, and mucus is scarcely a natural evacuation from the bowels.

Of the *diabetes* we have mentioned two varieties, for, in every instance, the chief form of the complaint is understood by the species; at least it should be, and the varieties are marked, when they are exceptions to the usual form, or when they require a variety in practice. The first of these is the *mellitus*, for, if the discharge is merely the increased watery secretion, it is understood from the definition of the species. The *diabetes mellitus* has lately claimed much attention, but the pathology and the cure are still imperfect. We have added another species, chiefly to notice a singular fact, that, when dropsical swellings are observable in almost all the cavities, if the urine is in considerable quantities, a large proportion of mucilage or gluten is found in it.

The species *diuresis* may require an apology, for it is often a symptom, but sometimes it appears rather as an idiopathic disease, arising from terror, surprise, or any peculiar sound, in some constitutions; as when "a bagpipe sings in the nose." Its distinction is obvious from the definition. The species *ephidrosis* may appear superfluous, for it is often a symptom of fever or debility; but its partial occurrence, particularly in the feet, is sometimes the object of the practitioner's attention.

For *plica* we could find no more suitable place, though it is less proper in this order, as connected with fever. Did we know the nature of the fever better, we might place it with more accurate discrimination, but at present we must look on it as an increased excrementitious discharge; and does not Shakspeare call Autolycus' beard, "the pedlar's excrement?" If this

be not authority, we have no better. The *Ptyalismus mellitus* is introduced on the authority of one striking case, though we have observed, in several, an approach towards it.

Obstructions are generally connected in every nosological system, except where the local are separated from universal diseases; but in the species enumerated are many of these local diseases, which are the objects of general practice. *Dysphagia* may arise from tumour, accretion, inverted motion, flatus, spasm, or debility. The two first are the only objects of the genus, which is limited to organic affections. The third is a symptom of palsy. The fourth and fifth of hysteria, and the last of vomiting. The existence of tumour, or accretion, cannot be ascertained in many instances, even by the probang, for spasm, as we have seen, will give the sensation of resistance, like a tumour, both in the œsophagus and urethra; but a repetition of the trial will show the nature of the cause, for spasm is seldom constant.

Obstipatio is generally passed over in nosological systems, as a local disease, but it is an object of considerable importance. A scirrhus pylorus, tumours of the omentum, or of some of the chylipoietic viscera, intusceptio, and a scirrhus contracting the rectum, are diseases which require distinction, and which can be discovered only by the symptoms. These we have endeavoured to distinguish in the different definitions, so far as the variety of symptoms would permit. *Polyphus* requires no particular remark, except the fact of its sometimes preventing the return of blood from the head. A case of this kind occurred some years since, while transcribing the definition, and the fact was confirmed by dissection.

It was necessary to form a separate genus for *asthma*, and *dyspnœa*, since they certainly belong to this order, and are not always organic, nor constantly depending on suppression of excrementitious discharges. The term *anhelatio* is familiar to nosologists, and neither the species nor the definitions require a comment.

The genus *epischesis* can require neither comment nor defence. The definition of *dys hæmorrhœis* is guarded in a manner, which would not be accepted in the school of Stahl, since it implies that the discharge is not required, except when established from habit. See *Hæmorrhœis*.

Obstructions of the secreted fluids are regularly associated, though, as there is a group of diseases depending on discoloration of the skin, perhaps *icterus* might have been more properly referred to it. The white stools are, however, a symptom equally obvious, and it is a disease much more general than the greater number which occur in that association. By the definition of the calculus icterus we do not mean to say that every instance of calculus is attended with pain, or that every painful jaundice is owing to calculus. Such, however, are the more common cases; and the spasmodic icterus is generally pointed out by authors. We find no subject of remark, or explanation, in the other genera, except to add, that *sitis* we have seen in two instances as idiopathic disease; at least, we have not been able to trace it to any morbid state of the body, except the vague idea of acrimony, apparently shown by slight eruptions on the skin. It was proper, however, with these cases in our view, to mark it especially, as we had the sanction of former nosologists.

The order *spasmi* is an association so constant, that it requires little observation; nor are the species so uncommon, the definition so peculiar, as to demand any commentary. It will be obvious that we have kept in view the distinction formerly made of convulsions being irregular rather than increased action, and the species chorea, raphania, and beriberia, are evidently proofs that this irregular action is closely connected with extreme debility, as each verges on, and is sometimes terminated by, palsy. *Pandiculatio* is equally connected with imperfect or irregular excitement. In the varieties, where it was necessary, we have equally kept in view the principle of convulsion arising from sensible irritation, or, in weak mobile habits, from irritation, often unperceived. The history of hysteria fully illustrates this principle, which pervades, without the author being conscious of it, the whole of Dr. Whytt's works on nervous diseases.

The *adynamia* form equally a natural association. We have scarcely stepped from the common systems, except in the varieties of apoplexy. The distinctions of the second and fourth may appear to be made without a difference. We meant, however, to distinguish the last moments of a constitution gradually sinking from that progressive stupor, which arises from effusion: each case we have distinctly observed. The *a. hydrocephalica* we have introduced in compliance with the authority of Dr. Quin, of Dublin; and we think that we have been able to distinguish this species, though we know not that any words will discriminate it, from hydrocephalus. It chiefly occurs in females of a fair complexion, blue eyes, and light hair. Perhaps, however, this is the strictly proper place for internal hydrocephalus, since there is no increased bulk.

The *paranoia*, a term derived from preceding nosologists, comprehends all the irregular or excessive appetites, and all the irregular exertions of the nervous powers. We begin with the diseases of the stomach, followed by those of the sexual organs, in which the mind is particularly affected, and ascend to those in which the mind chiefly suffers. Hypochondriasis is the connecting link; but the arrangement would have been more perfect; if the sexual passions had preceded, as the hypochondriasis and melancholia are so nearly connected. The introduction of *erotomania* may excite a smile; but it is often truly a disease, and, as an unsuspected one, is frequently troublesome. The species and their definitions require no farther remark than the pages of this work will afford. Under the *mania venenata*, Van Helmont is quoted, who relates with singular eloquence his own feelings in these circumstances.

The *cachexia* also require no remark, except that the *rubigo* is inserted from the authority of Coutanceau, in the Memoirs of the Medical Society of Emulation, who calls it cutaneous apoplexy.

The *intumescencia* scarcely form a natural order, and even the genera are not always natural associations; but it was impossible to avoid these anomalies. We have endeavoured to remedy the inconvenience, by passing from the more to the less solid, from thence, in succession, to the watery and aerial tumours; and on a comparison of the species of the first genus, it will be obvious that these could not be associated with the eruptions. We have again introduced *exostosis*; and it may remain if the inflammation is not thought a

sufficient reason for its retaining the former position.

The genus *phyaconia*, is, like some others, left open for anomalous tumours, of which the more important are distinguished, and may be ascertained by the organ affected. The *p. hepatica* and *uterina* (including in a more enlarged sense the whole uterine system, and particularly the parts most commonly affected, the ovaria) are the most common. The *externa* can be confined by no definition. We have thus included scirrhouidea, the sarcomatica, the graviditates falsæ, the megala, and polypsplachnina, the steatomatosa and strumosa of authors; but have not noticed the hydatidosa, because we could find no symptoms by which they may be distinguished, as we have confessed under the species *hydatidis*, which authority, rather than conviction, induced us to insert. The dropsies, *phlegmatia*, require no comment; and if some of these are partial tumours, the general relation will excuse the anomaly.

The *hernia* we have not again enumerated. Lest the list might be unnecessarily prolonged, we have also omitted the varieties, arising from the situation of a prolapsed intestine, which may be seen in the present work, and the impaired functions will at all times furnish the symptoms. See *HERNIA*; *LUXATIO*; and the different terms inserted in the general classification under *prolapsus*.

The species of *diastasis* have not been noticed by authors, though several may be observed; and the only one which has particularly challenged the attention of practitioners is that mentioned supposed to occur in labour, and facilitate delivery. Having concluded a new arrangement of diseases, we must leave it to the candour of the public. Had we not thought it meriting their attention, we should not have offered it in this place. While its reception is uncertain, it would have been improper to disturb the general system by even these few novelties of appellations or arrangement. If received with approbation, it may at a future period be incorporated with the whole, when its utility and application will be more striking, and when its foundations may be more fully developed. At present it has been with great care abridged, that those who disapprove, may not complain that much time and space have been mis-spent or misapplied. See Sauvagesii Nosologia, 2 vols. 4to.; Culleni Nosologia; Macbride's System of Medicine; Pinel Nosographie Methodique, 2 vols. 8vo.; Selle Pyretologia Methodica; De Haen Theses, Sistentes Febrium Divisiones.

NO'SOS, (from the Hebrew term *nosis*, *infirm*). See MORBUS.

NOSTALGIA, (from *nostras*, *our own country*, and *algia*, *maror*). NATIONAL INSANITY, in which strangers have such an unconquerable desire to return to their own country, that they become restless, with loss of appetite and strength, succeeded by dejection of spirits, insanity, or death. Dr. Cullen distinguishes two species, *nostalgia simplex*, and *complicata*. It is, in fact, a species of insanity from hope delayed, to which the Swiss, from a strong attachment to their native country, are generally subject; and the familiar tune, called *Ranz de vaches*, played at milking the cows, is forbidden in foreign armies, as it excites the tender recollection of what they have left.

NO'STOCH. See CÆLI FLOS.

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NO'THÆ CO'STÆ, (from *volæ*, *spurious*). See COSTÆ.

NO'THUS, (from the same). A variety often of a disease, not attended with the acute symptoms of the more active kind. Thus peripneumonia notha is a catarrh without violent inflammatory symptoms.

NOTI'ÆUS, (from *notos*, *the back*). See MEDULLA SPINALIS.

NUBE'CULA and NU'BES. See URINA ENCAUMA, and ALBUGO.

NUBE'CULA SUSPE'NSA. See ENÆOREMA.

NUCAME'NTA, (quasi *nucis amentum*). See AMENTACEI FLORES.

NU'CES OLEO'SÆ. See FARINACEA.

NU'CES PURGA'NTES. See CATAPUTIA MINOR.

NU'CHA, (from the Arabic terms *nucha*, *the spinal marrow*, or *nekra*, *the cavity between the shoulders*). The BACK of the NECK.

NU'CIPRUNI'FERA, and NUCI'FERA. See NUX VIRGINIANA.

NUCIO'SITAS. See MYOPIA.

NUSIPE'RSICA, (quasi *nux Persica*). The NECTARINE.

NUCI'STA. See NUX MOSCHATA.

NU'CLEUS, (ð *nuce*). A KERNEL, that part of the fruit which is inclosed in a hard shell.

NU'CULA TERRE'STRIS, (a dim. of *nux*). See BULBOCASTANUM.

NU'CULÆ SAPONA'RIÆ, *baccæ Bermudenses*, the fruit of the *sapindus saponaria* Lin. Sp. Pl. 526. These fruits resemble in size a cherry, and are transparent, showing the nut within. The part employed in medicine is the cortical, and it has been used in chlorosis, but is now neglected. It is a bitter of the narcotic kind.

NUMMU'LARIA, (from *nummus*, *money*, because its round leaves are of the size of a silver penny). *Lysimachia nummularia* Lin. Sp. Pl. 211; from its supposed utility, *centi-morbia*; in English HERB TWO PENCE, and MONEY WORT, is a low creeping plant, with square stalks, and smooth, little, roundish, or heart shaped leaves, set in pairs at the joints, upon short pedicles; in their bosoms appear yellow solitary monopetalous flowers, each divided into five oval segments, and followed by small round capsules, full of minute seeds; perennial, grows wild in moist pasture grounds, and flowers from May to the end of summer. It is said to be astringent, antiscorbutic, and vulnerary; resembling a mixture of cochlearia with acetosa. See Raii Historia; Lewis's Materia Medica.

NUSCITIO'SUS. See NYCTYALOPS.

NUTRICA'TIO, (from *nutrico*, *to nourish*). *Accretio*, *alitura*. NUTRITION, ACCRETION, or GROWTH.

The progressive increase of the body and the successive development of different organs we have explained in a variety of articles, and have traced the aliment from the stomach through its various stages to the blood vessels. The question then returns. How is the nourishment applied to the increase of the body, to the development of these different organs? Two opinions have prevailed, one that it is applied by the extremities of the arteries; the other that it is a fluid secreted from the vessels of the brain, and conveyed by the nerves. Dr. Cullen was so much struck with the glandular appearance of the brain, that he seemed to want an object for the application of its secreted fluid;

and the fact, that when the nerve leading to any part was divided, the latter was emaciated, seemed to assist the conjecture. It was no more, for he never rested on it, nor did it form any part of his system. We shall now, therefore, bring together, in a few words, the doctrines often inculcated, to give a view of the whole subject, without concealing its weaker parts.

The germ, we have said, contains in miniature the whole body, convoluted and contracted within a bulk so small, that we thought some illustration of comparative magnitude and littleness necessary to render the idea less shocking. The organs are gradually expanded by the successive filling of the arteries, and the extent to which the parts will admit of expansion is the "internal mould," which forms the shape, and limits the bulk. The food taken in differs from the fluids in the proportion of many of its ingredients; but the great change is in the very great diminution of carbon, and increase, often the formation, of azot. The process of digestion consists partly of separation, in part of solution, but most essentially in the assimilation of the aliment to the nature of the animal fluids. The latter is apparently effected by the remains of the former meal, acting as a kind of leaven; for the gastric fluid appears to be nearly a common mucus, and to possess no qualities but what it derives from the relics of former aliment. We cannot explain the gradual change of carbon to azot; the only part of the problem unexplained till chemistry lends us farther aid, which we are on the point perhaps of receiving; when we shall probably also see the connection between the muriatic and the phosphoric acids, since the latter also is apparently of animal formation.

The azot is not, however, exclusively the creature of the animal process. It has been found that some portion of this principle is occasionally absorbed from the atmosphere, and, even in the most strictly vegetable diet, some portion of azot is contained. This will not, however, account for the whole change, and there is some probability that the hydrogen, by some play of affinity, is changed to azot; but, as we have just remarked, chemistry has not yet afforded us sufficient light to enable us to perceive the source of the change.

The animal fluids then, distending the vessels, expand the convoluted fibres, and deposit in their interstices, dilated perhaps into a cellular substance the peculiar matter of which they consist. Every appearance of the animal economy seems to show that the state of the exhalent arteries forms or changes the nature of the fluid which they pour out, and the whole mystery of secretion consists probably in the various states of these vessels. Physiologists have supposed that fibres are not enlarged, but only elongated. They seem to be neither; but we believe that what we style fibres are only the larger fasciculi; and this we gather from finding in the extremities of nerves which are evidently fibrous, a structure which eludes even the assisted sight. When we speak then of the interstices of fibres, and the cellular substance, we do not mean that grosser kind which we see and handle, but that interposed between fibres, which escapes our glasses: animal matters of different natures are thus deposited in different organs, favouring or assisting their separate functions; and this matter is progressively absorbed, and again deposited. It is absorbed, say physiologists, when it becomes

effete, a term without a meaning: in fact, the change from carbon to azot is continually going on, and the oxygen gradually disappearing. When the proportion of the azot is too great, threatening dissolution to the system by the putrefaction which it favours, it is absorbed, and again supplied by the arteries. The nourishment is deposited in a fluid form, and this fluid seems to have a greater affinity to the azotic animal matter than to the recent substance. The former then becomes fluid, and is taken up by the lymphatics; for we know that nothing is adapted to their orifices but a fluid, or what approaches in consistence to it. This is not fanciful or hypothetical. Putrid matter of every kind shows its attraction for watery fluids, and assumes this soft consistence. When madder is mixed with the food of animals, it gives a red colour to the bones, for an obvious reason, it has been said, because its affinity to the calcareous phosphat occasions it to be deposited with this salt. It occasioned, indeed, some surprise that so hard a substance as bone should be so soon deposited and absorbed, till the difficulty was explained by a French chemist, who confirmed the former affinity; but found that the colouring part of madder had a greater attraction to the serum of the blood than even to the earthy neutral. This observation confirms also, in a striking manner, the successive deposition and absorption of the fresh and azotic animal matter; while it explains what has been thought a difficult problem, how the matter to be absorbed attains fluidity.

The parts of the body are thus successively renewed, and it has been conjectured that in seven years the whole was changed. This suspicion, for it is no more, must, of course, vary in infancy, more in advanced life, and in old age; but, if our conjectures respecting the primordial germ are right, the added matter is only changed; the original fibrous structure remains the same, and with it the metaphysician will say *personal identity*. It will be obvious, that, to supply nourishment, the power of the exhalents must be unimpaired; and this will sufficiently explain the reason why, on destroying a nerve, or impeding its influence by a ligature, the limb which it supplies is emaciated. In general, nutrition appears wholly conveyed by the arteries.

Every nutritious substance must be capable of some change in the stomach, must be susceptible, not of fermentation in the strict chemical sense of the term, but of assimilation from the influence of the remaining leaven. When reduced to its principles, and these are again combined, they form a simple fluid called chyle, which is conveyed to the arterial system, and, by its access to the air in successive circulations, forms blood. From hence the nutritious matter is secreted. Its nature is uncertain; and various have been the opinions on this subject. Lorry thinks it a mucous substance; Cullen a saccharine one; Halle an hydrocarbonated oxide, differing from the oxalic acid by having a smaller proportion of oxygen. He explains, with some propriety and force, the disappearance of the carbon and oxygen by their forming carbonic acid gas, which is carried off in respiration. In the same process, the azot is, he thinks, separated from the venous blood, to combine with the newly assimilated chylous matter. The remaining carbon, mixing with the oxygen of the air, at the surface, is still farther separated, leaving the blood, *sit venia verbo*, azotized. This explanation is,

however, more ingenious than true. The azot is an excrementitious fluid: instead of wanting it to animalize the chyle, the latter is necessary to correct the azot. The nutritious fluid, whatever it may be, is apparently simple; and we could, were this a place to build systems, give some striking reasons for supposing it pure albumen.

See HOMO, HÆMORRHOIDS, MENSES, FÆTUS; For-dyce's Elements, Part I.; Halleri Elementa Physiologiæ; Whytt's Physiological Essays; Monro's Observations on the Nervous System; Richerand's Elements of Physiology.

NUTRITUM UNGUENTUM was formerly made by mixing certain proportions of vinegar, oil, and litharge; but the London College substituted, as a neater application, the *unguentum cerussæ acetatæ*, made in the following manner: Take of acetated ceruse two drachms, and white wax two ounces by weight; olive oil half a pint: rub the acetated ceruse, previously powdered, with some part of the olive oil; then add it to the wax, melted with the remaining oil. Stir the mixture till cold. Ph. Lond. 1788.

The unguentum nutritum was formerly made by mixing three ounces of litharge with seven of olive oil and four of strong vinegar, and the term "sine corpore" was added, because the vinegar was united to the oil without the medium of mucilage or albumen. The process was, however, tedious, since the trituration was incessantly continued many days. Baumé shortened it, by using olive oil coagulated by cold, which kept the litharge suspended, while the vinegar dissolved it, or hastening the union by means of heat.

M. Dubuc, an apothecary at Rouen, has attempted to improve this formula by means of the new lights of chemistry, and we shall add a short abstract of his remarks. When we wish to *nourish* the vinegar, with the litharge, and the oil, for that was the origin of Lemery's fanciful term *nutritum*, since they were rubbed together till they formed a *body*, which neither ingredient had separately, we must dissolve a little of the litharge in the acetous acid, and introduce a sufficient quantity of carbonic acid to change the greatest part of the litharge into a white carbonate, which remains mixed with the oil, and to thicken the oily mixture; an effect analogous to thickening soap by the same acid. If so much vinegar is employed as to form a saline, *saturated*, compound, the consistence will not be proper. If too great heat is employed, according to Baumé's plan, a portion of the carbonic acid is separated, and a yellow oxide of lead remains uncombined.

It has been proposed to accelerate the preparation by adding hogs' lard; but this addition diminishes the bulk and lightness. In Germany, one half part of oil of roses is added to the vinegar of lead, which produces an ointment as white as wax, and of the consistence of a liniment; sometimes one half as much oil of olives, which produces a whitish ointment of a moderate consistence; sometimes with one part of oil of olives, as much vinegar of litharge, and half as much wax, which produces an ointment of a waxy whiteness and a firm consistence; but these are all mixtures, and by no means such intimate combinations as the true nutritum. We have engaged in this detail, not only from its curiosity, but to suggest a suspicion that we have probably sacrificed, in this preparation, too much to the ease of

the pharmacist. The utility of the old nutritum arose in a great measure from its levity, in consequence of a proportion of air, probably of carbonic acid gas, mixed with it; above all, from its being so imperfect a conductor of caloric.

In the Pharmacopœia Chirurgica the litharge plaster is employed, lowered in consistence by olive oil, adding vinegar to dissolve the litharge. This appears to be following the first plan of Baumé, as the plaster supplies the place of the congealed oil: but this application wants the lightness and the cooling quality of the real nutritum; and the unguentum cerussæ acetatæ, unless extemporaneously prepared, soon becomes rancid. See UNGUENTUM LITHARGYRI ACETATI, under LITHARGYRUS.

NUX, (from the Hebrew term *luz*). A NUT, a term belonging to many vegetable productions, viz.

NUX BARBADENSIS. See RICINUS, and CATAPUTIA MAJOR.

NUX BEN. Vide BEN.

NUX BENGALENSIS. Vide MYROBALLANI CITRINI.

NUX CATHARTICA AMERICANA. See RICINUS.

NUX DE BECUBA. A resinous Indian fruit from an unknown tree, whose oil is said to be a specific against cancers and colics.

NUX INDICA. See CACAO.

NUX METHEL. The fruit of the STRAMONIUM METHEL.

NUX NARCOTICA. An Indian fruit which occasions vertigo and delirium. It is used in anodyne plasters; but the plant has not been described.

NUX SERPENTINA. The fruit of the AHOVAI, q. v.

NUX MOSCHA'TA, *myristica nux*, *nucista*, *hala*, *chrysobalanus* Galeni, *unguentaria*, *assala*, *nux aromatica*, the NUTMEG, *myristica officinalis* Lin. Supplement, Pl. m. *moschita* of the Fragments, and the later editions of Schreber. In reality, however, the jealousy of the Dutch concealed the real plant, nor was it ever accurately described till the description of La Marck appeared in the Memoirs of the Academy of Sciences for 1788. He found it to be a dioecious plant, of the natural family of the Laurineæ, containing exotic trees or shrubs, evergreen, whose leaves are entire and alternate, and whose little axillary flowers are united in numbers on peduncles, divided, and longer than the leaves. He styles it the *myristica aromatica*. The fruit is a rounded or oval drupa, containing a large solid, oily, often aromatic, seed, through the internal parts of which veins branch, of different colours, but chiefly brown. The seed is defended by different coats. The first is fleshy, though sometimes dry and coriaceous; the second is the mace, a coloured membrane, deeply divided; the third the shell, which is thin, hard, and brittle, externally impressed with the ramifications of the mace.

The nutmeg is said to have been known to the ancients, and to have been the *comacum* of Theophrastus; but this author speaks vaguely only of the comacum as a spice brought from India; while the nutmeg is not from India: it is a production of the Molucca Islands and the Isle of Banda, and it is highly probable, as C. Bauhine and L'Ecluse have thought, that it was not known to the ancients. The Arabians first introduced it under the name of *jiansiban* (Avicenna II. c. 503), the nut of Banda. It is the *jenzave*, or *jus-*

bage, of Serapion, the *moschocarion* of the modern Greeks.

More modern naturalists were equally divided respecting the real plant which produced the nutmeg. Piso thought it resembled a pear or a cherry tree; others mistook the mace for the flower; Valentini and Rumphius saw only the female flowers, and their description was, of course, erroneous. They indeed gave the name of male and female to different species; but in the spirit of a grammarian, who tells us, "that the masculine is more worthy than the feminine." So the long nutmeg was the male, and the inferior round one the female: the different plants were distinguished on the same principle. Linnæus in his later works, Adanson and Sonnerat approached nearer the real plant in their descriptions; but the account of each was imperfect. Thunberg, in the Stockholm Transactions of 1782, gave a more faithful description of the plant, but it was still erroneous; nor, until the nutmeg tree was conveyed to the Isle of France, and branches, with perfect fructifications, sent to La Marck, did we properly know its form or habit. The general account already given is sufficient for our present purpose.

The *myristica aromatica* is continually in bloom, while the plant bears, at the same time, fruit of all ages, and its leaves fall in so small a proportion, that their loss is almost insensible. It is impossible to distinguish the male from the female tree by its leaves or habit. Some nutmeg trees produce both oblong and round seeds; others only round ones. The embryo of the future plant is at the large end of the nutmeg, where it is contiguous to the peduncle. In the plants sown, the males have been found more numerous than the females; a considerable inconvenience, as the sex could only be distinguished by the flowers. It was corrected by one planter, who preserved, in each tree, two branches, on one of which he grafted a female twig. The trunk, branches, and even the leaves of the nutmeg tree, when wounded, pour out, in sufficient abundance, a viscid juice of a pale red colour, which gives a durable mark to linen: the wood is light and porous, without any smell. The leaves slightly smell of the nutmeg, when fresh only. The fruit is ripe nine months after the flower has withered, and its pulp is sharply astringent. It is preserved, and a kind of marmalade made of it. The virola of Aublet and Jussieu, the tallow tree, appears to be a species of *myristica*. The other species of *myristica* are distinguished from their country, viz. the Philippine Islands, the coast of Malabar, and the Island of Madagascar, or from the shape of their leaves or their fruit. We learn nothing from La Marck of the comparative merit of their several seeds. The tree, we know, is propagated by birds, who break the shell; but in whose intestines the nutmeg is not digested. The hint has been taken apparently from this fact, and the nutmeg is planted without its shell. In this way, it vegetates sooner, and the worms have no time to eat it.

Nutmegs, preserved entire, are introduced in India with tea, but the mace and pulp are only eaten: the nut is thrown away. In cold climates, and voyages in the higher latitudes, the nut is chewed every morning.

The nutmeg is moderately warm, grateful to the taste, and unctuous. It is cordial, carminative, and astringent,

in doses of from three to fifteen grains; but to increase its astringency it is roasted, and used in diarrhoeas and dysenteries. In large quantities it is said to affect the head, and to be dangerous. Bontius says, this is a frequent occurrence in India; and Dr. Cullen saw a remarkable instance of its anodyne power in a person, who took two drachms of nutmeg in powder. See Cullen's *Materia Medica*, vol. ii. p. 204. An ordinary kind of nutmeg is called *areca*, *avellana Indica*, &c. From 1920 parts of nutmeg Neumann procured 480 of spirituous, and 280 of watery extract, with 320 of oil or tallow. The two last were insipid.

By an inverse operation he procured 600 parts of watery extract, fifty of sebaceous matter, and ten of volatile oil, afterwards 120 of an unctuous spirituous extract, and 300 more of fixed oil. The same quantity by expression gave 540 parts of oil, and afterwards 480 of watery extract; a strong distilled water, eighty grains of spirituous extract, and sixty of insipid oil.

The London College directs a gallon of proof spirit to be drawn by distillation from two ounces of nutmegs, called *spiritus nucis moschatæ*; but when a few hawthorn flowers are added, it is called *aqua nephritica*. A tincture made from the nutmeg, in proof spirit, is a valuable medicine.

By a distillation with water nutmegs yield nearly one-tenth of their weight of a limpid essential oil, *oleum nucis moschatæ essentielle*, very grateful, possessing the flavour of the spice in perfection; it is recommended as antispasmodic and anodyne, similar to the oil of mace, but is not so grateful.

On the surface of the remaining liquor an unctuous concrete, like tallow, swims, of a white colour, nearly insipid, not corruptible, commended as a basis for odoriferous balsams. The decoction, strained and inspissated, leaves a weakly bitter sub-astringent extract. We have already remarked that the tallow tree is a species of *myristica*.

Rectified spirit takes up the whole smell and taste of the nutmegs, and receives from them a deep bright yellow colour. The spirit drawn off from the filtered tincture is very slightly impregnated with their flavour; the greatest part of the specific smell, as well as the aromatic warmth, bitterness, and sub-astringency of the spice, remaining concentrated in the extract. Both the oil, the spirituous tincture, and extracts, agree better with weak stomachs than the nutmeg itself.

When nutmegs are heated, and strongly pressed, they give out a fluid yellow oil, which concretes on growing cold, into a sebaceous consistence. We are informed, that in the spice islands the imperfect and damaged nuts are separated for this purpose. In the shops we find three sorts, under the name of *oil of mace*. The best, brought from the East Indies in stone jars, is softish, of a yellowish colour, an agreeable fragrance, greatly resembling that of the nutmeg itself, but of the colour of mace. The next, from Holland, in solid masses, generally flat, and of a square figure, is paler coloured, weaker in its smell, and inferior in its quality to that of India. The last seems to be a composition of suet or palm-oil, flavoured with a little of the genuine oil of nutmeg. The chief use of these is for liniments, to be applied to the stomach, or as an ingredient in anodyne and nervous ointments. See Tournefort,

Lewis, and Cullen's *Materia Medica*; Neumann's *Chémistry*.

NU'X vel GLANS UNGUENTU'ARIA. See MYROBALANI.

NUX METE'LLA. See NUX VOMICA.

NUX VIRGINIA'NA; *prunus prunifera*, *nucifera*, *nucifera*, *nucifera*, *mastichen odoratum fundens*, a variety apparently of the *sapindus saponaria* Lin. Sp. Pl. 526, MASTICH of LIGON, and VIRGINIA NUT. Its leaves shine like those of the bay tree, and it differs from other pruniferous trees in its fruit, which is small, turbinate, containing but a little pulp.

The fruit is of the shape and size of a filbert, smooth, of a brown colour, with an eye near one end, containing a hard stone; and the kernel is white and globular, of a bitterish taste, and an aromatic smell. It is said to be antiscorbutic, deobstruent, and cordial. See Raii *Dendrologia*.

NUX VO'MICA, *nux metella*, *caniram*; *faba febrifuga*, *igasur*, is a flat roundish seed or kernel, about an inch broad, and a quarter of an inch thick, with a prominence in the middle, on both sides of a grey colour, covered with wool, internally hard and tough like horn, the produce of a large tree in the East Indies; *Strychnos nux vomica* Lin. Sp. Pl. 271.

It is bitter to the taste, and this quality chiefly resides in its resin; for the gum is but slightly so. Fallopius observes, that in doses to 3 ss. it procures sweat; but Hoffman informs us, that two doses of seven or eight grains each were fatal to a girl of ten years old. These nuts poison dogs, crows, &c. When imprudently swallowed by men, they produce great anxiety, convulsions, paralytic symptoms, retching, an increased action of the heart and of the lungs. The bitter is evidently in a high degree narcotic; but in Germany it has been given as an antidote against the plague, in mania, and hysteria; in hydrophobia, hypochondriasis, rheumatism, and gout. They have been employed with various, but not considerable, success in dysentery (London Medical Journal, vol. iii. p. 189,) as an anthelmintic in cases of tænia; and lately by Loureiro, after roasting, in fluor albus. This operation seems to mitigate their virulence. In this country, however, they have been seldom given. See Raii *Historia*; Lewis's *Materia Medica*; Neumann's *Chemical Works*.

NUX VO'MICA SERAPIO'NIS; *faba sancti Ignatii*, *pepita nux*, *faba Indica*, *catalongay*; ST. IGNATIUS'S BEAN, the produce of a tree called *mananaog*, or *cantara*, found in the East Indies and the Philippine Islands. It was supposed to be the production of a species of *strychnos*, with the trivial name of *volubilis*; but the younger Linnæus, and succeeding naturalists, have referred it to a distinct genus, *ignatia amara*. Each appellation Willdenow has preserved, vol. i. 1053. The fruit resembles a gourd, in each of which are from twenty to thirty seeds, improperly called beans. They are of a roundish figure, irregular, and uneven, of the size of a middling nutmeg, semi-transparent, of a horny texture, and of a white colour, slightly tinged with blue. These seeds have a bitter taste, but only a musty scent while fresh. The inhabitants of the Philippine Islands use them as a medicine; but their effects are violent, and they are never employed in any other country. They are chiefly used in the Philippines, in intermit-

tents, amenorrhœa, asthma, epilepsy, and as anthelmintics. See Philosophical Transactions, N° 249, p. 44; Medical Museum, vol. iii.

The other vegetable productions to which the term *nux* is applied are,

NUX BASILICA, EUBOICA, PERSICA, et REGIA. See JUGLANS.

NUX MALABARICA. See CUMBULU.

NUX VOMICA MINOR MOLUCCANA, ALTERA. See COLUBRINUM.

NYCTALOPIA. See AMELYOPIA.

NYCTALOPS, (from *νύξ*, night, and *ὤψ*, an eye).

NIGHT BLINDNESS. *Imbecillitas oculorum*. Sometimes such patients are called *luscitiosi*, but improperly; for this term is applied to those who, from some defect of the eye, see better in the evening than at noon. In the Greek and Latin writers the word *nyctalops* has opposite meanings; sometimes signifying those who see by night; at others, those who cannot see during the night. It is now understood to signify that disorder, in which, as the night approaches, the patient loses his sight, and remains blind until the morning. The sight thus continues to return in the day, and to depart at night.

The word *hemeralopia*, in Vogel's system, stands for blindness in the night, and sight in the day; and *nyctalopia*, in Linnæus's and Vogel's Genera, stands for blindness in the day, and sight in the night.

It appears to be an intermittent, arising in one instance from too great sensibility of the retina, and in the other from torpor. In the former, the light of the day is too great for the organ to bear; in the latter, the impression is too weak to excite vision.

An endemic species occurs among some of the more irritable inhabitants of the burning regions of the torrid zone, and a possible case has been suggested where, on the contraction of the pupil in a strong light, the rays converge on a spot of the retina previously paralytic, which is avoided by a slight motion of the head when the pupil is dilated. The proper disease is of the intermitting nature just described, and its best remedy is the bark. It is peculiarly rare, however, in its occurrence.

See London Medical Transactions, vol. i.; and London Medical Observations and Inquiries, vol. i. p. 111. &c.

NYMPHÆ, (from *νυμφα*, a water nymph). *Alæ internæ minores clitoridis, colliculum, collicula, myrtocheilides*, are foldings of the skin within the labia, rising from above the clitoris, and passing obliquely downward and outward, till they are lost about the entrance of the vagina. Between them is the orifice of the meatus urinarius. The substance of the nymphæ is spongy, and the orifices of numerous glands are visible on its surface.

NYMPHÆA, (from the same). *Nenuphar leuco-nymphæa, micro-leuco-nymphæa*. The GREAT WHITE WATER LILY. *Ny mphæa alba et lutea* Lin. Sp. Pl. 729. Each is an aquatic plant, said to be anodyne and demulcent, but too insignificant to demand any further notice. See Râii Historia. The name also of a preternatural excrescence on the nymphæ.

NYMPHÆA GLANDIFERA, INDI'CA, and MADRASPA'STANA. See FABA ÆGYPTIA.

NYMPHÆA LOTUS. Lin. Sp. Pl. 729. an Egyptian plant, whose fruit is employed in making bread, and whose root is sweetish, resembling in colour the yolk of an egg when boiled. It seems to be referred improperly to this genus. See Alpinus de Plantis Exoticis, vol. iii. p. 227, &c. Willdenow has, however, retained it.

NYMPHOMA'NIA, (from *νυμφια*, nymphæ, and *μανια*, furor). See FUROR UTERINUS.

NYMPHOTO'MIA, (from *νυμφα*, and *τεμνω*, secō). In warm countries, the nymphæ or clitoris are sometimes inconveniently or morbidly large; and a portion is cut off by an operation, which has this appellation, for the ancients called the clitoris by the name of nymphæ. It is commonly styled circumcision of the clitoris.

NYSTA'GMOS, (from *νυσταζειν*, to be drowsy). A WINKING or TWINKLING with the eyes, such as happens when a person is very sleepy. When a disease, it is an instance of the chronic kind of convulsion, and arises from any cause of irritation in the eye, and is observable in all nervous irritable constitutions.

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OB according to Selden was usually translated Python, or magician. The *ob* of the ancients was a spirit, or dæmon, that gave answers which seemed to come from some part of the body, but with a voice so low, as not to be distinctly heard. The *obi* of the Africans is a filthy malignant spirit. See Mosely on Sugar, second edition.

OBCO'NICUS, (from *ob*, and *conus*, a cone,) somewhat conical.

OBELE'A, (from *ὀέλος*, a dart, because it is straight,) **SAGITTALIS SUTURA**, q. v.

OBE'SITAS, (from *obesus*, fat). **FATNESS**. This state is peculiarly common in England and Holland, supposed to arise from the use of new malt liquors, or from a less active life; but more generally referrible to the phlegmatic temperament, or to idiosyncrasy. Vinegar never prevents fatness, but by destroying the vigour of the stomach; and the best means of avoiding the accumulation of fat, is active life, with a diet rather of vegetable than animal substances. It often predisposes to disease, though it cannot alone be styled morbid. A remarkable instance is described in the London Medical Observations and Inquiries, p. 69—84. See **POLYSARCIA**.

OBFUSCA'TIO. See **OFFUSCATIO**.

OBLA'TES PURGA'NTES. Cakes, made of flour, sugar, and purging ingredients; not an uncommon form of quack medicines for worms. Ching's lozenges are of this kind; but, in the greater number of such formulæ, calomel, not often in the best state, is a frequent ingredient.

OBLI'QUUS, (from *ob*, and *liquo*, to flow aside). An appellation of muscles whose fibres are oblique; a name also of the *pronator teres*.

OBLI'QUUS, ASCE'NDENS vel INTE'RNUS. ACCLIVIS. These muscles arise fleshy from the spine of the os ilium and ligamentum pubis, and the upper edge of the os sacrum, according to Dr. Hunter; but other anatomists describe them as passing forward and upward from the ossa pubis and ilii, forming a broad membranous thin tendon, implanted into the whole length of the linea alba, and the cartilages of the eighth, ninth, tenth, eleventh, and twelfth ribs. Their tendons divide into two lamellæ, one of which joins the rectus on each side, and the other the transversalis. These muscles are not perforated by the spermatic cord. Besides their use in compressing the belly, that part which arises fleshy towards the back part of the edge

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of the os ilium, and goes to the cartilaginous endings of the ribs, not only depresses them, and straightens the thorax in expiration, but from the order of its fibres counteracts the descending obliques in turning the trunk of the body, on the axis of the vertebræ. On its contrary side, as the series of its fleshy fibres is parallel to those of the descending oblique muscle, they may concur with them in discharging their office.

OBLI'QUUS DESCE'NDENS, vel EXTE'RNUS. DECLIVIS. They are the external muscles of the belly, denominated from the progress of their fibres, which run obliquely downwards. They arise by productions partly fleshy, and partly tendinous, from the lower edge of the fifth, sixth, seventh, and the greater number of the inferior ribs, which indent themselves into the fleshy dentiform processes of the serratus anticus major. Their fibres run forward and downward, terminating in the spine of the ilium, os pubis, and linea alba. Part of these fibres, which run toward the ilium, are lost in the fascia of the thigh, and those which run toward the os pubis are reverted, and consequently double, forming what is called the *ligament of Poupart*, and through it the spermatic vessels of men, and the round ligaments of the womb in women pass, for which purpose the tendinous fibres separate, and form a ring. From their origins, which are mostly fleshy, their oblique descending fleshy parts expand themselves into a broad membranous tendon, before they go over the rectus to their insertion in the linea alba and os pubis, from whence, still descending, they end partly tendinous in the ligamentum pubis, but chiefly fleshy on the superior and fore part of the circular edge of the os ilium. They do not adhere to the transverse processes of the vertebræ lumbares, but the largest, last, and most fleshy digitations, leaving the lowest bastard rib at its extreme point, in their oblique descent going forward, still recede gradually from the vertebræ, forming a triangular interstice, filled by the sacrolumbus and os ilium, on its lower side; in this area the fibres of the subjacent muscles plainly appear. These muscles give strength to the parietes of the belly, sustain and compress the viscera, propel the fæces, urine, and the fœtus: that part between the linea alba, os pubis, and the spine of the os ilium, bearing an analogy in its position to the mastoideus of the head, serves for the circumrotation of the trunk, upon the axis of the vertebræ, when we turn the body to the contrary side, and the feet remain unmoved.

OBLI'QUUS INFERIOR and **MAJOR**, *capitis obliquus inferior*. One of these muscles rises on each side, from the lateral part of the spinal process of the vertebra dentata, goes upward and outward, and is inserted into the transverse process of the atlas. Together they act by giving a rotatory motion to the head, and run in a contrary direction to the *obliquus superior*.

OBLI'QUUS MAJOR O'culi, *superior; trochlearis; amatorius; longissimus oculi*. It is called *trochlearis* from its tendon passing through a cartilaginous pulley, situated in the orbit of the eye, to the inside of the internal angular process of the os frontis, near the inner angle. This muscle rises tendinous from the bottom of the socket near the entrance of the optic nerve, and passing towards the upper part of the socket, near the great angle of the eye, its round tendon runs through a cartilaginous pulley, fixed to a cavity in the os frontis; from thence it is reflected, runs obliquely backward, enclosed in a ligamentous sheath, and is inserted tendinous into the sclerotica, upon the upper part of the globe of the eye, a little behind the insertion of the rectus superior. When it acts singly, it rolls the eye round its axis. When it acts in conjunction with the *obliquus minor*, the eye is drawn outward or forward.

OBLI'QUUS MINOR. See **RECTUS MINOR**.

OBLI'QUUS MINOR vel INFERIOR O'culi, *Amatorius*, rises chiefly fleshy, just within the edge of the lower and anterior part of the socket, near the caruncula lachrymalis, and, passing obliquely backwards under the globe, is inserted into the sclerotica, on the external side of the eye, near the optic nerve.

OBLI'QUUS NASI, *laterales musculi*, thin muscles running along the sides of the pyramidales nasi, fixed to the apophysis nasalis of the ossa maxillaria, and inserted into the ala narium.

OBLI'QUUS PALPEBRARUM, consists of all that extent of fleshy fibres which, by a thin stratum, surrounds the edge of each orbit, and from thence wholly covers the two eyelids. They are transversely oval, adhere to the skin of the eyelids, and wrinkle them.

OBLI'QUUS SUPERIOR. *Capitis obliquus superior*. These muscles are on each side covered by the head of the trachelo mastoideus; each rises from the transverse process of the atlas, and is inserted into the os petrosus and os occipitale, near the processus mastoideus. They bend the head backward.

OBLI'QUUS SUPERIOR O'culi. See **OBLI'QUUS MAJOR O'culi**.

OBLI'VIO, (from *obliviscor*, to forget). See **AMEN-TIA**.

OBLONGUS; applied to the leaf of a plant, whose longitudinal diameter exceeds that of its transverse.

O'BOLUS. A weight of about nine grains.

OBOVA'TUM. **OVAL**.

OBSIDIA'NUM, (from *Obsidianus*, its inventor). See **ANTIMONIUM VITRIFICATUM**.

OBSIDIA'NUS LA'PIS. See **AMPELITIS**.

OBSONIO'RUM RHUS. See **RHUS**.

OBSTETRICA'TIO, (from *obstetrix*, quod *dolori obsistat*). **MIDWIFERY**. By midwifery is strictly meant the actual operation of delivery, but in a more extensive view it includes the management of female diseases in the unimpregnated or pregnant state. The word is not, however, always employed in such an extensive sense, and it usually includes the conduct in the preg-

nant or parturient state only, to which is usually added the management of the complaints of newly born children.

Midwifery, like medicine, was in its earlier periods the result of sagacity assisted by more mature, or more extensive observation; nor is it surprising, in the ruder states of society, when science had not dawned, that it should be confined to women, who alone would probably attend in such circumstances. These were the practitioners among the Jews, very generally among the Grecians and Romans. The names of Cleopatra, the voluptuous queen of Egypt, of the courtesan Aspasia, of Sotira, Salpe, and many others, who distinguished themselves in this department, have reached us; but whether the conduct of a labour was, in those periods, ever intrusted to a male practitioner, is a question not yet determined. Women and slaves, at Athens, were forbid to study medicine, but this prohibition would not apply to the more domestic treatment of parturient women; and Hippocrates, Galen, and Aëtius, speak of female practitioners. Among the Romans, though the generality of midwives were females, accoucheurs of the other sex were not uncommon. The works of the supposed freed man of Julia were those of a female slave, and probably neither the productions of Erotis nor Trotula, to whom they have been attributed. Trotula is quoted in them.

When we speak of more regular practitioners, Hippocrates must, as usual, be in the foremost rank; yet it does not appear that he was himself a practitioner, and his directions are equally harsh and injudicious. Little was known, by the accoucheurs, or at least little taught, respecting the manual operation, previous to the restoration of learning. The only writers of an earlier period treated, in general of the diseases of women, and in more indefinite terms of the manual assistance to be given in labours. One of the first of these was Paulus of Aegina, in the seventh century. The delivery by the feet was usually condemned, unless the child could not be brought forth by other means: even the crotchet was preferred to it by Hippocrates. The best of Galen's works on this subject is the *Tract de Formatione Fœtus*, in the fifth volume of Chartier's elegant but inaccurate edition. Some other tracts, on subjects connected with midwifery, are left us by Galen.

The works attributed to *Cleopatra* are probably spurious, and are full of the most trifling and superstitious receipts; nor, as we have just observed, are those of *Erotis* free from suspicion. The first author, among the Romans, who speaks of deliveries and female complaints, is *Celsus*: he broke the shackles imposed by Hippocrates, and taught us that the child might be delivered by the feet. He was followed at some distance by Moschion, a late author of the methodic sect, about the time of Galen, without adding any remarks on the operation itself. Yet probably the means of assisting delivery had been studied, and some mechanical contrivances suggested; for, in *Albucasis*, we find the coarse rudiments of the forceps, the crotchet, and other instruments, which the delicacy and improvement of modern practice have rejected; for no instrument is found so powerful, in the greater number of cases, as the unassisted efforts of nature. In the darker ages, we find the name of *Albertus Magnus* prefixed to an indecent, and probably a spurious, work, *De Secretis Mulierum*;

and, about the end of the fourth century, similar tracts appeared under the names of *Henricus de Saxonia*, and *Michaelis Scotius*, in the latter case appended to his *Treatise de Physiognomia*. It will be obvious that science could gain little by such works.

In the beginning of the sixteenth century we find midwifery cultivated with greater skill, under better auspices. This was nearly the era of *Eucherius Rosslin*, known better by the name of *Rhodion*, of Frankfort; and soon afterwards *Rueff*, of Zurich, and *Ruff* (*Rivius*), of Strasburg, followed in the same line, though not strictly in the manual departments of midwifery. This nearly was the era of the dawn of midwifery in this kingdom; for in the year 1540 was published, in English, the *Byrthe of Mankind*, or the *Woman's Booke*, by *Thomas Raynold*, physician. It was held in high estimation, and continued a standard work for more than ninety years. In this interval, however, *Harvey* had published his *Exercitatio de Partu*, *Sydenham* his *Observations on the Diseases of Child-bed Women*; and different tracts relative to midwifery had appeared by *Charleton*, *Wharton*, and others in this kingdom. The increasing character, however, of *Ambrose Paré's* Surgery, first published in 1573, the works of *Roussel* and *Guillemeau*, which rapidly succeeded, before the close of the century, soon eclipsed these feeble lights, and gave a new era to the art. *Paré* was the first modern author who recommended turning the child and delivering by the feet, a practice which *Guillemeau* supported and extended.

About the beginning of the seventeenth century, we find the first undisputed work of a female midwife *Louise Boursier* (*Bourgeois*), who is styled by authors *obstetrix regia*. She was a pupil of *Ambrose Paré*, and published observations on sterility, abortions, fertility, lyings-in, the diseases of women, and newly-born infants. About the middle of this century *Chamberlen*, catching perhaps a hint from the Arabians, boasted of a new invention to facilitate delivery. This was the forceps, or more probably the vectis. He was a man of abilities and experience, though not, as *Mauriceau* in his fifth edition boasts, physician to the king. It was not himself, but one of his sons, who went to Paris for the purpose of selling his secret; but returned unsuccessful, from having miscarried in his first attempt. He had before translated the third or fourth edition of *Mauriceau's* midwifery, which was published in 1672. The invention of the vectis has been claimed for *Roonhuyzen*, whose works were published at Amsterdam from 1663 to 1672, though more properly belonging to his son *Roger*, if really an invention; but he seems to have purchased the secret of *Chamberlen*, and to have afterwards used only a single blade. In this period, the works of another female, *Justina Siegmund*, who was born in Silesia, but who practised at Brandenburg, appeared in 4to. at Berlin; and *Dr. Willoughby's* manuscript treatise, quoted with considerable extracts by *Dr. Denman*, belongs also to the present era. *Deventer's* midwifery, published at Leyden at the end of this century, must be now chiefly noted for his aversion to instruments, for it scarcely merits any particular commendation. His works are chiefly distinguished for an opinion that delivery is often retarded by an obliquity of the womb, a circumstance denied by many

subsequent accoucheurs. It is certain that the womb, in the pregnant state, occasionally inclines to either side, and sometimes presses forwards, but never, except when retroverted, in a degree to retard or impede delivery.

The fame of *Chamberlen* equally excited emulation and opposition. *Dr. Bambar* supported the credit of instruments, while *Dr. Maubray*, the first English public teacher of midwifery, in 1723, with greater zeal decried them. The foreign authors, in the early part of this century, were *De la Motte*, a Frenchman, and *Dengs*, of Leyden. The *Traité des Accouchemens* of the former is an excellent work, and may be perused, at this time, with advantage: that of the latter is more concise, and of inferior value. *Dion's* midwifery was published in 1718, translated into English in the following year; and in 1727 appeared *Dr. Simson's* "System of the Womb," a work rather ingenious than of practical utility. *Chapman's* "Treatise on the Improvement of Midwifery" was published in 1733, and, in the following year, *Dr. Hody* published *Gifford's* "Collection of Cases," which occurred in his own practice, and which he describes with great simplicity and fidelity. He used the forceps, then called the extractors, but seems not to have trusted them beyond the reach of his hand. In 1736, *Dawke's* "Midwife Rightly Instructed," and, in 1737, *Brachen's* "Midwife's Companion" appeared.

In 1739 *sir Richard Manningham* published his *Compendium Artis Obstetriciæ*, having previously taught at a lying-in hospital of his own institution. He succeeded *Chapman*, who was the second teacher of the art in this kingdom; and he was followed by *sir Fielding Oulde*, of Dublin, who published in 1741 his "Treatise on Midwifery." In 1752 we received "Elementa Artis Obstetriciæ," from *Roderer*, and, in 1759, his "Icones Uteri Humani," both published at Gottingen. *Smellie's* Anatomical Tables followed in 1754, and *Dr. Hunter's* very accurate ones in 1774. *Smellie's* "Treatise on the Theory and Practice of Midwifery" appeared in 1752, and a very elaborate, but not a very important, work, by *Mr. Wallace Johnson* in 1769. *M. Puzot* of Paris published his *Traité des Accouchemens* in 1759; *Levret* in 1761; *Plenck's* his *Treatise* at Vienna in 1768; *Fried* in 1769, and *Stein* in 1770; works in the German, and little known in England. Within a few years we received *Dr. Denman's* very valuable work on this subject, the improved edition of his former volumes; and successive editions of *Dr. Alexander Hamilton's* Elements, or Outlines, have been published by himself, and his very able, respectable successor, *Dr. James Hamilton*. Though short, as a syllabus, they are comprehensive and satisfactory.

We have thus brought the sketch of the history of midwifery somewhat lower than our former histories, since, as, from the nature of the subject, it must be rather a catalogue of works than a descriptive account of their contents, we trod more safely over the ashes, with less apprehension of the fire underneath. For the same reason, we shall only, in general, refer for the conduct and qualifications of the accoucheur to what we have said on that subject at the end of the article CHIRURGIA.

Midwifery, at present, is taught and practised as a distinct branch of art; and the practitioner is supposed to possess a competent knowledge of the parts of the pelvis, its dimensions, the depth of its cavity, its various distortions, &c.; the parts of women subservient to generation; the state of the womb and its neck, in the different periods of gestation; extra-uterine fœtuses; moles; the progress of a child's head through the different parts of the pelvis in a natural labour; the secundines; the various complaints which usually attend pregnancy; the manner and utility of touching; the difference betwixt false and true labour pains; the different kinds of labour; the various modes of the child's presenting, with the methods of delivery; the disorders of childbed women; the management of the child and its mother during the time of lying-in, &c. See PELVIS, PARTURITIO, GESTATIO, INVOLUCRA, PRÆSENTATIO, &c.

OBSTIPA'TIO, (from *obstipō*, to stop up). **COSTIVENESS**, a disease placed by Dr. Cullen in the class *locales*, and order *epischeses*, which he defines no discharge of fæces, or less frequent than usual. Its species are, 1. *Obstipatio debiliū*; in lax and weak habits. 2. *Obstipatio rigidiorum*; in those of rigid fibres, and hypochondriacs. 3. *Obstipatio obstructorum*, with symptoms of colic, or from stony concretions in the bowels. See CONSTIPATIO.

OBSTI'PITAS, (from the same). See CONTRACTURA.

OBSTRU'CTIO, (from *obstruo*, to shut). Obstruction in the vessels of any part; is a term applied when any obstacle opposes the circulation of their proper fluids. Vide MORBI FLUIDORUM. The word *ophilitatio* is used by ancient authors as a more complete or fixed obstruction. Rhodius.

OBTUNDE'NTIA, (from *obtundo*, to make blunt). Medicines suited to cover the acrimony of the fluids. See DEMULCENTIA.

OBTURA'TOR EXTE'RNUS, (from *obturo*, to shut up). *Marsupialis, bursalis musculus*. This muscle covers the foramen magnum ischii, and, rising from the bone before the foramen, runs backward under the head of the os femoris; covered by the quadratus femoris, and is inserted into the trochanter major, contiguous to the internus. Like it, this muscle is a rotator.

OBTURA'TOR INTE'RNUS, more frequently than the preceding called *marsupialis et bursalis musculus*, arises from the inner circumference of the foramen magnum ischii, passes round the ischium as on a pulley, and is inserted into the trochanter major, contiguous to the pyriformis. It is a rotator of the thigh; and its tendon plainly forms a groove on the bone in its passage.

OBTURA'TOR NE'RVUS, a branch of the crural; it passes through the foramen ovale, and is lost in the inner muscles of the thigh.

OBTURA'TRIX ARTE'RIA, (from *obturator*,) a branch of the hypogastric, which perforates the obturator muscle, and goes out of the pelvis, at the upper part of the ligament of the foramen ovale, having first sent a branch over the symphysis of the os ilium, and os pubis, to the inguinal glands and integuments. It sends out a branch which communicates with a branch of the sciatica arteria; gives out branches to the adja-

cent muscles, and sends many small ones by the neck of the thigh bone.

OBTURA'TRIX VE'NA, is a branch from the hypogastric vein, and receives this name where it enters the internal obturator muscle.

OBVOLU'TUS, (from *obvolvo*, to roll up). Folded or rolled up.

O'CCA. See CETE ADMIRABILE.

OCCIPITA' LIS ARTE'RIA, (from *occiput*,) is the first external, or posterior branch of the external carotid. It passes obliquely before the internal jugular vein; and having sent out branches to the adjacent muscles, it runs between the styloid and mastoid apophyses, along the mastoid groove, and goes to the muscles and integuments which cover the occipital bone. It communicates with the temporal, vertebral, and cervical arteries.

OCCIPITA' LIS MU'SCULUS is one of the quadrati, mentioned by Columbus, and accurately described by Fallopius. These muscles are short, broad, thin, and fleshy, situated on the occiput, where the mastoideus and splenius are inserted. They soon become tendinous, join with the pericranium, which firmly adheres to the hairy scalp on the sinciput. When they act, they pull the hairy scalp backwards.

OCCIPITA' LIS NE'RVUS. A branch from the tenth pair of nerves which proceed from within the skull: it spreads and runs on the upper and lateral parts of the head.

OCCIPITA' LIS POSTE'RIOR ARTE'RIA is a branch from the vertebral, spreading on the occiput.

OCCIPITA' LIS VE'NA. A branch from the posterior, or upper external jugular; but sometimes proceeding from the vertebralis, or axillaris. It branches on the occiput.

OCCI'PITIS OS, is of a rhomboidal figure; a transverse ridge running from the mastoid process of one side to that of the other, divides it into two parts. Its external surface is convex, except at the cuneiform process, at the base of which, on each side of the foramen magnum, are the condyles which connect the head to the spine. On the outside of these condyles the bone projects, and there is a notch where the internal jugular vein passes. It is divided into four cavities in its inside, by a crucial spine, in which there are canals for the superior, the longitudinal, and the inferior, frequently for the occipital sinus; those canals on each side, for the lateral sinuses, are continuations of the longitudinal. There are five foramina proper to this bone; the foramen magnum, a hole on each side just above the condyle for the ninth pair of nerves, and generally two which penetrate from behind the condyles to the fossæ of the lateral sinuses. Besides these, there are two common foramina, one on each side, between the processus cuneiformis and os petrosum.

The os occipitis is peculiarly thick, apparently to defend the cerebellum, and it is stronger than any other bone of the head, except the os petrosum. Below, and at its sides, the large muscles have apparently rendered it thinner, but they also defend it from injury. This bone is joined, by its cuneiform process, to the sphenoidal, and, in old age, unites with it. The lambdoidal suture unites it to the parietal bones, and the additional part of the temporal suture to the temporal bones. The

condyles of this bone connect it with the first vertebra; but these admit only of a slight lateral motion, for the rotatory motion of the head is owing to that of the atlas on the second vertebra.

In the fœtus this bone is divided by cartilage into four parts. The largest forms all the bone which is above the great foramen. Two other parts form the sides of the foramen. The cuneiform process, which is the last, appears often distinct at the age of six or seven.

OCCI'PITO-FRONTA'LIS MUSCULUS; *epicranium*, rises from the posterior part of the occiput, goes over the upper part of the os parietale and os frontis, and is lost in the eyebrows. It is a very thin muscle, raises the eyebrows, and wrinkles the forehead; an antagonist to the corrugator Coiterii.

O'CCIPUT, (from *ob* and *caput*, the hinder part of the head,) *prona, inion*. Inion is confined by Blanchard to the beginning of the spinal marrow; by others, to the back part of the neck.

OCHEU'S, (from *οχηω*, to carry). See **SCROTUM**.

OCHLAGO'GI, (from *οχλος*, *populus*, and *αγωγος*, *ductor*). See **AGYRTÆ**.

O'CHRA, (from *οχρος*, *pale*, *earth of a pale yellowish colour*). **YELLOW OCHRE**, sometimes brown, occasionally red: the latter is called **RED OCHRE**, *rubrica fabrilis*, *Creta rubra*, *arcanne*, **MARKING STONE**, **RUDD**, and **RUDDLE**, oxydated iron of Haüy, iv. 105. See Lewis's *Materia Medica*. Neumann's Chemistry.

O'CHRA NI'GRA. See **PLUMBUM NIGRUM**.

O'CHRUS, (from *οχρος*, *pale*, from the pale muddy colour of its flowers,) *lathyrus*, *ervilia*, *pisum ocrus* Lin. Sp. Pl. 1027. It bears cylindrical pods with round seeds as large as peas, which, though eatable, are indigestible.

OCHTHO'DES, (from *οχθος*, *callous*, *tumid*, *lips of ulcers*). See **ULCERS**.

OCIMA'STRUM, **OCYMA'STRUM**, (a dim. of *ocimum*, *basil*), *lychnis sylvestris alba simplex*; **WILD WHITE CAMPION**; *lychnis dioica* Lin. Sp. Pl. 626. β. Found in hedges and borders of fields; flowers in May. The flower is said to check the fluor albus and inward bleedings; the herb to cure convulsions in children: but its virtues have not obtained it a place in practice. See Raii *Historia*. It is a name for the *circæa lutetiana*, and several species of *lychnis*.

O'C-KOW. A Chinese remedy for diseases of the breast, said to be the flesh of the common ass, boiled down to the consistence of a thick glue. It succeeded in relieving the author of this account, in the eleventh number of the Edinburgh Medical Journal, Dr. Baildon, of a consumptive complaint; but the digitalis was taken at the same time, so that the effects of the remedy are equivocal.

OCRE'A. See **TIBIA**.

OCTA'NA, (from *octo*, *eight*). An erratic intermitting fever, which returns every eighth day.

OCTA'VUS HU'MERI MU'SCULUS, **OCTA'VUS HU'MERI PLACENTI'NI MU'SCULUS MINOR**. See **TERES**.

OCTANDRI'A (from *octo*, *eight*, and *ανδρ*, *a man*). A class of plants having eight stamina.

OCULA'RES COMMU'NES, (from *oculus*, *an eye*). See **MOTORES OCULORUM**.

OCULA'RES EXTERNI. See **MOTORES OCULORUM EXTERNI**.

OCULA'RIA, (from its use in complaints of the eye). See **EUPHRAGIA**.

O'CULI CANCRO'RUM, **CRABS' EYES**, *cancro-rum lapides*, *et lapilli*, are stony concretions, found in the head of the *astacus fluviatilis*, or river craw fish, lodged in a bag on each side. These stones are roundish, flattened on one side, white, having sometimes a reddish, and at others a bluish cast, of which the blue are preferred, as the white are taken out after the fish hath been boiled: they are internally foliated. The largest quantities are the produce of Muscovy, particularly of the river Don.

They were formerly used as absorbents of acid humours in the primæ viæ, and supposed, when combined with the acid, to be more aperient than the other absorbent earths. The earth of crabs' eyes differs much from that of crabs' claws, for the first is not convertible into quick lime; and in its chemical relations is said to resemble the earth of hartshorn. It is therefore, like the bones, a calcareous phosphat.

These stones are counterfeited with pipe clay, chalk, or the shells of fishes; but these compositions are easily distinguished from true crabs' eyes, which are of an uniform texture, stick to the tongue, soften with water, and dissolve in acids. See Tournefort's and Lewis's *Materia Medica*.

O'CULO-MUSCULA'RES. See **MOTORES OCULORUM**.

O'CULO-MUSCULA'RES EXTERNI. See **MOTORES OCULORUM EXTERNI**.

O'CLUSUS, (from *οπλομαι*, *to see*). **THE EYE**; *illos*. The external parts are the eyebrows, the eyelids, the extremities of which, where the eyelashes grow, are called *orchos*, the cilia, the fore part of the globe, the *membrana conjunctiva*, the *cornea lucida*, the iris, the pupilla, the *carunculæ lachrymales*, and angles of the eyelids, &c. The external eyes are named *paropia*; the internal *pegæ*. The internal parts are the globe of the eye, the *adnata* or *albuginea*, the extremity of which is called *premnon*; the *sclerotica*, the *choroides*, the *retina*, the aqueous humour (*hydatodes*, *hydatoides*; *ooides*; *ovatus oviformis vel albuginosus humor*); the vitreous humour, *hyaloides*; crystalline humour, *phacoides*; the muscles that move the eye, and the optic nerve, &c. For the particular descriptions, see the different articles in *verbis*. To explain, however, the theory of vision, it will be necessary to add a short account of the different parts of the organ in a connected view.

The eye is an irregular spheroid, projecting a little at its fore part, where it is seen between the lids. In this projecting portion we find a fluid, in which a fine membrane, perforated in the centre, floats. Beyond this fluid is a more solid transparent body, in the shape of a lens, and still farther back, a gelatinous fluid which covers a very fine semi-opaque membrane. All these fluids are confined by a dense substance which supports and protects them, called the coats of the eye.

Having given this very general idea of the organ, we shall proceed to notice the containing coats. From the eyelids to the ball of the eye a very thin vascular membrane is extended, in some degree to support the eye, and to prevent substances passing between it and

the edges of the orbit. This is the *adnata* or *conjunctiva*, in which, even when not diseased, red vessels may be distinctly seen, and which is the most common seat of ophthalmia. A hard, white, firm, tendinous substance forms the outer coat, viz. the *sclerotica*, which in the projecting part of the eye is transparent, and called the *cornea*. The *sclerotica* is peculiarly strong in the fœtus; the cornea comparatively weaker than in the adult; each may be divided into laminæ, but these are more distinct in the cornea, and separated by a cellular substance, containing a watery fluid, distinct from the aqueous humour already mentioned. In fact, if the compacted laminæ of the *sclerotica* are supposed to be separated, with a very pellucid fluid interposed between each, it will at once give a correct idea of the projection of the cornea, and of its transparency. When the optic nerve, which is inserted behind, reaches the globe, the external coat of its sheath covers the *sclerotica* externally, and the internal, internally: the external membrane of the eye is thus inserted between the coats. Le Cat and others have described the eye as a bottle blown from the optic nerve, preserving its coats in the coats of the organ; but this is a refinement, if true, of no practical advantage either in the theory of vision or the pathology of the organ.

The projecting part, or *cornea*, is described as the segment of a smaller circle; but it is by no means a portion of a circle, as its margin is flat towards the nose. The fluid between the laminæ gives it transparency; for in fevers this fluid becomes more opaque, and the eye acquires that dulness so constantly observed: when coagulated at the approach of death, the light is even reflected from it, and the eyes are said to be glassy. Over the cornea there is a very thin glassy membrane, probably derived from the *adnata*, and by maceration it is said that the cornea separates from the *sclerotica*. The cornea is sometimes the seat of abscesses, and seems to be supplied with vessels; but in a sound state these do not carry red blood.

Within the *sclerotica* is the *choroid coat*, covered with a black, or at least with a dark coloured pigment, which, in very fair persons, is of a lighter colour, and in the albinos, almost white. The choroid is minutely vascular, and not in every part connected with the retina. It consists of two laminæ; the outermost is that which supports the numerous vessels, and the innermost, the *tunica ruyschiana*, has the structure of a secreting membrane, for the appearance is villous, and these villi have been styled *tapetum*. The black pigment is a mucous substance, sometimes wanting in old persons, and in animals who seek their prey by night. It seems, however, more conformable to the analogy of nature, that in these, as in the albinos, it is of a grey or white colour.

When the choroid coat reaches the margin of the *sclerotica*, to accommodate it to the smaller circle of the cornea, it is folded in plaits, called the *ciliary processes*, still covered with the dark pigment, resembling, when this is washed away, the valvular doublings of the villous coat of the intestines. Previous to its inflection it is firmly fixed to the *sclerotica*, and is closely united with the root of the iris. At their internal extremities they are attached to neither, but are loose and floating. These processes leave an impression both on the

vitreous humour and the retina at the edges, where they are in conjunction, which have been styled *sulci ciliares*, the ciliary processes of the retina, &c. which only confound a simple idea, and multiply terms without reason. The ciliary processes collectively are called *corona* or *circulus ciliaris*, *ligamentum* or *corpus ciliare*, and are of great importance in vision: it is of consequence to remark, that their connection with the retina is the only means by which it is kept expanded, and the only mode of connection between the humours of the eye and their coats.

The *iris* or *uvea* is the coloured circle which we see in the eye, perforated by the black spot, styled the *pupil*. When put in water and examined with a microscope, the anterior surface appears to be covered by minute villi, whose colour fades when putrefaction begins. The fibres of the iris are transparent, and the colour chiefly depends on the pigment at the posterior surface.

The iris consists, it is said, of two sets of fibres, both irritable and muscular; the one surrounding the pupil, the other radiating from or to the circular, and, as it is called, muscular margin. The muscularity, however, has been denied, and its contraction and relaxation supposed to depend wholly on a stimulus on the retina. It is copiously supplied with nerves from the ciliary. Two large ciliary arteries, and two lesser anterior arteries, which pierce the *ligamentum ciliare*, freely anastomose round its root, and send serpentine branches to the margin of the pupil, where they again anastomose, and send off branches towards the edge of the iris. The corresponding veins pass into the *vasa vorticiosa* of the choroid coat; some between the choroid and *sclerotic*, and some piercing the latter, pass out, and spread on the surface of the eye. In fact, these vessels seem to constitute the whole of the iris, which is probably vascular rather than muscular.

The *retina* is the most important part of the eye, since it is the nervous expansion on which visible objects are painted; and by this means the image, we mean not to say the material image, is conveyed to the sensorium. The optic nerve enters, we have said, not immediately at the back part of the eye, but a little on the inward side towards the nose. At some distance, before it passes through the *sclerotic* coat, an artery penetrates its vagina, the *arteria centralis retinae*, so that if the optic nerve be cut after its entrance, the artery retracting, leaves a little foramen, called by ancient anatomists the *forus opticus*. The extremity of the optic nerve, before it expands in the retina, forms a little conical point, which we suspect to be a ganglion.

The retina itself is spread over the choroid coat, resting on a reticulated membrane which supports its vessels, probably derived from the pia mater, the *lamina cribrosa*: from its texture the name was apparently given. In this membrane the branches of the *arteria centralis*, derived from the optic and ophthalmic artery, and soon after entering the *sclerotica*, divided into many large branches, from which numerous anastomosing subdivisions proceed, are most profusely scattered. The retina seems to terminate at the ciliary processes, but the *lamina cribrosa* probably passes over the posterior part of the lens. This idea will reconcile many disputes, and some, seemingly discordant, observations.

The *membrana pupillaris* is a small vascular membrane

which extends over the pupil in the fœtus. At about the seventh month it begins to disappear, and is scarcely, if at all, discernible at the ninth. Its larger arteries come from the iris; smaller and more numerous branches from those of the lens. Its use is not known, nor does it merit any minute disquisition. It certainly prevents the iris from contracting in utero; but there is no cause for its contraction, and apparently no inconvenience would arise if no impediment existed. It is not impossible that some imperceptible remains of this membrane may prevent too violent effects from the first access of light.

The fluid, in which the iris floats, is called the aqueous humour, and its floating fibres are supposed to divide the projecting part of the eye into two chambers, the anterior before, and the posterior behind, the iris. The error, however, is considerable, for there is no space behind the iris which merits the name of a chamber, since the iris moves almost in contact with the lens. In the fœtus, this fluid is red and turbid, in the adult, perfectly transparent, but seldom exceeding in weight five grains. Mr. Chevenix found it to be an albuminous fluid, containing also gelatine and muriat of soda, but in such small proportions that the specific gravity of this fluid is not more than 10,053. We might perhaps remark, that the common salt assists the transparency, since salt water is peculiarly so, but that it is in so small a proportion that the aqueous humour has little, if any, taste. (Philosophical Transactions for 1803, p. 96.) It seems to be secreted from the vessels of the iris, and is regenerated, after being discharged, within a few hours.

The crystalline is almost immediately behind the iris. It resembles a flatted sphere. The anterior surface is the segment of a sphere about eight lines, the posterior of about five lines. The anterior is consequently the flatter surface. The crystalline increases in density from the surface to the centre. On the average its specific gravity is about 10,790, without any traces of muriatic acid. It contains, therefore, much larger proportions of albumen and gelatine, with less water. It putrefies rapidly, splits when dry, into lamellæ, so that at first it exhibits a star-like fissure, and is at last divided into shreds. When its density, its rapid putrefaction, and its fibrous structure are considered, we must conclude, that it contains a large proportion of fibrin, and we shall more readily admit the modern doctrine of its muscularity. The lens, it is now acknowledged, has a distinct capsule, and a canal surrounds it, called from its discoverer, Petit.

The vitreous humour fills the larger proportion of the cavity of the eye. It does not float loosely, but is contained in cells, so as not to flow freely without pressure. When removed from these it appeared of the same specific gravity as the aqueous humour, and similar in its chemical relations. Fourcroy found in these humours some phosphat of lime, which Mr. Chevenix could not discover. The canal of Petit is formed, it is supposed, by a double layer of the vitreous humour, which forms also the capsule of the lens; but the capsule and the canal are distinct. Mr. Bell supposes that the Petition canal is formed by the vascular membrane of the retina, which also forms the membrana pupillaris of the fœtus; and his arguments render the opinion highly probable.

The eye is surrounded by numerous muscles, whose

irregular action occasion that motion of objects which we perceive in vertigo. These muscles arise round the foramen, and are inserted into different parts of the orbit, giving, by their tendinous expansions, the brilliant whiteness of the fore part of the organ. Four of these muscles are called *recti* from the direction of their fibres, and it is these which have been supposed to compress and change the figure of the eye.

The *rectus superior* rises the eye upwards, the *attolens* and *levator oculi*, and as it expresses pride, is called also *superbus*.

The *rectus inferior* lowers the eye, styled, for similar reasons, *deprimens* and *humilis*.

The *rectus internus* moves the eye towards the nose *adducens oculi*; and as it is directed to the glass while drinking, *bibitorius*.

The *rectus externus* turns the eye outward; *abductor oculi*, *indigabundus*. The origin and insertion of these muscles will be obvious from their action.

There are two *oblique muscles*. The first is the *obliquus inferior, longissimus*, which rises from the bottom of the orbit by a slender tendon, passes the upper part of the eye ball fleshy; then forming a smooth round tendon, it passes through a cartilaginous pulley, in the margin of the orbit, and is inserted in the middle of the eye ball. It gives an oblique motion to the eye, and contributes with the other muscles to roll it. From its passing over the pulley, it is styled *trochlearis*.

The last is the *obliquus superior brevissimus*. It rises from the nasal process of the superior maxillary bone in the edge of the orbit, passing obliquely backwards and outwards under the ball of the eye, is inserted opposite to the obliquus superior. This muscle is in every respect the antagonist of the *inferior*.

The eye is an organ of peculiar delicacy and importance; but without the other senses it would afford generally imperfect, and often erroneous, ideas of external objects. This subject has been examined at some length, with great ingenuity, by Dr. Reid, (Inquiry into the Human Mind,) in what he styles the geometry of visibles; to which we must refer the reader, as it scarcely forms a part of our present subject. To explain the theory of vision, we premise a few remarks on some of the first principles of optics.

When light passes through a flat plate of glass it proceeds in a direct line, or at least nearly so; but when the glass is convex on either side it is bent from its direction towards the axis, or the line which passes through the centre. Numerous rays passing, therefore, from a point, and necessarily converging through a convex glass, are turned towards the axis, which must of course occasion them to meet at some point on the opposite side. This is styled the refraction of the rays; but rays impinging on the glass with a considerable obliquity do not pass through it, but are thrown back; and this is called the reflection of light. The degree of refraction differs with the density and the nature of the medium through which it passes.

To apply this popular view of the subject to vision we must remark, that the pupil of the eye, the aperture at which the light enters, projects, that it consists of transparent laminae, with a very bright fluid interposed. By passing through this fluid the light is a little diverted from a rectilineal course, but it is more so in passing through the lens and the vitreous humour. By

their united effects the rays meet in a point, at the bottom of the eye or on the retina. Its image is there accurately painted, and this image conveys to the mind an idea of an object, corrected by the touch and by experience. The touch corrects the idea respecting the form of the object; experience respecting its distance. We have observed that the refraction is greater in proportion to the density of the body, through which light passes, and it is greater in proportion to the obliquity of the impinging rays; if that is not in so great a degree as to occasion reflexion. To bring all the rays from a given point accurately to a focus, the density of the refracting body must therefore not be uniform, but must increase at its centre, where the obliquity of the rays is less. This is the case with the lens; and when, from causes to be hereafter explained, the image is not distinct, the eye lids are partly closed, to prevent the more oblique rays from entering.

It may appear singular, that while refraction is so simple an operation, such a number of refracting media are connected in the organ. In general, however, refraction is not regular. Some rays are broken in the operation, and resolved into their colours, giving the image, or spectrum as it is called, with coloured (iridescent) fringes. This irregularity is different in different bodies, and sometimes the irregularity is on opposite sides. The opticians, therefore, who felt its bad effects in telescopes, employed glass of such kinds as to correct this defect by their opposed powers; and it is singular that the structure of the eye had not suggested this mode of correction, rather than that the correction should elucidate the accuracy of the image in vision. It appears probable that the fluid interposed between the laminae of the cornea has some effect in this way, and that the irregularities of refraction from passing through the cornea are thus corrected, previous to the rays reaching the lens. The only inconvenience is the loss of light; for rays passing through different media are lost, or rather give an indistinct glare. The object of nature, however, in the structure of the eye, is to moderate the light; and we not only find many rays thus suffocated, but the vitreous humour is enclosed in cells, so that the refracted rays must be every moment passing through media of different densities before they form the image. When it is at last formed, it is comparatively very minute; and as each part conveys a correct idea to the mind, it is evident that every portion must, at least, impinge on a nervous fibre, and that each fibre must be of the minuteness of the image which the least visible object affords. Thus De la Hire calculates, that the image of the sail of a windmill, at the distance of 4000 toises, is but $\frac{1}{4000}$ of an inch, but very minute portions of this sail may be distinguished; and such reflections induced us to remark, when speaking of the nervous fibres, that what appeared in the microscope the smallest fibre was more probably only a fasciculus, and perhaps not the ultimate one.

When it was observed that the image was pictured on the retina, it was at once supposed that it was thus conveyed to the brain, and contemplated by the immaterial principle at its leisure. This, however, is highly improbable for the reasons stated, that, without the corrections of touching and experience, our ideas of visible objects are often erroneous. It is improbable, also, from another circumstance; the image in the eye is inverted,

and numerous have been the speculations to explain how this inverted image is again restored to its proper position. It was once supposed that the fibres in the optic nerves decussate in crossing; and again, that they are mixed in a ganglion near the sella turcica. The former is not true, nor would either explain the difficulty. Others have supposed that the soul looks at the image by reflection; an idle fancy, unworthy of a philosopher. The fact is, that experience corrects this and other errors: our knowledge of relations and relative positions are not conveyed by the eye.

With two eyes we see only a single object. This too has been explained on the principle of decussation which does not take place, and of the ganglion which can have no such effect. It chiefly arises from the axes of the eye being directed to the same point, which gives individuality to the idea excited in the mind. Experience teaches us that two objects cannot be in the same place, and we thus conclude the image to be single. This may be evinced by an easy experiment. A slight distortion of either eye, in every one's power, will give the appearance of a double object. If the uniform direction of the axes be gradually restored, the two objects will be seen to coalesce and become one. By diseases which affect the very minute motions of the eye, as a foul stomach, narcotic poisons, or spirituous liquors, which produce irregular action, no longer under the command of the will, objects seem also double.

Why then, it may be asked, have we two eyes? With two we see objects brighter; we see them more completely, for we take in a larger circle; nor are we left in the miserable state of blindness should an accident happen to one. It has been said, that when one is destroyed the other expands, and the loss is after a short period no longer felt; but this is not true. The person from habit is not sensible, indeed, of his loss, unless particularly required to examine the whole of an object, as of a column, and a minute motion of the head may assist him in this examination; but no expansion of the remaining eye can take place, for there is no apparatus for such a purpose.

Our ideas of the distance of objects is, we have said, the effect of experience; but the power of accommodating our vision, so as to survey objects at very different distances, has been the subject of much controversy. It has been supposed that the ciliary ligament is muscular, and draws back the lens; that the lens itself is muscular, and can change its own shape; or that the recti muscles, whose tendons may be supposed to reach, perhaps to spread over, the cornea, may contribute to flatten it. Each opinion has had its advocates. Yet this accommodation of the eye to distance is very limited. A near-sighted person, with all his efforts, cannot easily extend his sphere of distinct vision, though he can considerably reduce it; but to reduce it he must render the eye more convex, which neither of the means suggested will effect. Much of this supposed change in the form of the eye, however, apparently results from a greater exertion of attention, as images within the sphere of distinct vision, when from some accidental circumstance confused, are readily perceived by an exertion of attention, without any change in the external circumstances. If either of the powers above mentioned have any effect in this respect, it is the action of the recti muscles; and in trying experiments of this kind with attention,

we think we have been sensible of compression on the ball of the eye.

Habit has, however, a very considerable effect on the appearances of objects. Distortion of either eye, the effect of accident, is at first attended with double vision; but the object is soon seen single, though the cause remains. This circumstance, however, does not invalidate the former reasoning, since it arises from the power we possess of examining objects with one eye only. This is often done, particularly when the eyes are not equally acute.

Distinctness of vision depends much on the state of the organ, and this on the state of health. In disease we see imperfectly, because the eye rolls with an involuntary motion; and the person who sees dark spots in the bed clothes, in a fever, constantly finds them moving, and his hands rove to catch them. It is not enough for peculiarly distinct vision that the object should be at the proper distance. All adventitious light should be removed; for this, as opticians know, gives a fringe, an indistinctness, to the outline. If objects are carried to the remotest limits of distinct vision, by an exertion of attention, they will be seen more perfectly. Objects reflected from a convex mirror, or looked at through a glass somewhat more concave than the eye requires, will appear at a distance indeed, but peculiarly distinct.

In the article *AMBYLOPIA*, we anticipated some of the most common irregularities of distinct vision; viz. the myopia and presbytia. We are now in a capacity to consider them more accurately. The *myopia*, it was observed, arises from too great refraction of the rays, so that they are brought to a focus before the image reaches the retina. The defect has been attributed to a greater convexity of the cornea, which, as we shall find, flattens by age, so that the disease is by time diminished. This, however, is but one cause, for many near sighted persons are not relieved by advancing years. From what we have said, it will appear that it may arise from an increased density, and consequently the increased refractive power of the fluid between the laminae of the cornea, the increased density of the lens in general, its less uniform increase towards the centre, or the increased refractive power of the vitreous humour. That these causes often take place is certain, since, in many families, short sight is constitutional and hereditary. There is no doubt, however, but that both the myopia and presbytia may be acquired. The former is often the disease of those accustomed to survey minute objects at short distances, as the student, the watch maker, &c.; the latter of persons used to strain their sight to distant views, as the sailor. How this is acquired we are not prepared to say. When we spoke of distinct vision, we admitted, in some degree, the power of the recti muscles to flatten the eye; and in the sailor this power may produce the effect. The opposite change is more difficult of explanation. But is it a change? May not the eye naturally admit of distention; and may not this distention be particularly directed forward, as the coats of the eye are there less dense, unless counteracted by the recti muscles? When not exerted we may readily suppose that, as usual, their tone is weakened. In this supposition there is some probability, since it is the

acquired myopia which is chiefly relieved by age. It may be some confirmation of this opinion to add, that if a short sighted person uses a glass of too great concavity, he feels his eyes peculiarly weak; and he finds it difficult to adapt them even to the usual distance of distinct vision.

The remedy of myopia is obvious. As it is impossible to lessen by any art the convexity of the cornea, or the too great density of the humours, it is necessary to lessen the obliquity of the rays. This is effected in part by wrinkling the brow and closing the eyelids. The latter alone is not sufficient, for the arch of either lid is the segment of so large a circle, that to close the lid only, would scarcely impede any oblique rays. By wrinkling the brow we depress the inner corner of each lid, and cut off the oblique rays which pass by the inner canthus, and in some, though in a less degree, those at the outer. As a concave glass, by a power opposite to that of a convex, disperses the rays, so a glass slightly concave lessens their obliquity, and prevents their union by refraction so early. To choose then the degree of concavity which will produce the requisite obliquity only, will be an object of importance. It is advised, in general, to ascertain such a degree of it (marked usually by numbers from one to fourteen,) as will bring the eye to the common state of perfect vision, and to select the number immediately below, because it is supposed that the use of the glass will by degrees correct the defect. This indeed would be the case had the eye the considerable power of accommodating itself to different distances, which physiologists have been so anxious to explain. We believe, however, that no change takes place by such a glass which would not otherwise be observed; and, indeed, we know that after many years using an inferior number, that above it has been found in the same degree of superior utility as at first. If, therefore, a glass must be employed during a whole life, there is no reason for abandoning the peculiar advantage of the most perfect vision which art can supply. In the constitutional myopia there is seldom any change; and even the habits of the sailor will not conquer it. We have not, however, seen any such instance, except where the cornea has been distinctly prominent; so little foundation is there in the remark, that age will flatten it.

The *presbytia* is in every respect the opposite disease. It arises from the gradual change in old age, when the vessels, no longer distended, are in part obliterated. The eye sinks, the cornea is flatter, and but that the humours apparently increase in density and refractive power, sight would decay faster. This corresponding, or rather antagonising change, seems to preserve the sight of some old persons to a very advanced period. When from the diminished refraction, the picture thus falls beyond the retina, it is remedied by a convex glass, which more strongly refracts the rays, and brings the image more correctly on the retina. These glasses are neither so accurately ground nor so regularly numbered as the concave, and should be bought of an optician of character, rather than an itinerant, who purchases the glasses refused by the former. It was thought at one time advantageous to have the glasses tinged of a green or blue colour; but this defect is accompanied with some insensibility of the retina, and

to read, a strong light must be often thrown on the paper, either from the sun or a large candle.

Each complaint varies in its degree, according to the state of health; but disease seems chiefly to weaken the attention, and to affect the mind rather than the organ. If any part of the change in the shape of the eye depends, however, on muscular action, we may readily suppose, that diminished or increased irritability, or diminished tone, may have a considerable effect on distant vision.

We have spoken, through the whole of this discussion, of the retina as the seat of vision, though fully aware of the controversies which have arisen on this subject. The difficulty first arose from the insensibility of the spot where the optic nerve enters the globe of the eye; and as the choroid coat was discontinued on that part while the nerve was there, it was supposed that the coat rather than the nerve was the proper seat. We need not enlarge, however, on this point, for we know that any disease of the nerve between the eye and the brain will prevent our being sensible of visible objects; and there is no communication between the choroid coat and the brain. This would be decisive, independent of the numerous facts which prove that the state of the visual organ corresponds with that of the brain. The fact is, that in no instance do the nerves in their course show their peculiar properties or powers. They must be divested of their armature, and their evolved fibres exposed to the impressions. Much of the difficulty has arisen from the idea that the picture was essential to vision; but the impression alone is so, and the picture is an accidental, rather than a necessary effect.

The dilatation and contraction of the iris on the diminution or increase of light is, with difficulty, explained. The contraction is not owing to the stimulus of light on the iris, for it seems to have no muscular power. The ends do not recede when divided; it is not contracted when wounded, or light thrown on it, without entering the pupil. It has been thought sufficient to remark, that its motions correspond with the stimulus on the retina. This is, however, in many respects unsatisfactory; and it has been with more reason concluded, that the dilated is the active, the contracted the passive state of the iris. The author of this opinion thinks the action of light stimulates the arteries of the reticulated coat of the retina, and the increased action of its vessels fills also those of the iris, which communicate with them. But vessels when filled are tortuous, and of course shorter in straight lines (see Exeter Essays, p. 202); the breadth of the iris is consequently less, and the pupil enlarged. We more readily acquiesce in this idea, since we think that it explains one remarkable fact, that in some cases of amaurosis the pupil contracts and dilates. This we can easily suppose may depend on the state of the vessels. If the palsy, as usually happens, is communicated to them, contraction and dilatation will not on this system occur. In contrary circumstances these alternations may be observed.

The crystalline lens, as we have hinted, grows denser, and somewhat coloured by age; and in general its transparency is preserved by warmth, and, after death, may be restored by it. Cold seems chiefly to act by coagulating the fluids. In new born children its density

is inconsiderable, and the cornea is not stretched to its due degree of convexity; so that they see imperfectly. The aqueous humour in this early period also is sometimes not transparent, and it is by no means certain that some portion of the membrana pupillaris may not remain. All these circumstances will increase the imperfection, and occasion the phenomena already noticed.

A new born child never keeps its eyes fixed on any one object, and it will not wink if any object approaches it. It does not, however, follow that he does not see, but that his vision is imperfect, the reason of which has been explained.

See a Description of the Eye, and its Adjacent Parts, by J. Warner; Winslow's Anatomy; Cheselden; Bell; Zinn; and the very elegant plates of Soemmering.

Artificial eyes are made of concave plates of gold, silver, or glass, stained so as to resemble the natural organ. They must be taken out to clean every night, and replaced in the morning. If no more of a diseased eye is removed than what preternaturally projects, or if the muscles are unhurt, the artificial eye will have a little motion. If it does not fit well, it irritates and inflames the other eye.

On disorders of the eyes, see St. Yves; Benedict Duddell; Remarks on the Ophthalmia, by J. Ware, and J. Warner; Bell's Surgery, vol. iii. p. 232—519; Scarpa on the Diseases of the Eye.

In botany *oculus* means the bud of a plant, and also a name affixed to many herbs supposed to resemble the eye of some animal.

O'CULUS. See COLIQUAMENTUM.

O'CULUS BOVINUS and ELEPHANTINUS. See PROPTOSIS.

O'CULUS BOVIS. See BELLIS MAJOR.

O'CULUS BU'BULUS. See PROPTOSIS.

O'CULUS CHRISTI. See HORMINUM SYLVESTRE.

O'CULUS GENU. See PATELLA.

O'CULUS LACHRYMANS. See EPIPHORA.

OCYMASTRUM. See OCIMASTRUM.

OCYMASTRUM VERRUCCARIUM. See CIRCEA.

OCYMOIDES, (from *οκυμος*, basil, and *ειδος*, likeness,) *lychnis sylvestris*, sive *aquatica purpurea simplex*. RED WILD CAMPION, *silene armeria* Lin. Sp. Pl. 601, grows in hedges, and flowers in summer. The seeds are cathartic, but it is not at present employed. See Raii Historia.

O'CYMUM, *οκυς*, swift, (from its sudden growth.) *Basilicum*. OCYUM BASILICUM Lin. Sp. Pl. 833. *Ocyum* is chiefly used for improving the flavour of sp. volatilis aromaticus.

O'CYMUM CARYOPHILLATUM, *minimum*, *vulgarius*, *medium*, *citratum*. See BASILICUM.

ODAXISMOS, (from *οδης*, a tooth, and *δακνω*, to bite). A biting sensation, pain or itching in the gums. See DENTITIO.

ODONTAGO'GOS, (from *οδους*, and *αγω* to draw). See DENTAGRA.

ODONTA'GRA, (from *οδης*, and *αγειν*, to seize).

ODONTA'LGIA, (from *οδης*, and *αλγος*, pain). The TOOTHACH, a disease arranged by Cullen in the class *pyrexia*, and order *phlegmasia*, which he defines a rheumatism or pain of the jaws from carious teeth. The causes are those of caries in the body of the tooth, which frequently arises in the little cavities between the

fangs; often from tartar at the collum of the tooth, depressing the gum, and admitting the air; sometimes from a little erosion of the enamel where it is thinnest, near the collum.

In these pains the nerve may be sometimes destroyed by a hot iron, rendered torpid by essential oils, or by camphor and opium united.

The lady bird, *coccinella septem punctata*, and indeed all the species of *coccinellæ*, are said to relieve tooth-ach, if bruised between the finger and thumb, and applied to the tooth or rubbed on the gum.

If the external aperture is smaller than the carious cavity, after clearing away the carious matter the access of air may be impeded by stuffing of gold or silver leaf, or tin foil.

The more general remedies are, blisters behind the ear, on the affected side; burning the edge of the helix of the ear, as a branch of the fifth pair of nerves, which supplies the teeth, are lost on the external ear; constantly holding lukewarm water, or milk and water in the mouth, with or without opium; or large doses of opium internally. It is generally recommended to extract the tooth if carious, but no advice can be more injudicious. A carious tooth is certainly pained by accidental colds, but in such cases every sound tooth would have equally suffered; and those who adopt such rash, indiscriminate practice, have been known to draw each tooth in succession, and then to suffer equally in the gums. On the contrary, when the nerve is accustomed to the access of the air, it will continue carious for many years without pain, and be truly useful.

When odontalgia is connected with rheumatism, or gout, which sometimes happens, the remedies of either should be employed.

In extracting a tooth the force may be directed on either side, except in drawing the dentes sapientiæ of the lower jaw, and then the direction of the force should be on the outside, for the jaw within is so thin that it may be easily splintered. An instrument which would raise the tooth without any lateral force, is a great desideratum; and the second Monro, for many years, exhibited one in his class, but it has probably failed, since it is not employed. On pulling the tooth, the force exerted should be firm and steady, not violently rapid; and if the instrument slips, it should be applied on the opposite side. When fairly loosened, it may be raised by the fingers or forceps. The common precautions and the usual management are sufficiently known. See Bell's Surgery, vol. iv. p. 248; Dr. Cullen's First Lines, edit. 4. vol. ii. p. 38; also DENS.

ODONTIA'SIS, (from *odontia*, to put forth the teeth). See DENTITIO.

ODO'NTICA, (from *odontos*). Remedies for pains in the teeth.

ODONTIRRHE'A, (from *odontos* and *rhē*, to flow). Bleeding from the socket of the jaw after tooth drawing.

ODO'NTIS and ODONTI'TIS, (from *odontos*; because the decoction was supposed to relieve toothach). *Lychnis, flos cuculi* Lin. Sp. Pl. 625, β.

ODONTOGLY'PHON, (from *odontos*, and *γλυφω*, to scrape). See DENTISCALPIUM.

ODONTOI'DES, (from *odontos*, and *ειδος*, form). The tooth-like process of the second vertebra of the neck.

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ODONTOPHY'IA, (from *odontos*, and *φυω*, to grow). See DENTITIO.

ODONTOTRI'MMA, (from *odontos*, and *τριβω*, to wear away). See DENTIFRICIUM.

ODORA'TUS, (from *odoro*, *ὀζω*, to smell). See OLFACTUS.

ODORI'FERÆ GLA'NDULÆ. Sebaceous glands under the prepuce, behind the labia and in the axilla, denominated from their odour resembling musk. Dr. Hunter says he never could discover the orifices of these in the axilla, therefore he supposes the discharge to be from innumerable, small, imperceptible pores.

OE'A, (from *οἶω*, to bear, from its fertility). See SORBUS.

OECONO'MIA, (from *οἶκος*, a house, and *νομος*, a law, or rule). Hippocrates uses this word to express the management of a sick person; and it is the title of an Hippocratic lexicon added by Fæsius to his edition of the works of the Coan sage. The animal economy is the conduct of nature in conducting the animal process, and preserving animal bodies.

OEDE'MA, (from *οἰδω*, *tumeco*). See TUMOR; any inelastic tumour resembling anasarcaous swellings. See ANASARCA.

OEDE'MA ERYSIPELATOI'DES, *erysipelas bullatum*, inflammation. An œdematous tumour, white, pellucid, and accompanied by heat.

Dr. Kirkland, in the first volume of his Inquiry, describes an inflammatory œdema which attacks suddenly, sometimes accompanied with an erysipelas, or more commonly a simple inflammation of the skin. He considers œdema as always local.

As soon as the swelling begins to subside, a bandage, or a laced stocking, may be applied, and its tightness gradually increased. Small doses of calomel may be given at night, and the following morning a saline purgative. The bark will be ultimately useful, but the diuretic salt should be at first added. Kirkland's Medical Surgery, vol. i. p. 468.

OEDE'MA LACTEUM. See LYMPHÆDUCTUS.

OEDEMATO'DES, (from *οἰδημα*). See OEDEMA.

OEDEMOSA'RCA, (from *οἰδημα*, and *σαρξ*, flesh,) *uteriformis abscessus*, of a more solid consistence than œdema. Severinus.

ELSNI'CHIUM and ELSNI'TIUM. *Tysselium* Plinii, *apium sylvestre*, *selinum sylvestre* Lin. Sp. Pl. 350. MILKY PARSLEY. The root is perennial, large, and the whole plant full of milky juice. The leaves resemble those of the ferula; the seed is oval, flat, large, striated, and marginated. Another species of selinum, the s. palustre, agrees with this plant in its pungency and acrimony: the roots of both are aperient and detergent; their milky juice, it is said, resembles scammony. See Raii Historia.

ENANTHA'RIA, (from *οἶνος*, wine, and *ανθος*, a flower). SWEET SCENTED OINTMENTS. Their appellation is not derived from having *enanthe* as one of their ingredients, but from their fragrance, or on account of the wine and lilies which are ingredients in them.

ENAN'THE CHÆROPHY'LLI FO'LIIS, (from *οἶνη*, *vitis*, and *ανθος*, *flos*, because its flowers smell like the vine,) *ananthe petroselinii folio venenosa*, *ananthe*

cicutæ facie lobelii, filipendula cicutæ facie. HEMLOCK DROP WORT. DEAD TONGUE, *ananthe crocata* Lin. Sp. Pl. 365.

The root is long, thick, tuberous, extremely succulent; and, on exposure to the external air, the juice becomes yellow; the stalk striated, round, branched, of a yellowish red colour, about three feet high; the leaves of a pale green, winged or doubly winged; the folioles wedge shaped, smooth, streaked, and jagged at the edges; the flowers very small and white, disposed in umbels, placed among the principal stalks, with short ones at the subdivisions; each flower composed of five petals; some of them are bent inward, and heart shaped; tips, purple or brown; fruit stalks angular, scored; the general fence not always present; the seeds striated on one side, and dented on the other. It is found on the banks of rivers; is perennial; flowers in June or July.

The whole of this plant is poisonous, and the root is said to be the most virulent of all our indigenous vegetable poisons, producing epileptic symptoms, &c. See VENENUM. The general effects of this poison are convulsions, locked jaw, giddiness, madness, loss of hair and nails, violent heat in the throat and stomach, vertigo, sickness, and purging.

This herb hath been mistaken for wild celery, water parsnep, smallage, and for Macedonian parsley. The root hath no ill taste; and is therefore seldom suspected.

In Pembrokeshire it is called five fingered root, and is used in cataplasms for whitlows, &c.; in Cumberland, dead tongue, and applied in cataplasms to some diseases of horses. An infusion of the leaves, or three tea spoonfuls of the juice of the root taken every morning, is said to have been effectual in curing obstinate cutaneous diseases, but not without violent effects. It is injurious to dogs, but goats eat it with impunity.

For the treatment of the effects of this root, see VENENUM.

Withering's Botanical Arrangements. Wilmer's Observations on Poisonous Vegetables. London Medical Journal, vol. ii. p. 40, &c. It is the appellation also of water hemlock, and a species of thalictrum.

ÆNAREIA, (from *αιναρη*, the cuttings of vines). The ashes prepared of the twigs of vines.

ÆNELÆUM, (from *αινος*, wine, and *ελαιον*, oil). A mixture of oil and wine.

ÆNOGALA, (from *αινος*, and *γαλα*, milk). A mixture of wine and milk; or, wine as warm as new milk.

ÆNOPLIA, (from *αινος*, wine,) *nabea*, *phaliurus*, *naf*, *nafeca*, GREAT JUJUBE, is produced in Egypt and Crete; and is astringent before it is ripe. The fruit is eaten as a delicacy in Egypt and Turkey; and its juice resembles that of the grape.

ÆNUS, (from *αινος*, vinum). WINE.

ÆNUS A'NDRIUS. GENEROUS WINE, or wine of the island of Andros.

ÆNUS A'NTINOS. FLOWERY WINE; wine impregnated with flowers, in which sense it is an epithet for the cyceon. Galen.

ÆNUS ANTHO'SMIAS, (from *ανθος*, and *σμη*, a smell). SWEET SCENTED WINES.

ÆNUS APODÆ'DUS. Wine in which the dias or tæda hath been boiled.

ÆNUS APEZE'SMENUS. A wine heated to a great degree, and prescribed among other things, as garlic, salt, milk, and vinegar.

ÆNUS DEU'TERUS. Wines of the second pressing.

ÆNUS DIACHEO'MENUS. Wine diffused in large vessels cooled, and strained from the lees, to render it thinner and weaker. Such wines are called *saccati*, from the bag through which they are strained.

ÆNUS GALACTO'DES. Wine with milk, or wine made as warm as new milk.

ÆNUS MA'LACUS, sive MALTHACUS. Soft, or weak and thin wine, opposed to strong; or mild, in opposition to austere.

ÆNUS ME'LICHROUS. Wine in which honey is mixed.

ÆNUS OENO'DES. Strong wine.

ÆNUS SIRÆ'OS. See SAPA.

ÆNUS STRAPHI'DIOS LEU'COS. White wine made from raisins.

ÆNUS TETHALA'SMENOS. Wine mixed with sea water.

ÆNOSTA'GMA, (from *αινος*, and *σταζω*, to distil). See VINUM ADUSTUM.

ÆNO'THERA, (from its dried root smelling like wine). See LYSIMACHIA.

ÆPATA. See ANACARDIUM.

ÆSOPHAGÆ'Æ ARTE'RIÆ, (from *æso*, *phagus*), rise anteriorly from the aorta descendens, and are distributed to the *æso*phagus. Sometimes the uppermost *æso*phagæa produces a bronchial artery. Occasionally there is one only.

ÆSOPHAGÆ'US. See ÆSOPHAGUS.

ÆSOPHAGISMUS, (from *αισοφαγος*; the gullet). IMPEDED DEGLUTITION, or spasm of the *æso*phagus.

ÆSO'PHAGUS, (from *αισω*, the future tense of *φειω*, to carry, and *φαγω*, to eat, because it carries the meat into the stomach,) *gula*, *læmos*, *laucania*; the GULLET is the contracted continuation of the pharynx, the last part of the fauces, called by the Latins *infundibulum*. Its anterior part is connected with the root of the tongue, the os hyoides, and the larynx; it closely adheres behind to the vertebræ of the neck, and is moved by various muscles, which elevate or dilate the pharynx, and by others which shut it. One pair of these muscles, arising by three origins from the os hyoides, the cartilago cricoides, and the cartilago thyroïdes, totally surrounds the pharynx, called *æso*phagæus, the sphincter of the *æso*phagus. The others are called *cephalo-pharyngæus*, *spheno-pharyngæus*, and *stylo-pharyngæus*. The *æso*phagus first runs straight between the *aspera arteria* and the vertebræ of the neck and back, but turns to the right about the fifth vertebra, and to the left about the ninth; then proceeding through the middle of the thorax and the muscular part of the diaphragm, behind the little lobe of the liver, it terminates in the superior orifice of the stomach. The *æso*phagus consists of four coats, the outermost coat is a thin, vascular, cellular membrane originating from the pleura, uniting the gullet to the adjacent parts. The next coat is muscular, furnished with orbicular fibres, and above these with longitudinal ones. The third is

nervous, common to the mouth and fauces, and extending a little way within the stomach; it is glandular, and the glands secrete a mucus. The innermost coat is covered with mucus, is villous, and the orifices of the glands are numerous. The cuticle lines the *œsophagus*, but is too thin to be demonstrated. Besides the glands mentioned, the dorsal about the fifth vertebra of the back, adhering to the gullet, and the thyroid gland, situated between the thyro-cricoid cartilage and the *œsophagus*, are enumerated as belonging to this organ. Its upper part receives arteries from the internal carotids, its middle from the aorta and intercostal, and its inferior part from the gastric arteries. Veins from the jugulars, from the vena sine pari, and from the coronary veins of the stomach, return the blood in the respective portions. The nerves proceed from the par vagum. See Incapability of Swallowing, under DEGLUTITIO, INFLAMMATIO *ÆSOPHAGI*.

Spasms of the *œsophagus* are symptoms of hysteria only, and accompanied by all the peculiar appearances of that proteiform disease.

Spasms of the pharynx are distinguished from a paralysis or relaxation of the canal, by the difficulty of swallowing, being in the latter continual, in the former intermitting: in paralysis solids are more easily swallowed than liquids; in spasms the difficulty of swallowing solids and liquids is equal. The latter are distinguished from inflammation by the absence of swelling, redness, heat in the fauces, thirst, and fever; from tumours and excrescences, by cold liquids exciting greater difficulty than warm, and by pains in the scapulæ.

Spasms of the pharynx, from acrid substances, threaten an inflammation; from hysteric passions, an apoplexy. Etmuller observes, that a difficulty of swallowing from a convulsion, in wounds, is dangerous; and Hippocrates, that a sudden contortion of the neck, obstructing deglutition, without any swelling in fevers, is mortal. Spasms are removed by antispasmodics and anodynes, mixed with discutients, both given internally, and applied externally. The more violent the constriction, the more necessary are external remedies. But the most active anodynes internally must not be omitted; and should swelling, with a livid colour of the face, come on, and there be no time for the operation of a blister, leeches opening the temporal artery or jugular vein are necessary. The bowels must in every instance be kept open, and acrid poisons, if such be the cause, must be diluted and sheathed by mucilages, oil, milk, &c. Blisters, or antispasmodics applied to the spine of the neck, are often serviceable; but, except as a symptom of hysteria or apoplexy, the disease is peculiarly rare.

In spasms of the lower gullet externals are best applied to the spine, with which the *œsophagus* is immediately connected. If the spasms are so violent that the patient cannot swallow, he must be supported by nourishing clysters.

See Hoffman's Practice of Physic, translated by Lewis, vol. ii. p. 147, &c.; Percival's Essays, Medical and Experimental, vol. ii. p. 141, &c.; London Medical Transactions, vol. i. p. 165. vol. ii. p. 90.

ÆSTRUM. See BOVINA AFFECTIO.

ÆSTRUM VENERIS. See CLITORIS.

ÆSTROMANIA, (from *αἰσχος*, the pudenda of a woman, and *μαίνομαι*, to rage). See FUROR UTERINUS.

ÆSYPE, (from *αἶς*, a sheep, and *ῥυτίς*, sordes). The greasy sordes of wool.

O'FFA ALBA HELMO'NTII. If rectified spirit of wine be poured gently into a fully saturated volatile alkaline solution, down the side of a glass, an opaque dense coagulum is formed, which, on gently shaking, becomes a consistent mass, separating, by warmth, into a solid and fluid part: the solid part is called *offa alba*, and is supposed to be a volatile soap, but is only the excess of the salt, which the united spirit and water cannot dissolve.

OFFICINA'LIA. OFFICINALS; an appellation given to such medicines, whether simple or compound, as are required to be constantly kept; or to such vegetables as are selected for medicinal purposes.

OFFUSCA'TIO, (from *obfusceo*, to darken). See AMAUROSIS.

OLA'MPI. The name of a gum which resembles copal, brought from America. It is sweet to the taste, and somewhat astringent, but not used in this country.

OLCACA'TZAN. See CHINA OCCIDENTALIS.

O'LEA, seu OLIVA, (from *ελαια*), the OLIVE TREE, *cotinus*, *olea Europæa* Lin. Sp. Pl. 11, is an evergreen, with oblong, narrow, willow-like leaves, and monopetalous whitish flowers, cut into four sections, followed by clusters of oval black fruit, containing, under a fleshy pulp, a hard rough stone. It is a native of the southern parts of Europe, and bears the ordinary winters of our climate. The olives are called *drupas*, *dryfa*.

The fruit hath a bitter, austere, disagreeable taste; but when pickled proves less ungrateful, and is supposed to promote an appetite, assist digestion, and attenuate viscid phlegm. The Lucca olives are the smallest, and mildest; the Spanish, the largest, and most acrid. Those of a middling size, brought from Provence, are generally most esteemed; but the principal consumption of this fruit is for their oil, which, when taken from the unripe fruit, is called *omotribes omphacinum*. The oil for use is procured when the fruit is ripe. The purer and finer oil is procured by gentle pressure; and inferior sorts, on heating the residuum, and pressing it more strongly. The best olive oil is of a bright pale amber colour, bland to the taste, and without smell, becoming rancid by age, particularly in a warm situation; by cold, at the 38th degree of Fahrenheit's thermometer, it congeals, and does not become rancid at the freezing point of water. All the mild expressed vegetable oils are nearly of the same nature; but the most fluid, particularly the oil of olives, and of almonds, are most commonly directed for internal use. See AMYGDALÆ; and GROSS and EXPRESSED OILS, under OLEUM.

OLEA'MEN, (from *oleum*, oil). A thin liniment composed of oils.

OLEA'NDER, (from its resemblance to the olive tree). See NERION.

OLEA'STER, (from the same). The WILD OLIVE, *elæagnus*, *agrielæa*, differs from the garden olive only from the want of cultivation.

OLE'CRANON, (from *ωλενη*, cubitus, and *κρανον*, the head). The ELBOW; *ανκον*, *pechys*, is the largest of the two apophyses at the upper end of the ulna, ending in a rough tuberosity and an obtuse point. The tuberosity makes the corner of the elbow, called *acrotenion*; and the point is lodged in the posterior cavity of

the lower extremity of the os humeri, when the fore arm is extended.

O'LENE, (from *ωλενη*, the cubit). See CUBITUS.

OLEOSA'CCHARUM, (from *oleum*, and *saccharum*). Essential oils, ground with eight or ten times their weight of sugar, become soluble in water, and may be diluted to any assigned degree. These oleosacchara may be kept in well stopped bottles for making extemporaneous distilled waters. Mucilages render oils miscible with water into a milky liquor; and they dissolve in a little more than their weight of rectified spirit of wine. The extemporaneous waters made in this way are not so grateful as those that are distilled, as the more volatile finer portion escapes.

O'LEUM, (from *olea*, a name first confined to the oil expressed from the olive, but now applied to many other substances). OIL. Oils are animal, vegetable, and mineral. Animal oil is the fluid fat of animals, and all animal substances yield it by distillation. Vegetable oils are procured by expression, distillation, or boiling; the mineral spontaneously, and by distillation.

1. *Fixed oils* are usually liquid, or become so in a moderate temperature. They are combustible, insoluble in water and alcohol, mild to the taste, unctuous to the touch, without smell, and their boiling point is usually above 600°. Oils, or what are styled fat, expressed oils, are procured from the seeds of plants; in the animal kingdom, from the adipose membrane, the cells and cavities of bones, and the livers: it is contained in a small proportion in the egg. Olive oil, taken as a standard, was found by Lavoisier (*Journal de Physique*, Juillet, 1787) to contain, in 100 parts, 79 of carbon, and 21 of hydrogen. It is usually yellowish or greenish, and of the specific gravity of about 0.9278; does not unite with water, unless assisted by some mucilaginous substance, and then it is a mixture only, which, on standing, separates. When distilled it seems in part decomposed; water and sebatic acid, if the oil be from an animal, are formed; and the oil in the receiver no longer possesses its former qualities. It was once called *oleum philosophorum*.

Since the time of Lavoisier, however, the Dutch chemists, Deiman, Troostwyk, &c. have made some further advances in the analysis of oil. When alcohol is decomposed by the sulphuric acid at high temperatures, or when alcohol or ether are passed through a red hot earthen tube, a gas is obtained, styled the *heavy carbonated hydrogen*. This gas is nearly as heavy as common air, unaffected by water, of a foetid odour, burning with a strong compact flame, like resin. Its most singular property, however, is, that when combined with oxygenated muriatic acid gas, oil is obtained. They, therefore, called it *olefiant gas*. The carbon, in this gas, is in excess, and the oxygen seems to precipitate the superabundant portion; for, on igniting them, carbon is always separated. When the olefiant gas is passed through an ignited tube the hydrogen seems to be separated, and it will no longer produce oil, though it is usually said that the change is produced by the loss of the carbon. With pure alkali oils unite, and produce that useful concrete, soap.

If exposed to cold they lose much of their fluidity, sometimes at a very moderate temperature. In warm air, they become thin, rancid, and acrimonious: in this state, instead of allaying irritation they occasion it. When this acrimony appears in the kernels, it is covered

by the remaining mucilage, and the emulsion becomes sour, for the rancidity depends on the evolution of the sebatic acid. In a degree of heat which will occasion a small evaporation from these oils, a pungent acid vapour arises; and when cool they are found to have acquired a greater degree of consistence than before, with an acrid taste. In a heat approaching to ignition, in close vessels, the oil rises in an empyreumatic state, leaving a black coal behind.

In order to obtain these oils, the seeds which contain them must be ground or powdered small, included in proper bags, wrapped in hair cloths, and committed to the press, by which the oil is forced out. To facilitate the expression, it is usual to warm either the press or the plates, or to heat the substance to be pressed. But heat occasions rancidity, and should only be admitted when intended for immediate use. Olives, almonds, linseed, rape, and mustard seed, now chiefly employed, yield an oil not essentially different as a medicine, and each is an emollient and demulcent. For this purpose oil is prescribed in some coughs, catarrhal affections, and erosions, successfully used in worm cases, in nephritic pains, spasms, colics, constipation of the bowels, &c. and has been recommended in cases of canine madness. (See HYDROPHOBIA.) Externally, it is used in bites and stings of various poisonous animals, burns, and tumours, or mixed in liniments, injections, clysters, and poultices. Rubbed over the body, it has been thought beneficial in dropsies, particularly in ascites. The oily clyster consists of two ounces of oil to a pint of barley water; and if intended as a laxative, two ounces of Glauber's salts are added.

Four ounces of oil, with two drachms of tincture of opium are thrown up as a clyster, in spasmodic affections of the bladder and the neighbouring parts; sometimes the opiate instead of the oil, is united to a dilute solution of starch. The compound oily liniment is composed of two ounces and a half of olive oil, an ounce of oil of turpentine, with forty-five drops of oil of vitriol. The acid must be gradually added to the other ingredients in an open vessel. In chronic affections of the joints, in debility from sprains and bruises, this is said to be an efficacious, but it is not an elegant application.

Though expressed oils may be combined with water, by the intervention of gum or mucilage, yet they do not unite with the gummy mucilaginous parts of vegetables. Expressed oils, are, therefore, as we have said, similar, whatever may be their source. They may, however, be tinged by vegetable matters of almost all colours; and, in making the officinal oils by decoction, in order to have the colour clear and strong, the oil should be strained as soon as it hath acquired a sufficiently deep hue, and then boiled until no aqueous vapours exhale. If the water is not wholly evaporated the oil will have a dark colour, and be soon mouldy; and if the leaves are boiled after they become crisp, they occasion a disagreeable blackness. What are styled *fat oils*, differ only from the common expressed oils, by containing a larger proportion of mucilage.

2. *A gross sebaceous matter*. From the kernel of some fruits, as of the cocoa nut, a substance of a butyraceous consistence is obtained. It is best extracted by boiling the nut in water, when it separates, rising to the surface, and resuming its proper consistence as the liquor cools. These substances have the same general properties with expressed oils, but are less disposed to

become rancid than most of the common fluid oils. It is supposed that their thicker consistence is owing to a larger admixture of an acid principle, most probably of oxygen; for by fire they yield a vapour more sensibly acid than the fluid oils; and these by the admixture of concentrated acids are reduced to a thick and a solid mass.

Oils of this kind are styled drying oils, because they dry without losing their transparency. Lintseed oil possesses this quality in the greatest degree; but it is usually increased by adding litharge, which, when boiled with it, is in part reduced to its metallic state. From hence, and from the effect of acids, we conclude that the change consists in the addition of oxygen. The highly oxygenated metallic salts, as the hydrargyrus muriatus, will have a similar effect. The thick opaque whiteness produced by the access of air, in what are styled fat oils, as those of olives, almonds, rape seed, and ben, depends on a similar addition; for it is immediately produced on the addition of oxygen gas: (Senebier.)

Oils in different disguises constitute a great part of our nourishment; but it is not easily digested in a separate state, nor when intimately combined with mucilage in the kernels of nuts. Oil is used internally as a DEMULCENT, and its operation is explained under that head. Many difficulties attend the explanation of its effects when carried into the system. Yet the German physicians, particularly De Haen, give it freely in inflammations of the lungs; and we have thought soap, which must be considered as a form of oil, useful in peripneumony. In Switzerland it is used to destroy tania; and as a gentle laxative it is employed in preference to others in nephritis, in colics, and constipation of the bowels.

The external use of oil as a medicine is of very high antiquity. It was a part of the complicated system of bathing, as employed by the ancients, either as a remedy, or for the preservation of health. Bathing was of peculiar importance, since they were unacquainted with linen; and their woollen garments were not very regularly or very nicely cleaned. The peculiar advantages of oily applications, independent of the friction employed, except in giving softness and flexibility to the limbs, are not easily ascertained. After exercise they were undoubtedly refreshing, and prevented stiffness; but as preservatives they seem to have been chiefly useful in preventing the too copious perspiration. When we compare all the directions for anointing, we can see no other point in which they meet; and this, in a climate so warm, after violent exercise, and the relaxation of the warm bath, must have been an object of importance. The use of oil as an external remedy was introduced by Prodicus, more probably Herodicus, the inventor of gymnastics; and in fevers it seems to be directed to the purposes mentioned. We have not the works of this ancient author, but find copious directions for its use in Pliny. It still seemed an appendage to the bath; for, in slow fever, the oil was used in cold water; in the cold fits, united with warm substances. In general, it was supposed to strengthen and to fortify the body against the access of cold. So strong was the ancient opinion of its utility in this respect, that to defend the body *intus vino, foris oleo* was the frequently repeated maxim for prolonging life.

Independent of its subsidiary aid to the balneum, it

was used by the ancients, in many diseases, applied externally, and often rubbed along the spine; in palsies, in lethargy, in tetanus, in dropsy, and in ephidrosis. In hydrophobia the patients were thrown into the cold bath, and then into oil; in melancholia, into a bath of water and oil. It was supposed to allay irritation, and we still retain its use in burns, in bites of insects, in prurigo, &c.; but the ancients employed it to allay pain after severe operations, to soften the exuberant callus of bones, to remove the pain attending luxations or wounds. St. Luke, whom we now quote as a physician, describes the good Samaritan as pouring oil and wine into the wounds of him who fell among thieves, x. 34.

When luxury increased, this salutary custom was, as usual, abused, and the oil was combined with the most costly perfumes. The simplicity of ancient manners consigned, without a blush, the fatigued body of the traveller to the hands of a female; but this custom was afterwards extended, and the bath became the scene of wantonness and lust. In the progress of empire, of science, and the arts, eastward, the use of oil might have been carried, unless the same necessity which suggested it in Greece introduced it also in Indostan; though the cotton dress would, in a great degree, render the use of the bath less necessary.

In the east the use of oil, however, seems of considerable antiquity; and, besides the more obvious effects of giving sleekness to the skin, and flexibility to the limbs, it is supposed to assist the strength, increase the secretion of fat and of the semen, as well as to prolong life. The Hindoos use oil to cure fevers, epilepsy, mania, dropsy, worms, and cutaneous diseases; to relieve pains from bruises, and the colic; to prevent bad effects from the bites of mad animals, and of serpents.

Modern practice continues the application of oil to allay irritation, particularly the pains felt in old fractures, or wounds, on the change of weather, as advised by Rosenstein; and in irritations of the genital organs, as recommended by Hufeland.

Oil, we have said, was used externally by the ancients in low fevers, and the practice continued in Egypt to the time of Prosper Alpinus. On this foundation it may have been recommended in the plague, in which it has been said to be of essential use. Its advantages, however, arise not from the oil, but from the friction; for, unless continued so as to excite perspiration, it is of little utility. In dropsies also the oil seems only to assist the friction, by preventing the excoriation, which might otherwise soon occur. In tetanus, if ever useful, it is also perhaps in consequence of the friction and the perspiration excited, by means of the friction.

In the bites of insects it seems to relieve pain, but in those of serpents Fontana found it inefficacious; nor are the experiments of Mr. Baldwin on its effects in the bites of scorpions, or rats, unexceptionable. In hydrophobia it has been recommended on the authority of an ancient Greek manuscript; and, though we have received accounts of cases in which it seemed to relieve the spasms, it has not been found to cure the disease.

That oil may be useful in securing a person from contagion appears from evidence apparently more decisive. From very different sources we find that oil porters, oil sellers, tallow chandlers, and tanners, are unusually exempt from the plague, and the worst epidemics.

It has been supposed that frictions with oil are nutritive, as they are said to increase obesity: butchers and cooks are proverbially fat. This effect has, however, been doubted, sometimes denied.

3. *Essential oils* are obtained only from the odiferous parts of vegetables, since on these the odour, often the pungency, and other active powers of the subject depend. They are consequently called essences and essential oils. These oils are very combustible, boil nearly at the same point as water, evaporate without leaving a stain on paper, unite with different proportions of rectified spirit of wine, and even water will imbibe some more subtle portion, and be impregnated with their flavour. By the mixture of sugar, gum, &c. they unite with water in a transparent fluid. Digested with volatile alkalies the colour often varies, and some of the less odorous acquire a considerable degree of fragrance, while fixed alkalies universally impair their odour. Their medium specific gravity is 0.9553, and they seem to contain a larger proportion of hydrogen than expressed oils. In the heat of boiling water these oils totally exhale, and on this principle they are readily extracted; for an aqueous fluid is only volatile in this temperature, from which part of the oil is easily separated. In their resolution by a burning heat they differ little from expressed oils. From continued exposure to a warm air, instead of growing thin, rancid, and acrimonious, they gradually become thick, hardening at last into a solid, brittle, concrete, sometimes into a saline substance, with a remarkable diminution of their volatility, fragrance, and pungency. (See GAUBII ADVERSARIA.) The mixture of a concentrated acid instantly produces a similar change.

The oils expressed from aromatic substances differ from those obtained from olives, almonds, &c. They retain a portion of the aromatic matter of the subject; and a nutmeg yields, upon expression, an oil impregnated with the flavour of the spice, and a purgative oil is expressed from the seeds of the ricinus. The rinds of oranges, lemons, and citrons, yield, by expression, essential oils nearly similar to those obtained from them by distillation. They are most conveniently obtained by rubbing a piece of lump sugar on the surface of the fresh peels: the vesicles in which the oil is contained are thus burst, and the sugar imbibes it.

Moist essential oils are drawn by distillation, adding a sufficient quantity of water, to prevent burning, in which the subject is macerated a little before the distillation: the oil comes over with the water, and either floats on its surface, or falls to the bottom. The water employed in distilling essential oils imbibes some portion of them; so that the saturated water of former distillations may be advantageously employed instead of common water in future operations, since this portion of the oil cannot be separated.

Essential oils are very often adulterated. If with an expressed oil, the fraud is discovered by adding a little rectified spirit of wine, which dissolves the essential oil, and leaves the expressed untouched. If a heavier essential oil be dropped into water, after a brisk agitation, it falls to the bottom, and the expressed oil swims at the top; or if evaporated in a silver spoon, the essential oil will leave the expressed behind. If adulterated with rectified spirit of wine, when dropped into water, or into spirit of turpentine, a milkiness will appear on the mixture being shaken. If an essential

oil is mixed with a cheaper one, a drop rubbed on the hand, and held to the fire, will leave the odour of the added oil sufficiently distinct behind. The added oils are usually those of turpentine, which are also discovered by a milkiness when dropped into spirit of wine.

Essential oils, medically considered, agree in the general qualities of pungency and heat, but differ according to the subjects from which they are obtained. Some of these are used to correct the irritating griping quality of resinous purgatives, in which respect they are useful, as general stimulants, as carminatives, and sometimes light astringents. These oils may be administered with powders, pills, boluses, or electuaries.

4. *Concrete essential oil.* Some vegetables, as the roots of elecampane, yield a substance possessing the general properties of essential oils, but of a thicker and sebaceous consistence. It is equally volatile and subtle with the fluid oils; exhales equally in the heat of boiling water, and concretes upon the surface of the collected fluid. The exhalation of this matter and its concreting again, without any separation, into a fluid and a solid part, distinguishes it from essential oils that have been thickened or indurated by age or by acids. See Hoffmann's *Observationes Physico-chemicæ*, lib. i.; Neumann's *Chemical Works*.

OLE'UM AMYGDALA'RUM. See AMYGDALÆ.

OLE'UM ANIMALE is an empyreumatic oil from animal substances, usually prepared from bones or harts-horn, refined by repeated distillations till it is nearly colourless. It always retains some smell, which is pungent, but not unpleasant; and is used chiefly as an antispasmodic, sometimes as a diaphoretic. It was first introduced by Dippel, and the preparation has been greatly improved by Model, a Russian chemist. The dose is from fifteen to thirty drops, and it is given in convulsions, the whooping-cough, and similar complaints. Externally it has been employed in bruises; and the *British oil*, a quack remedy, is of this kind. By keeping it acquires its former unpleasant qualities, probably by attracting azot from the air.

OLE'UM CAMPHORATUM is the camphor in a liquid form, exuding from the trees which produce it. (See CAMPHORA.) It may be used for all the purposes of camphor; but was first introduced as an external application to cure gout. It seemed to relieve the pain, which, however, returned to another part; and had it not done so, all the inconveniences of repelled gout would probably have followed.

OLE'UM JECORIS ASELLI. THE OIL OF THE LIVER OF THE COD FISH, is procured by the process of putrefaction, when it spontaneously separates. It is imported in barrels from Newfoundland, and was first, we believe, prescribed by Dr. Percival in the Manchester infirmary, in doses from one to three table spoonfuls. It was given for chronic rheumatism; and, though highly nauseous, was found so successful, that patients petitioned to be allowed the same remedy. Dr. Bardsley has lately added his testimony to its salutary virtues in this complaint; and we have, we think, seen chronic rheumatisms yield to a steady constant use of this oil which had resisted every other remedy. By habit the palate is less offended by its taste.

OLE'UM MACIS. See NUX MYRISTICA. As an external application it is said to be anodyne.

OLE'UM MALABATHII. An oil said to be procured

from the leaves of the *laurus cinnamomum*; but what is brought to us from India seems to be flavoured by cloves, if not drawn from them.

OLE'UM NEROLI. An oil procured from the flowers of the Seville orange tree, used only as a perfume.

OLE'UM OLIVARUM. See *OLEA*, or *OLIVA*.

OLE'UM ORIGANI and *SASSAFRÆ*. Two acrid essential oils, often serviceable in relieving toothach. They appear to act as narcotics.

OLE'UM PALMÆ. See *PALMÆ OLEUM*.

OLE'UM PAPYRI. A fetid empyreumatic oil, used for relieving the toothach. A sheet of paper is rolled up in a small cylinder, and set on fire at one end, while the other is enclosed in a cavity formed by two tea cups. When the paper is consumed, and the apparatus cold, a dense oil is found in the lower cup.

OLE'UM PETRÆ. See *PETROLEUM*.

OLE'UM RICINI. See *CATAPUTIA*.

OLE'UM SINAPEOS. The oil of mustard is perfectly mild. What is usually styled the *essence of mustard* is only the oil of turpentine combined with spirit of wine, with the addition of camphor, opium, and a small proportion of the flour of mustard.

OLE'UM SULPHURATUM. The modern appellation of *BALSAM OF SULPHUR*, q. v.

OLE'UM SYRIÆ. A fragrant essential oil obtained from the *pinus balsamea* Lin. Sp. Pl. 1421.

OLE'UM TEMPLINUM. See *ABIES*.

OLE'UM VINI. An oily fluid which arises in the distillation of ether, after the finer fluid has come over. A proportion of this oil gives Mr. Tickell's ether its distinguishing qualities.

Oleum is a term for the product of several substances, viz.

O'LEUM BALSAMI. See *BALSAMUM*.

O'LEUM SA'LIS. See *CIRCULATUM*.

O'LEUM MY'RRHÆ per DELIQ. See *MYRRHA*.

O'LEUM ANTIMO'NI. See *ANTIMONIUM*.

OLFA'CTORII NERVI, (from *olfactus*), the OLFACTORY NERVES, were formerly called *processus mammillares*. They are the first pair of nerves from the brain, and seem to approach as they pass towards the crista galli, where they divide into many small filaments, which pass through the foramina of the os ethmoides. On these nerves no covering from the dura mater can be traced. See *OLFACTUS*.

OLFA'CTUS, (from *olfacio*), the SENSE OF SMELLING; *odoratus*. The mucous membrane which lines the nostrils is expanded in the two frontal sinuses, the antra of Highmore, the cells in the sphenoid bone, and the spongy bones of the nostrils. The olfactory nerves pierce the holes in the ethmoid bone, and spread themselves in this membrane. No where are the nerves so soft, naked, and consequently so easily affected and injured, though defended by an insipid mucus. A branch from the fifth pair is also sent to this membrane, by the irritation of which sneezing is excited on the irritation of acrid mucus, or any other stimulant. The objects of smell are those substances which float in the atmosphere; but from experiments it is plain that the spirit chiefly excites the sense of smelling, for as it is separated from the oil the latter is inodorous. The sense of smell is only excited when the odorous effluvia contained in the air are impressed on the olfactory nerves.

The longer the nostrils, and the more extensive the surface, the more acute is the sense of smelling.

OLIBANUM, (from the Chaldee word *lebana*), *condensatus*, *thus masculinum*, and *corticolum*. **LYCIAN JUNIPER** or CEDAR. (See *THUS*.) It is a gummy resin brought from Turkey and the East Indies; but Dale found in a species of cedar, in Carolina, a gum so nearly resembling it that he could not perceive any difference. The tree which usually affords it is the *juniperus lycia* Lin. Sp. Pl. 1470. We usually receive the olibanum in drops or tears like those of mastich, but larger, of a pale yellowish colour, by age becoming reddish. The single tears are called simply *olibanum* or *thus*; when two are joined together, *thus masculinum*; if very large, *thus femininum*. When four or five large tears have adhered together, found probably on the bark of the tree, they have been named *thus corticosum*; the finer powder *mica thuris*; the coarser, *manna thuris*. The appellation of *thus* is now, however, disused.

Olibanum has a moderately strong, not very agreeable smell, and a bitterish taste. In chewing, it sticks to the teeth, and renders the saliva milky. Laid on a red hot iron it readily burns with a strong, not unpleasant smell. On trituration with water, the greatest part of it dissolves into a milky liquor, which, on standing, deposits a portion of resinous matter, which, on inspissation, leaves a yellow extract, retaining much of the smell and taste of the olibanum. Rectified spirit of wine dissolves less than water, but takes up nearly all the medicinal virtue. It has been recommended in disorders of the head and breast, in hæmoptoes, and in alvine and uterine fluxes, in a dose of about ʒss. Dr. Cullen thinks it has no medicinal virtues, and takes no notice of it; but it is sometimes prescribed in gleets, leucorrhœa, and other discharges, where stimulants in the urinary passages or parts contiguous are necessary. It seems useful as a carminative; and we have sometimes thought it advantageous in the catarrhus suffocativus of old people. In hysteric complaints it is frequently ordered; and applied externally in a plaster as a corroborant. See Lewis's *Materia Medica*. Neumann's *Chemical Works*.

OLISTHE'MA, (from *ολισθαίνω*, to fall out). See *LUXATIO*.

OLIVA'RIA CORPO'RA, (from *oliva*, the olive,) resembling an olive. Two eminences on the lower part of the medulla oblongata, at the commencement of the medulla spinalis. See *CEREBRUM*.

O'LLI. See *CAOUTCHOUC*.

OLOPHLY'CTIDES, (from *ὅλος*, whole, and *φλυκτῖς*, a pustule, because they cover the whole body). See *PHLYCTENÆ*.

OLSEN'CHIUM. See *CELSNITIUM*.

O'LUS A'TRUM, (*olus*, herb, *ab alendo*, and *atrum*, black, from its leaves). See *HIPPOSELINUM*.

O'LUS AU'REUM. See *ATRIPLEX*.

O'LUS HISPANICUM. See *SPINACHIA*.

OMA'GRA, (from *ὤμος*, shoulder, and *αγρία*, seizure), See *ARTHRITIS*.

O'MASUM, or **O'MASUS**, (quasi *comasum*, or *comesium*, from *comedo*, to eat). See *ABOMASUM*.

OMELY'SIS, (from *ωμος*, crude,) the meal of barley not parched; or any sort of meal.

OME'NTA. See *DURA MATER*.

OMENTA'LIS, and OMENTI'TIS, (from *omentum*). See PERITONITIS.

OME'NTUM, (from *omen*, because the soothsayers prophesied from the inspection of this part,) *epifloon*; *reticulum*, *dertron*, *gangamon*, from its structure resembling that of a net; the caul which extends sometimes to the hypogastrium, sometimes scarcely below the navel. It is bordered with fat; the lines by which it is divided are fatty, and between the bands of fat it is sometimes plaited, resembling in shape a net or an empty pouch, floating over the intestines. Its superior portion is divided into two borders, one of which is fixed along the great arch of the colon, and the other along the great curvature of the stomach. The union of these two borders on the right side is fixed to the ligament, or adhesion of the duodenum and colon, and to their contiguous parts; that on the left side to the longitudinal scissure of the spleen, to the extremity of the pancreas, and to the convex side of the great extremity of the stomach. It connects also the membranous ligament which sustains the ductus choledochus to the ventral vena portæ.

The inferior portion is the *saculus epifloicus*; the anterior and posterior styled the *laminæ*; but Dr. Monro prefers the term *ale*.

The omentum is composed of two laminæ joined by cellular substance which is looser near the blood vessels, forming broad bands, in which the latter ramify, and which Dr. Monro calls *bands* or *portions of fat*.

The little omentum (see MESOGASTRION) is a small bag fixed, by its whole circumference, to the small curvature of the stomach, and to the concave side of the liver before the sinus of the vena portæ, so that it surrounds the prominent portion of the lobulus. It is thinner than the greater omentum, and ends in a narrower cavity, often in different pointed sacculi. Its laminæ seem, in part, to be continuations of the external membranes of the stomach, the liver and the contiguous portion of the diaphragm. Those of the great omentum are equally continuations of the contiguous membranes of the stomach, colon, and in part of the spleen; at least, it is intimately connected with these organs. The fatty appendices of the colon and rectum have been called *appendices epifloicæ*, and are elongations of their external coat, resembling in structure the omentum. Each rests on a broad thin basis next the intestine, terminating by irregular papillæ. The bases are at first longitudinal, then, in their progress, oblique, and near the rectum transverse. The longitudinal appendices sometimes communicate with each other.

The blood vessels of the omentum are from the gastricæ, and consequently called *gastro epifloicæ*. The arteries on the right side answer to the hepatic; on the left to the splenic: both communicate with the arteria ventriculi coronaria, and with the mesenteric arteries respectively. The veins answer equally to the vena portæ. The vessels of the lesser omentum come chiefly from the coronaries of the stomach; those of the appendices from the vessels of their respective intestines.

The omentum is generally larger on the left side than the right, often forms a part of a hernial tumour, and suffers with the peritonæum in child-bed fever. Its use is unknown. It is said, without reason, to lubricate

with its fat the intestines; but these are kept distinct by an halitus. From its communication with those viscera, which are subject to considerable distention, there is little doubt but that it is subservient to their functions, though in a manner not easily explained.

OMOCO'TYLE, (from *ὤμος*, the shoulder, and *κοῦλη*, a cavity). See SCAPULA.

OMOHYOIDE'US MU'SCULUS, (from *ὤμος*, and *ὕοις*, the hyoid bone). See CORACO HYOIDÆUS MUSCULUS.

OMOLI'NON, (from *ἄμμος*, crude, and *λίαν*, linum). RAW FLAX; which Hippocrates used for burning or cauterizing, or in the cure of the fistula in ano, a mode which Paulus calls *apolinosis*; in a tubercle of the side after cutting and cauterizing; or in dropsy.

OMOPLA'TA, (from *ὤμος*, the shoulder, and *πλαῖς*, broad). See SCAPULA.

OMOPLA'TO HYOIDÆ'US. Synonymous with *omohyoidæus*. See CORACO HYOIDÆUS MUSCULUS.

O'MOS, (from *οἶω*, to bear). See HUMERUS and UTERUS.

OMPHA'CIUM, (from *ομφακον*, an uterine grape). See VITIS.

OMPHACI'TIS, (from the same). A small kind of gall.

OMPHACOME'LI, (from *ομφακον*, and *μέλι*, honey,) oxymel made of the juice of unripe grapes and honey.

OMPHALOCA'RPOS, (*ομφαλος*, a navel, and *καρπος*, fructus, from its resembling the navel). See APARINE.

OMPHALOC'E'LE, (from *ομφαλος*, the navel, and *κλή*, a rupture). See HERNIA UMBILICALIS.

O'MPHALOS, (from *ομφαλίσκω*, to roll up). See UMBILICUS, and HERNIA UMBILICALIS.

O'MPHAX, (quasi *ὡμῃ εἰς τὸ φαγεῖν*, from its crude state). See AGRESTA.

ONA'GRA. See ARTHRITIS.

ONEIRODY'NIA, (from *ονειρον*, somnium, and *ὀδυνή*, cruciatus). DISTURBED OR TROUBLED SLEEP. Dr. Cullen places this disease in the class *neuroses*, and orders *vesania*, and defines it, violent or disturbed action of the imagination during sleep. The species are,

1. ONEIRODY'NIA ACTIVA. See SOMNAMBULISMUS.

2. ONEIRODY'NIA GRAVANS. See INCUBUS.

ONEIRO'GMOS, (from *ονειρωτῶ*, semen in somno profundure). Cælius Aurelianus gives this appellation to the complaint in which the patient is disturbed with delusive dreams, frequently emitting his semen during sleep. He considers it as the result of impressions on the fancy, arising from extraordinary desire of, or great abstinence from, venery. Cælius Aurelianus de Morbis Chronicis, lib. v. c. 7. See GONORRHEA.

ONEIRO'GHONOS, (from *ονειρος*, a dream, and *σπέρμα*, seed). The oneiroghmos, occurring rarely.

ONI'SCUS, (ab *ovos*, multipeda). See ASELLI.

ONI'TIS, (from *ovos*, an ass, because asses are fond of it). See ORIGANUM CRETICUM, and ANGLICUM.

NOBRY'CHIS, (from *ovos*, and *βρυχω*, to bray, because its smell makes asses bray). *Polygalon Gesneri*, *caput gallinaceum*, *hedysarum onobrychis* Lin. Sp. Pl. 1059, HOLYHAY, COCK'S HEAD VETCH, SAINTFOIN. It grows on hills, in high ways, and corn fields; but

always in a chalky soil, exposed to the sun. It is cultivated for feeding of cattle, and is said to increase the flow of milk in cows.

ONOCHE' LIS, ONOCLE' A (from *ovos*, and *χειλος*, a lip; from its supposed resemblance). See ANCHUSA.

ONO'NIS (from *ovos*, because it interrupts asses when at plough). See ANONIS.

ONO'PTERIS MAS, (from *ovos*, and *πτερις*, fern; because eaten by asses). *Onosma echinoides* Lin. Sp. Pl. 196. It is the plant which produces the *anchusa lutea* of some foreign dispensaries, commended as an emmenagogue. See ADRIANTHUM NIGRUM.

ONY'CHIA, (from *ονυξ*, a nail). See PARONYCHIA.

O'NYX, (from *ονυξ*). The Greeks gave this name to a disease of the eye; a spot resembling in shape the finger nail. See ABSCESSUS OCULI, and ALBUGO.

OOI'DES (from *ovon*, an egg, and *ειδος*, likeness). See OCULUS.

OPERCULA'RES, (from *operio*, to close). See COCHLEÆ.

OPERCULA'TUS, (from *operculum*, a cover). A kind of moss whose anthera is furnished with a lid.

OPE'RCULUM CO'CHLEÆ CÆLA'TÆ. See UMBILICUS MARINUS.

OPHIA'SIS, (from *ophis*, a serpent; because the serpent casts his skin). See ALOPECIA.

OPHIOGLO'SSUM, (from *ophis*, and *γλωσσα*, a tongue). ADDER'S TONGUE; *brassatella*; *lingua serpentis*, *ephioglossum vulgatum* Lin. Sp. Pl. 1518. This plant hath only one leaf, with a slender stalk arising from its bottom, the edges dented, and supposed to resemble the tongue of a serpent; it grows in meadows, the leaf is thick, of a fresh green colour, and juicy; the seed is in a green spike. It has not been lately used in medicine.

OPHIOSCO'RDON, or OPHIOSCO'RODON, (from *ophis*, and *σκορδον*, garlic; spotted like a serpent,) *victorialis*; *allium agninum*, and *alpinum*; *allium montanum latifolium maculatum*; *idæa*; *moly alpinum*; SPOTTED RAMSONS; BROAD LEAVED MOUNTAIN GARLIC, similar in virtue to the common garlic. See Raii Historia.

OPHIOSTA'PHYLLON, (from *ophis*, and *σταφυλη*, a berry; because serpents feed upon its berry). See BRYONIA ALBA.

O'PHRIS, and O'PHRIS MA'JOR. See BIFOLIUM.

O'PHRYS, (*οφρυς*). See FRONTS, OS.

O'PHRYS UNIFO'LIA. See MONOPHYLLON.

OPHTHA'LMIA, (from *οφθαλμος*, an eye). *Inflammatio oculi*; *ophthalmitis*; *blephoritis*; *chemosis*. An inflammation of the membranes which invest the eyes; particularly the adnata.

Dr. Cullen places this disease in the class *pyrexia*, and order *phlegmasia*, defining it redness, and pain of the eye, with incapacity of bearing the light, and most commonly with tears. He distinguishes two species: 1. The *ophthalmia membranarum*; 2. *ophthalmia tarsi*, when attended with tumour, erosion, and glutinous exudation of the edges of the eye lids. The first he considers as varying according to its degree. The second includes but two varieties. He distinguishes also between the idiopathic and the symptomatic oph-

thalmia, including in the first the species mentioned, and distinguishing the last from the primary disease. There is, however, no disease in which the practical views are so much confounded by nosological strictness as in ophthalmia, which is often an acute fever with highly active inflammation; but from this point it frequently diminishes in activity, so as to become merely a redness from over distended vessels; though from the great sensibility of the organ, pain, impatience of light, and effusion of tears, remain. In this gradual progress the remedies must differ, and be often of a very opposite nature. In our description of the disease we shall keep, therefore, this change in view.

Ophthalmia is seldom ushered in by a marked paroxysm of fever. The first sensation is that of a pricking, often of a stabbing pain; and, where these sensations have been felt most pungent, a little fasciculus of peculiarly distended vessels may often be discovered. A sense of heat is felt in the eyes, with heaviness of the head, often with itching, and an effusion of tears. The eye lids are stiff, and closed to guard against the impression of light, which is peculiarly painful and distressing. If the habit is irritable, the pulse is quickened, especially towards the evening; slight shiverings, with nausea, and an inclination to vomit, sometimes come on.

By proper treatment the violence of the pain and the increased sensibility are mitigated, and the patient sleeps with ease, and can bear some degree of light. But the eyes continue red, and the former applications fail to relieve. They must then be changed, in the manner to be afterwards described.

This is the form of the common acute ophthalmia. The more severe differs rather in degree than in symptoms. In this form of the disease, the heat in the eyes is a sensation of violent burning; the organ itself feels spasmodically contracted; the weakest light is intolerable; the tears are continual, copious, highly acrid, and mixed with mucus; or the eye is dry and scorched; the pupil is contracted, and, instead of a redness of the adnata, the whole is sometimes a projecting excrescence of unvaried redness. Sometimes the vessels burst, and the whole adnata swells beyond the eye lids; sometimes the vessels yield internally, and the organization of the eye is destroyed. This is occasionally known by a sudden sensation of bursting, with usually a flash of light. Sometimes the ophthalmia commences internally and the adnata appears only inflamed from the communication. In this case the deep seated heat, the intolerance of light, and the spasmodic contraction, are first felt. The consequences are often the same, viz. the destruction of the organ.

The external causes of this inflammation are cold air; dust; irritation of every kind, sometimes even of a swollen tarsus, or a tumour in the calix; too great light; vivid colours; blows, wounds, &c. The internal causes are those of fever in general, the measles and small pox, scrofula, repelled eruptions, and suppressed discharges.

Dr. Cullen considers all the varieties of ophthalmia membranarum as the same disease, differing only in situation or degree. Should we, from the views just mentioned, and in subservience to practice, attempt to divide the varieties of ophthalmia, they would be the following:

- Ophthalmia, 1. Acuta.
 2. Epidemica.
 3. Intermittens.
 4. Metastatica.
 5. Symptomata.
 6. A tarso.

The first of these is the common disease, differing in violence, according to the circumstances; the second, the Egyptian ophthalmia; the third, the common intermitting kind; the fourth, that which arises from repelled discharges; the fifth, the disease which arises from fullness of the vessels of the brain; and the last, the ophthalmia from tumours of the tarsus. The two first are constantly acute; the third only during the access of fever; the last inflammation has only a very slight degree of activity.

The ophthalmia subsequent to blows on the head, by which the meninges are injured, shows considerable danger. When it appears in the beginning of the small pox, the consequence is often fatal. When attended with long and violent headaches, blindness frequently follows. The humid species, the erysipelatous and venereal kinds, that of the choroides, and the chemosis, all greatly endanger the sight.

The cure must be regulated by the violence of the disease. In the active kinds, the general bleeding must be very copious; for in a disease in a great degree local, small bleedings will have little effect. Besides general bleedings, for a similar reason, topical ones are necessary. When the pain and the inflammation are so acute as to threaten destruction to the organ, the temporal artery must be opened; or it will be preferable, according to the plan of Mr. Ware, to cut it through. Opening the jugular vein is less useful, for the purpose of a topical evacuation, and not always convenient as a general one. Mr. Ware recommends opening the vein at the inner canthus of the eye; but from this little blood can be obtained. Other modes of topical bleeding are leeches and cupping glasses. Authors have been apprehensive of leeches, because they are supposed to add to the irritation. They sometimes certainly produce erysipelatous inflammation; but we have never known this increase the prior disease. Cupping glasses, well managed, are undoubtedly a less equivocal remedy; but unless the surgeon is peculiarly dexterous, little blood can be obtained, while, from leeches, any assigned quantity may be procured.

Blisters and laxatives should immediately follow the bleeding, and the former should not be applied nearer to the part affected than the nape of the neck, or behind either ear. The laxatives should be chiefly saline, unless the quantity required should be so great as to nauseate the stomach, and then some more active cathartic may be added; but they should be given so as to procure very profuse discharges. Emetics have been indeed given, from an idea that sordes in the stomach might produce or aggravate the disease. They undoubtedly determine to the head; but we have already observed, that by the determination to the surface in general, they are more serviceable than injurious by the former effect.

The applications at this period must be of the mildest and most soothing kind: moderately warm milk and water, or combined with a little mucilage, will be suffi-

cient; and it will be useful to insert either the white of a fresh egg, a little mucilage or mild ointment, between the lids, if it can be done without irritating. The most perfect repose in a dark room is necessary.

By these means the general fever, as well as the more active inflammation, is checked. The acrid tears no longer flow, and a mild mucus is discharged from the tarsi; but the pain and the inflammation, in a less active form, continue. At this period, the saturnine applications are chiefly admissible, and blisters may then be applied to the temples; for, in the acute form of the disease, these appear too irritating, so near the inflammation. The mildest collyrium consists of equal parts of the aqua ammoniæ acetatæ and rose water, or with a less proportion of water. If a more cooling application is wanted, five drops of the aqua lythargyri acetati may be added to four ounces of distilled water, or to as much camphorated julep. By degrees the proportion of the saturnine preparation may be increased. Repose is still necessary, and light must be still as much as possible avoided. If the collyria, when cold, produce pain, they should be at first slightly warmed.

This is the period, we think, best adapted to the division of the vessels of the cornea by the point of a lancet, or to cutting off any projecting fasciculi of vessels with crooked scissors. It is often recommended earlier; but we have found that it is then impracticable to admit sufficient light to direct the operator.

The more active astringents, viz. the vitriolated zinc, the hydrargyrus muriatus, or the opium, are not admissible till the inflammation or the sensibility are still further lessened. From five to ten grains of vitriolated zinc may be dissolved in four ounces of water, or, by degrees, a scruple of the zinc with six grains of camphor may be allowed to this quantity of water. The muriated mercury is sometimes employed for this purpose, in the proportion of a grain to four ounces of distilled water. Opium is occasionally added to either of the former collyria, usually in the form of tincture; and two grains of camphor with one of opium have been rubbed together, with four ounces of boiling water, and then strained. Mr. Ware has recommended a drop or two of the vinous tincture of opium to be dropped into the eye, night and morning; other practitioners have employed the spirituous; but, as the vinous tincture cannot easily be procured, we have usually added a proportion of water to the spirituous, till the inflammation was so much abated as to admit the latter undiluted. At almost every period of the disease, except the most acute, a proportion of brandy in water is useful. About one-eighth may be at first added, and the proportion increased, so as to produce a slight pungency, without any considerable pain: powders are in general less convenient or useful than fluids; but the latter should be applied immediately to the inflamed parts, and if soft muslin gives pain, as will be often the case, the eye cup must be employed. The only admissible powder is the natron vitriolatum, which Dr. Kirkland advises to be blown into the eye. The pain, as with the tincture of opium, is at first increased; but a flow of tears soon comes on, and relieves the inflammation.

If the eye remains very weak after the inflammation abates, the best applications are the alum curd, which may be spread thin on a rag, and applied over the eyes

every night; and a solution of alum, in the proportion of a drachm to half a pint of water; to which may be added the white of one egg. The patient may afterwards bathe in the sea, or cold water may be poured upon his head every morning for some time.

When the transparency of the cornea is diminished by films, borax is an useful remedy, and half a drachm may be dissolved, and may be used in two ounces of water; of which a little may be frequently dropped into the affected eye. Other collyria for this purpose are æruginis pp. gr. iv. ammoniæ muriatæ 3 ss. aq. calcis recentis 3 viii. m. and liquoris hydrargyri muriati, gutt. i. aq. distillat. 3 iv. Pellier's ointment is thus prepared. R hydrargyri nitrati rubri, lapidis calamin. pp. aa. 3 i. ss. lythargyri levigati 3 i. tutiæ pp. 3 ss. hydrargyri sulphurati 3 i. bene commisceantur, deinde adjiciantur adipis suillæ 3 ij. balsam Peruviani. gutt. xv. m. f. unguentum. When pimples on the eye attend an inflammation, the solution of vitriolated zinc usually succeeds; when these pimples suppurate, they should be opened with the point of a lancet, and washed with the solution of vitriolated zinc.

It will be necessary to notice the varieties of the ophthalmia membranarum, which we have pointed out as admitting of many modifications in practice.

1. *Acuta*. This is nearly the disease which we have described, but which authors have chosen to call *chemosis*. We now mention it to remark, that the whole of the curative plans, in all their activity, will be necessary in this complaint. The room should be completely darkened, the applications be perfectly cold, if such can be borne, and they should be the most imperfect conductors of caloric.

2. *Epidemica*. The Egyptian ophthalmia was for a long time supposed to be owing to the sands and dust of that arid country; but later observations have shown that it is acquired by sleeping in damp situations, with imperfect covering; that it is contagious, and epidemic from contagion chiefly, if not exclusively. The contagious nature of this complaint, if by contagion is not meant sympathy, though this scarcely alters the question, is evinced by Dr. Edmondson, not only from his own observation, but from the concurring testimony of ancient authors, establishing the position of Ovid more strictly than he ever intended it,

Dum spectant oculis læsos, læduntur et ipsi.

In support of this doctrine, he remarks, that even looking on a diseased person was enough to induce the ophthalmia in those who returned in the late expedition to Egypt; and it was conveyed, like other fevers, not only by immediate contact, but even by clothes, by ships, and barracks. The fever was also obviously remittent: the evening exacerbation and the morning remission were too clearly marked to be mistaken. Yet Egypt was not in former ages ravaged with this destructive enemy to our dearest enjoyments. Historians are eloquent in their praises of its fertility and beauty; without a hint of the sting which would sully the charms; and it was probably only at a later era, when many of the mouths of the Nile no longer carried its fertilizing waters to the sea, that the remaining marshes left their destructive miasmata; or when, under the iron hand of despotism, the land was no longer drained and cultivated with the former care.

The disease in this form does not greatly differ from the severe kind already described. The fever, however, is more strongly marked, and its remittent nature more obvious. The irritability of the muscles of the eye is increased in a greater degree, and we thus trace the peculiar action of the marsh miasmata. The uniform redness comes on rapidly, and in a day, or at most two, a puriform matter, which is, however, a sebaceous mucus, is discharged from the eye; small yellow spots rise on the conjunctiva, which soon render the whole membrane spongy; and the headach, at first slight, becomes so violent and incessant as generally to threaten delirium, sometimes induce it. The morning remission of the third day concludes the first stage. The acute pain is succeeded by a sense of weight, and a peculiar sensation of weakness on exposure to light. The vessels of the conjunctiva, still distended, become of a purple colour, and the matter discharged is thicker and milder. The spongy appearance of the cornea gradually disappears, and a kind of depression follows. All the symptoms gradually diminish, leaving a cloudiness and weakness of sight only.

When at the termination of the first stage the disease does not remit, the pain is pungent and deep seated, extending to the temples and forehead, occasioning an obstinate and distressing headach. The effusions of blood increase, and successive preternatural membranes are formed on the cornea. Collections of purulent matter gradually destroy the organ, and the cornea bursting, the protrusion of the different parts produce staphyloma. Ulcerations take place in the eye lids, and the adhesive inflammation connects these with the ball of the eye. Relapses are frequent on slight irregularity; but the disease is each time milder, and the blindness which often follows depends on the gradual thickening of the cornea. The inflammation is usually confined to one eye; but, if it ceases in that, the other is soon affected, which strongly proves that the fever is the principal disease.

The treatment of the epidemic ophthalmia does not greatly differ from that of the acute. General bleeding, by almost any author, is scarcely mentioned; and of the topical bleeding, the scarification of the vessels of the eye seems to be preferred. Dr. Edmondson remarks, with great apparent propriety, that in this variety the scarification should be performed while the vessels are distinct, florid, and round. If delayed till the redness is more diffused, and the hue purple, it is evident that the active period of the inflammation is passed; and Savaresi distinguishes the same period of asthenic inflammation, by a diminution of the swelling of the eyes, and a swelling coming on in the lids, by which they are turned up. Dr. Edmondson depends little on the opening of the temporal artery, as the eye is not supplied from thence; and we may add, that cutting it through will more probably determine a fuller current to the anastomosing branches. The purgatives he recommends are the neutral salts; but dissuades, with the generality of practitioners, violent purging. With this remedy, though the discharges are considerable, the system is not greatly debilitated. Mild lotions are also highly commended, at first milk warm, afterwards cold, and in the end artificially cooled. In the second stage the acetite of alumine is said to be an advantageous application. Half a drachm of alum is dissolved in four ounces

of water, and a scruple of acetite of lead in the same quantity. When these solutions are mixed, a double decomposition takes place, and the sulphat of lead falls to the bottom. Opium is commended also by Dr. Edmondson, who confines its use to the second stage. Where there is great sensibility and irritability, he employs the watery tincture, and, if not effectual, two parts of water are added to one part of the tincture of opium, lessening gradually the proportion of water. One part of brandy, with two parts of water, form a still more stimulant application.

3. *Intermittens*. The intermittent ophthalmia is nearly allied to the epidemic. Each is violent in its attack, and each recedes, though in different degrees, while both perhaps depend on a similar cause. Yet we think we have seen an intermitting ophthalmia connected with a venereal lues, or at least relieved by a course of mercury. In this case we generally lose sight of the local affection to attend to the original complaint, the intermitting; nor are the remedies of ophthalmia employed unless the inflammation during the paroxysm is violent. The bark, or Grant's electuary for the hæmicrania will generally relieve. As the disease is rare, we have had no opportunity of trying the arsenic, which, from its utility in similar complaints, we should suspect to be highly useful.

4. *Metastatica*. The most striking instance of metastatic ophthalmia, adduced by authors, is that from gonorrhœa. It is spoken of with confidence, derived apparently from one author to another without much reflection: We remember, about thirty years since, that a similar metastatical gonorrhœa was supposed to occur in the nose, till it became evident that there was in two or three cases which happened about the same time, actual infection from the pocket handkerchiefs. Yet, if consent of parts, as Scarpa insinuates, be the cause of the translation of a disease from one mucous membrane to another, it is more probable that this metastasis would be to the nose than to an organ whose secretions are from different glands, viz. the sebaceous. As we write, however, to instruct, not to establish systems, we shall describe the disease as it occurs in authors.

Two kinds of this inflammation are described; one when the whole system is affected with syphilitic virus, the other where gonorrhœa has been imprudently suppressed. Each is distinguished, by a sense of itching, which increases towards night, and goes off in the morning: the hairs drop from the cilia, the colour of the iris is changed, the pupil acquires a rugged appearance, the cornea becomes opaque and milky, sometimes so protuberant as to destroy the sight, and disfigure the organ. Mr. Bell describes it as occasionally attacking suddenly, with all the appearances of amaurosis. There are, however, strong doubts of these complaints being syphilitic. They have very decidedly the appearance of lepra; and we were not disappointed on finding that the chief reliance of the original authors was on their being cured by mercury. In this case, at least, there is no metastasis.

The second kind is more properly our present object. The symptoms are as rapid and violent as in the Egyptian ophthalmia. The swelling, the pain, the headach, the tumefaction of the eye lids, are almost in an equal degree; but we do not observe the exacerbating nature of the fever, and the discharge from the cilia is

said to be greenish, like the matter of gonorrhœa. Swediaur describes three cases which occurred in an extreme cold winter, and the observations of different authors are so vague, some describing it as coming on after the suppression of gonorrhœa, some as continuing with it; one class speaking of it as accompanying, or immediately following, the acute stage; another as following this period at a greater distance; and all confessing it to be rare, that we should have been justified in considering its existence as ideal, or as accidental, had not Mr. Pearson given his very extensive experience on the same side. This very respectable practitioner could never trace such a connection between the eye and urethra as authors, and particularly Scarpa, had pointed out. It is possible, indeed, that the fingers or the handkerchief might convey the virus; but when this metastasis takes place, we have the express opinion of Scarpa that the gonorrhœa is mild in its appearance, and not rapid in its progress. Dr. Edmondson examines the question with great precision and propriety, and his conclusions are very correctly drawn; but, unable to escape from positive assertions, he admits the consent of the urethra and the eye lids from the consent of functions; both being, in the opinion of Bichat, mucous membranes. If the question, however, be determined by the identity of functions, both from structure and disease, it may safely be denied that the membrane of the eye lids is a mucous membrane, or that the discharge of this translated gonorrhœa arises from inflammation of these membranes. If any dependence can be placed on the description of authors, the discharge is from the sebaceous glands of the cilia. While, then, the supposed metastasis to a neighbouring organ, the testicle, is now found to be a communication of inflammation, not a translation of morbid matter; while membranes decidedly mucous do not suffer, and glands of a different nature are in this case affected; we are, we think, justified in considering this supposed metastatic ophthalmia as an accidental occurrence only. We have engaged at greater length in this discussion to guard young practitioners, in such instances, from depending, as they might do, on mercury for the relief of this ophthalmia, and neglecting the remedies for the real inflammation. Ophthalmia certainly does occur more remotely from lues; but this variety rests on a very different foundation, and will be afterwards noticed.

Other cases of this variety rest on a more certain basis. On the suppression of the menstrual discharge, of that from fistula in ano, or from piles, the eyes are sometimes affected. These are scarcely, however, in strictness, cases of metastasis, nor is the ophthalmia acute. Gout repelled has been sometimes followed by ophthalmia; ulcers in the legs imprudently cured, or erysipelas suddenly dried by astringents, have had the same consequences; but such diseases are easily understood from the nature of the original ones.

5. *A tarso*. We mean in this case to notice a distinct inflammation from the ophthalmia tarsi, and to point out the existence of real membranous inflammation from previous disease of the tarsus. We might, perhaps, have been contented with referring to it as symptomatic; but that if ever lues really produces ophthalmia, it is when the tarsus is diseased with the little tubercles which sometimes affect it.

6. *Symptomatica*. Ophthalmia is often a symptom of

affections in the head from blows, shocks, &c.; of apoplexy, when violent and sanguineous; palsy, and of scrofula. It was necessary to point out this variety; but the disease is not very acute, and the treatment is that connected with the original complaint.

CONSEQUENCES OF OPHTHALMIA. Repeated inflammations in the eyes produce various diseases of this organ, among which the most frequent and distressing is that laxity and debility of the vessels which admits most commonly red blood in a larger proportion than usual, and which occasions increased accumulations in them on the slightest cold or irregularity. This forms the **CHRONIC OPHTHALMIA**, which we shall first consider, and at greater length, as the directions will be applicable to the disease in its less active state.

When *chronic ophthalmia* is increased from colds, &c. it approaches more nearly the acute disease, and must be treated like the acute kind, in its second or third stage. In the interval the more active astringents may be employed; the first of which is cold. Cold bathing in general is sometimes useful; but bathing the face and eyes in the coldest water every morning is highly useful. Solutions of vitriolated zinc may be occasionally, though not constantly, used; but the purer and more active astringents, alum excepted, have not been employed. The tincture of galls, at first diluted, we should think an useful application, as combining a portion of spirit with a powerful astringent; and sometimes those narcotics which lessen irritability will be equally useful, as the tincture of opium, and probably a cold infusion of green tea, with a proportion of brandy. The discharge of a perpetual blister, or an issue, will take off the inflammatory disposition, and prevent the effects of cold. Both the blisters and the issues should, however, be as near to the head as possible. Blisters and setons on the temples have been advised, and are undoubtedly very powerful, as well as successful, remedies, should the disease be so violent and dangerous as to counterbalance the inconveniences and the unsightly scars. The narcotic bitters have been taken with some success, and the cicuta has had its advocates; but in general the constitution loses more by their deleterious power than the eyes gain by their sedative effects. This disease is, however, often idiopathic, and arises from the unsuspected intrusion of any minute hard body between the ball and the lids of the eye; the inversion of some of the hairs of the cilia, a disease of the *caruncula lachrymalis*, a small ulcer of the cornea, and, as we have said, any enlargement or inflammation of the tarsus.

Encanthis is the consequence most commonly of scrofulous ophthalmia, and the tumour feels hard and granular. Vide in verbo.

Pterygium, according to Scarpa, is a separation of the thin external lamina of the conjunctiva, which changes into a varicose membrane, from long obstinate ophthalmia, or from a shorter attack, if very severe. It differs both from the *ALBUGO* and *UNGUIS*, q. v. and often succeeds either the chronic or epidemic kinds. It is always triangular, and its point is towards the cornea, where the membranes are most closely united.

Ulceration of the Cornea. Though we must now speak of this complaint chiefly as a consequence of ophthalmia, yet, as we shall not have occasion to resume the subject, we may add, that it is occasionally an

idiopathic disease. As a consequence of ophthalmia, the ulcer is often already formed; but, in the latter case, it rises sometimes on, sometimes between, the laminae of the cornea, and is attended with marks of acute ophthalmia: but though highly painful, and the tumour visible, yet opening it will not relieve the sufferings; for the matter is very tenacious, and will not flow out. The opacity of the cornea is increased by the operation, and another small abscess is often formed in the neighbourhood. When it bursts spontaneously, the symptoms of ophthalmia are greatly increased, and a little excavation is obvious. On its first appearance it is of a livid cineritious colour, with an inflamed base, and an irregularly tumid margin. When matured, however, it often remains inactive, and when it bursts naturally, the discharge is serous and acrid, the tumour, like that of all secreting surfaces, liable to spread; and in violent ophthalmia the ulcer penetrates to the humours, occasioning their discharge, and a protrusion of the iris, or some portion of the vitreous humour. This is said to have been the consequence of the Egyptian ophthalmia, and occasionally of what is styled the gonorrhœal, which we must consider only as the violent epidemic disease. The inflamed eyes of children, however, often terminate in slight ulcers, which have no such formidable consequences. They heal with little difficulty, leaving sometimes a slight depression, which gradually fills up without even deformity.

The ulcer is healed only by those means which destroy the irritability of the nerves. The most effectual is caustic. The *argentum nitratum*, cut to a point, must touch the ulcer long enough to form an eschar; and, should any part of it be dissolved by the tears, it must be washed off by dropping a little milk into the eye. The pain of the application is acute, but momentary, and the relief is soon almost complete; but, on the separation of the eschar the burning heat, &c. return, only removed by successive applications of the caustic. The permanent effect is perceived by degrees, and at last the ashy coloured appearance of the ulcer is changed to a brighter red, and the symptoms of ophthalmia disappear. When this change is obvious the caustic should no longer be applied, but the collyrium of vitriolated zinc substituted. In the slighter cases this collyrium is alone sufficient: indeed, they are often little more than abrasions, sometimes the ulcer appears fungous, and to derive its nourishment from a small fasciculus of vessels. If then neglected, or treated only with slight astringents, the whole organ is destroyed. In this case the fungus and the bundle of vessels must be cut off with the crooked scissors; and when the blood has been allowed to flow, the caustic freely applied. If, on the exfoliation of the eschar, the morbid part should not be wholly separated, the application of the caustic must be repeated. Each lid must be most carefully kept open during the application; the upper with a small spatula, which the operator must hold in his left hand, and the lower by an assistant.

Opacity of the Cornea. This also, though a frequent effect of inflammation, sometimes appears independent of it; and is in that case rapid in its access, but temporary in duration. It seems, from an experiment of Dr. Barclay, recorded by Dr. Edmondson, to arise merely from fulness, chiefly from an excess in the proportion of the aqueous humour. It is then successfully removed

by general and topical evacuations only. When it succeeds ophthalmia, and is connected with varicose veins, giving a cloudiness only, without elevation to the eye, and impeding rather than obstructing vision, it is styled *nebula*. It seems to arise from a dilatation of the veins, and from Scarpa's experiment, of these exclusively. This complaint differs from albugo in being a recent, slight, superficial opacity of the cornea, preceded and accompanied by chronic inflammation, through which the pupil and iris may be seen. When opacity of the cornea is the effect of more violent and active inflammation, it is styled *ALBUGO*, and its worst kind *LEUCOMA*, q. v. A very effectual mode of cure is to divide the vessels, leading to the cornea; for the opacity is the effect of effusion, in consequence of increased action.

Hypophyon, vide in verbo. *Staphyloma* is the consequence often of very severe ophthalmia, and consists in an opacity of the cornea, with irregular projections. In the earlier periods the cornea is thick and compact, in the latter its thickness diminishes, apparently from the compression from within, and the pressure of the eye lids without. It seems to consist in an effusion from the vessels of the conjunctiva; but in many cases we suspect that the serous fluid between the laminae of the cornea coagulates in consequence of an alteration in its nature. From this cause the form seems to continue permanent. When, from distention or wound, any part of the iris, or, as we have seen, of the vitreous humour, protrudes, it is called *staphyloma*, though with less propriety.

OPHTHALMIA TARSI, *psorophthalmia* of Plenck, and some modern authors; mucous or puriform ophthalmia. Dr. Cullen has carefully included the *psorophthalmia* in his definition, by adding "the glutinous exudation of the tarsus," which is peculiarly conspicuous; and were even a cavit to arise, it may be removed, by subjoining, "and occasionally of the internal surface of the palpebrae." The disease is sufficiently obvious, and is often first felt by an obstruction of the lachrymal sac, giving the appearance of fistula lachrymalis. In fact, when this more glutinous fluid is mixed with the tears it obstructs the ducts; and, when the tumour is pressed, this puriform matter is pressed through the puncta lachrymalia. If, in this case, the tarsus be examined, and either eye lid turned back, particularly the lower, the internal surface will sometimes have a villous appearance, Merbomius' glands will be obviously swollen, and an ulcer on the tarsus, or at its union with the internal membrane, will be obvious. We were aware of this morbid appearance when we opposed the opinion of Bichat, that the internal membrane was not a mucous one. In fact, when it puts on that appearance the discharge is very different from mucus.

The scrofulous swelling of the tarsus differs, only in degree, from the *psorophthalmia* described, in which the displeasing eversion of the eye lids most frequently occurs. The purulent eye, as it is styled, is not uncommon in new born children; and the conjunctiva is spongy, the cornea dull, and, if the complaint be not carefully attended to, an opacity of the latter comes on. This disease in children is not connected either with scrofula or luës, but there is constantly a griping, and a discharge of dark fetid matter by stool, with which it seems intimately connected.

When it is a disease of the adult it is often at first at-

tended with a little inflammation, and the more cooling, slightly astringent, applications of the second stage of ophthalmia are necessary, with occasional scarifications, or the application of leeches. This stage is, however, soon at an end, and more active astringents are now necessary. The oxide of zinc, combined with axunge, in the proportion of one to six, is sometimes alone successful; but, when the disease is more violent, some mercurial is required to give a more active stimulus. Janin's ointment is composed of four parts of axunge, two of prepared tutty, as much Armenian bole, and one part of the white calx of mercury. The unguentum nitratis hydrargyri of the Edinburgh dispensatory, lowered with three times its weight of axunge, or the red oxide, by means of nitrous acid, combined with twelve times its weight of axunge, has been recommended. We have found, for the greater number of cases, equal parts of the strong mercurial ointment and the unguentum cerusæ acetatæ sufficient; occasionally adding, in more obstinate diseases, a small proportion of the unguentum citrinum.

If the ulcers are not cicatrized by these means, the solution of blue vitriol, in the proportion of fifteen grains to an ounce of water, will be useful. Each application must be made by means of a camel hair brush, and the ointments softened by a gentle heat. When the ointments are used, they must be applied in the evening, and continue on the part all night; the solution must be used two or three times a day, and the redundant fluid washed away with a syringe and a little cold water. Tincture of opium may be occasionally employed. When the disease is violent, an adhesion of the eye to the upper lid sometimes takes place, which should be carefully separated, by raising the lid, and dissecting cautiously with a round edged scalpel. Instead of the mercurial or the cupreous solution, the argentum nitratum, according to St. Yves, may be drawn along the edge of the palpebrae, washing the eye, immediately afterwards, with milk and water. The puncta lachrymalia should be kept open by injections of warm water, with a slight proportion of brandy.

In the general conduct of all these remedies, they should excite on their application, a slight irritation, by which the puriform secretion is at first increased; but by degrees the edges of the eye lids become soft, the glands lessen, the internal surface of the palpebrae become smooth, and of its usual paleness.

In conducting the puriform ophthalmia of new born children, we must recollect the intimate connexion between this disease and the state of the bowels, nor is it one of the least important parts of the treatment to keep up a steady discharge by stool. The eye lids should be scarified by a lancet, and a leech or two applied in the neighbourhood.

The eye while in a tender inflamed state must be washed with a collyrium of equal parts of the common emulsion and julep of camphor, or warm barley water; and until the swelling of the eye lids subside, cooling ointments and emollient cataplasms may be applied. When the turgescence of the eye lids abates, and the inflammation of the conjunctiva disappears, the decoctum corticis Peruviani is given internally, and astringent collyriums employed. Though blisters are generally applied, and commonly useful, they have not been considered as essentially necessary. Mr. Ware proposes on the first attack to resist the discharge of mucus, by strengthening

the external coat of the eye. He consequently directs the eye to be cleared of the morbid mucus, by injecting into it, by a syringe, a gentle astringent collyrium; in particular he prefers the aq. cupri vitriolati camphorata, diluted with common water, in the proportion of about a drachm, to two ounces. This practice he uses in all the stages of the disease. As the matter increases, the collyrium may be employed more frequently, and gradually increased in its strength: in a slight case it may be used two or three times a day, but in the more violent ones it may be repeated every hour, and the astringency of the collyrium may be increased in proportion; as the disorder gives way, the strength of the medicine, and the frequency of using it, may both be decreased. Some authors recommend a solution of sulphats of copper and alumina. Of each a scruple may be dissolved in ten ounces of water, with a few drops of sulphuric acid, to keep the alumina suspended. But this we have found too stimulating, unless diluted with a third or fourth part of water. To abate the swelling of the eye lids Mr. Ware prefers a cataplasm of the coagulum aluminosum et unguentum florum sambucian. p. æq. applied cold. When the eye lids adhere strongly, they will be best separated by washing their edges with fresh butter dissolved in warm milk; but this may be prevented by interposing between the eye lids at night the unguentum oxydis zinci, or the combination of the mercurial and saturnine ointments. If the inside of the eye lids turns outward only when the child cries, and returns as soon as it ceases, nothing is particularly necessary; but if this symptom is constant, it will require a more frequent repetition of the injection, and immediately after the use of it, the lids must be returned, and a compress, dipped in the diluted aqua camphorata, constantly kept on it with the finger. When the inside of the eye lid is much inflamed, the diluted tinctura opii may be dropped on it with advantage every day; and when the quantity of mucus is so diminished as that the tincture may come in contact with the eye, it may be applied once a day to it. If there is reason to suspect any particular disease in the habit, the proper alteratives will be necessary.

Mr. Ware gives an instance of a case in which blood instead of mucus was discharged, and which gave way to the treatment here recommended.

See Heister's Surgery; Gooch's Cases and Remarks, p. 44, &c.; Lewis's Translation of Hoffman, vol. i. p. 38; White's Surgery, 223; Bell's Surgery, iii. 232; Kirkland's Enquiry, i. 473; Ware's Remarks on the Ophthalmia; Warner, &c. on the Eye and its Disorders; Scarpa on Diseases of the Eyes; Plenck de Morbis Oculorum; Pellier sur l'Oeil; Janin Memoires sur l'Oeil; Edmondson on Ophthalmia.

OPHTHALMIA SI'CCA, et TA'RSI. See XEROPHTHALMIA.

OPHTHALMIC OR LENTICULAR GANGLION, is formed in the orbit by the union of a branch of the third or fourth pair of nerves with the first branch of the fifth pair. From this union the eye is sometimes affected in the TIC DOLOREUX, q. v.

OPHTHALMICI EXTE'RNI, (from οφθαλμος). See MOTORES OCULORUM EXTERNI.

OPHTHALMICUS WILLISII. The ophthalmic is the first branch of the fifth pair of nerves, which runs through the foramen lacerum to the orbit, con-

nected in its passage with the sixth pair, and distributed to the ball of the eye, with the third; to the nose along with the olfactory, which the branch of the fifth that passes through the foramen orbitarium internum joins. This branch likewise supplies the parts at the internal canthus of the orbit; the glandula lachrymalis, fat, membranes, muscles, and teguments of the eye lids; its farthest extended branch passing through the foramen superciliare of the os frontis, to be distributed to the forehead. See TRIGEMINI.

OPHTHALMITIS, (from the same). See OPHTHALMIA.

OPHTHALMODY'NIA, (from οφθαλμος, and οδυνη, pain.) An itching burning pain in the eye without redness, and without greatly increased sensibility. It is seldom distinct from ophthalmoponia, and has been ascribed to a rheumatic affection, or a spasm of the muscles. A deep seated pain is sometimes felt from an accumulation of the aqueous humour (hydrophthalmia), sometimes from a cancer, or from a caries of a portion of the orbit.

OPHTHALMOPO'NIA, (from οφθαλμος, and πονω, to labour). An intense pain in the eye, rendering light intolerable, usually arising from inflammation in the internal parts of the orbit.

OPHTHALMOPTO'SIS, (οφθαλμος, and πτοσις, a fall). A falling down of the eye, or its displacement in any direction. The eye falls down almost exclusively from relaxation, but it may be displaced by blows, by tumours of any kind within the orbit. When staphyloma depresses the lower eye lid, the disease is referrible to a different head.

OPHTHALMORRHA'GIA, (from οφθαλμος, and ρεω, to flow). Bleeding from the eye or eye lid.

OPHTHALMO'XYSIS, (from οφθαλμος, and ξωω, to scrape off.) A brushing of the eye.

OPHTHALMOXY'STRUM, (from οφθαλμος, and ξυστρον, a brush). A BRUSH FOR THE EYE, blepharoxystis, formerly made of the beards from barley or rye. It was drawn across the inside of the eye lids, to draw blood.

OPIA'TA, (from opium). Medicines in which are opium; but an appellation also of ELECTARIUM, q. v.

O'PII. TINCTU'RA CAMPHORA'TA. See PAREGORICUM ELIXIR.

OPISTHO'TONOS, (from οπισθεν, backward, and τενος, from τενω, to stretch). See TETANUS.

O'PIUM, (from οπος, juice; μικανος οπος; and, from hence, κατ' εζοχην, οπιον). Affion, afiun, anfiun, manus Dei. Opium is the milky juice of the papaver somniferum Lin. Sp. Pl. 726, α, when incisions are made in their heads; and it is gradually dried in the sun to the consistence in which we receive it. Opium is brought from Turkey, Egypt, and the East Indies, obtained, according to Neumann, by pressing the juice from the heads of the poppies; but the best kind is that obtained from the incisions.

In many provinces of Asia they sow the white poppy (for this is the variety from which the true opium is procured) as we sow wheat. As soon as the heads appear, a slight incision is made in them, and some drops of a milky fluid exude, which are suffered to dry, and then collected. Tournefort tells us, that the greatest quantity of opium is made by bruising and pressing the heads; but Kämpfer and Belon, though they speak

of three kinds of opium, describe each as produced by incision and exudation only. In Persia, the opium is collected in summer, when the heads are nearly ripe; and these are wounded on one side by a knife, which makes five incisions at once. The next morning, the inspissated juice is collected with a spatula. The operation is then repeated on the other side of the heads, but the first tears, styled *gobaar*, are preferred: these are whitish, or of a light yellow, but become brown in the sun, or when too much dried. The second tears are darker, and less efficacious; those of the third operation, black and inefficacious.

When the opium is collected, it is beat up with a little water or honey, till it has the brilliancy of pitch. It is then rolled into cylinders, and, in this state, offered to sale. If small quantities are wanted, they are cut off with scissors. Sometimes the honey is in so large a proportion as to prevent its drying, and to soften its bitterness. This is the state of the East India opium. The most remarkable preparation of opium, in the East, is uniting it with nutmeg, cardamoms, canella, and mace. It is called *philonia*, and is the philonum of the Persians, supposed to strengthen the heart and the brain. Others add only saffron and ambergris, and almost every one varies the additions, according to his fancy. A celebrated liquor, called *Cocomar*, is mentioned by Kämpfer, which is an infusion or a decoction of the leaves, sometimes of the heads, adding various ingredients to please the palate. Another preparation to produce a temporary intoxication is called an electuary, and often employed.

Olivier in his travels into Asia saw the plantations of poppies on a large scale, chiefly in the vicinity of a village, called Affiom Kara-Hissar (the black castle of opium). The poppy is sown in autumn, transplanted in spring, and the harvest is collected about July.

Various attempts have been made to cultivate the poppy in England for the purpose of making opium, and Mr. Ball received a premium for this purpose from the Society for the Encouragement of Arts; but the quantity used is too inconsiderable to render it a national object, and the uncertainty of our climate will render it a very precarious speculation. The inspissated juice of the decoction of our white poppies is sometimes used, and the heads are boiled down to make the poppy syrup; but the former is of inferior virtue, though apparently less virulently narcotic, and white. We think the syrup, when properly made, an highly useful preparation, for reasons to be assigned hereafter; we fear, it is seldom the true watery extract of the poppy head. The seeds of the poppy are oily, and the flowers are cultivated in France for that purpose.

Opium is brought into Europe in flat cakes, or irregular masses, from four to sixteen ounces in weight, covered with leaves. It is a gummy resinous substance, softish, and tenacious, especially when warm, or much handled; of a dark reddish brown colour in the mass, and yellowish when reduced to powder, with a faint disagreeable smell, and a bitter taste. If chewed a little, it affects the tongue with a very slight sense of heat, which spreads to the palate, and then in a less degree to the lips, provoking a discharge of saliva, and sometimes sneezing.

That in which no visible impurities are lodged; which, when broken, appears of a dark red blackish colour;

dry, not unctuous, but moderately ponderous and compact; that which is inflammable, of an acrid bitter taste, a faint smell resembling the odour of unripe poppy heads, without any empyreumatic flavour, communicating to water a reddish tincture, is the best.

Belon observes, that sometimes a pound contains only about four ounces of pure genuine opium; but such adulterated kinds rarely reach us. Sand is added to increase its weight, and many foreign bodies are found mixed with it. It is ordered to be purified by dissolving it in twelve times its quantity of proof spirit, and distilling the tincture to dryness, after filtering.

Opium is softened by the heat of the fingers, but is not fusible, though highly inflammable. Water and alcohol dissolve it in different proportions, and no separation of the opium in the watery solution takes place on the addition of alcohol. When water is added to the tincture, some resin is deposited. Alcohol or water carry over, into a receiver, the narcotic powers of opium, which, by long boiling, or drying, are lost. A portion remains, which neither alcohol nor water will dissolve, supposed, by Gren, to be albuminous; by Bucholtz, caoutchouc; by Josse, a virulent glutinous substance; by Proust, wax, or combined with wax; by Duncan, gluten, approaching in its nature to the fibrin of the blood. Neumann procured from 1920 parts of opium 1520 of alcoholic, and 80 of watery extract; and, inversely, 1280 of watery, and 200 of alcoholic extract. In the first case, the residuum was 320, in the last 440 parts. The solutions of opium, especially the watery, give copious precipitations by infusions of galls. The resin is separated either in a soft or hard state, and the former is sometimes called its essential oil: in this the narcotic power has been supposed to reside. The gummy part seems to contain a small proportion of an earthy salt.

It would be useless to enlarge on the numerous disquisitions to which the chemical analysis of opium have given a temporary importance, but we shall add a few remarks, applicable to practice, that may be drawn from them. This celebrated drug contains, like all other matters, a resin and gum. The extractive matter contains the mucilaginous portion with resin, and it appears, that, while this union is least interrupted, we attain the sedative power with the smallest portion of the virulently narcotic. By the long tedious processes of the French chemists, we obtain a large portion of resin; but this is the product of the operator in consequence of the union of oxygen. The black drop, prepared at Lancaster, is not, we have said, the solution of opium in a vegetable acid; nor does it appear to be a strong spirituous tincture, and is certainly more active than any tincture not virulent after its immediate action. It is equal, in efficacy, in the dose of four drops to seven of the common tincture of opium, and, in the mildness of its effects, though not in their degree, we have come near to it by a tincture made with a weak spirit; for we have uniformly found, that, with a diminished portion of the uncombined resin, the anodyne effects were best secured, without the subsequent inconveniences of head-ach, nausea, &c. We should, therefore, suspect that it is a weak, spirituous tincture, with a proportion of watery extract. At least, we know, that in this way, a medicine of very similar powers may be procured. With this exception, we think Dr. Duncan has very

justly observed, that the attempts of some pharmacologists to obtain a preparation of opium, which should possess its sedative without its narcotic effects, only succeeded in so far as they diminished its activity.

The effects of opium on the living body have been represented in very opposite, contradictory, terms. It has been keenly disputed whether it is stimulant or sedative, as if it was necessary that it should be either. If by stimulant is meant a medicine, which, by its action on the stomach, will increase the heat of the body and the quickness of the pulse, it by no means deserves the title. If given to a healthy person, the pulse and the heat are both lowered; every pain, every care, is soothed; cheerfulness and hilarity are the consequence. If the dose is increased, the face is somewhat flushed, the hilarity rises to intoxication, the mind is unsteady, and the hands tremble. Nausea, faintness, and headach follow, when the influence of the medicine is at an end. This brings the medicine within our class of indirect stimuli, which are generally narcotics; and the error seems to have arisen from what we have often stated as a fundamental one in medical reasoning, viz. not distinguishing between increased and irregular action. If we speak of its effects more generally, to the serenity and calmness which it induces, we should add respiration, slow and deep, a suppression of all the excretions, except that of the skin, pulse slower and fuller, with sleep in circumstances often the most unfavourable to it. With some persons, however, instead of sleep, a mild pleasing delirium comes on, the mind wanders in the delightful regions of fancy, and the duration of time is to the imagination greatly extended. It is a striking instance of a material cause influencing an intellectual idea. With others, this delirium is attended with horror. Suspended rocks are ready to fall; the torrent hastens to overwhelm them, or the edge of a precipice yields under their feet. After considerable doses, vertigo, convulsions, and apoplexy come on, the blood is confined to the large vessels, usually the veins, and a rupture has sometimes ensued.

To explain these symptoms has appeared difficult. It was supposed, from dissections where venous plethora was so conspicuous, that the blood was rarefied, and that sleep was produced from its pressure; but this opinion is no longer supported, for opium produces its effects in very small quantities, and more rapidly than will admit of its reaching the circulating system. In general, it has been concluded that it possesses both stimulating and sedative powers, the first of which is conspicuous soon after its exhibition, and at last conquered by the second. It is not easy, however, to conceive two such opposite powers in a substance, except where the excitement is so violent as to exhaust the irritability, and then the medicine would be strictly a stimulant.

In conformity with the principle which we have just stated, we think it will appear to be a sedative, or rather a narcotic only; and we shall endeavour to explain all its effects from this power. A sedative or narcotic remedy will necessarily first lessen irritability, and this power is immediately obvious in the calm serenity it induces, in consequence of lessening the effect of irritation. The pulse becomes slower and fuller, because the heart, less irritable, is more completely filled before it is stimulated to contraction; the mind is unsteady

from diminished, and of course unequal, excitement; the secretions checked from the confinement of the blood in the larger vessels; and those of the skin more full, as the relaxation of the cutis, by which they are confined, diminishes the resistance. A similar effect we have seen from warm bathing. (See *BALNEUM*.) In the other secretions there is no obstacle to the fullness of the vessels from a constricting membrane.

Marks of a stimulus are however occasionally striking. If given in inflammatory complaints, it will sometimes increase the action of the pulse; and if it does not produce sleep, it renders the patient unusually restless. Yet these effects may be readily explained without contradicting the general principle. If, as in cases of pneumonia, the solution of the disease depends on the yielding of the excretories, to oppose this effect must aggravate all the symptoms, particularly the fever. Yet it aggravates also acute rheumatism, though said to open the cuticular excretories. But, in this case, it opposes a disease which consists, as we shall find, in a constriction of the cuticular vessels, from a different cause. If this constriction is not relaxed by very different medicines, we must expect injurious effects from opium. This reasoning will be confirmed by the advantages derived from peculiar modes of administering it, which coincide with the principle laid down, of its being purely sedative. See *RHEUMATISMUS*.

Nor is it surprising, that, when it excites unpleasant images, and renders the patient restless and uneasy, it should increase fever. The constant agitation is alone sufficient for this purpose; and, when the excitement is unequal, it depends on idiosyncrasy whether the delirium shall be pleasant or distressing.

When the idea of its changing the circulating fluids was abandoned, it was doubted whether it acted on the stomach or the heart; and the second Monro has published some experiments, which seem to show that its chief effects are on the latter. These, however, only prove that, when opium is injected into the sanguiferous system, it produces no effect till it reaches the heart. The small quantity which in the stomach will produce the peculiar effects; the little diminution which is found in a pill of opium, when it has proved fatal; and the rapidity of its action, sufficiently show that, in diseases, it acts exclusively on the stomach. All the subsequent symptoms, those which follow its continued use, and those which arise from the increased dose, contribute to show a sedative power.

The test of this reasoning must, however, be sought for in practice; and, for this purpose, we shall consider its utility in the various diseases for which it has, at any time, been recommended.

We know of no question either in theory or practice more difficult than the use of opium in *FEVERS*, q. v. We have in that article given the outline of its advantages, but we must consider the subject more carefully, at this time, when we possess the necessary information respecting its action. If fevers consist in debility and in irregular action, and opium is a sedative, producing also irregular action, it will appear that no medicine is so unsuitable to the disease. We might rest on this, and at once, with many respectable practitioners, condemn it; but experience forbids; and we must examine whether any unsuspected circumstance of the disease, or any new property of the medicine, either alone or in

combination, will explain the apparent inconsistency. When we spoke, with Dr. Darwin, of the quiescent state of the capillaries during fever, we did not exclude spasm, or irregular action, in consequence of debility; and in considering the state of the brain, we saw numerous proofs of unequal excitement. If, then, the irritation from the latter cause could be prevented; if, by any means, we could determine to the surface without increasing the heat, we might expect to relieve the febrile state. These ends may, we think, be obtained by moderate doses of camphor, joined with the opium, and occasionally with an antimonial. Each is assisted by the warmer ammoniacal neutral, and, as we have remarked, should opium not disagree, we preserve the strength by a few hours rest. When the unequal excitement, in consequence of increasing debility, is so great as to produce subsultus and convulsions, there can be little doubt of checking the inequality by removing all irritation; and this we are often compelled to attempt by opium, though aware of its sedative power, since the excitability would be soon destroyed by the violent excitement. Camphor, in this case, acts not only by its antispasmodic power, but also by its stimulus; for, in considering the effects of this peculiar medicine, we remarked, that we were more frequently obliged to add nitre than aromatics to it.

INTERMITTENTS. The use of opium in intermittents supports, we think, the former reasoning. It is employed with the warmer stimulants, sometimes with relaxants, to keep up the discharge from the surface, and prevent the formation of the cold fit. Boerhaave's *sudorificum antipyreticon raro fallens* contained two grains of opium; and the compound powder of ipecacuanha, assisted with the ammonia, will often succeed. In the hot fit it produces, according to Lind, that relaxation of the skin which hastens and facilitates the sweating stage, relieving by this means the headache and delirium, rendering the solution more complete, and the fever less liable to return.

IN CONTINUED FEVERS, according to the same principles, it will contribute to determine the fluids to the surface, as we have already explained, and to diminish irritation; but we must be particularly cautious that it do not stop the other secretions, particularly the alvine, on which the success of our practice so much depends.

IN INFLAMMATIONS, opium, for the reasons assigned, viz. its tendency to check secretions that would be salutary, is not very frequently employed. Yet with calomel it has been given in every form of active inflammation, with success; for reasons which will be readily understood, since to a medicine which determines so steadily to the skin, opium must be an useful auxiliary. In *phrenitis*, opium is inapplicable, except as a diaphoretic; and in *cynanche*, as it occasions thirst and dryness of the mouth, it can seldom be used with advantage. In *pneumonia*, except where a diarrhoea is found to exhaust the strength, and check expectoration, opium is seldom admissible, since it will have a similar effect; and is only employed to prevent exhaustion, since it is scarcely more than a temporary impediment to the salutary discharge. Yet De Haen gave two grains of opium with two ounces of olive oil, a practice which has not been imitated; and we have left it in doubt (see *OLEUM*), whether oil may really assist expectora-

tion. In *enteritis* opium is highly useful; and we have already spoken of the propriety of checking the spasm previous to the exhibition of laxatives. But, independent of this power, it is often necessary to quiet that irritation of the stomach which prevents food or medicine from being retained. In *nephritis* it is often necessary, with oily laxatives, to relieve pain; but, as it powerfully checks the discharge of urine, diluting liquors should be freely drank with it. In *rheumatism*, with relaxing remedies, often with calomel, it is highly useful (see *RHEUMATISMUS*). In *gout* it is frequently indispensable to relieve the pain, nor is it found, if the action of the bowels be supported, really injurious.

In the *EXANTHEMATA*, opium is often a valuable medicine; and in *variola*, it is an exception to the injuries feared from it in inflammations, for when these tend to suppuration, no inconvenience results from its use. In the convulsions, previous to the eruptions, it is highly advantageous; and on the sixth and seventh days, it allays the pain of suppuration, without checking the ptyalism. In *morbilli* it is less useful, as will be obvious, if what we have alleged of the utility of a free discharge from the bowels be considered. In every view, the dry cough and the pneumonic symptoms forbid its use, unless considerable irritation prevail. In the *scarlatina*, as in *cynanche*, it is still less proper.

In the *HÆMORRHAGIE* it is not often employed, from the apprehension of its stimulus; but, as it soothes and calms, rendering the pulse slower, and determining to the surface, it will be often of service. We have found it so, and particularly in those hæmorrhages attended with considerable irritation, as the uterine, and those which precede or threaten abortion.

When hæmoptysis is aggravated by cough, it is equally so, and when discharges of blood from the anus are produced by diarrhoea, opium is the most salutary remedy, particularly if joined with demulcents.

In the *PROFLUVIA* of Dr. Cullen, it is chiefly useful in *dysentery*, and with the mild laxatives, occasionally with the relaxing antimonials, or with ipecacuanha, very effectually relieves. In *catarrh*, unless joined with peripneumony, it is a most useful medicine.

If there were in nosological systems a class of *DOLORES*, opium would be the chief remedy. It is useful in pains of the stomach, the violent pains from the passage of a biliary or urinary calculus; in *pyrosis*, in *dysmenorrhœa*, *odontalgia*, in those cases of *sphacelus* attended with great pain. In general, also, in painful diseases, as in spasms, the dose of opium, however large, acts only on the constitution, in that portion which is in excess beyond what is necessary to relieve the pain. Thus, if ten grains are given, and nine are required, to procure ease, the constitution only experiences the inconvenience which would arise from one grain.

In *SPASMS* of every kind it is an almost indispensable remedy, particularly in *tetanus*, *trismus*, *convulsio*, &c. In *puerperal convulsions*, after bleeding, it is almost the only effectual remedy. In all flatulent diseases, it acts as the most effectual carminative.

Opium, some years since, was recommended as an infallible remedy in *venereal complaints*, and constantly used, for a time, in the military hospitals. It indeed seemed to *suspend* the disease, without making any progress in the cure. It may be used, therefore, like the nitric acid, to prevent the symptoms from increasing,

while the constitution recovers some degree of strength from former mercurial courses, but cannot be depended on for a complete victory over the disease.

With many, opium disagrees, and numerous have been the correctors proposed. Ammonia sometimes succeeds; more often camphor; or camphor with castor. The vegetable acids, so highly extolled, have been in our hands useless in this respect. Five grains of camphor, with as much castor, made into three pills, with conserve, may be combined with a grain, or a grain and half, of opium; and, in this form, will frequently produce no inconvenience. While a blister is rising, opium will be often borne with ease; and, in almost every case of fever, camphor should be combined.

The nausea, the drowsiness, and vertigo, after taking opium, are relieved most effectually by a cup of strong coffee; but seldom disappear till after a night of sound sleep. Opium should not be given with astringents, alkalis, or metallic salts, as by these it is precipitated when in solution. It is not, however, certain that any real chemical change in the essential part of the remedy takes place; but should it be suspected, the combinations may be made in pills, where there is little room for the play of affinities.

The chief official preparations of opium are, the pulvis ipecacuanhæ compositus; pulvis opiat; tinctura opii confectio opiata; pulv. è creta C. cum opio. In the *pilula ex opio*, it is mixed with liquorice in the proportion of one grain to ten. In the *camphorated pills of opium*, each grain of the latter is united to two of the former. In the *compound opium pills*, a grain of opium and of camphor are united with a quarter of a grain of tartarized antimony. The *emplastrum opiatum* contains a very small proportion of opium, with the litharge plaster, stiffened with dry pitch and some wax. As an anodyne it is wholly useless. For opiate clysters and injections, see ENEMA and INJECTIO.

One grain of pure opium is generally a sufficient dose; three grains can scarcely be taken with impunity by a person not accustomed to it; though, by habit, even an ounce in a day may be administered. Garcias knew a person who took ten drachms a day; and in Turkey, five or six drachms are often taken when violent pains, or other symptoms, require it. Frequent experience manifests the propriety of large doses in spasmodic complaints; twenty-two grains of pure opium, besides three hundred drops of laudanum, have been given in the space of thirty-six hours, without any remarkable inconvenience. Different constitutions require different doses to produce the desired effect; so that practitioners should be careful in ascertaining the proper dose for each constitution, by beginning with small portions, and gradually increasing them till the end is obtained.

Where, however, opium disagrees, both small and large doses are equally inconvenient. In general, the doses should seldom be less than a grain, unless often repeated. The effects of opium seldom continue above eight hours, and if the action is to be continued, it should be repeated in six. In large doses it does not check the secretions, but, on the contrary, sometimes seems to promote them. When it conquers obstructions, it often appears to do so; and in taking off the spasm which prevented the passage of a stone or obstructed the bile,

or, in similar effects in the urinary passages, it seems to be laxative or diuretic.

When imprudent doses have been taken from mistake, or design, stupidity, giddiness, a redness of the face, swelling of the lips, troublesome dreams, starting, convulsions, cold sweats, a considerable dilatation of the pupil, imperfect speech, slow full pulse, quick breathing, nausea, itching in the skin, vomiting, madness, hiccough, fainting, &c. follow. A vomit of vitriolated zinc is then necessary, and after it a spoonful of sharp vinegar is recommended; sinapisms must be applied to the feet, blisters to the arms, and frictions freely employed. Vinegar is the supposed antidote, but cordials and ammonia will be more successful.

Alkaline salts diminish, it is said, the soporific effect of opium; and the fixed alkaline salts are supposed to render it diuretic. The volatile carries it through the skin; and acids, in the opinion of many authors, destroy its powers.

See Kœmpfer's *Amœnitates Exoticæ*; Wedelius's *Opiologia*; Cullen's and Lewis's *Materia Medica*; Neumann's *Chemistry*; Alston's *Dissertation on Opium* in the *Edinburgh Medical Essays*, vol. v.; *Medical Museum*, vol. i. page 473, &c.; Jones's *Mystery of Opium*; Tralles' *Usus Opii*.

OPOBA'LSAMUM, (from *οπος*, juice, and *βαλσαμον*).

BALSAM OF GILEAD. See BALSAMUM.

OPOCA'LPASON, (from *οπος*, and *καλπασον*, a tree of that name). *Ophocarpason*, or *ophocarpithaton*. See CARPASUS.

OPODE'LDON. The name of a liniment said to be invented by Mindererus; but often mentioned by Paracelsus. (See LINIMENTUM SAPONACEUM.) A composition is sold under the name of *Steer's Ophodeldon*, considered as a powerful remedy for strains, bruises, and similar complaints. It is made in the following manner: \mathcal{R} . Solution. saponis cum camphora aq. ammoniæ acetatæ āā \mathfrak{z} i. aquæ ammoniæ puræ \mathfrak{z} ss. m.

OPODEOCE'LE. A hernia through the foramen ischii, and into the labia pudenda.

OPO'PONAX, (from *οπος*, juice, and *παναξ*, the *panacea*). The plant from whence the gum *thus* is produced is known by the names of *ophoponacum*, *panax heracleum*, *costinum*, and *pastinacea*. HERCULES' ALL-HEAL, *pastinaca ophoponax* Lin. Sp. Pl. 376, nat. order *umbellatæ*. See PASTINACA OLUSATRA.

This gum is brought from Turkey and the East Indies, sometimes in little round drops, but generally in irregular lumps, of a reddish yellow colour on the outside, with specks of white, internally of a paler colour, and often variegated with large white pieces. It has a disagreeable smell, and a bitter, acrid, nauseous taste, dissolving in water and in spirit, and yielding a little essential oil in distillation. As a medicine, it is used as an attenuant and deobstruent; and, in large doses is said to be laxative: its dose is from \mathfrak{z} i. to \mathfrak{z} i. *Ophoponax* resembles, and is the least disagreeable of the fetid gums, probably also of the least virtue. See Raii *Historia*; Cullen's and Lewis's *Materia Medica*; Neumann's *Chemistry*.

OPPILA'TIO. See OBSTRUCTIO.

OPPO'NENS POLLICIS. The flexor of the metacarpal bone of the thumb.

OPPOSITIFOLIUS PEDUNCULUS, (from *opposito-*

situs and *folium*). Growing opposite to a leaf of a plant.

OPPRESSIO. See CATALEPSIS.

O'PTICI NE'RVĪ, (from *ὀπτομαι*, to see). The OPTIC NERVES are the second pair united in the brain, but soon becoming two distinct cords, each passing through the foramen opticum of the sphenoid bone, to their respective orbits. They unite on the anterior part of the glandula pituitaria, before they escape from the skull; but soon separate again, without mixing their fibres, and are inserted obliquely towards the nose. The optic nerves are surrounded by the four recti muscles of the eye.

OPU'NTIA. *Cactus opuntia* Lin. Sp. Pl. 669, a shrub which nourishes the cochineal insect, whose flowers expand like a case, having each a great number of stamina in the centre, growing upon the tops of the ovary. The ovary becomes a fleshy umbilicated fruit, with a soft pulp, inclosing many seeds of an angular shape. The leaves are used as emollients in inflammation. See COCCINILLA.

OPUNTIOI'DES, (from *opuntia*, and *ειδος*, likeness,) a marine plant, shaped like the opuntia, but brittle and hard, reckoned among the vermifuges.

O'RANGIA. See AURANTIA HISPALIENSIA.

ORBI'CULARIS LABIO'RUM, (from *orbiculus*, a little ring). See LABIA.

ORBICULA'RE OS, (from the same). *Lenticulare os*. See AURIS.

ORBICULARIS PALPEBRA'RUM MUSCULUS, (from the same). *Constrictor palpebrarum*. The orbicular muscles of the eye lids rise fleshy from the outer edge of the orbital process of the superior maxillary bone, and from a tendon near the inner angle of the eye. The fibres run a little downward and outward over the upper part of the cheek below the orbit, covering the under eye lid, and surround the external angle. Then passing over the superciliary ridge of the os frontis, they mix near the inner canthus with the fibres of the occipito frontalis and corrugator supercillii. After covering the upper eye lid, they descend to the inner angle, and adhere to the inner angular process of the os frontis, and to the short round tendon which serves to fix the palpebræ. It is inserted into the nasal process of the superior maxillary by a tendon which covers the anterior and upper part of the lachrymal sac. The fibres which run on the eye lids are elliptical. These muscles shut the eye lids, compress the lachrymal gland, and convey the tears to the puncta lachrymalia.

ORBICULA'RIS, (from the same). See SPHINCTER ANI, and LYCOPERDON VULGARE.

ORBICULA'RIS CLAUSOR. The orbicular muscle of the eye lid.

ORBICULA'RIS LABIO'RUM. See SPHINCTER LABIORUM.

O'RBITA, (a dim. of *orbis*, a globe). *Cyclos*. The ORBIT of the EYE, or the spheroidal cavity in which the eye is placed; its angles are called *canthi*.

ORBITA'LES ARTE'RIÆ, (from *orbita*), are branches of the inferior maxillary arteries. See MAXILLARIS ARTERIA.

ORBITA'RE EXTE'RNUM FORA'MEN, is in the os maxillare, below the orbit. Through it the nerves and vessels, which come from the teeth, pass to the cheek.

ORBITA'RE INTE'RNUM FORA'MEN, is a little above the os planum; through it goes a branch of the fifth pair of nerves to the nose.

ORBITA'RII NE'RVĪ. See MOTORES OCULORUM EXTERNI.

ORBITA'RIVS PROCESSUS. See MAXILLARIA SUPERIORA OSSA, FRONTIS OS, and SPHENOIDES OS.

ORCHE'A, (from *ὄρχις*, a testicle). See SCROTUM.

O'RBHIS, (from *ὀρεσμαι*, to desire,) the name of a plant with a testiculated root; *satyrion*; *cynosorchis*; *testiculus caninus*; *scrapias*; *orchis morio* Lin. Sp. Pl. 1333. MALE ORCHIES; SATYRION.

This plant hath six or seven long, narrow, smooth leaves, variegated with dark coloured spots, issuing from the root, and one or two embracing a single, roundish, and striated stalk. On its top appears a long loose spike of irregular, naked, purplish red flowers, consisting each of six petals, one of which is large, cut into three sections, hanging downward; the other smaller, forming a kind of hood above it, with a tail behind. The root consists of two roundish, whitish tubercles, about the size of nutmegs; one plump and juicy, the other fungous and somewhat shrivelled, with a few large fibres at the top. It is perennial, grows wild in shady grounds and moist meadows, and flowers in May.

The plump roots, which are alone used in medicine, have a faint smell, and sweetish viscid taste. When the seed is formed, and the stalk ready to fall, the new bulb, of which the salep is made, has arrived at maturity, and may be distinguished from the old one by a white bud, rising from the top, the germ of the orchis of the succeeding year. It is mucilaginous, and similar to the althæa. The dried roots are brought from Turkey, under the name of *salep*; but those of our own growth are equally good. The salep brought from Turkey is in yellowish white oval pieces, hard, clear, and pellucid, without smell, tasting like gum tragacanth. Our orchis roots, decorticated and dried in the air, are similar in appearance. Reduced to powder, and boiled in water, they form a very nourishing mucilage. Half an ounce of the powder will produce a gallon of thick mucilage, if first sprinkled with a little boiling water, then mixed well with it, and afterwards with the water in which it is to be boiled. If kept dry, it never spoils, so that it might form an excellent part of seamen's diet; and as a drachm and a half of salt in a pint of portable salep, is not disagreeable, it may be made with a portion of salt water when fresh is scarce. As a diet, it excels rice; and for children, particularly, it is peculiarly proper, as it seems to retard the acetous fermentation of milk. This powder, and the dried gelatinous part of flesh, or portable soup, dissolved in boiling water, form a rich thick jelly, capable of supporting life for a considerable time. One ounce of each of these articles, with two quarts of boiling water, will be sufficient subsistence for a man one day. Dr. Percival thinks, that a small proportion of it would be an useful addition to flour in making bread; but we perceive that it must be small and less than one eighth. As a medicine, the salep is mucilaginous, demulcent, and sheaths, it is said, the acrimony of the sea scurvy. In diarrhœas and dysenteries, it is useful by lubricating the bowels and correcting putrefaction. In symptomatic fevers, from the absorption of pus, a

plentiful use of salep acts as a demulcent. In the stranguery and dysury it is of service by its mucilage; and it is a useful aliment for calculous patients. See Cullen's and Lewis's *Materia Medica*; Percival's *Essays*; *Georgical Essays*, vol. iv.

O'RHIS BIFO'LIA, Lin. Sp. Pl. 1331. See BIFOLIUM. Dr. Cullen has seen salep prepared from this species as perfect as that from Turkey.

O'RHOS, (from ὄρεος, a plantation, or orchard). The extremities of the eye lids where the eyelashes grow; from the regularity of their insertion. See OCLUS.

ORCHOTO'MIA, (from ὄρχις, testicle, and τέμνω, to cut). See CASTRATIO.

O'RDO, (method, or disposition). ORDER. The second division under which naturalists arrange the objects of nature. See NOSOLOGIA, and Cullen's *Synopsis Nosologiæ Methodicæ*.

ORE'LLONS. See CYNANCHE PAROTIDÆA.

ORELLA'NA. See ORLEANA.

OREOSELI'NUM, (from ὄρος, a mountain, and σελινον, parsley). MOUNTAIN PARSLEY. *Athamanta oreoselinum* Lin. Sp. Pl. 352. *Apium montanum nigrum*; *oreoselinum apii folio minus*. The roots are slenderer than those of the daucus, and not lactescent; the leaves like those of the parsley; the seeds oval, flat, large, striated, margined, and sometimes cast off their husks. It grows on the mountainous parts of Germany and other countries, is pungent and diuretic.

OREOSELI'NUM PRATE'NSE CICU'TE FO'LIO; *heucedanum Alsaticum* Lin. Sp. Pl. 354. *Daucus Alsaticus*; *angelica pratensis apii folio*.

OREOSELI'NUM A'PHI FO'LIO MA'JUS; *athamanta libanotis* Lin. Sp. Pl. 351. *Libanotis nigra*; *gentiana nigra*; *daucus montanus*; *cervaria nigra*; *daucus selinoides major*; MOUNTAIN DAUKE, or BLACK HERO FRANKINCENSE. The seeds of these plants resemble those of the mountain parsley, and are styled diuretic and emmenagogue, but are seldom employed.

ORE'STION, (from ὄρος, a mountain,) *helenium Dioscoridis*, *inula helenium* Lin. Sp. Pl. 1236. See ENULA.

ORGA'NUM. Any part of the animal body, which from its structure is adapted to particular offices. This structure is from thence called *organizatio*.

ORGA'SMUS, (from ὀργασμός, turgeo). SUDDEN VEHEMENCE, generally applied to the venereal impulse. Hippocrates transferred this term to the agitation excited by superfluous excrementitious fluids, to produce the necessary discharges. Linnæus calls it a subsultus of the arteries. Quincy considers it as an impetus of the blood or spirits, distending the muscles with unusual force. It is in fact a violent determination of the blood to any organ.

ORI'CIA. A species of fir, called from Oricus, a city of Epirus, where it grows.

ORIENTA'LIA FO'LIA, (from oriens, the east). See SENNA ALEXANDRINA.

ORIENTA'LE GU'MMI. See GUM SENEGAL.

ORI'GANUM, (from ὄρος, a mountain, and γανω, to rejoice; because it grows most luxuriantly on mountains). WILD MARJORAM; *marjorana sylvestris*, *oleacea*, et *mancarana*; *origanum anglicum*, et *spontanæum*; *onitis major*; *origanum vulgare* Lin. Sp. Pl. 824. *Heracleoticum*, from Heraclea. COMMON WILD MARJORAM is a plant with firm round stalks; oval, acuminate, uncut, and somewhat hairy leaves, set in

pairs on short pedicles. On the tops grow scaly heads of pale-red labiated flowers, whose upper lips are entire, the lower cut into three segments, set in a convex umbel, intermixed with roundish, purplish leaves; each flower is followed by four minute seeds inclosed in the cup. It is perennial, grows wild on dry chalky hills and gravelly grounds in several parts of England, and flowers in June.

The leaves and flowery tops have an agreeable aromatic swell, and a pungent taste, warmer than the garden marjoram, and much resembling thyme, with which they agree in medicinal virtue, as well as with marjoram. Infusions of the leaves are drunk as tea in weakness of the stomach, and disorders of the breast, to promote perspiration, the fluid secretions in general, and the catamenia. They are sometimes used in anti-rheumatic baths; and the dry leaves powdered are a good errhine. For internal use, half an ounce of the leaves is infused in a pint of water. In distillation with water they yield a moderate quantity of a very acrid, penetrating, essential oil, smelling strongly of the origanum, but less agreeable than the herb, called oil of thyme, often put into a hollow tooth to allay pain. See Lewis's *Materia Medica*, and Neumann's *Chemistry*.

ORI'GANUM CRE'TICUM. See DICTAMNUS CRE-TICUS.

ORI'GANUM MAJORA'NA, seu FOLII OVATIS. See MAJORANA MAJORI FOLIO.

ORLEA'NA, (from the place where it grows,) *arbor Mexicana*; *orellana*; the ROUCOU or ARNOTTO TREE, *bixa orellana* Lin. Sp. Pl. 730.

This curious shrub rises commonly to the height of eight or nine feet, thrives best in a cool rich soil, and shoots most luxuriantly near springs and rivulets. The seeds are covered with a kind of wax called *terra orellana*, *roucou*, and *arnotto*. When the seed vessels are mature, the seeds are put into convenient jars, to which is added as much hot water as will suspend the wax. When this is washed off, the seeds are taken out, and the fluid left at rest till the wax thoroughly subsides. The clear liquor is then decanted, and the sediment dried gradually in the shade. This mass is afterwards made into balls or cakes, and dried in an airy place, until fit for use, or the market. The wax is a cool, agreeable, rich cordial, and hath been long in use amongst the Indians and Spaniards in America, who still mix it with their chocolate, both to heighten the flavour and raise the colour. It is said to be a successful remedy in dysentery, is used as a pigment, and often mixed with other ingredients both by painters and dyers. The roots resemble in virtue the wax, but are more diuretic. The Indians prepare an arnotto of a bright shining red colour, almost equal to carmine.

The arnotto dissolves with difficulty in water, tinged it of a pale brownish yellow; more readily in rectified spirit of wine, to which it gives an orange-red colour; and it is used in varnishes, to give an orange hue to the pale yellows. Alkaline salt renders it soluble in boiling water, without altering its colour. See ACHOTE.

ORNITHO'GALUM, (from ὄρνις, of a bird, and γαλα, milk; because the colour of its flower resembles the milky fluid found in eggs). *Ornithogalum umbellatum medium angustifolium*; *ornithogalare*, *ornithogalum umbellatum* Lin. Sp. Pl. 441, the STAR OF BETHLEHEM, flowers in May. The root is bulbous or tuberous, and

is a wholesome nutrient: indeed the roots of all the species possess the same properties. (See Raii Historia.) It is also a name for squills. See SCILLA.

ORNITHOGLOSSUM, (from *ornis*, a bird, and *γλωσσα*, a tongue, from their shape). BIRD'S TONGUE. The seeds of the common ash tree.

ORNITHOPODIUM, (from *ornis*, and *πῦς*, a foot, from the likeness of its pods to a bird's claw). BIRD'S FOOT; telephium; chironium; scorpioides; SCORPION WORT; *ornithopous scorpioides* Lin. Sp. Pl. 1049, grows on sandy and gravelly places, and flowers in summer. The seeds are said to destroy the stone in the kidneys; but are very rarely used. See Raii Historia.

O'RNUS, (from the Hebrew term *orn*). See FRAXINUS ORNUS. It is also an appellation of the *sorbus aucuparia*. See SORBUS SYLVESTRIS.

OROBANCHE, (from *οροβος*, a wild pea, and *αρχω*, to suffocate; because it twines round and suffocates the orobus). See HYPOCISTIS.

O'ROBUS, (from *ἰσπελω*, to eat). *Karemyle astragalus*; *astragaloides*; *orobus tuberosus* Lin. Sp. Pl. 1028. WOOD PEASE, HEATH PEASE; grows in woody places, flowers in April, ripens its seed in May. The tubera of the root are highly nutritious, taste like liquorice, and in Scotland are used for the same purposes, and chewed like tobacco. See Raii Historia.

O'ROBUS, and OROBRYCHIS PEREGRINA, (from *οροβος*, and *βρυχω*, to eat). See ERVUM.

OR'PIMENT. See AURIPIGMENTUM.

O'RRIS. See IRIS VULGARIS.

ORTHOCOLON, (from *ορθος*, straight, and *κωλον*, a limb). See ANCHYLOSIS.

ORTHOPONCEA, (from *ορθος*, erect, and *πνεω*, to breathe). This disease, when neither connected with asthma nor dyspnoea, is only a symptomatic. It consists in a sighing suffocating respiration, and the patient must be erect to breathe. It is a symptom often of hysteria, sometimes of hydrothorax, occasionally of polypi and diseases of the heart or larger vessels. In some cases it arises from fat, from poisons, deleterious vapours, or any cause of compression on the lungs.

ORVALA, (from *orvale*, French). See HORMINUM.

ORVIETANUM. A celebrated antidote, called from Orvieto, a city of Italy, where first used, or from Orvietanus, its inventor.

ORYZA, (from the Arabic term *orez*). RICE; the seeds of the *oryza sativa* Lin. Sp. Pl. 475; ARAC. Its grains are disposed in an oval panicle, covered with a thick husk, like barley. It is less viscous than wheat, but less nourishing, and used as a diet in diarrhoeas; but the salep is preferred by Dr. Percival. It ferments slowly, and corrects putrefaction imperfectly; but is preferred by Dr. Cullen as a grain highly productive and nutritious. The idea of its being hurtful to the eyes is without foundation. Rice flourishes in a moist soil, and even in water. In China the liquor called *arrack* is distilled from it. See ARAC.

ORYZA GERMANICA. A species of barley.

Os, *ossis*, (from the Hebrew term *ozam*, strength). A BONE. Bones consist of a mucilage and an earthy matter. Acids dissolve this earthy matter, leaving the bone of its original shape, but soft. See BONES.

Os, ORIS, (from *ορρα*, the voice). The MOUTH.

Its external parts are the lips, the angles of the mouth, the border or edge of each lip, the fossula which runs from the septum narium to the edge of the upper lip, and the transverse fold which separates the under lip from the chin. The internal parts are the palate, the septum palati, the uvula, the amygdalæ, the gums, the fræna of the lips, and the tongue, with its apex, root, sides, and frænum.

Os EXTERNUM, and INTERNUM. The first is the entrance into the vagina; the second the mouth of the womb.

Os LEO'NIS. See ANTIRRHINUM.

Os TINCE, *amphideon* and *oscheon*. If the os internum is long and hard, when pains, like labour, come on, a clyster and an anodyne may be given, for labour has not commenced. The os tinæ is sometimes open, a month or two before the period of labour; but its thickness and softness remain the same, until labour comes on. Nor does it always point in one direction during pregnancy, or in the beginning of labour. When opened by the membranes, it is soft, and if contracted again from the discharge of the waters, it is easily dilated. It sometimes is hardened and thickened by age, or by frequent labours; and the birth, though natural, is in that case somewhat retarded. To dilate these parts, the fingers must be gradually introduced, and when the hand is in the vagina, the os internum must be slowly and cautiously dilated; and the more carefully in proportion to the rigidity of the parts. When the hand can be introduced into the uterus, the back should be contiguous to it, and the palm to the membranes.

OSCE'DO, (from *os*). See OSCITATIO.

OSCHEOCE'LE, or OSCHEOPHY'MA, (from *οσχιον*, the scrotum, and *κηλη*, or *φυμα*, a tumour). See HYDROCELE and HERNIA.

O'SCHEON, (*οσχιων*). See SCROTUM, and Os INTERNUM.

OSCILATORIUS MOTUS, (from *os*, a mouth, and *cilleo*, moveo). VIBRATION; as of a *pendulum*. Borelli thinks that such a motion takes place in the blood by means of the inspired air mixed with it in equal proportions, regulating and governing the motion of the spirits by its elasticity; and physiologists, without any distinct ideas, have spoken of a similar motion in the extreme blood vessels. They certainly act often irregularly, and perhaps independent of the heart, as in blushing; but such action is very different from oscillatory motion, and the introduction of the term only produces confusion.

O'SCITANS, (from *oscito*, to gape). The YAWNING FEVER.

Yawning is undoubtedly an early symptom of fever; but there is no peculiar kind distinguished by this symptom.

OSCITA'TIO, (from the same,) *chasma*, *oscedo*. YAWNING. The effect of yawning in the healthy, according to Boerhaave, is to move, accelerate, and equally distribute the fluids through all the vessels of the body, consequently to fit the muscles and organs of sensation for their various functions. It is an irregular, partly a convulsive, action of the muscles of the lower jaw, and, like stretching, takes place when the muscular power is not completely restored. A French physiologist has told us that it is designed to

restore the due power to the extensor muscles, which they lost by the superior action of the flexors during sleep. See MUSCULI.

When yawning is troublesome, a long deep respiration, or drawing in the air at long intervals, cures it. Hippocrates.

OSCOLATO'RIUS MU'SCULUS, (from *osculo*, to kiss). See SPHINCTER LABIORUM.

OSCOLUM, (a diminutive of *os*), a small orifice.

OSMA'ZOME, (from *οσμη*, smell, and *ζωμος*, broth). We should not have introduced this singular term, but that the experiments of M. Thenard, who suggested it, were not within our reach when the former part of this work was written. It is the animal substance peculiar to muscles, or muscular flesh, which gives odour and flavour to the decoction or soup; and by these qualities, as well as its colour, is distinguished from gelatine. Its proportion to the latter, in flesh, is as about one to five. Four pounds of muscular flesh, bruised and washed with cold water, produced nearly six drachms of this substance. The decoction of bones is gelatinous only. This is the animal matter not yet sufficiently examined, which gives the zoonic acid its peculiar properties, for it is originally the acetous.

OSMU'NDA VULGARIS, PALU'STRIS, and REGA'LIS. See FILIX FLORIDA.

O'SSA BA'TUS. See BORZAIL.

O'SSA SPONGIOSA, sometimes distinguished by the epithet *inferiora*, as two turbinated portions of the ethmoid bone, by some anatomists described as parts of the ossa palati, are frequently called *superiora*. They are certainly distinct in the early periods of life, and consist of a spongy lamella in each nostril, the convex surface of which is towards the septum, and the concave towards the maxillary bone, covering the opening of the lachrymal duct. Two processes rise from its upper edge. The posterior (the broadest) hangs on the edge of the antrum highmorianum; and the anterior forms the os unguis, and a part of the lachrymal duct. These bones are complete in the fetus, and lined with the mucous membrane. The sides of the maxillary sinus, apparently turned downwards, seem to form two other bones, and some smaller bones, irregular in their size and uncertain in their number, occasionally project into the nostrils to extend the surface of the olfactory organ.

O'SSA E CO'RDE CE'RVII. THE BONE OF A STAG'S HEART, formed by the ossification of the arteries, was formerly used in asthma.

OSSI'cula AUDI'TUS. See AURIS.

OSSI'culum, (a dim. of *os*, a bone). In botany it is the shell or hard covering of seeds, like bony lamellæ.

OSSIFICA'TIO, (from *os*, a bone, and *fo*, to become). OSSIFICATION. The calcareous phosphat of which bone consists is deposited from arteries; but previous to the deposition, the arteries are distended; and those which did not before carry red blood are now visible from their containing this fluid. In this blood the knife discovers hard particles, which gradually unite; for these bony fibres are flat, and radiate as from a centre; no membranous parts are formed, and their shape is generally irregular. In the blood vessels the membranes supply the place of those usually connecting the

osseous particles in cartilages, forming the body of the cartilage from which the bone by maceration slips perfectly distinct. While the bones are increasing within cartilages, the cartilages are extended; and from the pressure which they suffer from the bone within and the integuments externally, they decrease continually, and are at last entirely destroyed.

Dr. Hunter, in his Lectures, supports this opinion, by curious anatomical preparations, in opposition to Kerkringius and others, who contend that bones are originally cartilaginous.

Dr. Hunter had a preparation of the patella, in which he demonstrated that the ossification of that bone began by the arteries ossifying in the centre of the cartilage, which, in young subjects, supplies the place of the bony patella. Mr. Cruikshank prosecuted the subject, from the first appearance of an ossifying artery, to the perfect formation of the patella. He supposed that the same thing took place in all other bones, and demonstrated that ossification is not only begun but carried on by the ossifying of the arteries.

Morbid ossifications frequently happen in the aorta, lungs, pericardium, and even in the corpora cavernosa penis. The natural process advances in infants in proportion to their strength. In flat bones it begins in the centre, and shoots towards the circumference; in long ones, in the middle, shooting towards the extremities.

See Kerkringius, Ruysch, Nesbit, Albinus, and Monro.

OSSIFRA'GA, (from *os*, a bone, and *frango*, to break). See OSTEOCOLLA.

OSTA'GRA, (from *οστιον*, a bone, and *αγρα*, a laying hold of). A forceps to take out bones; and also a pain in the bones.

OSTI'TES, OSTEOCO'LLA, (from *οστιον*, a bone, and *κωλλω*, to glue), *ossifraga*, *osteolithos*, *holosteus*, *amosteus*, *ostracites*, *stelochites*, GLUE BONE, STONE OR BONE BINDER, is the petrified root of a poplar, or pine; found in sandy places in several parts of Germany. This sand hath a large mixture of fine, white, calcareous earth, which sticks to the fingers, resembles meal, and when washed by the rains into any cavity hath the appearance of an emulsion. Of this sand, and calcareous earth insinuated into the roots of the trees, is the osteocola formed, long famed for its virtues of promoting a coalition of fractured bones. See Lewis's *Materia Medica*; Neumann's *Chemistry*; and the *Philosophical Transactions*.

OSTEO'COPAS, (from *οστιον*, a bone, and *κοπος*, uneasiness). A constant and remarkable pain of the bones from an affection of the internal periosteum, not increased by pressure, arising chiefly from acrimony of the humours in the spina ventosa. These pains resemble those of great weariness.

OSTEOGENEI'A, (from *οστιον*, and *γενεια*, generation). OSTEOGENY, treats of the production of a bone in its progressive states. See OSSIFICATION.

OSTEOGE'NICA, (from *οστιον*, and *γενναω*, to beget), medicines ridiculously supposed to promote the generation of a callus.

OSTEOGRA'PHIA. OSTEOGRAPHY (from *οστιον*, and *γραφω*, to describe), describes a skeleton, and all the bones which compose its different parts.

OSTEOLITHOS, (from *ὀστρεον*, and *λίθος*, a stone). See OSTEODOLLA.

OSTEOLOGIA, (from *ὀστέον*, and *λόγος*). A DESCRIPTION OF THE BONES. The doctrine relative to the bones includes osteogeny, osteography, and synosteography. See MONRO'S Osteology.

OSTEOSARCO'SIS, (from *ὀστρεον*, *ος*, and *σάρξ*, flesh). Softness and flexibility of the bones.

OSTIA'RUS, (from *ostium*, a door). See PYLORUS.

OSTIO'LA, (a dim. of *ostium*). The valves in the vessels of the heart. Mundinus.

OSTRACITES, (from *ὀστρακον*, a shell). *Ostrea labris non crenatis*. HOBGOBLIN'S CLAW, a stony substance, of the shape of an oyster shell, used instead of the pumice stone, to take off hairs. A name of the *osteocolla*; see also CADMIA.

O'STREA, (from the same). The OYSTER. A light, easy, nutritious diet, which is said not to pass off freely by perspiration. In the reign of Galen it was supposed to be cold; and Dr. Moffat tells us, that to eat oysters and drink cold water is certain death. It has been since recommended, so mutable is fashion, as an aphrodisiac. If roasted or scalloped, it is hard of digestion; and vinegar seems to add to its insolubility. The shells are excellent absorbents, and generally used to correct acidity in the primæ viæ. When burnt in the fire they are supposed to form a lime peculiarly adapted to calculous complaints; and after being repeatedly used for making lime water, they may be employed, were it necessary, as absorbents. The hollow shells contain most of the fine white earth; the rougher matter of the shell much sea salt. See NEUMANN'S Chemistry; Lewis's Materia Medica.

OSTRI'TIUM. See IMPERATORIA.

OSY'RIS; *cassia poetica* Lobellii, *cassia Latinorum*, *lignea Montsfeliensis*. *Osyris alba* Lin. Sp. Pl. 1450. POET'S ROSEMARY: the whole shrub is astringent; it grows in the southern parts of Europe, and is sometimes corruptly called *auxyris*.

OSY'RIS, (from *ουρον*, urine; because it promotes a discharge of urine). See LINARIA.

OTALGIA, (from *οὖς*, an ear, and *αλγος*, pain). A PAIN IN THE EAR. This disorder affects the concha, and the whole meatus auditorius; and is attended with inflammation, tumour, pulsation, and a sense of weight. Dr. Cullen considers it to be a variety of phlogosis phlegmone, from its situation.

It is, in general, an inflammatory complaint, often from its usual cause, cold, directed from a crevice to the part, and sometimes followed by suppuration; but any cause of irritation may produce pain in this very sensible organ; and hardened wax, or any extraneous body, in the meatus auditorius, are frequent causes. Numerous are the causes and distinctions in authors, and in our predecessor's work; but acrimony, the fermentation of the wax, or turgid glands, are at least unfrequent sources of the complaint. Indeed they are incompatible with the nature of the organ or its secretions. We must therefore confine our ideas to inflammation and irritation. In the former case, blisters behind the ear, cooling laxatives, and the frequent injection of warm fluids are necessary, and alone often complete a cure, especially if joined with the relaxing diaphoretics and anodynes.

Warm olive oil seems to have no particular claim to

our notice, above any other warm fluid; but it has probably been preferred, from apprehension of the pain being occasioned by some insect, which it often destroys. If this be the case, however, he may be enveloped in the cerumen; and tobacco smoke has a better chance of relieving the complaint. Other warm applications are, warm sea water, a roasted onion, and similar modes of conveying heat. If these fail of giving relief, they at least hasten suppuration when the pain ceases. Suppuration seldom takes place within the tympanum; but when it does so, the matter finds a way through it.

Inflammation in the part itself is not the only cause of this disease. It may be secondary from the throat, the teeth, and occasionally from rheumatism on the side of the head. It is only necessary to be aware of these causes to ascertain their existence, and obviate them by appropriate remedies.

There are, however, pains in the ear, whose sources are less obvious. If it be hardened wax, it may be seen by throwing a strong light into the meatus auditorius; and, in that case, syringing the ear with soap and water is often effectual. Salt water is a better menstruum for the wax, and may be employed. There is reason, however, for apprehending one bad effect from this remedy, viz. giving such a susceptibility to the organ, that it is more liable in future to be affected by cold, and therefore this remedy must be employed with caution.

When the wax is not in fault, and the pain is deeply seated, we cannot ascertain the cause, and our conduct must be more empirical. In these cases a warm infusion of poppy heads, the warm essential oils, the balm of Gilead, a solution of camphor, joined with opium and similar medicines, may be dropped into the meatus with good effect.

OTENCHY'TES, (from *ωτος*, the genitive of *οὖς*, an ear, and *εγγχεω*, to flour in). A SYRINGE for the EARS.

OTHONNA (from *θεον*, lint). See CHELIDONIUM MINUS.

OTITIS, (from *οὖς*, the ear). Inflammation in the internal ear, inducing fever, restlessness, and even, in some cases, delirium. Independent of the remedies of OTALGIA, q. v. from inflammation, the general remedies for fever are required.

OTOPLA'TOS, a fetid discharge from behind the ears. It is generally critical, and consequently must not be imprudently checked. The utmost cleanliness is, however, indispensable.

OTOPUO'SIS, (from *οὖς*, and *πυον*, pus). A purulent discharge from the ear.

OTORRHŒ'A, (from *οὖς*, and *ῥεω*, fluo). A discharge of blood or of bloody matter from the ear.

OUY'COU. See CASSADA.

OU'RLES. See CYNANCHE PAROTIDÆA.

OVA ZEPHYRIA. Eggs not impregnated by the cock; WIND EGGS, said to be conceived in a westerly wind.

OVA'LE FORA'MEN, (from its shape). See COR.

OVA'RIA, (from *ovum*, an egg). The OVARIES; formerly called the female testicles; but now supposed to be the receptacles of ova or the female seed, taken up and conveyed in the form of an ovum by the Fallopian tube to the uterus. (See GENERATIO.) The ovaries are two small bodies situated behind each

Fallopian tube, near the fundus uteri, to which they are fixed by a short round ligament, and inclosed with it, between the folds of the ligamenta lata. The substance of the ovaria, like that of the testicles, is spongy; but each ovarium seems to contain numerous little vesicles, styled *ova*, each of which seems surrounded by a spongy covering. The outer coat of the ovary is from the peritonæum; and when a woman has conceived, a fissure is observable on this coat of a different size and figure, even in the same body. At the age of puberty they are of the proper size, and continue plump and full until the menses begin to disappear. They receive vessels from the spermatics, which run on to the uterus, and anastomose with the hypogastrics. The nerves are from the intercostals, lumbal and sacral. Besides the liquor which resembles the white of egg, they contain two or three vascular bodies called *corpora lutea*, and which, by some, are called the eggs, but in reality are apparently the part of the ovarium from which the egg has dropped, since it is not found before a woman has conceived. It is not again wholly filled for three or four months, but is very vascular, as is the case when any lost substance is to be supplied.

The ovaries are subject to great distention from water. See HYDROPS OVARII, and also a singular case in Gooch's Observations and Remarks.

OVA'TUS, or OVIFORMIS HU'MOR. OVAL, EGG-SHAPED. See OCULUS.

O'VI CA'NDIDUM, (from *candeo*, to shine). See ALBUMEN OVI.

O'VI DUC'TUS, the Fallopian tube.

OVIPAROUS, animals which exclude their young under the covering of an ovum.

OVO'RUM TE'STÆ; *anatum*, and, when calcined, *anora*, EGG SHELLS, are prepared by boiling them in water, separating the membrane, which lines the inner surface, and powdering them by levigation. They are similar to the other absorbents, but said to be less astringent.

O'VUM, (from *ovum*). AN EGG. Eggs are nutritious, but if boiled hard, are with difficulty digested. They seem to be less alkalescent than almost any other animal substance, and during digestion to be less stimulant; but they should be eaten when quite fresh, for as they approach to a putrescent state they become offensive to the stomach; nor is it material from what birds they are taken, except those which feed almost exclusively on putrid animal substances. The yolk is used as a medium for uniting balsams with water. There is great analogy between the serum of the blood and the white of an egg. See Neumann's Chemistry. Cullen's Materia Medica.

O'VUM PHILOSOPHO'RUM. A glass whose body is of an oval figure, by which a liquor may be distilled by circulation.

O'VUM SUBLIMATO'RUM. See CUCURBITA.

O'XALAS, (from *oxalis*, wood sorrel). OXALATS. Salts formed by the combination of the oxalic acid (acid of wood sorrel; see ACETOSILLA) with different bases. These salts are decomposed by lime water, and the precipitate is soluble in the acetous acid. Most of the alkaline oxalats are capable of combining with an excess of acid. The earthy oxalats are generally insoluble, but may be decomposed by a red heat.

OXA'LIC ACID. See CHEMIA.

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OXA'LIS (from *οξύς*, sharp). See ACETOSA.

OXA'LME, (from *οξύς*, and *αλς*, salt). A mixture of vinegar and salt.

OXELÆ'UM, (from *οξύς*, and *ελαιον*, oleum). A mixture of vinegar and oil.

O'XYA, (from *οξύς*). See FAGUS.

OXYACA'NTHA, (from *οξύς*, and *ακανθα*, a thorn; from the acidity of its fruit). The BARBERRY. See BERBERIS and SPINA ALBA.

OXYCE'DRUS, (from *οξύς*, and *κεδρος*, a cedar; from the sharp termination of its leaves). See CEDRUS FOLIO CYPRI.

OXYCO'CCUS, (from *οξύς*, and *κοκκος*, a berry,) *vaccinia palustris*, *vitis Idea palustris*. *Vaccinium oxycoccus* Lin. Sp. Pl. 500. MOOR or CRANE BERRIES. This plant grows in marshy and rich soils, and flowers in June. The fruit is cooling and astringent; and in Sweden they are used as refrigerants. See Dale, and Raii Historia.

OXYCRA'TUM, (from *οξύς*, and *κραννυμι*, to mix). OXYCRATE; vinegar mixed with a portion of water, and rendered milder by the addition of a little honey.

OXYCRO'CEUM EMPLA'STRUM, (from *οξύς*, and *κροκος*, saffron,) a plaster containing saffron and vinegar.

O'XYDS, (from *οξύς*, acid). Substances formed by the union of oxygen with any basis; as a metal or an acid.

O'XYGEN, (from *οξύς*, and *γίνομαι*, gignor). The atmospheric air is composed of two æriform fluids (see AER); one of which, oxygen, is capable, by respiration, of contributing to animal life, in which metals are calcinable, and combustible bodies may burn;—the other azot, on the contrary, is distinguished by opposite qualities. The properties of this base is to form acids by combining with many different substances: and this process is termed *oxygenation*. The union of oxygen with caloric is called *oxygen gas*, the same as was formerly called *empyreal*, *vital*, *dephlogisticated*, or *pure air*. When oxygen is united with a combustible substance, it is said the conversion of that substance into an acid is to oxygenate it. See CHEMIA.

OXYGENATED MURIATIC ACID. Muriatic with an excess of oxygen, by distilling it from any metallic oxide, particularly that of manganese. It is yellow, transparent, with a peculiar suffocating smell; apparently less acid than the common muriatic, and its oxygen is soon separated by light.

OXYDE'RCES, and OXYDE'RCICA, (from *οξύς*, and *δεικω*, to see). Medicines which relieve those affections of the eyes which occasion imperfect vision.

OXYDO'RCIA. See DACNERON.

OXYGA'LA, (from *οξύς*, sour, and *γαλα*, milk). SOUR MILK.

OXYGA'RUM, (from *οξύς*, acid, and *γαρον*, garum). See GARON or GARUM.

OXYGENA'TIO, and OXYGE'NIUM. See OXYGEN.

OXYGLI'CUM, (from *οξύς*, and *γλυκος*, sweet). See APOMELI.

OXYLA'PATHUM, (from *οξύς*, and *λαπαθον*). See ACETOSA, and LAPATHUM ACUTUM.

O'XYMEL, (from *οξύς*, vinegar, and *μελι*, honey). Honey and vinegar, boiled together so as to form a

M

syrup, is called *simple oxymel* and *apomeli*. To this Hippocrates applies the term *adipsion*, a preventer or allayer of thirst. (See MEL.) Oxymels of different denominations are made by macerating medicinal ingredients in vinegar, and then boiling them with honey.

O'XYMEL ÆRU'GINIS. See ÆGYPTIACUM UNGUENTUM.

O'XYMEL CO'LOCHICI. See COLCHICUM.

O'XYMEL SCI'LLÆ. See SCILLA.

OXYMYRRHI'NE, or OXYMERSI'NE, (from οξύς, and μυρρίνη, the myrtle, from its resembling myrtle). See RUSCUS.

OXY'OPIA, (from οξύς, and οφίς, vision,) a peculiar acuteness of sight usually found in fair persons, the pigment of whose choroid coats is of a light colour.

OXYPHLEGMA'SIA, (from οξύς, and φλεγω, to burn). See INFLAMMATIO.

OXYPHCE'NICA, (from οξύς, and φοινίξ, the tamarind). See TAMARINDUS.

OXYPHY'LLON, (from οξύς, and φύλλον, a leaf,) *cnicus* of Oribasius; but he seems to intend by it a

different plant from that which we call by that name; probably a species of *carthamus*.

OXYPHO'NIA, (from οξύς, and φωνή, voice). See PARAPHONIA.

OXYRE'GMIA, (from οξύς, and ερεγγω). An ACID ERUCTION.

OXYRRHO'DINON, (from οξύς, and ῥοδινον, oil of roses). A composition of vinegar and oil of roses.

O'XYS. See ACETOSELLA.

OXYSA'CCHARUM, (from οξύς, and σακχαρον, sugar). A composition of vinegar and sugar.

O'XYSAL DIAPHORE'TICUM, (from οξύς, acid, sal, salt, and διαφωρίω, to perspire). Salts with an excess of acid, prepared by Angelus Sala; but nature offers us many such in the tartar, salt of wood sorrel, &c.

OXY'TOCA, (from οξύς quick, and τίκτω, to bring forth). Medicines which promote delivery.

OXYTRIPHY'LLUM, (from οξύς, and τριφύλλον, trefoil). See ACETOSELLA.

OZÆ'NA, (from οἴζος, a fetid smell). See ABSCESSUS NARIUM.

P.

PAD

P, in prescription, sometimes signifies *pugillum*, *pugil*, or the eighth part of a handful; sometimes *parts*.

P. Æ. PARTES ÆQUALES. EQUAL PARTS.

PA'CAL. A tree in Peru, the ashes of which, mixed with soap, in the form of an ointment, are used for the cure of leprous disorders. It is not noticed in the botanical systems. See Raii Historia.

PACHIONIA'NÆ GLANDU'LÆ. See CEREBRUM.

PA'CHYS, (from *παχυνω*, to *incrassate*). THICK. The name of a disorder unknown to us, but which has been described only by Hippocrates, more probably by the Cnidian school. Hippocrates condemns them for multiplying the species of diseases without necessity; and of this they make four species, with symptoms very incompatible. The description of this disease, which is called *παχυ νόσημα*, occurs indeed in the treatise De Internis Affectionibus, which is generally accounted spurious; and the different species are certainly different diseases; for the first is an asthenic typhus, with considerable accumulations of bile, &c. in the epigastric region; and the last, the dropsy, which follows fevers of peculiar severity. See James' Medical Dictionary, and Le Clerc's Histoire de Medecine, lib. iii. c. 11. page 181.

PACO CA'ATINGA. A coniferous species of Brazilian canna, the *costus arabicus* Lin. Sp. Pl. 2. Its stalk, if chewed, occasions a spitting: if the saliva is swallowed, it is said to cure gonorrhœa in a few days; and to be occasionally lithontriptic. See Raii Historia Plantarum.

PACOEI'RA. See BANANA.

PA'DRI. A siliqueous tree in Malabar, not yet accurately described: the juice of the leaves is a cure for mania; that of the bark, mixed with the fruit of the pera, is supposed to restrain the menses. See Raii Historia.

PA'DUS; *prunus padus* Lin. Sp. Pl. 677; *cerasus avium nigra*, *cerasus racemosa*; the WILD CLUSTER CHERRY, the BIRD'S CHERRY, grows on mountains, and the berries are used to hang about the necks of children as a cure for the epilepsy; and internally to cure dysentery. The bark, a narcotic bitter, and slightly astringent, has been said to cure intermittents and syphilis. (See Dale, and Raii Historia.) A name, as is said, also for the lauro cerasus, but in reality a species of *prunus*, resembling the lauro cersus, so called by

PÆO

Clusius. See Lin. Sp. Pl. 678, where it is arranged with this trivial name.

PÆDA'NCHONE, (from *παις*, a child, and *αγχω*, to strangle). See ANGINA.

PÆDARTHROCA'CE, (from *παις*, *αρθρον*, a joint, and *κακον*, an evil). The JOINT EVIL; as it frequently appears about the joints of children, and oftener than in adults. Severinus calls the spina ventosa by this name; and adds that its tumours are frequently attended with pain, redness, and all the appearances of inflammation, while the pædarthroca has little or no pain in the beginning. But these names are used very promiscuously; and the term is sometimes applied to anasarca. Dr. Cullen places it as a variety of the first species of phlogosis, under phlogosis phlegmone. See M. A. Severinus's Treatise De Reconditâ Abscessuum Naturâ; also SPINA VENTOSA, and CARIES.

PÆDOPHLEBOTO'MIA, (from *παις*, and *φλεβοτομία*, opening a vein). The bleeding of children.

PÆNO'E, *vateria Indica* Lin. Sp. Pl. 734. A large tree in Malabar; the root, bark, and fruit of which yield a resin, which is burnt instead of incense in their sacrifices. The kernels of the fruit, made into an emulsion with warm water, is supposed to strengthen the stomach, relieve nausea, colics, and cholera. See Raii Historia.

PÆO'NIA, (from *Pæon*, who is supposed to have first used it). PIONY; *ephialtia*, *idæus dactylus*, *pentorobus*, *pæonia officinalis* Lin. Sp. Pl. 747, α and β, viz. MALE and FEMALE PIONY.

The male piony hath dark green leaves, pale red single flowers, long thick roots, with red streaks in the stalks and pedicles; the female, longer, pale, and narrower leaves, deep red, double flowers, and irregular roots, composed of several tuberous pieces, hanging by rough filaments from one head. The male is preferred; but the difference is inconsiderable, and the female is most frequently used. The fresh roots and seeds have a faint narcotic smell, with a slight acrimonious bitter and astringent taste; but, when dried, lose wholly, or in a great degree, both. Watery extracts are insipid, spirituous ones bitter, and slightly astringent.

Every part of this plant has been considered as antispasmodic and tonic. The roots were at first directed to be hung round the neck; and if relief did not follow, a drachm of the dried root was to be taken two or

three times a day. On the continent the expressed juice is preferred. The piony is chiefly used in epilepsy; but in this country it has not succeeded, and is now neglected. The roots, flowers, and seeds, are anodyne, but their efficacy is very inconsiderable. The flowers impart their colour, smell, and taste, to water and to spirit. See Lewis's *Materia Medica*.

PAGA'NICA. A ball used by the Romans in their exercises; confined to the villages.

PAG'NA, (from *πηγνῶ*, to compose). The superior and inferior superficies of the leaf of a plant.

PAGU'RUS, (from *παγος*, a rock, and *εμειν*, to keep; because found in rocky places). See **CANCER MARINUS**.

PAHUATLA'NICA. See **CHINA OCCIDENTALIS**.

PAIA'NELI; *bignonia Indica* Lin. Sp. Pl. 871. A tall pod bearing tree in Malabar, used by the natives in several disorders. See Raii *Historia*.

PAIDATRO'PHIA, (from *παίς*, and *ατροφία*, *atrophy*). See **ATROPHIA**.

PAIDI'ON, (from *παίς*, a perfect child in the womb). Hippocrates. See **CONCEPTIO**.

PAIN DE MADAGA'SCAR. See **CASSADA**.

PAI PARCEA, *couradi*; *grewia orientalis* Lin. Sp. Pl. 1367. A bacciferous shrub in Malabar. An apozem prepared of the leaves, fruit, and roots in water, is said to be useful in gout. See Raii *Historia*.

PA'LA. See **NUX MOSCHATA**. Also a tall pod bearing tree in Malabar, *tabernaemontana citrifolia* Lin. Sp. Pl. 308; used in various disorders. See Raii *Hist.*

PALE'TYRUS, (from *παλαιος*, old, and *τυρος*, cheese). See **CASEUS**.

PALA'TI O'SSA, (from *palatum*, *palate*). The BONES of the PALATE are two, irregular, and continued up the back part of the nostrils to the orbit. These additional parts, viz. the pterygoid process, the nasal lamella, and orbital process, we shall soon notice. The square bones situated in the roof of the mouth join each other backwards, and the maxillary bones forward; on the posterior part there is a lunated edge, whence the velum pendulum palati is suspended. The upper part of its internal edge rises in a spine, to be joined with the vomer: its anterior edge is ragged, to connect it more firmly with the process of the maxillary bone. The internal edges, by which they join, are thick and smooth. The internal point projects, for the origin of the palato staphylinus. On the side towards the maxillary bone there is a fossa, which, applied to a similar one in the maxillary bone, forms a passage for the palatine branch of the fifth pair of nerves, and a small twig passes through a hole behind. The pterygoid process of this bone passes between the os maxillare superius, and the pterygoid process of the os sphenoides: it is of a triangular shape, broad at its basis, and small above. The nasal process is very thin and brittle, rising upwards, covering a large part of the aperture of the maxillary sinus, and closing the cavity between the sphenoid and the projecting part of the maxillary bone. From the middle internal side of this plate, a cross ridge, resting on a similar one of the maxillary bone, extends, and on it the back part of the os spongiosum inferius rests. A perpendicular fossa, made by the palate nerve, is observable on its outside. At its superior part the os palati divides into two processes, called the orbital, of which the anterior is the larger, and its fore part

is contiguous to the back of the maxillary sinus: its posterior surface is cellular, contiguous to the ethmoid cells, and placed on the opening of the sphenoidal sinus, so as to leave a small hole above. Sometimes this hole is wholly in the palate bone, and through it a nerve artery and vein belonging to the nostrils pass.

The palate bones are very complete in the infant, and the nasal plates are thicker and stronger than in the adult, but the orbital processes have no cells. In old persons, all these bones are firmly united. From the connexions described, we see why the eyes are so often affected in ulcers of the palate; or why, on the other hand, the palate suffers from EGYLOPS, q. v.

PALATI'NÆ GLA'NDULÆ, (from *palatum*, the *palate*), are conglomerated glands, situated in the septum and arch of the palate, near the tonsils.

PALATI'NUS, (from *palatum*, the *palate*), is a branch of the upper maxillary branch of the fifth pair of nerves, running before the pterygoid apophyses of the os sphenoides in the canal formed by the os maxillare and os palati, and through the foramen palatinum posterius: it spreads in the glandular coat of the palate, and parts adjacent.

PALATI'NUS DUCTUS. The Eustachian tube.

PALATI'NUS PROCE'SSUS, (from *palatum*). See **MAXILLARIA SUPERIORA OSSA**.

PALA'TO PHARYNGÆ'US, (from *palatum* φάρυγξ). See **CONSTRUCTOR ISTHMI FAUCIUM**; **PERISTAPHILO PHARYNGÆI**; and **PHARYNX**.

PALA'TO SALPINGÆ'US, (from *palatum*, and *σαλπιγξ*, a trumpet, from its origin and shape). See **CIRCUMFLEXUS PALATI**.

PALA'TUM, (from *palos*, to hedge in, as it apparently is by the teeth). The PALATE, *cerebri basis*, *hyperoæ*, is that arch of the mouth which is surrounded before by the teeth and gums, and extending backward the whole breadth of the upper part of the mouth, as far as the great opening of the pharynx. This arch is partly hard and immoveable, and partly soft and moveable. The solid part is formed by the two ossa maxillaria, and the two ossa palati. The soft part lies behind the other, and it is lined by a membrane full of small glands. When a child is born with the hare lip, the fleshy and the long parts of the palate are sometimes defective, from a fissure, or a division through it into the nostrils; the uvula also is occasionally divided into two. In this case the child must be fed by a spoon, for it cannot suck.

PALA'TUM MO'LLE; *septum*, and *valvula palati*. Behind the bony palate lies the soft palate, from the middle of which the uvula hangs down: the two arches on each side are called *columnæ septi palati*.

PALEA, (from *παλλω*, to agitate, because easily driven by wind). **CHAFF**, **POLLEN**. In botany it is applied to the thin membrane which separates the floscules.

PALEA DE ME'CHA. See **JUNCTUS ODORATUS**.

PALIMPISSA, (from *παλιν*, iterum, and *πίσσα*, pitch). See **PIX NIGRA**.

PALIURUS, (from *παλλω*, to move, and *ουρον*, urine). **CHRIST'S THORN**, or **WILD JUJUBE**; *ænochia*, *ramnus*, *zyzyphus* Lin. Sp. Pl. 282, is a species of thorn in the southern parts of Europe. The leaves and roots are moderately astringent and diuretic; but from the length of its spines it is more valuable for making hedges.

PALLIUM PURPUREUM, (from *pallium*, a cloak). A PURPLE CLOAK. A powder, prepared of an amalgama of gold and mercury put into a retort, where the mercury being separated, what remains is calcined with sulphur, and turned a purple colour. Basil Valentine.

PALMA, (from *παλλω*, to move). The PALM of the HAND; *thenar*, *ages*, *agostus*.

PALMA, (so called because its leaves are extended from the top like the fingers upon the hand,) the PALM TREE. The palms are a family of plants, which generally grow between the tropics, and furnish, with little trouble, food, clothing, and habitations.

They are remarkable from their height, from the perpetual verdure of their tops, and the abundance of their fruit. The stalk is simple and shrubby, composed of the leaves of the former growth. The green foliage of the top is ranged circularly by stages, each leaf covering the other, at its base. These leaves rise from a large bud, which terminates the stalk.

The stalk of the palm tree does not enlarge by successive annual strata. Each leaf of a palm is formed by an elongation of the woody fibres, and the cellular substance of the trunk; and the latter is formed by the remains of leaves, which annually rise out of it. As the woody and the cellular substance, however, of the new leaves arise from the centre, they throw back the old ones. On this account, the density of the trunk is greater, the nearer it is to the circumference; and when this density has arrived to a certain degree, the expansive power of the centre will have no effect in enlarging it. Such, at least, is M. Daubenton's explanation. Desfontaines, in an excellent memoir on the organization of the monocotyledones, in the first volume of the Memoirs of the Institute, observes, that the size of the trunk is not always the same, but depends on the degree of nourishment. Thus, if a young palm is transplanted from a barren to a rich soil, the later shoots will be larger than the old ones, which will retain their former size, and the contrary.

Palm trees bear two sorts of leaves; the one resembling in shape a fan, others compounded of many leaflets on a common foot stalk. Their number is usually the same in each individual. The leaflets are folded lengthwise double, resting against the foot stalk, which is turned back. The disposition of the leaves, rising out of the trunk, resembles that of the ferns, to which the palms are related. Strictly speaking, the palms have no trunk, though rising often to the height of one hundred feet; but what has been styled so is a prolongation of the root, and the leaves are truly radical ones. The flowers are usually small, yellowish, or greenish, without any splendour. They are not provided with separate peduncles, but are collected in great numbers on common simple peduncles, naked at their base, more or less ramified or paniculated at the upper parts, to which the name of *spadix* has been assigned, and this spadix arises from the axillæ of the flowers. They are concealed, before the bloom, in very thick coriaceous spathæ, which, though monophyllous, are subject to be torn in two, or more pieces. Independent of this general spatha, which is not found in many of the genera, there are smaller ones enveloping each division. Few palms bear hermaphrodite flowers: they are, in general, monoicous or dioicous. In the former case,

each sex is sometimes inclosed by the same spadix, sometimes by distinct ones. In each sex we find the rudiments of the other, so that palms appear monoicous or dioicous only in consequence of abortive blossoms.

Fourcroy, in the sixth number of the Annals of the Museum of Natural History at Paris, gives an analysis of the pollen of the date tree, by which it appears to contain a large proportion of malic acid already formed, which may be separated by cold water; phosphats of lime and magnesia, separated by the washing, as the acid contributes to their solution; an animal matter dissolved also in the water by means of the acid, found to be a kind of gelatine; a powdery substance, apparently covered by the former bodies, insoluble in water, and, by putrefaction, producing ammonia. Thus this pollen has a considerable resemblance to animal substances, and still more to the seminal fluid of animals, which some of the species show by the smell of the flowers. Bory St. Vincent has also shown, by an ingenious experiment, that at the moment of blooming, the anthers of the palm trees had a temperature superior to that of the atmosphere.

The fruit of the palm is commonly a dry berry, whose shell is formed of numerous fibres, closely compacted, concealing a woody kernel, varying in its form, and sometimes equalling in size a man's head, with two or three seeds, which are very hard, and inserted at the base of the kernel. The embryo is very small, situated in a cavity on the back sides, or base, of the perisperm; at first soft, often liquid, eatable, and gradually hardening to the consistence of horn.

The genera of palms are twenty-three in number, arranged in four divisions, determined by the sex of the flowers, and which may be sub-divided according to the shape of the leaves; but many are imperfectly known.

1. The palms with hermaphrodite flowers, include the Rotang, licanis, and the corypha Lin.
2. Those with polygamous flowers, the chæmærops Lin. and the raphis.
3. With monoicous flowers, the areca, the elate, and the cocos Lin. caryota, nipa, sagus, bactris, arenga, hyphæna, and euterpe.
4. With dioicous flowers, phœnix, and borassus Lin. elais, laodicea, and cleophorus.

The palms, whose sex is scarcely, if at all, known, are the mauritia, caranda, maniquana, and hyophorhis.

The palms are of the most general utility to the inhabitants of the tropics, for every part is of use. The external parts of the trunks of some species furnish a wood, hard and durable as iron, and, indeed, substituted for it by many savage tribes of India and America. In others, the spatha is so compact as to contain the thinnest fluids; and, in some places, vessels are made from them which will bear the fire. The trunks of the larger palms may be formed into planks, by which houses, unaltered by the air, may be built and covered with the leaves: the latter, transformed into mats, blinds, &c. serve to adorn them within.

The fibrous pericarpium in many species, the filamentous membrane which covers the trunk in others, the leaves, and the foot stalk in almost all, furnish

threads, which may be wove into garments, twisted into cords, &c. Many subordinate advantages may be derived from these trees; fans, hats, paper for writing, a substance for artificial flowers, canes, dishes, &c. are furnished by them. Let it not be supposed that we are relating a fairy tale. They are the giants of regions where nothing is minute, where nature exerts her most active powers with the utmost energy, in the greatest and least of her productions; where all is grand or beautiful; often salutary and generally useful.

We must not, however, in these more extensive views, overlook our more immediate object. As administering to the necessities of mankind, in the most important points of nourishment and medicine, the palms are of the greatest importance. Not one species possesses injurious properties; almost every one is salutary or useful. We find in the soft pulp of some the perisperm of the seeds of many, and the terminal bud of almost all, a wholesome and savoury food, which may be dressed in a variety of ways. The fluid found in the green spathæ, or the vast cavity of the perisperm, affords a copious and a salutary draught, from which, by evaporation, good sugar may be procured; and by the common processes, wine, spirit, or vinegar. From the pericarp, or seeds, sweet oil, or a butter scarcely inferior to that from milk, may be expressed. If the trunk of other species are split, a very wholesome fæcula, the sago, is obtained. The medicinal palms we shall notice under their proper titles.

PA'LMA A'DY. See ADY.

PA'LMA CHRISTI, and OLEUM. See CATAPUTIA.

PA'LMA COCCIFERA; *cocos*, *nucifera*, Lin. Sp. Pl. 1658, *palma Indica coccigera angulosa*, *cocceira Indica*, *coccys*, *palma Indica nucifera*, *nux Indica*. The COCONUT TREE.

From this tree the Indians extract a species of sugar called *jagra*, the liquor *suri*, from which they distil the arrac. The milk in the shell of the nut is grateful and cooling. The exterior covering of the nuts, in their early state edible, are gratefully acid and gently restraining. By boiling, an oil like that from almonds is obtained from the kernel of the nut.

PA'LMA DACTYLIFERA. See DACTYLUS PALMULA.

PA'LMA HU'MILIS. See MUSA.

PA'LMA JAPONICA; *sagou*, *palma Indica*, *arbor farnifera*, *todda*, *monta fanna*; the LIBBY TREE, INDIAN BREAD, or SAGO TREE. *Cycas circinalis* Lin. Sp. Pl. 1658. The medulla of this tree, well beat in a mortar with water, forms a fæcula, which, when dried, is sago. The fruit is somewhat astringent; but this quality is moderated when eaten with sugar.

Sago is very nourishing, and used by the Indians when rice is scarce. Boiled in water it becomes an insipid, almost transparent, jelly, readily soluble, and an useful aliment in weak constitutions and consumptive complaints. It is demulcent, never ferments in the stomach, and is, therefore, preferable to wheat flour for the food of infants.

PA'LMA MA'JOR. See DACTYLUS, and DACTYLUS PALMULA.

PA'LMA MI'NOR, *palma humilis dactylifera et Hispanica spinosa*, et non spinosa, *palmites*, *chamæriphe*, *chamærophi humilis* Lin. Sp. Pl. 1657. The DWARF PALM. Its fruit is astringent.

PA'LMA NO'BILIS, *regulis Jamaicensis et Barbadosensis*,

palmitis, *palmeto royal*, a species of *areca*, Lin. Sp. Pl. 1659, styled *oleracea*. The CABBAGE TREE; the cabbage of which are called *chou de palmitis*. It is a tall straight tree, often more than two hundred feet high. The terminal bud is a white, tender, savoury, medullary substance, which, if eaten raw, resembles a walnut, but boiled and pickled with the white leaves, which surround it, is one of the greatest delicacies in the Leeward Islands. In the Isle of France, where it is chiefly found, there is another species which is poisonous. See Raii Historia.

PA'LMÆ O'LEUM is produced from the *PALMA foliorum pediculis spinosis, fructu pruniformi luteo oleoso*. *PALMA SPINOSA minor fructu pruniformi*, &c. of Brown, called in Jamaica the MACKAW TREE. He observes, that the rind of the fruit is thick, and yields a fattish substance, not unlike or inferior to the real palm oil. The fruit of the great mackaw tree differs but little from that of the little mackaw tree, and the husks of the fruit are also full of oil. He adds, that the negroes say it is the tree which yields the true palm oil. In the Pharmacopœia of the Edinburgh college this species is described as being the *palma foliorum pediculis spinosis, fructu pruniformi luteo oleoso*. Sloane's Jamaica and Adanson's Senegal. Mr. Curtis, in his Catalogue of Medicinal, &c. Plants in the London Botanical Garden, calls the tree *palma oleosa* Lin.; but it has been more lately referred to the genus *cocos*, with the trivial name of *butyracea*. The tree is tall and unbranched, with long winged leaves, furnished with two ranks of simple leaflets. Several species of it are met with in the warmer countries. The fruit is pressed, or first bruised, and then boiled in water; by either of these methods an oil of the consistence of butter is obtained, and eaten by the inhabitants of Guinea, and the Cape Verd Islands. It is of a strong, but not disagreeable, smell, and hath but very little taste. The colour, whilst good, is of a deep yellow inclined to red; but by long keeping it becomes pale, and is then to be rejected. There is, indeed, some little inconsistency in the different accounts, which may be reconciled, by supposing that a sweeter butter, which will not soon become rancid, may be prepared without pressure. This oil is used, when mixed with some warm penetrating ingredients, to rub on parts affected with old pains, and in some nervous disorders.

PALMA'RIS BRE'VIS, and CUTA'NEUS, (from *palma*). *Caro musculosa quadrata* of Brown. Cananus pointed out this muscle to Fallopius, and it was first published by Valverde, in his Anatomy. It rises from the fascia of the annular ligament, runs across the ball of the little finger, and is inserted into the os pisiforme, and lost in the skin and fat that cover the abductor minimi digiti.

PALMA'RIS LO'NGUS, (from the same,) *ulnaris gracilis*. This muscle lies on the inside of the extensor carpi radialis, and, rising tendinous from the inner condyle of the os humeri, soon becomes fleshy, and then again unites in a long slender tendon, which, near the wrist, separates into two portions, one of which is inserted into the internal annular ligament, and the other loses itself in the aponeurosis palmaris. Some of the fibres of this muscle adhere to the metacarpal bones, and the first joint of the fingers. It bends the hand, and stretches the aponeurosis palmaris.

PALME'TO RO'YAL, and PALMI'STE. See PALMA NOBILIS.

PALMITES. See PALMA MINOR.

PA'LMOS, (from *παλλω*, to beat). A PALPITATION OF THE HEART. See PALPITATIO.

PA'LMULA, (a dim. of *palma*, the hand). A DATE. The name also of the broad and flat end of a rib; from *palma*.

PA'LPESBRÆ, à *palpitando*, from their frequent motion). The EYE LIDS; *blephara*; are connected to the circumference of the socket by the tunica conjunctiva (see ADNATA); and composed of the common teguments, a cartilage called *tarsus*, and an external membrane. They have two angles or corners styled *canthi*, one small and external, the other large and internal. The form of each eye lid is that of a segment of a large circle, and when both eye lids are shut they make an uniform arch, adapted to the convexity of the eye, and in contact with it; but when shut, their edges leave a very minute opening, narrow toward the outward, and wider toward the inner, angle, serving to conduct the tears and the sebaceous matter to the lachrymal points. The margin, or basis of each eye lid, is a cartilage of a considerable thickness, divided into the outer and inner edges; but the outward edge only of each lid is supposed to join when they are shut, the inner edge forming by its obliquity the channel first mentioned. This margin is called the tarsus, of which that in the upper eye lids is the broadest; and the edges furnished with hairs are called *cilia*. The cutis is very thin, and almost transparent on them. On the internal edge of each lid in the tarsus is a row of small holes, which are the excretory ducts of the ciliary glands. From the upper edge of the upper tarsus, and the inferior of the lower, is contained a membranous expansion to the neighbouring edges of the orbit; each of those membranes, together with its respective tarsus, has the form of the eye lid to which it belongs, and is called *ligamentum tarsi*. The ligaments of the eye lids are reckoned to be three: from the inner angle to the nasal process of the os maxillare superius, we see one which is the tendon of the orbicularis; at the external angle we see another ligament more diffused on the bony brim, blended with the cellular membrane; a third goes all round, proceeding out of the brim of the orbit from the periosteum. The broad ligaments of each tarsus are membranous elongations, formed by the union of the periosteum of the orbits and pericranium, along both edges of each orbit. The superior is broader than the inferior, and each is fixed to the edge of its cartilage.

In man the superior palpebra has much more motion than the inferior. *Twinkling* is the effect of the alternate contraction of the levator palpebræ and orbicularis. The inside of the eye lids are lined by the ADNATA, q. v. The muscles subservient to the motions of the eye lids are the orbicularis, and levator palpebræ superioris; and these, as well as the lids, are furnished with branches from the angular, temporal, and frontal arteries, which communicate with those sent to the internal membrane of the eye lids. The levator palpebræ receives a branch from the internal maxillary artery. The veins correspond very nearly with the arteries, and carry their blood into the external jugulars, by means of the veins in

the temples and face. The nerves proceed from the ophthalmic branch of the fifth pair, from the superior maxillary branch of the fifth pair, and from the portio dura of the seventh pair; the levator palpebræ superioris receives a branch from the third pair. The eye lids defend the eyes from the light during sleep; and preserve the eye from becoming dry by their frequent motion, which spreads the tears over the external surface of the globe. See LACHRYMALES GLANDULÆ, LACHRYMALIA PUNCTA.

PALPE'RIA. See APOPLEXIA.

PALPITA'TIO, (from *palpito*, to vibrate). *Palmos* of the Greeks. Dr. Cullen places it among the *spasmi*, defining it a violent, irregular motion of the heart. The only species is the palpitation cardiaca; a palpitation almost constant, at least often returning, without any other evident disease. The arthritic, chlorotic, hysterical, melancholic, and febrile palpitation, with some others, are species; but rather symptomatic.

There is a morbid chronical palpitation of the heart, when violent, called *diognus*: and in persons otherwise healthy, the disease may be occasioned by strong passions, surprise, violent exercise, &c. Actuarius distinguishes palpitation owing to plenitude or heat in the blood, from the disease in consequence of vapours. In the first, he says, the pulse is unequal; in the latter unaffected.

Those most subject to palpitation are of a sanguine temperament, very mobile and irritable, of delicate minds, and in whom natural or artificial evacuations have been suppressed.

Palpitation may be owing to general mobility, when the heart shares in the irritability of the whole system, or from any disease of this organ or the larger vessels in its vicinity. A common, though often an unsuspected, cause is, accumulations in the stomach and bowels; and in our experience it has brought on the disease in sixteen of twenty. Plethora will alone often produce it; for this is a very frequent cause of increased irritability. See PLETHORA; and MORBI FLUIDORUM.

The more remote causes are organic diseases of the heart, or the distant parts. Of the first kind, the most frequent and considerable are polypous concretions in the ventricles or auricles of the heart, sometimes extending to the veins, or the arteries, according to their situation; ossifications in the heart, which sometimes are found in its substance, frequently in the valves shooting out in little processes resembling crystallizations; aneurisms of the heart or larger vessels; dropsy of the pericardium, sometimes of the chest.

The more distant causes are, costiveness; obstructions in the circulation through the abdominal viscera; repelled gout or eruptions; disturbances of mind; intense thought; particular odours; flatulent aliment, or indigestion. It is not easy to see how these causes operate, except by increasing general irritability; and, indeed, those which immediately affect the heart would appear rather to produce a tardy circulation than spasm, but, in a muscle regularly acting, every cause of irritation, every thing which disturbs that regularity, produces in a certain degree spasm or convulsions, as we perceive in the stomach and bowels, in the eye, and occasionally in the urethra. See POLYPUS.

The disease frequently intermits, especially while at

rest; but from any cause of agitation or increased circulation it returns: the pulsations are sometimes so great that the motions of the heart may be perceived on the outside of the clothes. Sometimes it attacks during sleep, and awakens the patient suddenly; often only during the day, and is worse after eating; occasionally preceded by anxiety or uneasiness in the precordia. In the paroxysm of palpitation, the breathing is difficult; and though the pulse intermits, it does not correspond with the motion of the heart, but is languid and diminished. In a violent paroxysm, a great uneasiness is perceived in the region of the precordia; and a considerable languor of the body, with a tremor of the joints, remains after the paroxysm is over. When from polypous concretions in the heart, the palpitation is immediately increased after violent exercise, or the slightest increase of the circulation; and, indeed, this is the case when any enlargement of the vessels of the heart, or any contraction of the cavities around, takes place; and in such circumstances a flushed, or even a livid countenance, with sense of suffocation, and fainting, also occur. When a redundancy of blood is the cause, the countenance is florid, the vessels turgid, and the pulse full. In a very violent paroxysm the pulse is peculiarly slow, and the longer the intervals, the more strong are the attacks.

A palpitation of the heart should be distinguished from that which is perceived in women about the last months of pregnancy in the epigastric region, and which is only a pulsation of the cœliac arteries, in consequence of too much blood being conveyed through them. One remarkable symptom attending a violent palpitation of the heart, is an acute pain immediately above the right orifice of the stomach, which is easily accounted for when the course of the right phrenic nerve, round the apex of the heart, already described, is considered.

When palpitation frequently returns, continues long, or is violent, it often ends in a fatal syncope, or a suffocation. An unequal pulse, or difficulty of breathing attending the paroxysms, are dangerous circumstances. When the disorder is idiopathic, there is very little dependence on any remedy; when symptomatic, as is most frequently the case, the cure is often easily effected by the removal of the original complaint. When it proceeds from terror, and returns often, it produces polypi, which again may increase the disease, and at last produce a fatal termination. Palpitations attend various diseases, and always increase their danger.

The complaint is best relieved by keeping the mind and body at rest, avoiding every cause of irritation, mental or bodily, and keeping up a proper equilibrium of the circulation. All ligatures should be avoided, and the clothes made easy. The patient should never continue long in the cold; and, when the fit approaches, a clyster should be instantly administered, and the extremities rubbed.

During the paroxysm, bleeding is often necessary, except the cause be debility or relaxation. In these circumstances warm cordials are more salutary. An emetic, with repeated cathartics, should be early employed, for the reasons assigned; but, in full plethoric habits, bleeding should be premised, unless the fulness be accompanied with peculiar irritability. In full and irritable

habits the diet should be carefully regulated. It should not be of vegetables, because of their flatulence, nor of strong animal foods. The meat of milder, young, animals will be the best, and, in such cases, fish may be also allowed. When, by this means, and gentle laxatives, there is less danger from emetics, these should be also given.

With a view of keeping the circulation in its due equilibrium, besides gentle laxatives, nitre, with small doses of camphor, may be given, and Hoffman's anodyne liquor is often serviceable. Opium, where it does not produce restlessness, is highly useful, and may be joined at night with the camphor. The feet should be kept dry and warm, frequently rubbed, and if not otherwise warm, with powdered mustard seed. When it does not yield to the evacuations, and has followed suppressed gout and evacuations, a perpetual blister, or a seton, with warm cordials and tonics, are often necessary, and essentially useful.

In the intervals, the bark, with valerian, perhaps the arsenic, will be useful, especially if any considerable irritability of the system accompanies the disease; and could it be certainly ascertained that no fixed obstruction occurs in the heart, or larger vessels, the cold bath also in the intervals would greatly contribute to prevent the return. Steel, as a tonic, has been advised; but its stimulus is too inflammatory, and our utmost exertions should be employed to keep the circulation tranquil. All violent emotions should be avoided, and the external heat regulated with the utmost caution. The room should be large and airy, the head raised, the bed covered with a mattress, and the coverings slight. On the access of a fit, the volatile tincture of valerian may be given, unless the disease proceeds from an affection of the heart; and, in that case, the extremities should be rubbed, and every means tried to assist the circulation in the most distant branches. The stimuli then employed should be chosen with care, and perhaps the camphorated julep with æther will be the best, as it combines an antispasmodic power with a stimulus, not very diffusible. The event of such cases, however, is often sudden and fatal.

See ACTUARIS, HOLLERIUS, SENNERTUS, LOMMIUS, and HOFFMAN; Cullen's First Lines, vol. iii. p. 372. edit. 4; Memoirs of the Medical Society of London, vol. i. p. 77.

PALUDA'PIUM, (from *palus*, a lake, and *apium*, smallage; because it grows in moist places, and near rivulets). See **APIUM**.

PA'LUS SA'NCTUS, (from its woody texture, and the numerous virtues ascribed to it). The HOLY POST. See **GUAIACUM**.

PAMPINIFO'RMES, (from *pampinus*, a tendril, and *forma*, likeness). See **DUCTUS THORACICUS**.

PANACE'A, from *παν*, all, and *αἰς*, a remedy, an universal medicine). There are many panaceas in most of the former dispensaries, for the ancients were particularly anxious to cure all diseases with a single medicine, among which we may notice

PANACE'A DUPLICA'TA. See **NITRUM**.

PANACE'A LAPSO'RUM. See **ARNICA MONTANA**.

PANACE'A MERCU'RII. See **MERCURIUS DULCIS SUBLIMATUS**.

PANACE'A VEGETA'BILIS. See **CROCUS**.

PANACE'A MOSCHA'TA. See **HERBATUM CANNADENSIS**.

PANA'DA, quasi PANA'TA PANATE'LLA, (from *panis*, bread). Bread boiled in water, to a proper consistence, as food for children, in febrile complaints, and in states of considerable debility. It should be made from bread thoroughly baked, from baked flour, or rusks. Salt is a better condiment than sugar.

PANARI'TIA. See PARONYCHIA.

PANA'VA. See GRANA TIGLIA.

PA'NAX. Synonymous with panacea. See PASTINACA OLUSATRA.

PA'NAX ASCLE'PIUM. See FERULA GLAUCA FOLIO and MINOR.

PA'NAX CHIRO'NEUM. See CHAMÆCISTUS.

PA'NAX COLO'NI, *stachys palustris fetida*; *galeopsis angustifolia fetida*; *sideritis Anglica*, *strumosa radice*; *galeopsis palustris betonica folia*, *flore variegato*; *marubium aquaticum acutum*; *tertiola Cæsalpini*, *stachys palustris* Lin. Sp. Pl. 811. CLOWN WOUND WORT, or ALL-HEAL. This and some other species of *stachys* have been used as astringents.

PA'NAX CO'STINUM, HERA'CLEUM, HERCULE'UM, PASTINA'CEA. See OPOPONAX, and PASTINACA OLUSATRA.

PA'NAX QUINQUEFO'LIUM. See GENSING.

PANCHYMA'GO'GUM, (from *παν*, *χυμος*, humour, and *αγω*, to bring away). The name of some cathartic extracts, supposed to carry off fluids of every kind.

PANCRATIUM, (from *παν*, and *κρατω*, to conquer,) a gymnastic exercise consisting of wrestling and boxing. The SEA ONION; named from its power in overcoming all obstructions.

PANCREAS, (from *παν*, and *κρεας*, flesh,) *callicreas*; *pancrene*. The SWEET BREAD; a long, flat, conglomerate gland, situated transversely in the duplicature of the posterior portion of the mesocolon, reaching from the duodenum to the spleen, and in shape resembling a dog's tongue. Its head lies in the first curvature of the duodenum, and from thence it runs across the spine to the spleen, behind and below the stomach, to the last curvature of the duodenum. There is a natural cavity into the epiploon, between the lower sides of the stomach, and the upper side of the mesocolon; and here the arteries, veins, and nerves enter, and the cystic and hepatic ducts come out to form the ductus communis choledochus, which goes into the duodenum near the pancreatic duct. The vessels of the pancreas come from those of the spleen, which run along it. That head next the duodenum hath vessels from the mesenterica and gastrica dextra. The substance of this viscus, composed of united masses which occasion an uneven surface, is that of the conglomerate gland; in the whole length of the gland is a duct called ductus Wirsungii, from its discoverer, but generally spoken of by the name of ductus pancreaticus: it is white and almost transparent, beginning towards the spleen; and receiving branches, it grows larger, and proceeds into the duodenum, in the same canal as the biliary duct. The branches are large near the trunk, and smaller at the edges, but always lie in the same plane. The duct is sometimes double, sometimes winding, and generally nearest the lower side; very thin, without valves; and does not always go out jointly with the biliary duct, but seldom otherwise. Malpighi makes the pancreas a cluster of vesiculæ; Ruysch finds these vesicles to be vascular. The nerves come from the plexus hepaticus, plexus splenicus, plexus mesentericus, &c. The pan-

creatic juice resembles the saliva, but is less viscid, and contains a larger proportion of salts. All the pancreatic juice is sent into the duodenum, and is secreted most when the stomach is fullest. This viscus is subject, like the spleen, to inflammation; but this disease has no appropriate distinguishing symptoms.

PA'NCREAS MI'NUS. Where the great extremity of the pancreas is connected to the duodenum, it sends out an elongation, with a distinct duct in it, which opens into the duodenum.

PANCREA'TICÆ ARTE'RIÆ, (from *pancreas*, the sweet bread). The splenic artery runs from the celiac, under the stomach and pancreas, to the spleen: it adheres to the lower posterior part of the pancreas, to which it gives several branches called *pancreaticæ arteriæ*.

PANCREA'TICÆ VE'NÆ, (from the same). They are several branches from the splenica, which run to the pancreas along its lower side. There are other small pancreatic veins which do not arise from the splenica.

PANCRE'NE, (from the *παν*, and *κρηνη*, a fountain; from its great secretion). See PANCREAS.

PANDALITIUM. See PARONYCHIA.

PANDE'MIUS, (from *παν*, and *δημος*, a people). See EPIDEMICUS.

PANDICULA'TIO, (from *pandicular*, to gape and stretch.) STRETCHING; *distentio*; is that restless stretching and uneasiness which accompany the cold fit of an intermitting fever, and one of the irregular actions from debility.

PANI'CULA. A PANICLE. A stalk diffused into several pedicles, sustaining the flowers or fruits, like the oat, millet, &c. Panicula is also a diminutive of panus, a species of tubercle; and a name for crude bile.

PA'NICUM, (à *paniculis*, from its many panicles,) *elymagrostis*; *elymos*; COMMON PANIC; *panicum dactylon* Lin. Sp. Pl. 85. The spike consists of innumerable thick seeds, disposed in lesser spikes, so as to appear like a cluster. It is cultivated in Germany; and the seeds have been used as food, but are not regarded in medicine. See Raii Historia.

PA'NIS, (from *παν*, to feed). BREAD; *artos*, *fari-nacea panis*. Good bread should be composed of flour well kneaded with the lightest water, seasoned with a little salt, fermented with the yeast, and sufficiently baked. The viscosity of unfermented bread, called *duratos*, is destroyed by fermentation; and the bread is thus rendered more digestible, but at the same time inclines the substances fermented to acidity, whence unfermented bread only can be proper where acidity abounds in the stomach. (See BREAD.) To this article we have little to add except the kinds distinguished by ancient authors. The purest and best bread was styled *panis siligineus*, *mundus*, *athleticus*; *isungia coliphis* and *robys*. The next in quality, from which the bran was not wholly sifted, had the appellations of *secundus*, *smilaceus*, or *smilagineus*; the third containing the whole of the bran, was styled *antophyrus*, *syncomastus*, and *confusaneus*. A fourth kind consisted wholly of bran, and was styled *cacabaceus*, *sordidus*, *furfuraceus*, or *furfurativus*, *bissus*, and *leibo*.

PA'NIS CANINA'CEUS. See CANICÆ.

PA'NIS FURFURA'CEUS, IMPU'RUS, A'TER, CIBA'RIVUS, GREGA'RIVUS. See COLIPHIVUM.

PA'NIS CU'CULL. See ACETOSA.

PA'NIS PORCINUS. See ARTHANITA.

PANNI'CLUS ADIPO'SUS. See CELLULOSA MEMBRANA.

PANNI'CLUS CARNO'SUS. A fleshy membrane which assists the corrugation of the skin, found, with a very few exceptions, only in brutes.

PANNO'NIUM. See ARTHOICUM.

PANNO'NICA, (from *pannus*, a rag). See HIERACIUM ALPINUM.

PA'NNUS, (from *πῆνναι*, to labour). WOOLLEN CLOTH; synonymous also with albugo, and with a venereal spot.

PANO'CHIE. See BUBO.

PANOPHO'BIA, (from *πᾶν*, and *φοβία*, to fear). MELANCHOLY, attended with groundless fear. See MELANCHOLIA.

PANTARBE. An imaginary stone, supposed to be capable of attracting gold as the magnet attracts iron.

PANTI'CES. See INTESTINA.

PA'NULA, or PA'NUS. A sort of crude bile.

PA'NUS. See PHYGETHON.

PAO-A'GULA. See AGALLOCHUM.

PA'PAGA and PAPAGA'LLI. Names for the seeds of bastard saffron, denominated from the magpies eating them.

PA'PAS. See BATTATAS.

PAPA'VER ALBUM; *papaver hortense semine albo; somniferum*, α, Lin. Sp. Pl. 726; WHITE GARDEN POPPY; *papaver somniferum album*. The watery extract of this plant is chiefly used, and it amounts to about one fifth of the weight of the poppy heads boiled. It is said not to produce a nausea or giddiness, which generally follows the use of opium; and the dose is about double that of the latter. It is supposed to check a diarrhoea as well as the Asiatic opium, but does not so powerfully check expectoration; but in reality it seems only to be weaker. The seeds, without a portion of farinaceous, contain a great quantity of oily matter, obtained copiously by expression, which has been employed both in diet and medicine. In the former also the seeds have been used in considerable quantity, without the least trace of a narcotic quality. A cataplasm is formed of the heads, and applied to parts in an irritable or a painful state.

The cataplasm of white poppy is made in the usual way, with a strong decoction of white poppy heads; and may be rendered more sedative, if necessary, by adding a solution of opium, or the extract.

In the fomentation of white poppy, four ounces of the heads are added to six pints of water, reduced by boiling to a quart.

The syrup of white poppy is made in the following manner: take of the heads of dried white poppies, without their seeds, three pounds and a half; of water, eight gallons. Slice and bruise the heads, and boil them in the water to three gallons; in a water bath saturated with sea salt, reduce it by boiling to about four pints, and strain while hot, first through a sieve, and then through a thin flannel: set it by for a night, that the fæces may subside; boil the liquor poured from the fæces to three pints, and dissolve six pounds of double refined sugar in it. Pharm. Lond. 1788.

This syrup is given to children in doses of from 3 ss. to one drachm or more; to adults of an ounce and a half. In general, an ounce of this syrup is equal to one grain

of opium; but it is subject to great variation in point of strength, from the different degrees of maturity, and the soil and seasons in which the poppy heads are produced. See OPIUM.

PAPA'VER CORNICULA'TUM LUTE'UM. See CHELIDONIUM MAJOR.

PAPA'VER NI'GRUM; *papaver hortense nigro semine, papaver somniferum* Lin. var. β. BLACK GARDEN POPPY, as the seeds are black.

These plants are often found wild, and several varieties are produced by culture in our gardens. The head, stalks, and leaves, have an unpleasant smell, and a bitterish pungent taste, like opium. The smell and taste are lodged in the milky juice of the cortical part of the heads, which is collected in the manner already described. (See OPIUM.) It is, however, weaker as a medicine, though stronger in smell and taste. The juices obtained from the white or the black poppy are the same; but the white affords the largest quantity. The seeds contain an insipid oil, obtained by expression, without any narcotic quality.

PAPA'VER RU'BRUM; *rhaas*, and *erraticum; calocatanos*; CORN ROSE; WILD POPPY; *papaver rhaas* Lin. Sp. Pl. 726. This plant hath deep red flowers, dark coloured seeds, hairy leaves and stalks; is common in corn fields, and sometimes varied by culture. The heads contain a narcotic juice similar to the preceding, but in a very small quantity. The leaves of the flowers, on expression, yield a deep red juice, which they impart to watery liquors, and a bright, though pale red to rectified spirit. The London College orders a syrup to be made in the following manner.

Take of the fresh flowers of the wild or red poppy, four pounds; boiling distilled water, four pints and a half: put the flowers by degrees into the boiling water, in a water bath, constantly stirring them. After the vessels are taken out of the bath, macerate them for twelve hours; press out the liquor, leaving the fæces to subside. Lastly, make it into a syrup with double refined sugar. Pharm. Lond. 1788. This syrup has been thought useful as an anodyne and pectoral; but it is more employed for the beauty of its colour.

PAPA'VER SPINO'SUM; *argemone Mexicana* Lin. Sp. Pl. 727. PURGING THISTLE. Its juice is called *glaucium*, and is used as a cooling external medicine.

PAPA'VER SPUME'UM. (See LYCHNIS SYLVESTRIS, BEHEN ALBUM, PEPLION, or PEPLOS.) *Euphorbia pepilis* Lin. Sp. Pl. 652. See EUPHORBIA; Lewis's *Materia Medica*; Neumann's *Chemistry*.

PAPAYA MAS ET FCE'MINA; *papaya Peruviana, papayamarum, platanus mamera mas et femina*. MALE and FEMALE PAPA TREE. *Carica papaya* Lin. Sp. Pl. 1466, nat. order *cucurbitacea*. The fruit resembles a melon; it is eaten raw, sometimes with vinegar, or prepared with sugar, and is said to strengthen the stomach.

PAPILIONA'CEA, (from *papilio*, the butterfly). PAPILIONACEOUS. Flowers are thus called from their resemblance to the wings of a butterfly when expanded; irregular and usually four-petalled. The lower petal is shaped like a boat, and called *carina* or *keel*; the upper petal, which spreads and rises upwards, *vexillum*, *standard* or *banner*; the two side ones separated by the keel are called *alæ*; the keel is sometimes split, and then this corolla is properly five-petalled. These flowers form a natural class, named *papilionaceæ*, and are

chiefly comprehended within the order *decandria*, of the class *diadelphia*, in the artificial system. This is one of Tournefort's classes, and is the *leguminosa* of Ray and other authors. Of this tribe are peas, beans, kidney beans, vetches, and other leguminous plants, hence called pea-blossomed flowers. See Miller's Dictionary; Martyn's Language of Botany.

PAPILLA, (from *pappa*, a dug). The NIPPLE; *mamma* and *mamilla*; the little eminences on the breast. In children of both sexes, and in males of all ages, they appear to be no more than cutaneous tubercles; but, in reality, their structure is the same, but the parts are not evolved. In females arrived at the age of puberty the nipple begins to increase; in pregnant women, and those who give suck, it is large; in old age it decreases, and becomes flabby. The body of the nipple seems to consist of extensive elastic fibres, containing the terminations of the tubuli lactiferi. Their convolutions act as valves: but when distended, as the nipple is drawn out, they become straight; the breast also is equally elongated, and its convoluted vessels become straight, so that the milk flows freely. The lactiferous tubes are about twelve or fourteen in number, and pass out from the apex in as many apertures. Its surface is uneven, wrinkled, and covered, like the inside of the mouth, by a very soft, thin, epidermis.

The nipples are sometimes flat, sometimes drawn in. When flat, which was formerly more common from wearing tight stays, they were with difficulty drawn out, and the suction of a strong child was necessary. The retraction of the nipple seems to be owing to adhesion of some of the convoluted fibres, which has taken place at early age, so that the breast has swelled beyond it. It is drawn out by the suction of glasses, and often with great pain.

Excoriations of the nipples is a most distressing complaint. It is more common in the first than in subsequent nursings, and, when independent of any disease in the child's mouth, is owing to the unusual irritation of the new stimulus. In many instances bathing them with a little port wine or brandy will succeed. A more effectual remedy is the tincture of opium, which can be more easily washed off, while the salts of iron and of zinc are often deposited in the rugæ of the nipple, and with difficulty removed. A remedy extremely simple, and said to be certain, was given us by an old woman. When the child has done sucking, the nipple is to be sprinkled over with equal parts of finely powdered gum arabic and sugar of candy. This absorbs the acrimonious fluid, and defends the breast. When the child also takes hold of the nipple, he is attracted by the sweetness and the irritation given by taking hold, and capriciously dropping the nipple, in which the pain chiefly consists, is avoided. By this term Peyer calls the intestinal glands.

PAPILLÆ CAPITATÆ, LENTICULÆ RES PYRAMIDALES. See LINGUA.

PAPILLÆ MEDULLÆ RES. *Tubercula mamillaria.* Small eminences on the medulla oblongata.

PAPILLÆ PYRAMIDALES, are observable on the surface of the skin. They are longer in some parts, as in the fingers, and called *villi*, appearing in rows, each having two ranks contiguous. They are the organs of touch, being the terminations of the cutaneous

nerves, each of which is inclosed in two or three membranous coverings. See CUTIS.

PAPILLA' RÊ OS, (from its resembling a *papilla*). See SPHENOIDES OS.

PAPILLA' RES CARU' NCULÆ. See CARUNCULA.

PAPILLA' RES PROCE' SSUS. The extremities of the olfactory nerves entering the mucous membrane of the nose.

PAPILLA' RIS HERBA. See LAMPSANA.

PAPILLO' SUS. A leaf, whose surface is covered with little points or protuberances like nipples.

PA' PPAS, PA' PPUS. POTATOES. See BATTATAS. The down also of the seeds of plants, which are hence called *pappose*, or *pappescent*.

PA' PPOS. PATERNAL. The downy hairs upon the chin.

PA' PULA, (a dim. of *pappa*). A PIMPLE or ULCEROUS TUBERCLE. A very small and acuminate elevation of the cuticle, with an inflamed base, not containing a fluid, nor tending to suppuration.

PA' PULÆ. This term is applied to a variety of different eruptions by medical authors; but confined by Dr. Willan to those enlargements of the papillæ of the skin, occasioned by a strong determination of the blood, sometimes attended with a degree of inflammation; the small papillæ, thus enlarged, elevating the cuticle immediately above them, and appearing red. A slight effusion of lymph often takes place in these circumstances, and gives a pustular form to several papulæ; but the fluid does not break the cuticle, and the pimple does not suppurate. The duration of papulæ is uncertain, but they usually terminate in scales. Of this order he enumerates three genera, which, with their species, are STROPHULUS *interinctus*, *albidus*, *confertus*, *volaticus*, and *candidus*: the second, LICHEN *simplex*, *agrius*, *pilaris*, *lividus*, and *tropicus*: the third, PRURIGO *mitis*, *formicans*, and *sensilis*. Vide in verbis.

PAPY' RUS, (from *παπυρος*, an Egyptian term). The PAPER TREE; *papyrus Nilotica Alpina, Egyptiaca; Cyperus Niloticus* vel *Syriacus. Cyperus papyrus* Lin. Sp. Pl. 70. This tree afforded to the Egyptians food, boats, furniture for beds, and other utensils in houses, sails for ships, shoes for priests, and paper. The paper of modern times is, we know, made of flax, first woven into cloth. We have mentioned under ODONTALGIA its oil; and have only to add, that the magma of which paper is made, or into which it may be reduced by maceration in water, is recommended in diarrhœas. See Maryatt's Art of Healing, p. 40, 41.

PAR, (*παρ*, equal, even). A PAIR. Some vessels are called *sine pari*; because there is no corresponding one on the other side.

PAR CUCULLA' RE. See POSTICI.

PAR LINGUA' LE. The ninth pair of nerves from the head.

PAR MENTA' LE. See LEVATORES LABII INFERIORIS.

PAR VA' GUM. The eighth pair of nerves from the head, *nervi vagi*, and *sympathetici medii*. This pair is made up of several small cords which come from almost the whole length of the medulla oblongata, and when joined with the accessorius Willisii, a small cord running up laterally from the medulla spinalis, pass through the foramen to join this pair, which goes out

by that common hole between the temporal and occipital bones, where likewise the internal jugular vein goes out of the cranium. The par vagum goes down the neck, by the side of the carotid arteries, and behind the internal jugular, and is accompanied by the intercostal nerve to the last cervical vertebra. In the neck the par vagum sends off the lingual and superior laryngeal branch; thence passes down into the thorax, gives branches to the pharynx, larynx, &c. and joins many nerves. As they enter the thorax they go across the subclavian arteries, and, as the right trunk passes before the subclavian, it sends off a twig, which bends backwards under the artery, and runs up the side of the *aspera arteria*; called the *recurrent nerve*. Afterwards the par vagum runs down behind the lungs, to which they give a plexus, and then form two cords, one anterior the other posterior, called *nervi stomachici*, which pass along the *œsophagus* through the aperture, in the diaphragm, and are dispersed on the stomach, &c. See *NERVI*.

PA'RA. A Greek preposition, often signifying in composition, *disease* merely; sometimes, *beyond* and *besides*. It occasionally increases and sometimes diminishes the force of the word compounded with it.

PARACE'NTESIS, (from *παράκενσις*, to make a perforation,) *compunctio*, TAPPING; an operation employed for discharging water through the integuments of the belly from its cavity. The place formerly appointed for the perforation is about four fingers breadth from the navel, or rather in the middle betwixt the naval and the upper part of the *os ilium*. The left side is usually preferred, as the spleen does not extend so low as the liver. Mr. Sharp observes that, if the naval protuberates from water only, a small puncture made in the tumour with a lancet will discharge the water, without endangering a rupture. The signs of ascites, and the distinction between it and the pregnant state, we have already considered. (See *ASCITES*.) It is now only necessary to remark, that in the young and robust this operation may be performed; but when fever, scirrhus, or abscess, concur, it should be omitted. In exhausted constitutions, in consumptions when attended with jaundice or with general dropsy, if allowed, it should be only for temporary benefit, and the patient should be apprized that nothing more can be expected.

If the extravasated fluid remains in the same proportion for several years, particularly if the health in other respects is good, the evacuation is a radical cure, provided that the health is otherwise unaffected; but while the bulk of the water increases, there is not that confidence of a radical cure.

Upon a sudden evacuation of the waters in a hydrophorictis, or in an ascites, deliquium ensues, because when the pressure of the water is taken off, the flow of blood into the descending aorta leaves the vessels of the brain not sufficiently supplied.

In this operation, therefore, it is proper to have, 1. A roller of flannel, or a flannel laced about the belly, previous to the evacuation of the water, that it may be tightened at pleasure, and the bowels pressed against the diaphragm. 2. A piece of flannel, for a compress about a foot square. 3. A sufficient quantity of proof spirit, to moisten the roller and compress. 4. A piece of sticking plaster about two inches square, to lay over the pledgets of lint. 5. The trochar with its canula, and a

probe to thrust back any thing that may obstruct its mouth. 6. Two assistants, to keep a proper pressure, observing to press from behind, and on the sides, rather forward, continuing this pressure during the time that the water is passing off, until the roller or the laced flannel is securely applied.

A flat trochar is now preferred; and, when the bandage is prepared, the trochar is introduced, pressing on its end with the palm of the hand. It was usual first to perforate the skin, that the impetus in overcoming the resistance might not carry the instrument too far; but a check is sometimes affixed to the canula, though, in general, pressing on it with the fingers, about an inch from the extremity, will be sufficient, and the want of resistance will show when it has reached the cavity. The trochar should not be small, as the fluid is sometimes glutinous, and a blunt probe should be occasionally introduced, if there is any interruption to the flow. Should the resistance be very great, after penetrating the integuments, it is probable that the water is contained in a cyst; and, in that case, the abdomen will not be completely emptied. It is then advised to tap on the other side, as a cyst is seldom single; but in this variety of the disease, the operation is useless; nor is it certain that on the other side we may certainly meet with another cyst.

Lately it has been more common to introduce the trochar in the middle of the abdomen, between the umbilicus and the symphysis of the pubes, through the *linea alba*. The only advantage is, that we certainly avoid every branch of the hypogastric artery, which sometimes varies its direction in the minuter ramifications. The wound, however, does not contract so soon, and often continues to leak for many days; but though this is perhaps an inconvenience, it is not a disadvantage.

When the water is drawn off, lay the pledgets upon the wound, and secure them with the plaster; over them lay the flannel cloth, and then begin with the bandage or laced flannel, as already mentioned. See *Heister's Surgery*; *Le Dran's Operations*; *Sharp's Observations*; *Bell's Surgery*, vol. ii. p. 337, 354; *White's Surgery*, p. 298, 306.

PARACMA'STICI, (from *παράκμαζω*, to decline.) See *ACMASTICOS*.

PARACO'E, (from *παράκουα*, difficult hearing.) DULLNESS OF HEARING.

PARACOPE, (from *παράκοπιω*, to be delirious.) A slight delirium. Hippocrates.

PARACYNANCHE, (from *παρα, de, κυων, a dog*, and *αγγω, to strangle*, species of quinsy; a distemper to which dogs are subject.) *Juxtangina*. See *CYNANCHE*.

PARACU'SIS, (from *παράκουα, non rectè audio*.) DEPRAVED HEARING, of the order *dysæsthesia*. In Cullen's *Nosology* the species are: 1. *Paracosis imperfecta*; in which sounds are difficultly distinguished. (See *SURDITAS*.) 2. *Paracosis imaginaria*; when the sound is excited within the ear; *susurrus*; *syrigmus*, *syringmos*. See *TINNITUS AURIUM*.

PARADISAI'CA ARBOR. See *THUYA*.

PARADI'SA GRANA. GRAINS OF PARADISE. *Amomum grana paradisi* Lin. Sp. Pl. 2, have been supposed to be the seeds of the larger cardamoms, and called *malegueta*, *maniguetta*, and *cardamum piperatum*. They

are brought from the East Indies, are angular, of a reddish brown colour without, and white within; smaller than pepper; in appearance resembling cardamom seeds. They grow in pods, in shape and size like unripe figs, divided internally into three cells, in each of which are two rows of seeds. They join the flavour of cardamoms to the pungency of pepper; but the latter pungency resides in their resin; the distilled oil possessing only their smell. These seeds are sometimes used instead of pepper, but more often employed to adulterate it. Their medicinal virtues are the same as those of the semina cardamomi, though they are rather more pungent. See Neumann's Chemistry; Lewis's and Cullen's Materia Medica.

PARAGLOSSA, (from *παρά*, and *γλῶσσα*, the tongue). A PROLAPUS of the TONGUE. A SWELLED TONGUE.

PARAGU'A. See CASSI'NE.

PARALAMPSIS, (from *παράλαμπω*, to shine a little). See ALBUGO OCULORUM.

PARALLELA, (from *παρά αλλήλων*). A scurf or leprosy, affecting only the palms of the hands, and running in parallel lines, sometimes occurring in the venereal disease.

PARALOPHIA, (from *παρα*, and *λοφία*, the first vertebra of the back,) the lower and lateral part of the neck. Keill.

PARALYSIS, (from *παρύνω*, to dissolve or weaken). A Palsy; *catalysis*, *attonitus morbus*, and *stupor*; though the last appellations are sometimes confined to the palsy, which follows apoplexy. Dr. Cullen places this disease in the class *neuroses*, and order *comata*, defining it a loss or diminution of the power of voluntary motion, but only affecting certain muscles or parts of the body, often accompanied with drowsiness. He distinguishes four species. 1. *Partialis*, palsy of some particular muscles; 2. *hemiplegica*, of one side of the body; 3. *paraplegica*, of the upper or lower half of the body; 4. *venenata*, when from sedative poisons, external or internal.

The apoplexy, hemiplegy, and palsy, diseases nearly similar, may be considered in one view. In the beginning, the palsy, connected with sanguineous apoplexy, is acute; but it soon becomes chronic, like other palsies.

The most violent form of palsy is that which succeeds apoplexy, and it is usually the **HEMIPLEGIA**, q. v. That which equals it in obstinacy and degree is the *paraplegia*, where the lower extremities are affected; and the rare occurrence of the palsy of the right hand and left foot, which Sauvages would call *hemiplegia transversa*, is scarcely less difficult of cure. The partial palsies are of inferior importance; but we must notice each in the order mentioned.

Hemiplegia might be considered as a consequence of apoplexy, but that it sometimes attacks without loss of sense, and sometimes comes on gradually, the head on one side losing the acuteness of its sensation, then the hand, till the whole side is paralyzed. When preceded by an apoplectic attack, the patient is for a time dull and heavy, with a sensation of cold, trembling, and debility. The principal attack is, however, usually sudden, and with all the symptoms of apoplexy, as stertor, insensibility, a slow pulse, and slow impeded respiration. Even during the insensibility the mouth is drawn

on one side, a certain proof of the nature of the disease; and when recollection returns, one side is usually either insensible, without motion, or both. In general, the whole of the side is affected in unequal degrees; but sometimes the head only suffers, in a few instances the hand and leg, while the head remains free. When the apoplectic symptoms have receded, the power over the voluntary motions of one side is lost, the vital and animal functions are weakened only. This circumstance has been already explained by the connection of the nerves in ganglia and plexuses, where nerves are united, so that the functions are diminished only, instead of the organ losing its power in any given portion. The action of the tongue is impaired; but it is also locally paralytic, for it trembles, and, when put out, is turned to one side. The side affected is in general dry and cold, though sometimes bathed in cold colliquative sweats: the extremities swell, are often affected with cramps or convulsive motion, and the limbs lose their muscular fulness and colour; the flexors are contracted, the nails white and livid; the mouth, wanting the power of the antagonizing muscles, is drawn down on one side.

The mind is affected with the body. The memory is impaired, the recollection fails, the judgment is often considerably weakened. The paralytic patient cries and laughs without an adequate cause, is timid, irascible, violent. The distortion and vacancy of countenance give the air of fatuity to his look and manner; and the tongue hanging from the month, the saliva dropping from the chin, the articulation imperfect, contribute to render him an object highly distressing. It is the most dreadful lot of humanity.

In this state, the paralytics often continue for many years a burthen to themselves, and objects of the highest distress to their sympathizing friends. If, however, the patient be young, and previously in health, (but it is not a disease, in general, of the young,) they gradually recover some portion of strength, and some action of their limbs. The articulation of their words is again, in appearance, learnt, and very gradually acquired; the limbs are moved by the concurrence of other muscles with those affected, though each recovers some share of its power. The amendment comes on with a creeping sensation, and often with violent pain, occasioned by the distention of contracted vessels. A glowing heat, increased power of motion, and a greater degree of sensibility, are slowly and gradually conspicuous. The patient sometimes completely recovers; but we must add, that this rather happens from the powers of nature than from those of medicine.

We saw, in our examination of the nerves, that there were no exclusive branches destined for sensation, except when depending on organization, as in the eye and ear. It is difficult therefore to explain, why sometimes the motion, sometimes the sensation only, is affected. It has been supposed that a greater degree of active power in the nerves is required for the former than the latter office; and it seems that sensation is most commonly destroyed in the lighter forms of the disease. The two defects are, however, so often in different degrees, without any striking connection between either and the violence of the palsy, that we offer this solution with doubt and hesitation. On dissection, we find sometimes an effusion of watery fluids, or extravasation of the

blood, sometimes exostoses at the base of the skull; in a few instances, local abscesses and tumours. In local palsies, the nerve leading to the part appears sometimes shrivelled; but in no instance has any organic change of the brain, in an extensive degree, been found. When the brain is unusually dry, shrivelled, &c. the disease has been rather mania than palsy. Often dissection discovers no alteration in any part of the encephalon. In more partial palsies, the spinal marrow is chiefly affected, but this happens in new born children, from the spinal marrow being deficient in this part. In adults, it is sometimes owing to a shock, but more often to distortion or partial dislocation.

The more immediate cause of hemiplegia seems to be, therefore, some partial compression on the origin of the nerves, or some change in the state of the nervous power. The latter we infer from the absence of any cause of compression, and the nature of the remote cause, which is incapable of producing any organic affection, as deleterious gases or sedative poisons.

The remote causes are such as favour determination to the head, either constantly, or in particular circumstances only. The constant causes of this kind are those which depend on form and constitution, as short necks, or large heads; and, as the effusion is most commonly venous, lax fibres, with large veins. As forms and imperfections are inherited by children, so far hemiplegia is hereditary. The causes which determine to the head, accidentally, or in particular circumstances, are convulsive and epileptic paroxysms, violent passions, the repulsion of cutaneous eruptions, the suppression of the usual discharges, great heat, close or confined rooms, and improper use of warm bathing.

The causes which leave no traces, and which we suppose to have produced some change in the nervous fluid, are sedative poisons, particularly of lead; cold, with moisture, long continued grief, deleterious gases, syphilis, scurvy, and excess of venery.

The prognostics are generally doubtful. A spasmodic apoplexy and sanguineous hemiplegia may be removed, but they are apt to return and end in a fatal hæmorrhage of the brain. In cold weather, palsies are not soon relieved; and it has been said that relief may be less expected, if the muscles of the head and face are affected, if the disease be in the arms rather than in the legs. The other species of palsy, and a serous hemiplegia, do not suddenly prove mortal; but the cure is more difficult the more the senses are injured, and such diseases frequently continue during life. The palsies of infants are sometimes relieved about the years of puberty, but adults rarely recover completely. A palsy in the belly and lower limbs is generally mortal, and often accompanied with a gangrene. If convulsions occur in the parts opposite to those that are paralytic, the danger is greater. When a palsy follows an apoplexy, or comes on in old age, it is scarcely in any instance cured. Palsy, from pressure on the medulla spinalis, is often relieved by art, but slowly yields to the powers of nature. If the part affected is painful, yet capable of sensation, not cold, nor extenuated, there are some hopes of a recovery, which is still more to be expected if there is a sensation of formication and a pricking pain in it.

The indications are, 1. To remove the causes, which interrupt the influx of the fluid into the nerves. 2. To

excite increased action in the parts affected, and the whole nervous system.

Effusion of the brain, the most frequent cause, is, we have said, very frequently venous; but if the disease occurs in a young person, after violent exercise, in consequence of a blow or fracture, arterial effusion is probably the cause, and in this case only is bleeding in any considerable degree admissible. The remote causes, when they can be traced, will point out the probability of serous effusion, and the appropriate remedies can be soon ascertained. Bleeding in this case is improper, though countenanced by Dr. Cullen, from an opinion that the red veins absorb in the brain, since lymphatics have not been discovered in it. The existence of the common absorbents is now, however, admitted, though it has not been demonstrated; and the general state of relaxation in constitutions of this kind render indiscriminate bleeding, formerly so common, highly improper. There are, indeed, very few instances, and these we have mentioned, where this remedy is proper.

Of *emetics* we have already spoken, and the controversy to which they have given an origin; nor can we add to what we have already said on that subject. See *EMETICS*.

Cathartics are remedies of considerable importance in this point of view, and their nature must be varied according to the difference of the disease. The younger and more robust require those of the cooling kind, as the salts; but a mixture of those which are more active is often necessary, as large quantities cannot often be swallowed. In the more lax and debilitated habits, rhubarb, aloes and their tinctures, quickened with the tinctures of senna and of jalap, are useful. The degree of the discharge by stool must be regulated by the strength of the patient, and if that is so much exhausted as to excite apprehension from its excess, clysters must be trusted: in the torpid state of the patient they must not be inert. When nothing can be swallowed, clysters are the only resource, and decoctions of the colocynth, with a large proportion of salt and oil, are most useful: the aloes is also not an useless ingredient. Tobacco clysters are effectual ones; but the languor they induce, and the faintness which often follows their action, render them improper in this disease.

Blisters we consider among the evacuates, since we have found little advantage from their stimulus. They should be applied very near the head; and when the discharge is lessened, others should be applied either to the vertex, or behind each ear. Setons, &c. are applicable to the chronic form of the disease, which we shall afterwards notice.

Diuretics and *sialogogues* are also evacuates, which have been sometimes used. Of the former, the cathartides were for a time highly esteemed; but their diuretic power is inconsiderable. Mercury, the chief sialogogue, is inadmissible, from the debility which any considerable dose of it induces, and it has, indeed, seldom been employed as a remedy for this disease.

Diaphoretics, of the warm stimulating kind, are highly useful in those hemiplegias which arise from effusion. The foundation of their utility we have already seen, vide in verbo; but this subject we shall return to under the second indication.

The next indication is sufficiently obvious; but it must not be followed until the venous congestion or

extravasation, if either appear to exist, are relieved. The imprudent use of stimuli, at a very early period, often produces a fatal apoplexy.

As fever has been sometimes found to relieve palsies, and as some heat and increased action will occasionally come on, after an attack of this disease, we are directed, by some old authors, to excite fever. This need not lead us to any very nice disquisitions respecting the connection between the disease and the remedy; for by exciting fever, was only meant the effects of stimulants in increasing the rapidity of the pulse and the heat; and when fever was supposed to cure palsy, the relief was owing to the stimuli usually employed. There is an imposing simplicity in the direction to relieve the congestion, previous to the use of stimuli, which will mislead the young practitioner; for, such is the tender structure of all the nervous organs, that compression, continued for even a short time, will so far injure their organization as to make every future attempt more hopeless. We have, therefore, found it more convenient to follow the intentions of ancient authors, and not delay, for any long period, the stimulating plan. What that period should be, must be left to the discretion of the practitioner in the peculiar circumstances of the case. In general, the more torpid and exhausted the habit, the more violent the cause, the more urgent the symptoms, the less delay is admissible; nor need we add, that, in cases of sedative poisons, any delay is improper. In general, when some stools have been procured, not mere evacuations from the rectum, but a free discharge through the whole canal, and a blister is found to have begun its action, the stimulating plan may commence; and we ought to reflect, that by this means the torpid absorbents may be roused to action. The whole class of stimulantia have been occasionally employed; but, in general, the aromatics and ammonia are preferred, as more quickly active, more generally diffusible, with less suspicion of acting indirectly as stimuli, than any other medicines. When activity is less necessary, the tetradinamia, the siliquosæ, and the alliaceæ, are employed; and the mustard, the horse radish, the onion, with the whole tribe of their congenères, are called to our assistance. They must be frequently changed, variously combined, and often alternated with gentle laxatives, to prevent returns of accumulation on the brain. In this part of the conduct little skill is necessary; and the medicines may be varied as caprice or fancy may direct, provided no one is continued for a long period.

Though these are the most powerful and active stimuli, yet others have been occasionally employed. These are the essential oils and the balsams. The most active and useful of the former is the ethereal oil of turpentine, and of the latter the balsam of Peru, though this is less useful, as in the larger doses which the disease requires, it is highly offensive to the palate. The oil of cinnamon and the balm of Gilead, often used, are less effectual. The arum, the serpentaria, and the guaiacum are stimulants of a less active kind, and less diffusible, and the latter has perhaps gained a great share of its reputation from the volatile spirit with which it is usually combined in the officinal preparation employed.

External stimulating applications are highly useful with the internal stimuli. Of these the most commonly useful, or from abuse injurious, is the warm bath,

particularly that at Bath. It is easy to understand, why it is so often injurious in hemiplegia depending on congestion; and useful where congestion, together with the tendency to it, is wholly removed; or where the disease arose from sedative poisons. Common warm water, of a moderate temperature, from 92°, for instance, to 96°, is much less dangerous. It has been usual to combine such baths with aromatics, but little advantage is gained by the union, and the heat is more generally efficacious. The cold bath is often more safe, since the repulsion of the fluids from the skin is transitory only, and it excites increased action by giving additional tone; but the other tonics are less generally employed. The tepid salt water baths and sea bathing are very useful remedies. The bitters are of an equivocal nature, and do not seem very essentially useful; and the metallic tonics have not perhaps been sufficiently tried. Even the steel, except in chalybeate waters, is seldom given; but these are so frequently useful, that they have tempted us to try this and some others of the same class, though we have not done so sufficiently to induce us to offer any remarks on their efficacy. If arsenic is so active a tonic in the paralytic state of chronic rheumatism as Dr. Bardsley has represented it, we may expect some efficacy from it in paralysis.

External applications are, however, more particularly useful in partial palsies; and in these the Bath waters may, without hesitation, be freely employed. In the palsy from the endemial colic of Devonshire, from lead, or any other cause, it often relieves; and the mustard, the ammonia, with many other stimulants, are often useful. The acknowledged utility of mustard has been seized on, to render it a vehicle of quackery; but, in reality, the supposed essence of mustard is a superior application, viz. the ethereal oil of turpentine, combined with spirit of wine, some camphor, and apparently opium. Cold and warm pumping is also very serviceable in partial palsies, as well as in particular states of the more general disease, where the congestion is removed, and some organ is peculiarly weak.

Electricity was, for a time, highly fashionable; but it has lost its credit, except when in cases of partial palsy sparks are drawn from the part. It is undoubtedly a stimulus, but a slight and transitory one. All Europe was informed of its success in curing the locksmith of Geneva; but very few heard that he soon relapsed, and died in his former palsied state. Success is usually blazoned, while failures are concealed.

Galvanism has lately been employed, it is said, with great success; but we have often mentioned our distrust of the boasted powers of a new remedy. There is, however, a striking instance in the *Annals of Medicine*, or its successor, the *Edinburgh Medical Journal*, of its success in a considerable disease of a nerve of the leg, inducing epilepsy.

After some time, when little advantage is apparently gained by medicine, the prudent physician will discontinue, to resume it again after some weeks or months. The artful one will, however, persevere to gain the laurels which are due to the activity of nature's powers. 'Tis a dishonest warfare! In these cases, however, nature generally when unassisted, exerts all her energy, and either by the increased activity of the smaller branches, perhaps by the accumulated excitability of the whole nervous system, some degree of strength and

motion is regained. This constitutes what we have styled the chronic form of the disease; and though we have declared medicine useless, yet some slight general regulations will be advantageous.

The diet should be solid, gently restorative, and stimulant; sleep moderate, on a hard mattress, in a large, cool room, situated on a gravelly soil, but not exposed to cold winds. In the summer the neighbourhood of the sea is highly salutary. The bowels should be kept open by gentle laxatives, generally aloetics, or rhubarb; and in torpid habits these should be given in the form of tinctures. Such exercises as can be admitted should be taken daily, and walking so far as the strength will permit, or gestation in a carriage, not too easy, will at other times be advantageous. To avoid congestion, which, if the original source of the disease, will be liable to recur, it is necessary, in addition to the laxatives, to open some drain near the head by a perpetual blister, or by a seton; and friction, particularly on the affected side, should be used morning and evening. When the tongue is particularly affected, an infusion of mustard and horse-radish should be often held in the mouth, or a bit of ginger frequently chewed. The mind should be soothed by cheerful company, and every varied amusement; by prospects held out of recovery, by changes of place and objects, with every other affectionate service.

Paraplegia sometimes arises, we have said, from distortion, sometimes from a violent shock, or, occasionally, from long continued cold. Distortion has its appropriate remedies, and the limbs gradually recover strength and motion; but we must add, that, independent of any remedy, this disease is more often progressive in amendment than any other form of palsy. In the disease from the other causes, blisters to the sacrum, and the warmest stimulants, externally and internally, are necessary. We need not apprehend danger from congestion; so that the bath waters, sea bathing, warm and cold pumping, may be freely employed. Great inconveniences arise, sometimes from an inability to retain the water, or the stools. Each is often relieved by blisters to the sacrum, and the former by the cautious internal use of cantharides. Astringent injections, and bathing the parts around with cold water, will be frequently serviceable in the latter case.

The *hemiplegia transversa* of Sauvages has not been described by any late author, and Sauvages seems often more eager to accumulate the number than the value of his authorities. It was seemingly an accidental occurrence, and probably a combination of two partial palsies. The only author cited is professor Fabricius of Helmstadt, who describes it as arising from a dysentery, prematurely suppressed by opiates and astringents.

We have not, in our enumeration of the remedies, mentioned the mosch, camphor, or castor. These, however, with opium, are sometimes useful, when convulsions, which are not unusual on the affected side, come on. Camphor is sometimes given as a stimulant; but this property rests, as we have said, on a very uncertain foundation. We have sometimes thought that, joined with ammonia, it is more certainly carried to the skin, acting as a diaphoretic.

Some varieties of paralysis are too curious to be wholly omitted. One of these is mentioned by De Haen, arising from *vomica* in the lungs, which com-

presses either the thoracic ganglion, or the brachial nerves above. The *intermittent palsy* is described by Torti, and seemed to depend rather on accumulation and compression on one part of the brain than effusion, since it was at once relieved by the recession of the disease, and was cured by the remedies of intermittents. Its form was that of hemiplegia.

The *arthritic hemiplegia* merits particular notice. It is mentioned by Musgrave, but particularly described in the Upsal Transactions. The peculiarity of the disease consists in its being relieved by cooling medicines, and aggravated by stimuli of every kind. The *syphilitic palsy* appears in many different forms; but it is chiefly owing to exostoses in the inner table of the skull, and is scarcely ever removed; for though the disease be cured, its effects remain.

See *Ætius*, *Celsus*, *Cælius Aurelianus*, *Aræteus*, *Trallian*, *Hoffmann*, *London Medical Observations and Inquiries*, vol. iii. p. 160, &c. p. 257, &c.; *Cullen's First Lines*, vol. iii. edit. 4; *Edinburgh Medical Commentaries*, vol. iii. p. 9.

PARA'LYSIS, (from their use in palsies). *Primula veris* Lin. Sp. Pl. 204. *a. Verbasculum pratense odoratum*; *primula veris odorata, flore luteo simplici*; *primula veris major*, PIALES, COMMON COWSLIPS. This plant is valued for its flowers, which have an agreeable smell, are used to give flavour to a wine, and are gently anodyne, and antispasmodic.

Primula veris minor. P. veris γ Lin. The PRIMROSE, grows in hedges and woods; its flowers are weaker than those of the cowslip; the leaves and roots resemble asarum, and are powerful errhines and emetics.

Primula veris β Lin. *herba petri*; *primula inodora lutea*; *verbasculum pratense*. OXSLIPS, or GREAT COWSLIPS. The flowers are slightly diuretic.

PARAME'SOS, (from *παρα*, near, and *μεσος*, middle). See DIGITUS.

PARANOI'E, from *παρα*, dim. and *νοειν*, to understand). See DELIRIUM.

PARAPHIMO'SIS, *PERIPHYMO'SIS*, (from *παρα*, and *φίμω*, to tie, as with a string). An inflammation of the prepuce, when it cannot be drawn over the glans. See *LUES VENEREA*; *Bell's Surgery*, vol. i. p. 534; *White's Surgery*, p. 345.

PARAPHO'NIA, (from *παρα*, and *φωνη*, the voice). *Cacophonia*. DEPRAVED VOICE, including in general dumbness and difficulty of speech. Dr. Cullen, confining it to the depraved voice, distinguishes the following species: 1. *Puberum*, that change of voice remarkable in boys about fourteen years of age. 2. *Rauca*, the hoarse and rough voice, from the dryness of the fauces. (See *RAUCEDO*.) 3. *Resonans, rhenaphonia*, when the voice seems to come whistling through the nostrils. 4. *Palatina*, from a defect of the lip, the palate, or uvula (see *ASAPHIA*, or *ASAPHODES*.) 5. *Clangens, leftophonia, oxyphonia*, when the sound is shrill or squalling. (See *CLANGOR*.) 6. *Comatosa*, a voice resembling stertor.

PARAPHRENE'SIS, (from *παρα*, and *φρεν*, the mind). See DELIRIUM.

PARAPHRENI'TIS, (because commonly attended with delirium). *Diaphragmitis*. AN INFLAMMATION OF THE DIAPHRAGM. In this disease the pain is very violent and deep seated in the lower part of the breast, under the short ribs, or striking between them and the

back; the fever very acute, and the delirium constant. The belly is drawn up, and kept as much at rest as possible; the respiration excessively quick, erect, small, suffocating, difficult, performed principally by the muscles of the breast; the patient frequently affected with sickness and hiccup, often with involuntary laughter, convulsions, and madness. The pulse is very frequent and small, often irregular; great anxiety; and symptoms of irritation come on, with a rapid, fatal termination. In general, the progress, termination, and manner of treatment, are nearly as in pleurisy. The pain is greatly augmented during inspiration, coughing, sneezing, repletion of the stomach, nausea, vomiting, or in discharging the feces and urine. The termination is often in suppuration; the risus sardonicus, convulsions, and madness, are supposed to be distinguishing symptoms of the disease. Sagar observes, that it is an inflammation, attended with an obscure pain at the spurious ribs, oppression of the breast, often bloody sputum, difficult breathing, anxiety, the sensation of tightness, like the stricture of a cord, at the precordia; a retraction, almost involuntary, of the angles of the mouth; delirium, and sometimes a lethargy. The pulse is unequal, intermitting, irregular, and hard; the hypochondria drawn inwards; respiration without the motion of the diaphragm; the urine sometimes pale, at others, high coloured, with a sensation of burning at the precordia. See PLEURITIS; Boerhaave's Aphorisms; Fordyce's Elements, part ii.

PARAPHRO'SYNE, (*alienation of mind*, from *παράφρων*), is a transitory insanity without fever. See MANIA.

PARAPHYMO'SIS, (*παρά, and φύμω, oblige*). See PHYMOSIS.

PARAPLE'GIA, PARAPLY'XIA, (from *παρά, trans, and πλῆσσω, to strike*). A palsy of all the parts below the neck; but Hippocrates means by this term a palsy in any particular part, from apoplexy or epilepsy. Dr. Cullen confines it to that species of palsy which affects the lower extremities only. See PARALYSIS.

PARAPOPLE'XIA. See APOPLEXIA.

PARARY'THMUS, (from *παρά, and ῥυθμός, number*). See ARYTHMUS.

PARATHRE'MA, (from *παρά, and ἄρθρον, a joint*). (See LUXATIO.) A tumour also from protrusion. See HERNIA.

PARASITICA'LES PLA'NTÆ, (from *παράσιτος, a hanger-on*), are produced from the trunk or branches of other plants, and do not draw their nourishment from the ground; as misleto, ivy, &c.

PARA'SPHAGIS, (from *παρά, and σφαγή, the throat*). The part of the neck contiguous to the clavicles.

PARA'STATA, (from *παρίστημι, to stand near*), any thing situated near another.

PARA'STATÆ. *Assistentes, astites glandulosi*; the EPIDIDYMIS. Herophilus and Galen distinguish this part of the testicle by the name of *varicosa parastata*, while they style the prostate *glandulosa parastata*. See EPIDIDYMIS, and TUBÆ FALLOPIANÆ.

PARASTRE'MMA, (from *παράτρεψω, to distort*). A convulsive distortion of the mouth or any part of the face.

PARATHE'NAR MA'JOR, (from *παρά, near, and*

σιναρ, the sole of the foot). This muscle in each foot is fixed backward by a fleshy body to the outer part of the lower side of the os calcis, from the small posterior external tuberosity, all the way to the anterior tuberosity, where it joins the metatarsus, and at the basis of the fifth metatarsal bone separates from it again, forming a tendon, inserted in the outside of the first phalanx of the little toe, near its basis, and near the insertion of the parathenar minor. It separates the little toe from the rest.

PARATHE'NAR MI'NOR. A muscle in each foot, fixed along the posterior half of the outer and lower side of the fifth bone of the metatarsus; terminating under the head of the bone, in a tendon, inserted in the lower part of the basis of the first phalanx of the little toe. These muscles are sometimes called *transversales pedis*.

PARAU'. See BEZOAR ORIENTALES.

PAREGO'RICA, (from *παρηγορέω, to mitigate*). An epithet for medicines which relieve pain. See ANODYNA.

PAREGO'RICUM ELI'XIR; *tinctura opii camphorata*. Take of hard purified opium, flowers of benjamin, of each one drachm; camphor, two scruples; essential oil of aniseeds, one drachm, by weight; proof spirit of wine, two pints: digest for three days. Pharm. Lond. 1788. It is useful in allaying the tickling sensation from cough, without diminishing expectoration or producing dyspnœa. It is given to children in the chin cough, from five drops to twenty; to adults from twenty to a hundred and twenty.

PAREIRA BRA'VA, (*harcyra, Span.*) *ambutua, caapeba, convolvulus colubrinus, botou*. WILD VINE, *cissampelos pareira, L.* Lin. Sp. Pl. 1473; the root of an American climbing plant, brought from Brasil, generally in crooked pieces of different sizes. The outside is brownish, and variously wrinkled; the internal substance pale, dull, yellowish, and on a transverse section, a number of concentric circles, crossed with striæ, running from the centre to the circumference, are conspicuous. There is a white species, the bark of whose root is white, and the substance within like the root of liquorice.

This medicine has been highly esteemed as an attenuant, expectorant, and diuretic, in suppressions of urine, in nephritic and calculous complaints, in ulcers of the kidneys and bladder, in humoral asthmas, in fluor albus, rheumatism, and jaundice; but is neglected in this country, since it has been found inefficacious. The dose of the powdered root is from ℥j. to ℥ij; in decoction ʒij. to a pint, divided into three doses. It yields its virtue to water or to spirit. See Lewis's Materia Medica; Neumann's Chemistry.

PARE'NCEPHALIS, (from *παρά, and εγκέφαλον, the brain*). See CEREBELLUM.

PARE'NCHYMA, (from *παριγχνω, to pour into*). A term introduced by Erasistratus for the substance contained between the blood vessels of the viscera, imagined to be extravasated and concreted blood. It sometimes means any of the viscera through which the blood is supposed to be strained.

PARENCHYMA'TICI, (from *parenchyma*). INFLAMMATIONS OF THE SUBSTANCE OF THE VISCERA.

PARE'SIS, (from *παρίημι, to relax*). A palsy of the bladder, when the urine is either suppressed or

discharged involuntarily. (Aretæus.) In modern authors an imperfect paralysis, synonymous with ANAESTHESIA, q. v.

PARETU'VIER. See GUAPARAIBA.

PARIETA'RIA, (from *parietes*, because it grows on walls). COMMON PELLITORY OF THE WALL; *parietaria officinalis* Lin. Sp. Pl. 1492, *muralis*, *helxine*, *perdicium*, because partridges feed on it; *vitriaria* and *urceolaris*. This plant hath tender reddish stalks, rough, uncut, oblong leaves, pointed at both ends, and imperfect rough flowers growing in clusters along the stalks, followed each by a small shining seed; perennial; flowering in May. The leaves have been used externally as refrigerants; and internally as diuretic and emollient, though now disused, notwithstanding it is retained in the British Pharmacopœias. See Raii Historia.

PARIETA'RIA O'SSA, (from *parietes*; because they defend the brain like walls,) THE BONES OF THE SINUSIPUT. These bones form an irregular square, whose upper and fore sides are longer than those behind or below. The inferior side is a concave arch, receiving the convex part of the temporal bone. Together they form the sides and upper part of the head.

The external surface of each parietal bone is convex, and about the middle is a transverse arched ridge where the temporal muscle is attached: at its concave side the temporal bone unites with and rises above it, to prevent apparently its starting from blows. Near the upper and the posterior part of each bone is a small hole, through which a vein passes to the longitudinal sinus, and sometimes a branch of the temporal artery. The situation of this hole should be attended to, lest, if a branch of the artery is cut, it retract into the bone, and occasion an incurable hæmorrhage. Internally there are numerous furrows on the concave surfaces of these bones, and they are largest and deepest near the anterior angle of the lower edge. In these furrows there are sometimes passages into the diploe. On the inside of the upper edge there is a large sinuosity, where the upper part of the falx is fixed, and the superior longitudinal sinus lodged. Near the angle formed by the lower and posterior angles of these bones are the depressions of the lateral sinuses. The pits made by the brain are also very conspicuous on the internal surface of this bone.

The parietal bones join the os frontis by the coronal suture; at their long inferior angles the sphenoidal bone by part of the sphenoidal suture; at the lower edge the bones of the temple by the squamous suture; the os occipitis by the lambdoidal suture; and one another by the sagittal suture.

In the new born child none of their sides are complete, and no hole exists in the ossified part near the sagittal suture. The unossified part of the head was supposed to be kept open for the evacuation of the superfluous moisture of the brain, then called the *fountain* (BREGMA, q. v.); sometimes with the epithet *pulsatilis*, for the arterial pulsation is there felt; and accoucheurs judge by this beating, and the fulness of the bregma, whether the child, on the head presenting, is alive. The bregma is usually ossified before the seventh year; and previous to that age, sometimes after it, applications have been made to that part, with a

view to draw off noxious vapours from the brain. We still apply blisters to the vertex, though perhaps without any decided advantage, as the brain is there covered by a thick ligament, scarcely more pervious than bone.

PARIETES. The soft inclosing membranes and muscles of any cavity.

PARI'GUA. See CASSINE.

PA'RI'S QUADRIFO'LIA. See HERBA PARIS.

PARI'STHMIA, (from *παρα*, and *ισθμια*, a part of the throat so called). See TONSILÆ.

PARISTHMIO'TOMUS, (from *παρισθμια*, and *τομή*, to cut). An instrument with which the tonsils were formerly scarified.

PARMENTA'LE. See LEVATORES LABII INFERIORIS.

PARMESAN. A rich cheese made at Parma, from the milk of cows fed on the banks of the Po. See CAUSEUS and ALIMENT.

PARNA'SSIA PALUSTRIS, Lin. Sp. Pl. 391. *Hepatica alba*; *gramen Parnassii*; *cistus humilis*; *pyrola rotundifolia*; GRASS OF PARNASSUS, or WHITE LIVERWORT. The leaves are roundish, and disposed in a circle; it grows in flowery marshy places, and flowers in August. The whole plant is said to be cooling and diuretic; but it is not now used. See Raii Historia.

PARONY'CHIA, (from *παρα*, and *ονυξ*, the nail). A WHITLOE, or FELON, *penaris*, *dogga*, *pandalitium*, *panaritium*, *fassa digitum*, *onychias*, an abscess at the end of the fingers. The symptoms and treatment greatly differ, according to its situation. If, at the root of the nail, an astringent spirituous application, often the camphorated spirit of wine, kept constantly applied, with a moderate pressure will cure it. Should suppuration, however, come on, at its first appearance as a white speck at the base of the nail, the cuticle should be removed, and the spiritus Minderei, or any slight discutient, applied. The appearance of the white spot, however, must be caught at, since a few hours delay will render the attempt abortive.

When it attacks the finger, but is seated only under the skin, it is troublesome in consequence of the thickness of the cuticle. It is, therefore, convenient to disperse it; and this may be done by immersing it frequently in warm water, or applying saturnine lotions. Should these fail, a knife may be at once passed through the prominent point, to relieve the inflammation by a topical bleeding, though the matter be not yet formed. When suppuration has taken place it may be opened early, or the cuticle pared down, so that the natural opening may be more quickly made.

When the paronychia is seated under the sheath of the flexor tendons, it is known by a violent pain, affecting the internal condyle of the humerus; and it is a disease so excruciating as to excite violent fever, and often delirium, with convulsions. The pain is occasioned by the resistance of the compact tendinous sheath, which prevents its pointing outward, and the matter insinuates itself upward to the palm, where it is felt under the aponeurosis of the palmaris, and, passing under the annular ligament, sometimes reaches the fore arm.

When the disease is, therefore, ascertained, as it may be by the pain in the condyle, the abscess should be

immediately opened, and the incision must extend so far as the matter has penetrated. If the tendon should be sloughy, that portion must be separated; but, in general, a part of it must be taken away; for when the distention is taken off, the wound will close in consequence of the elasticity of the tendinous expansion.

It is sometimes necessary to follow the matter beyond the annular ligament into the fore arm; for a cure can only depend on the freest opening. The best dressings are warm spirituous ones, and the oil of turpentine is well adapted to the complaint.

In the last kind, the abscess is formed within the periosteum, and the pain, as well as fever, are considerable, though not so great as in the preceding, and the characteristic symptom of a pain in the internal condyle of the humerus is wanting. The swelling and tension of the fingers are also less; but the latter are often livid, and covered with dark coloured vesicles.

In this case a bistoury must be introduced at the side of the finger, and plunged deep into the bone, through the periosteum. A slight sanious discharge only, in general, follows; but this gives relief, and the next day it is often more considerable, flowing copiously for some time. Should this not succeed, amputation of the finger should not be delayed.

See Le Dran's Operations; Heister's Surgery; Kirkland's Medical Surgery, vol. ii. p. 269; Bell's Surgery, vol. v. p. 431; Pearson's Principles of Surgery, vol. i. p. 82, &c.; White's Surgery, p. 18.

PARONY'CHIA, (from its supposed virtues in curing paronychia). *Sedum, saxifraga, alsine; saxifraga tri-dactylites* Lin. Sp. Pl. 578, WHITLOW GRASS; is said to be emollient, but is of too little efficacy to be trusted.

PARO'PLÆ, (from *παρά*, and *ὤψ*, the eye). See OCULUS.

PAROPTE'SIS, (from *παρά*, and *ὑπταω*, to roast). Sweating from external heat.

PARO'RASIS, (from *παρά*, and *ὁραω*, to see). An IMBECILITY OF SIGHT. See DYSOPIA.

PARORCHI'DIUM, (from *παρά*, and *ὄρχις*, the testicle). A DETENTION OF THE TESTICLES, in the abdomen or at the ring of the muscles, called *criphsorrhis*, or concealed testicles. Usually about the time of the child's birth they descend into the scrotum; but the time of their descent is very uncertain in different persons, and in the same person both testicles will not always descend at the same time; sometimes they never pass into the scrotum. Mr. Pott observes, that he knows not of any particular inconvenience arising from the detention of a testicle within the cavity of the belly; but its lodging in the groin exposes it to be hurt by accidents. When hurt it may be mistaken for a different disease, and occasion very improper treatment. To which considerations he adds, that there is no kind of disease to which the testicle is liable in its natural situation, but what may also affect it in any or all its unnatural ones. In the first cause related by Mr. Pott, a testicle being detained in the groin of a young healthy seaman, who hurt the part by hitting it against a piece of timber, the tumour, became extremely painful, and was mistaken for a bubonocoele, from which it might have been more readily distinguished by the following circumstances, had not the extreme tenderness of the injured testicle prevented any examination by the touch; and the very hard swelling of the scrotum precluded any certainty

of a testicle being there or not. Mr. Pott adds, that the tumour in the groin did not, like the bubonocoele, point obliquely from the ilium towards the pubes, but lay across the groin, and when the scrotum became soft no testicle could be felt; two striking circumstances to determine the nature of the case. In the earlier part of this young man's life, the detained testicle had been mistaken for a rupture, and a truss had been applied to it. In the second case the testicle was detained in the groin; and the patient was also advised to wear a truss, which he could not bear from the pain it occasioned. At last, when infected with a gonorrhœa, this detained testicle inflamed, forming a hernia humoralis, unfortunately mistaken for a bubo. The tumour, however, was moveable, and the scrotum on that side contained no testicle; two circumstances of importance in the diagnosis. Each patient was cured by the remedies for inflammations of the testicles in their usual situation.

PAROTIDÆ'A, (from *παρωτίς*, the parotid gland). See CYNANCHE PAROTIDÆA.

PARO'TIS, (from *παρά*, and *ὤς*, the ear). The PAROTID GLAND, *epharmā* and *epharsis*; together styled *dioscari*. It is seated on each side in a cavity below and before the ear, between the maxillary process, the zygomatic process, and the angle of the lower jaw. Its duct passes over the buccinator to pierce the membrane of the mouth, near the third dens molaris of the upper jaw. It is a secreting salivary conglomerate gland, supplied with vessels from the temporal artery, with an appendice at the tendinous beginning of the masseter muscle. It is also an inflammation, or an abscess of the parotid gland, considered by Dr. Cullen as synonymous with bubo. See ABSCESSUS PAROTIDIS.

PAROXY'SMUS, (from *παροξύνω*, to irritate). A PAROXYSM, chiefly applied to fever or spasm. Sometimes this term is applied to a crisis, or that more acute exacerbation previous to the solution of the disease.

PARTHENIA'STRUM, (from *parthenium*, tansy). BASTARD FEVERFEW. WILD WORMWOOD. *Parthenium hysterophorus* and *integrifolium* Lin. Sp. Pl. 1402, used as a vulnerary in Jamaica and South America, the country of each.

PARTHE'NIUM, (from *παρθένος*, a virgin; from its use in diseases of young women,) *tanacetum, matricaria*, and *artemisia; achillæa atrata* Lin. Sp. Pl. 1267.

PARTURI'TIO, (from *parturio*, to be in labour). LABOUR; the bringing forth of a child.

Women are generally delivered about the end of the ninth month, or very early in the tenth: instances, however, have occurred of the birth of healthy children, at different periods, from seven to eleven months after conception.

Labours are either *natural*, when the delivery is accomplished by the efforts of nature; *laborious*, when protracted beyond the usual time, or requiring extraordinary assistance; and *preternatural*, when any part besides the head presents, requiring also obstetrical aid. When the period of gestation, at which the fœtus can enjoy independent life, is arrived, either the uterus admitting of no farther distention, the active efforts of a stronger and perfect child, the irritation occasioned by the presenting part on the os tincæ, excite this hollow muscle to contraction. Either of these causes, or all combined, may produce this effect; but difficulties and

objections may be made to all. It is, however, sufficient for our purpose, that in the latter months, some days before labour commences, the tumour sensibly falls down. This, however, sometimes occurs twice, in a few instances oftener, before labour really comes on; and in each, the swelling again rises, not from the foetus changing its position, but from its increase of bulk, or from its assuming a straiter posture. When, however, labour is actually at hand, efforts are made by nature, usually called pains. These, in the beginning, are slight, and the intervals considerable: after some of these efforts the uterus begins to contract, and a glary mucus, sometimes bloody, is discharged from the vagina. The pains then become more severe, return more quick, and continue longer. From the pain and agitation, the pulse is affected, the skin becomes hot, the face reddens, and the mucus is more copiously tinged with blood; the os tincæ opens; its edges grow thin; the membranes, with the waters, dilate and widen the orifice. When the pain ceases each time, the womb rises, but not so high as before; the tumour formed by the membranes disappears; the os tincæ is relaxed, and the diameter diminished; the child falls, by its gravity, upon the lower part of the womb; and the part of the body which presents, may be easily distinguished through the relaxed membranes.

Towards the end of labour the succession of pains is rapid, and the efforts violent: at first the pains usually begin in the small of the back, and terminate about the pudenda; but at this period they are perceived in the umbilical region, pressing with a sense of weight towards the fundament. The tumour formed by the waters distending the membranes below the mouth of the womb dilates the parts, until at length it bursts, and the waters are discharged. If the child's head presents fairly, it stops the discharge of the remaining waters: and the same effort which bursts the membranes often expels the infant; though at other times the interval is long before the delivery of the child. The head of the child having passed the os internum, enters the vagina, which becomes wider in proportion as it shortens; the perinæum is stretched by the child's head, and the frænulum sometimes torn in the passage; the nymphæ are obliterated; and the labia pudendi confounded in the general distention. At length the head forces the os externum, and the body readily follows, with the rest of the waters, mixed with blood. At this last period the woman trembles and is convulsed, but is soon relieved by the expulsion of the child. A calm succeeds, until returning efforts are exerted for the exclusion of the placenta, &c. called *secundines*. Parturition, therefore, demands the concurrence of several agents. The cause and determination of labour is in the womb itself, which contracts, and forces its contents by the vagina, where there is the least resistance; for if from any cause that resistance is insurmountable, the uterus itself is lacerated. The womb is muscular and reticulated; some of its fibres run uniformly parallel upon the inner surface, from the fundus to the neck: others diagonally or horizontally, and so closely interwoven towards the fundus, as to have been mistaken for a muscle destined for the separation of the placenta. The uterus, in short, is capable of dilatation and contraction, acting like other hollow muscles, assisted by the diaphragm and the abdominal muscles.

The irritation which the womb suffers at the end of pregnancy is supposed to be the chief cause which determines its action; for before conception its cavity is triangular and flattish; the angles very pointed; and the uterus consequently more thick in the middle, and at the fundus; apparently consisting of fibres, coiled and doubled, as it were, in reserve, to expand with the gradual development of this organ. The expansion once begun, continues with the growth of the foetus until all the fibres are unfolded; so that when farther stretched, pain, contraction, and labour, follow. The prelude to labour consists of gentle efforts of short duration, gradually and almost insensibly expanding the orifice or os tincæ. When this is sufficiently dilated to admit the head, the pain remits, but is renewed when the head enters and extends the vagina. As the neck of the womb varies in length and thickness; as the development of its fibres may be retarded or accelerated by various circumstances; and as the increase of the child may be faster or slower; it will be obvious that the birth will be accelerated or protracted, at least within certain limits. However small the dilatation of the os internum, it will occasion a separation of the chorion from the uterus, rupture the communicating vessels, so that the fluid which circulated between them will escape, and become the source of a mucous discharge at the first period. If the membranes are strong, their progressive separation continues until it arrives at the borders of the placenta, where the adhesion being greater, the bag generally bursts; though in rapid labours, the child and the membranes and the secundines have been discharged together.

When the vertex first presents, as is the case in a natural labour, one ear is turned to the pubis, the other to the sacrum, so that the forehead must be towards one side of the pelvis, and the occiput to the other: thus the broadest part of the head is in the widest of the pelvis; so that, when compressed and propelled, the vertex descends into the lower part of the ischia, where the pelvis is narrower at the sides. The forehead now turns round into the concavity of the sacrum, and the vertex towards the pubis, a position in which advantage is still taken of the width of the pelvis: it is then pushed forwards, turning as on a fulcrum, until the forehead rises gradually from under the perinæum.

With respect to preternatural presentations, see *PRÆSENTATIO*.

Natural labours are, we have observed, when the head presents and is delivered by common pains, requiring no other assistance than what is needful in saving the perinæum from being lacerated. Laborious labours, called also lingering, non-natural, and difficult, are when the head presents; but labour pains being insufficient, some safe contrivance becomes necessary to bring it forward. These are of two kinds; when delivery is effected without destroying the child; or when the head of the child must be opened, that its size may be lessened to adapt it to the passage. Preternatural labours are when the legs or breech are delivered first, the body and head last; or when different parts of the body present, except the head, or the head presents in such a situation that the child must be forced back, turned, and delivered by the feet.

Some pains come on about the time of labour without assisting the progress of the child, and are called false

pains, occasioned by spasm, from the child pressing on some nerve, from costiveness, sometimes from plethora. They are known from the os tinæ continuing shut during the pains. A clyster, followed by an opiate, will relieve them; but true labour pains, after a little interval, are promoted by opium. False and true pains sometimes attend at the same time; but an opiate will relieve the former without impeding the latter. The prognostics are taken from the age, the state of health, and the temperament of the patient; from the force, duration, and recurrence of the pains; from their effect in dilating the os tinæ; from the rapidity with which the child follows the rupture of the membranes; from the bulk and posture of the child.

Until the woman is likely to be soon delivered, she may be up, or in bed; but at the time the most convenient posture is on her left side upon a bed, with the knees drawn up. If asthmatic, the head may be raised, or they may be delivered in a sitting posture.

The assisting powers in a natural labour are particularly the diaphragm, and abdominal muscles. The feet should be placed against a fixed object, to assist the abdominal muscles; and a strong inspiration made at the beginning of each pain, to fix the other extremities of the muscles. A deep inspiration, or an effort to strain, except what nature excites, should be avoided, especially as the pain goes off, since it retracts the fœtus, and lessens its force in distending the parts.

When the child's head forces strongly against the perinæum, which is the consequence of the external orifice not being in the axis of the pelvis, it should be supported by a gentle pressure from the hand with a napkin, during a pain. The palm of the hand should be firmly, but not with too violent pressure, lest inflammation should be the consequence, fixed against the tumour, repressing the passage of the child backward, and endeavouring to conduct the head to the aperture, when the vertex will pass from under the pubes and the forehead, rise over the distended perinæum, which, with a little assistance, will slide over the face.

This part of the process is now completed. The body is not immediately excluded; but after a few moments respite, the whole is gradually concluded, for the body is born without difficulty; except that, of a large child, the shoulders pass with less ease.

After the parts are cleaned and dried, the patient has a little respite till the placenta begins to separate. This process was some time since, under the direction of Dr. Hunter, entrusted wholly to nature; nor was art suffered to interfere, though a day or two elapsed before the separation took place. This was an error in many respects. The mind was kept in anxiety, for the patient was not completely a mother till restored to her former state; nor, till the circulation in the uterus was free, was there any probability of the flow taking place to the breasts. Modern practitioners have, therefore, neither hurried on the separation, nor delayed it many hours, should not nature complete the business. It is usually an operation of nature without assistance; and after about ten minutes from delivery, pains begin; the cord, if kept tense, is elongated, the abdominal tumor subsides into a rounded ball, sinking gradually lower, and the placenta, with little difficulty, is brought through the vagina. If the labour has been long and tedious, or the patient previously debilitated, the contraction of

the uterus, which produces the separation, takes place slowly. We must then wait; and if in five or six hours, gently pulling in the interval by the cord, it does not advance, the hand, guided by the funis, must be introduced into the uterus, and the edges of the placenta separated around. It then soon comes forward, for the centre is first naturally loose. The cake is distinguished from the clots which usually surround it, by its being in the centre of the funis, by its firmer consistence, and by its convex puckered feel. When flooding is violent, the separation must be quickly accomplished; and when the contraction of the uterus is irregular, reducing its form to that of an hour glass, the stricture must be steadily dilated; a work of no little difficulty. In general, the separation should be left to nature; but should hæmorrhage and convulsions occur; should the separation, notwithstanding every effort, be delayed for more than twelve hours; the most steady but determined mode of separation should be adopted. Some authors indeed advise a longer delay, and even to wait the effects of a dose of opium; but this has never seemed, in our practice, to facilitate the contraction of the uterus. We may just add, that after dry warm linen has been put on, all impurities removed, and a little well boiled gruel given, the woman should be left perfectly quiet, the child put by her side, and the room, with a moderate light, kept perfectly tranquil.

LABORIOUS LABOURS form an object of far greater intricacy and difficulty. In the whole practice of medicine and surgery no subject requires greater firmness of conduct, more profound reflection, nor more sound judgment. Delivery may be protracted by causes depending on the mother, the child, or the secundines.

In general, laborious labours are owing to increased resistance, or diminished or irregularly exerted powers. We find an increase of resistance from the rigidity of the parts, the frequent consequence of advanced life; scirrhus or polypous tumours; accumulated water and fæces in the bladder and intestines; a stone in the urethra; a prolapsus of the vagina or rectum. To which some authors have added an obliquity of the uterus; but this cause has not occurred to the most experienced practitioners since the time of Deventer, who first suggested it; an anchylosis of the os coccygis, and a peculiarly short funis, neither of which seem for any considerable period to protract delivery. To ascertain the cause will suggest the best means of relieving the patient; but, when the impediment cannot be at once removed, if the accoucheur has patience, takes a little blood from robust and plethoric women, gives an injection, followed by an opiate, he will find the most ample assistance from the powers of nature.

The powers of the mother are diminished by general or local weakness. General debility, however, while it lessens the power, often in a greater degree diminishes the resistance, and in the last stages of hectic, children are often born, almost without a pain. The local weakness is a torpor of the uterus, by which it fails to contract, or contracts irregularly and inefficiently. Torpor often arises from over distention, sometimes from a want of irritability in the womb; but the former continues no longer than the time when the waters escape; though this part of the process must not be hastened, as we shall find their early discharge one of the most common causes of tedious delivery.

Other causes of delay, depending on the mother, are floodings, epileptic fits, spasms or colic. Floodings are always dangerous; but, when they remit during pains, we may check the discharge by breaking the membranes. If they increase during pains, they probably proceed from the placenta being fixed to the os uteri; and this situation is most alarming. As soon as it is ascertained, which may be done with the finger when the os tincæ is a little opened, and the spongy feel of the placenta presenting points out the cause, the hand must be passed with the most steady firmness, as quickly as is consistent with the patient's safety, to bring down the feet and deliver the child. It is seldom that the forceps and crotchet can be used in such cases. Spasms and colics are removed by opiates; and for the management of epileptic fits, see CONVULSIO and PREGNANCY.

The conduct of the attendants, in time of labour, often renders it tedious. Any sudden intelligence of an interesting kind, whether pleasing or disagreeable, the appearance of danger, a look of uncertainty or peculiar anxiety, will at once stop the pains and the progress of the labour, often inducing worse complaints. Every thing in the room should be tranquil, easy, and cheerful; the spirits should be supported by the most favourable prognostics, by holding out every promising symptom to view, and palliating or concealing whatever may be of a different complexion. The strength should also be supported; and until the appearance of a forcing accompanies the pain, the idea of labour should be kept at a distance. The early pains, styled grinding, which are necessary for the dilatation of the parts, must be soothed by opiates; the bowels kept soluble by clysters, and the strength preserved by avoiding fatigue. The woman should be allowed to walk, sit still, lie down, as is most suitable to her own feelings.

The bulk of the child is sometimes a cause of laborious labours; occasionally the firmer ossification of the head, its less favourable position in the pelvis, the breadth of the shoulders, or an enlargement of the whole body in consequence of mortification. If the pelvis is well formed, these causes occasion only a temporary delay, and nature will accomplish her purpose.

The secundines are often a cause; and a very frequent one is too great rigidity, or the contrary state of the membranes. In a well formed pelvis, and a strong healthy young woman, the child, covered with its membranes, is often at once excluded, when they are too firm; and great inconveniences arise from the flooding in consequence of such a sudden discharge. When too lax, they are ruptured on the slightest touch; and, unless the uterus has been previously over distended, the pains cease, the os uteri contracts, the parts become rigid, and labour is peculiarly tedious, often requiring the use of the vectis or the forceps. When it is necessary to break the membranes, the nail is the safest instrument; but it is necessary to avoid mistaking the child's head, covered with mucus, for them. They are, in general, too tender, and the accoucheur should be cautious of breaking them prematurely, so that in touching he should avoid the moment of a pain, when they are often forced down.

The funis umbilicalis, when too long, protracts labour, especially if twisted round the child's neck. It is seldom necessary, however, to divide it; and when the

head is born, it may be easily slipped over. When too short, it does not protract labour, but pulls the placenta early in the progress, occasioning a partial separation, and the death of the child, unless it soon follows. To divide it during labour is dangerous; and the operator may, with propriety, hasten the birth. Such cases, however, occur rarely. If the funis protrudes before the child, it should be returned before the labour is so far advanced as to fill up the passage; for, unless this be done, if the labour is slow, the child is lost. If this cannot be done, the forceps must be used to hasten delivery, for to turn the child in such circumstances, is to expose it and the mother to the greatest danger.

Though we have represented the powers of nature as able to overcome the greater number of obstacles, yet some are in themselves irresistible, and the woman sometimes sinks. Both mother and child would therefore be lost if additional assistance could not be procured. Various means have been contrived for this purpose, viz. the fillet, the lever or vectis, and the forceps. The fillet is with difficulty applied, except when the child's head is so low that the hand of the operator would supersede its use; nor is it without danger to the child, if the force used be considerable. The lever, the supposed invention of Roonhuysen, was probably, as Dr. Bland, in an excellent paper in the second volume of the Medical Communications, has shown, only a single blade of Chamberlen's forceps, and is, in his opinion, a very convenient instrument. A great advantage is, that it is perfectly safe, and may be easily concealed; a circumstance of no little importance in situations where the mind is so easily agitated, and where agitation is attended with such dangerous consequences. Its inconvenience is said to be, that its fulcrum is the symphysis of the pubes, and that there is danger from bruising the meatus urinarius, of producing inflammation and mortification. We suspect, however, and we are countenanced in this suspicion by some respectable authors, that these disadvantages result from its abuse. When the head of the child is confined at the upper brim of the pelvis, or rather when the head has partly passed through it, the great impediment is at the symphysis, and the great object to bring the occiput below it. In this case, the fulcrum of the lever is not at the symphysis, but at either ramus of the pubis, where there is room for its introduction. On the other hand, the fulcrum of the forceps, when the blades act singly, is at their junction; which would give this instrument a decided preference were there always room for the introduction of both blades, or were the idea of an instrument less formidable to the patient. Either, however, may be occasionally employed, and each is a valuable assistant in labours preternaturally delayed.

A different instrument, though with the name of the lever, is recommended by some of the ablest practitioners; but it is rather an extractor. It is the vectis or lever of Lowther (see Plate), and is used without any pressure, either on the rami of the pubes or the symphysis. It acts slowly and safely; but its chief advantage, in cases of emergency, is its bringing the head within the reach of the forceps, an instrument which should not be trusted beyond the guidance of the fingers. This lever rests on the occiput, and, like Roonhuysen's, with the difference of action mentioned, brings the head down till the face is turned into

the hollow of the sacrum. Its situation must then be changed, and the instrument applied over the chin. The practitioner, in using either, should keep his left hand under the perinæum, for the natural pains, when the head is freed from the edge of the pubes, often propel the child rapidly; to which we must add, that the stimulus, from the introduction of the instrument, often increases them.

The shape of the forceps is also seen in the plate: indeed words will not adequately describe them. They should not, we have said, be trusted beyond the reach of the fingers, and the short forceps should therefore be only used. These cannot be applied till the head of the child is nearly or completely within the brim of the pelvis. The blades are to be placed over the ears, and the convex side of the instrument must be towards the hollow of the sacrum. The handles must then be cautiously brought together, and the forceps locked, which, if the instrument is properly applied, is no difficult task; but should it prove so, the position of either blade is faulty, and it should be altered. When locked, the handles are confined by a fillet. In the employment of every instrument, it should only act during a pain; and, in the more considerable intervals, the fillet should be loosened, that the pressure on the child's head may not be too long continued.

In considering the causes of laborious labours, we mentioned the deficiency of the propelling powers, or the increase of resistance. The unfavourable position of the child's head is a most frequent cause of this increased resistance, and it is one of the causes to which the lever is particularly adapted.

The unfavourable position alluded to, is the presentation of the fontanelle, instead of the vertex (more strictly speaking, the anterior portion of the fontanelle rather than the posterior), the face and the forehead. In the first case, the face is frequently turned under the symphysis of the pubes; and, in the two latter, the chin is placed indifferently towards the pubes or sacrum, most commonly towards the pubes. It is not because the face or the forehead presents, that the case is styled laborious, for in strong, robust constitutions, these presentations occasion little delay; but because they afford increased resistance, which the woman's powers cannot overcome.

When, therefore, such cases prove laborious, there is some doubt whether the lever or forceps is applicable. In general, when the head is advanced about one-third only, or one-half, through the pelvis, the lever is the most useful instrument, and it is introduced over the occiput, to draw down that part of the head which occasions it to occupy much less space than when the face presents. This operation is greatly assisted by raising the chin with the other hand. In some cases, the resistance is increased by a slight diminution of the space at the brim of the pelvis. The lever of Dr. Lowther may be often used in such situations. When convulsions or hæmorrhages require expedition, to save the life of the woman, the lever should not be trusted. In other cases of laborious labours it is in no respect superior to the forceps, though, in many of the instances, equally useful.

The cases in which the short forceps are applicable may be divided into those where the face is in the hollow of the sacrum, to one side of the pelvis, or under

the symphysis of the pubes. In the first case, one blade of the forceps, guided by the finger, is to be carried forward over one ear, and the other in the same direction on the opposite side. The line of traction must then be first downwards and backwards to disengage the occiput, next upwards and forwards to disengage the chin from the breast. In the second case, the blade which is to pass under the symphysis of the pubes is to be first introduced; and if the face be to the right hand, the right hand blade must pass under the symphysis. The other blade is introduced at the opposite side; and the action of the instrument is not only directed downwards, but in part so as to turn the face to the hollow of the sacrum. In the third case, the blades are to be applied as in the first, but the line of traction should be upwards and outwards, to bring down the occiput before the face.

The safest instruments, however, should not be rashly employed; and it requires no less of skill than of steadiness and resolution, to determine the proper period of our active exertions by their means. The accoucheur is attacked equally by the impatience of the sufferer, and the clamour of the female attendants. To suffer her to die undelivered would fix an indelible stigma on his character; to employ instruments rashly and unnecessarily would be equally discreditable; and should the woman at last die, the disgrace would be equal. The accoucheur should, therefore, carefully weigh the state and constitution of the woman with the work which remains to be performed. Should the pulse continue firm, should the patient be able to take nourishment, however slight and attenuated, should she have intervals of easy repose, he may still wait, whatever is the length of time. Yet he should cautiously attend also to one circumstance, whether nature endures only without exertion, or whether the intervals of repose are alternated with periods, however short, of pain. While such periods are observable, and the strength is in other respects preserved, he may safely wait; and he may be assured, that a comparatively rapid and easy recovery will amply repay his patience and anxiety. When, however, the periods of exertion are few and slight; when the pulse begins to flag, the features to sink; when nourishment is taken in with difficulty, and fainting comes on, we must hasten our exertions to preserve two lives. Should we not succeed with the lever or forceps, and it be at last probable that one must fall, may we not depart from the general rule, and attempt the delivery with the long forceps? It is the less desperate step, but should only be taken with those well acquainted with the use of the former instrument. For the particular directions in the application of the forceps, see EMBRYULCIA.

Should we, however, fail, the last desperate step remains, to open the child's head, and thus to lessen the diameter of the cranium, and afterwards draw it down with the crotchet; an instrument resembling the forceps, but terminating in a hook, sharp at the point, and bent to an angle most convenient for holding (see plate of the Instruments of Midwifery); and we may here add, that the references to the old instruments in the article EMBRYULCIA, q. v. should be expunged, as it was judged unnecessary to represent objects now no longer used.

The crotchet must not be employed while there is any possibility of delivery by the powers of nature, the

lever, or the forceps. The cause of this impossibility is the smallness of the pelvis, or its distortion; for in no instance, in a well-formed pelvis, is the size of the head an insurmountable obstacle. The diameters of the pelvis have been measured with geometrical precision; but in the living body we cannot be exact, nor can we determine it often within a quarter of an inch. In general, the great difficulty is at the brim; and if its diameter is within two inches, the danger is considerable. The smallest space through which a child has passed is about an inch and three quarters. When the capacity of the pelvis is so small, after every obstacle from accumulated urine or fæces has been removed, when the lever and the long forceps have failed, embryotomy must be attempted.

The *perforator* (see plate) must be first introduced, guided by the fingers to the child's head, and in its closed state must be pressed into it so far as the rests. The blades must then be gradually opened, so that the points shall be in the direction of the largest diameter of the pelvis, guarding them with the fingers of the left hand. That these shall be sufficiently disengaged, an assistant should support one ring of the handles. By opening and shutting the perforator, if necessary, in different directions, a large hole is made in the cranium, through which, by a crotchet or a small scoop, the brains may be extracted. The rough edges of the bones should be removed, or covered with the remaining pericranium. Experience has shown that the extraction of the child, now that the bulk of the head is lessened, may be delayed from twelve to twenty-four hours; for the injurious pressure being removed, the patient recovers strength by a little sleep, and by taking nourishment, while the child, less rigid by supervening putrefaction, passes more easily. The crotchet, guarded by the fingers, must be introduced at the aperture formerly made, and fixed to any portion of the side or basis of the skull which it meets. The force employed to extract the remains of the child must be steady and gentle; if any pains occur, the efforts must be synchronous, and co-operate with them. If the instrument loses its hold, it should be carefully again fixed, guarded with the fingers, as before.

When the superior part of the cranium is thus brought down, the instrument may be more securely fixed in the foramen magnum, or on the outside. In many cases, the force used must be considerable, and the natural turns imitated to accommodate the larger diameter of the head to the greater space in the pelvis. When the shoulders or the sternum cannot pass, the arm has been taken off at the shoulder joint, or the contents of the chest evacuated by means of the crotchet. In general, however, where the head has passed, the shoulders do not form an insurmountable obstacle; but where the cranium must be in part destroyed to secure its exit, the shoulders may be impeded. Should the cavity of the pelvis not exceed an inch, or at least be within an inch and a half, the CÆSAREAN SECTION, q. v. is the only remaining expedient which offers any probability of preserving life.

Yet we ought not to pass over a confident proposal, not offered as a hint, as a suggestion, as a probable means, but at once ushered in with the most splendid encomia; honoured by a medal, by a pension, by accla-

mations, which all Europe was expected to join; we mean the division of the symphysis of the pubes, by M. Sigault. The idea was suggested in 1768, successfully executed, it is said, in 1777. The new operation was seized with avidity by the enthusiasm of the inventor's own nation; praised by Camper, and performed at Wurtzburg and Dusseldorpe. First experiments, by some fatality, we have said, frequently succeed, and the inventor is sure to find his own plans infallible. It was not, however, an idea wholly new. The ancients suspected that a relaxation of the ligaments probably took place in labours, to facilitate the delivery; and subsequent authors had hinted at the necessity of the containing parts yielding as well as the contents. Pinæus had expressly mentioned their division as parts of beings less noble, compared to the boys, which were thus prevented from seeing the light. We must not, however, enlarge on the subject. It has been repeatedly tried and abandoned. The space gained was found to be inconsiderable, particularly at the brim of the pelvis, where the contracted space was most sensibly felt. It did not preclude the use of the scissors and crotchet; and was, in general, equally fatal to the mother and child. See Osborne's Essays, and Hamilton's Outlines of Midwifery.

PRETERNATURAL LABOURS are those in which any other part besides the head presents, and is generally first excluded. In the advanced periods of gestation, the child, from its increased bulk, is confined by the uterus, and struggles with difficulty in its narrow circle; but at an earlier period he is more at large, though with less power over his voluntary muscles. To this period, however improbable, the preternatural position has been attributed; and, as subsidiary causes, the quantity of the liquor amnii, the size of the pelvis, and the length of the funis, have been enumerated. Any violent agitation of the mother has been also considered as a cause, and her peculiar sensation, in such circumstances, considered as a proof of its action. Yet neither seems to explain satisfactorily the change of situation. While the fœtus has space in which it can move, it is apparently incapable of voluntary motion; and, if there is room for a change of position, there is room also for the recovery of its former station. We do not seek for a cause of a long, a short, or a knotted funis; for the uterus expanding to the right or left side; for the placenta fixing to the fundus, sides, or mouth of the womb. Why then must we explain the situation of the fœtus? Are we sure of satisfactorily explaining the natural presentation? There is reason to suppose the position of the child to be unnatural, if the pains are weak; the membranes protruded like the finger of a glove; if no part of the child can be felt, when the os tincæ is dilated; or if the part felt be small, irregular, and not strongly resisting, like the head. If the fæces are excluded, the breech most probably presents. We form our prognosis, in such circumstances, from the constitution and shape of the woman, the bulk of the child's body, and the manner of presenting; from the time that has elapsed since the breaking of the membranes; for, in the same proportion, the child's body is more firmly fixed in the pelvis, and from the different circumstances, which would be a source of alarm in other labours. In general, in such cases delivery is dangerous.

The varieties of preternatural labours are, first, when one or both lower extremities present; including, in this enumeration, the breech; secondly, when the child lies across the pelvis, offering the shoulder, side, back, or belly; thirdly, when either one or both arms present.

Authors usually commence with what are styled the footling cases, since the others are reduced to it, and they are the easiest as well as the most simple forms of preternatural labours. They are styled *agrippian*, either as *aggre partum*, or from the tale of Agrippa having entered the world in this posture. The case is easily understood; the shortness of the toes, the projecting heel, and the weight of a foot, will distinguish it from the hand.

In this case we wait, as in natural labours, till the presenting part reach the os externum. The woman is then placed on her side, with the breech towards the edge of the bed, and when the operator can take hold of one leg, he should gently draw it forwards, moving it from pubes to sacrum during the pain only. In the interval, the os externum and the protruded limb should be covered with a warm cloth. When the foot is without the os externum, the other leg should be drawn down; and when within reach, it will be safer to draw first with one, and afterwards with the other leg, than with both at once; as the parts are thus more distended, and better prepared for the passage of the shoulders. When the legs are born, they should be covered with a warm cloth, without concealing the toes, which afford the necessary directions for turning the body. These should be turned to either side, and if directed to the back or belly, a little before the breech advances to the os externum, the legs should be covered with a warm cloth, and pushing a little upwards, the toes should be steadily and gradually turned towards either sacro iliac ligament. This is seldom accomplished during one pain. As the breech advances, the operator has a firmer hold, and he must move the child a little from side to side, pressing towards the perinæum. When the navel approaches, the umbilical cord should be gently brought down; and when the cord is compressed by the os tincæ, the operator must hasten the operation. In this mode of delivery the arms are drawn up by the side of the head. At this time, then, the child, resting on the arm, or one hand of the operator, is to be drawn a little aside, to afford room for the passage of a finger or two on the opposite side over the shoulder. The arm is by these fingers to be drawn down obliquely over the breast, bending the fore arm. The other arm must be brought down in the same way. The woman may now rest for a little while; and after a pain or two, the head, in many instances, is excluded. If it is not, and the woman is much exhausted, the remainder of the process must be accelerated, as the child will be otherwise lost from pressure on the cord. The pulsation and the woman's strength will determine the proper period of waiting. When it is necessary to deliver the head, the child must rest on the arm of the operator, and two fingers of the hand on that side be passed into its mouth to draw down the lower jaw; while pressing on the shoulders with the other hand, the accoucheur, rising from his seat, must endeavour to turn the face into the hollow of the sacrum, and then draw in a direction from pubes to sacrum, with a

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steady force, raising and depressing the head till it begins to yield. The face will then descend from the hollow of the sacrum, and the occiput be brought from under the pubes by a half round turn. During the whole time an assistant must press on the perinæum, and the operator coincide in his exertions with the pains.

If the mouth cannot be reached, a pressure should be made on the lower jaw, with great caution, as this bone is very tender; and the convolutions of the cord round the child's body or neck, if possible, disengaged. If the feet are not pulled down too early, the contraction of the os tincæ seldom proves an insurmountable impediment to the delivery of the head. By a little delay, where sufficient strength remains, the head is delivered, though for a time it resisted all attempts. In natural labours, the upper part is exposed to the pressure, and it yields easily: in these cases the firmly ossified basis which first presents is incapable of altering its shape; though when it has begun to pass, the superior bones yield, and facilitate the remaining part of the operation. If we find the delivery hindered by the very large size of the head, or a size greatly disproportioned to the pelvis, and perceive that there is no longer room for delay, if we would preserve the mother; its contents must be evacuated by the perforator introduced at the basis of the skull, and the head at last brought forward by the blunt hook or crotchet. In general the forceps are of little use, for a head which can be brought forward by these may be delivered by a very little assistance to the powers of nature.

If one leg should be entangled by catching on the pubes, it may be easily brought down; but if folded along the child's body, it should be left to pass down with the breech and body. When one or both knees present, the legs often cannot be brought down till the breech be slightly raised and pushed gently back into the pelvis. If the feet should offer with the breech, the latter should be gently pushed back.

When the breech presents, the child's breast may be towards the pubes, sacrum, or either side of the mother. The breech may be easily distinguished by the touch, and is rendered probable by an early discharge of meconium. In each case the delivery should be left to nature, till the breech and feet have advanced beyond the os externum. In the two first cases the labour must be then managed as directed, turning gradually the child to accommodate it to the varying diameter of the pelvis. The last is more simple. In general there is less inconvenience, danger, and pain, in suffering the child to come forward double, than to push it back and turn it. The pains, in such cases, are usually more violent; and, after some continuation, should they remit, and the strength lessen, the parts will be better prepared for the more active exertions of the operator. Delay is, however, inadmissible when the mother's strength is inconsiderable, the pains slight and inefficient; when the child is large, the pelvis narrow, the umbilical cord compressed between the thighs of the child, and in cases of flooding and convulsions. In such circumstances the feet must be brought down as soon as possible.

The navel string most commonly falls down where the fore parts of the child are opposed to the symphysis of the pubes; and if the breech be far advanced, and

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the pains strong, it cannot be reduced, nor can the child be pushed back. In such cases the child can be preserved only by the labour coming on rapidly: to attempt bringing down the feet would greatly endanger the mother without saving the infant. In breech cases, care must be taken not to mistake the buttock for the shoulder, and to touch with caution, lest the genitals may be injured.

When the child lies across the pelvis, offering the arm, shoulder, side, back, or belly, the powers of nature are insufficient for the delivery. If the practitioner is early aware of either presentation, it will not be difficult to turn; but if the waters have been for some time evacuated, and the uterus is contracted round the body of the child, each case is highly dangerous. Fortunately some little water is often retained, and then turning is not difficult.

As we have often mentioned this operation, we shall now give a few simple directions for its execution, as in the cases before us it is indispensable. We must, in general, wait till the *os tincæ* is so much enlarged as to admit the hand of the operator freely; and till the pains have in a great degree abated. We shall then be able to ascertain, with some certainty, the position of the child, the shape and dimensions of the pelvis. The waters should, if possible, be preserved; but if they should break, the hand may be immediately passed to retain some portion of them, and the turning may be immediately executed. Should this, however, be impracticable, a large dose of opium should be given, to procure some relaxation of the contraction previous to the attempt. No other narcotic has been tried, though several, particularly the belladonna, seem to have greater power in diminishing irritability.

The hand should be introduced with the fingers closed in a conical form, after being well lubricated with pomatum, steadily and resolutely, during the remission of a pain, on the fore parts of the child, as the feet are usually folded on the belly. In pushing back any part of the body of the child the hand should be expanded; and though, on the introduction of the hand, the remission of a pain be waited for, the efforts in drawing the child down should co-operate with those of nature. If both legs are within reach, both should be brought down; and should there be reason for concluding the child to be dead, as this is by no means certain, the operation should be conducted with the greatest tenderness. When it is necessary to pass the hand high up in the uterus, it is more convenient to avoid the projecting sacrum by passing it on one side; and if the presenting part opposes its introduction, it should not be pushed back till we have tried to raise the hand, and pass it round to the other side, where the space may be greater. When both feet cannot be brought down, one will be sufficient, and we thus obtain room to search for the other; but should it be impracticable to bring down the other, the delivery, by a little care, may be completed by means of one only.

From the rashness or unskilfulness of the operator, the putrid state of the child's body, the size of the head, or the narrowness of the pelvis, the head is sometimes separated from the body. When the child is known to be putrid, no great effort should be exerted till the finger is fixed on the lower jaw. If already

separated, it may be sometimes extracted by the fingers in the lower jaw, or by the forceps; pressing, in either case, on the woman's abdomen, to keep the head steady. Should these methods fail, it may be opened by the perforator, and at last extracted by the crotchet.

When the arm presents, a skilful practitioner may often prevent its coming down, or return it when it has protruded. If the shoulder is, however, locked in the pelvis, the hand can be introduced into the uterus, by the side of the arm; and when the feet are brought down, the arm of course returns. When the hand is introduced, it is conducted by the breast and belly of the child to the feet. If any difficulty occurs in finding them with one hand, the other will often succeed. But if the shoulder and head prevent the introduction of the hand, the presenting part must be raised or shifted to one side, that one or both feet may be taken hold of, which, by gently pulling while the shoulder is raised, may be brought so low as to be surrounded with a noose, and then the delivery will be easily completed.

The *shoulder*, when *presenting*, feels more bony, hard, and irregular than the buttock; and when the *os tincæ* is dilated, the arm often comes down. They are then together locked in the pelvis, and turning will be more difficult and hazardous; unless the child is small, the pelvis unusually capacious, or the hand pressed close to the side of the head, the arm and head will not be excluded together. By attempting to bring both forward the latter is often torn off.

The side, the back, and the belly, are easily distinguished; and when they present, do not come beyond the brim of the pelvis, so that turning is by no means difficult. When the case is ascertained there should be little delay, for the child should be turned before the uterus is too closely contracted round it.

A case of peculiar difficulty sometimes occurs, when the child lies straight in the uterus, with the feet above, the arm and shoulder presenting, and the head resting on the pubes, or on one side of the brim of the pelvis, while the uterus is contracted around it. In this case, the arm must be reduced by passing the hand along it till the operator reaches the shoulder, which he must shift a little to the opposite side, bringing the head more nearly opposite the *os tincæ*. Should this method fail, the fore arm may be pushed up at the elbow, and in bending it the joint must be carefully attended to. When the arm is reduced it must be kept in the uterus till, at the next pain, the head is brought down and prevents its return; for if this be not done, the arm will be protruded as often as it is returned.

If the *os tincæ* be not sufficiently dilated to return the arm, and if the head by the labour pains is carried still farther to the side; while these are violent and almost unremitting, every attempt must for a time be given up, and a very large dose of laudanum administered. The former efforts may be then repeated, or by fixing a noose to the child's arm, the head may be drawn by this means nearer the *os tincæ*, or more space may be gained for introducing the hand. This is the very judicious and probable plan recommended by the late Dr. Hamilton, by which he repeatedly succeeded. Should this fail, as the head is without the reach of the perforator, the crotchet must be fixed on the trunk or thorax to bring down the breech or feet, and the delivery may be then accomplished, as in these cases. This practice

is, however, only justifiable when the pelvis is faulty, or the mother's life in imminent danger.

Dr. Denman has remarked, that when the arm presents, if it is drawn down, and the patient left to the efforts of nature, the child, by the action of the uterus, will turn as on an axis, the breech come down, and the arm be necessarily drawn back. This, however, will only be the case when the child is dead; and the method recommended by Dr. Hamilton will often save the life of the child; nor has this spontaneous evolution succeeded within the observation of other practitioners.

When both arms present, the case is not more difficult than when one protrudes. They prevent the head coming down, and may be either reduced, or there is room to bring down the feet. It is possible, however, that the head, with a hand on each side, may be locked in the pelvis. If the woman's strength begins to decay, for by delay in a well formed pelvis the delivery may be completed by the efforts of nature, the lever and the forceps must be tried; and if these fail, the only resource is the crotchet.

When the head is locked fast at the brim of the pelvis, and the uterus is contracted round the body of the child, a tumour is perceived on its head, if it be living, but not, if dead. When a child is locked fast, the face is usually towards the sacrum. Sometimes the face of the child is turned upward, from its progress being stopped by the sagittal suture resting on the brim of the pelvis. In a case of this kind Levret advises passing a fillet through the perforation of each blade of the forceps, before they are introduced. When the handles are fixed, the ends of the fillets must be tied together, so as to hang down in a noose, about six or seven inches. If, then, the handles are raised with the right hand, and the fillet pulled down with the left, the forceps will be converted into a lever of the third kind, and bring the head into the hollow of the sacrum. This is, however, only practicable with the long curved forceps.

After the delivery, the accoucheur should pass his hand into the uterus, or press on the abdomen, to examine whether another child may not remain. Should the child, with the waters, be in a small proportion to the bulk of the abdomen; should the umbilical cord, after being divided, continue to bleed beyond the usual time; labour pains recur; a tumour remain a little below the scrobiculus cordis, he should certainly introduce his hand into the uterus; for these circumstances are often, from different causes, fallacious. When a child is known to be in the uterus, and natural pains come on, the membranes soon force down. If the head or breech present, the membranes may be broken, and delivery will soon be completed. If the feet present, they should be immediately taken hold of and brought forward. As in such cases the uterus is usually over distended, the pains are often slow and inefficient, the woman agitated in uncertainty, and weakened by flooding; so that it is better to pass the hand, break the membranes, and expedite the delivery. Cases of twins are uncommon; of triplets and quadruplets proportionally more rare. A very few instances have occurred (Garthshore, Philosophical Transactions) of five at a birth. It is singular, that of far the greater number of twins and triplets, the father has been in an infirm state of health.

When the labour is completed, the linen, &c. must be changed, and the woman left to repose, after having taken some gruel, seen her child in health, which should be placed at her side. She may then be left to rest for two or three hours; while the room is kept cool, airy, and with the utmost tranquillity around. It has been usual to give various medicines, particularly spermaceti, "the sovereignest thing on earth for an inward bruise;" but this, and all other medicines, are now disused. Should there be inflammation from bruises, fomentations or astringent applications may be used; and should not a stool occur in twenty-four hours, a clyster or a little castor oil may be given. Should after pains, as they are called, be troublesome; pains arising from spasmodic contractions of the uterus in consequence of the discharge of clots of blood, an opiate may be given, and repeated, if necessary.

The peculiarly irritable state of a woman in child-bed renders the continuation of the utmost tranquillity and caution necessary till after the third evening. It may afterwards be gradually relaxed. The secretion of milk will then have begun; the period of the formation of fever is passed; the irritability, the constant attendant of changes in the balance of the circulation, greatly diminished. Popular prejudice has prolonged this caution to the ninth day, and in some families it is still common to confine the woman to her bed on that day; and, indeed, such is the prejudice which fills every female mind respecting its importance, that from apprehension alone some little irritation is occasionally observable on it.

The child, from the delay, the pressure on the head, or the cord, is sometimes born apparently without life. In this case the cord is allowed occasionally to bleed a little; air is blown into its mouth, closing the nostrils; embrocations of warm brandy applied to the pit of the stomach, and a clyster thrown up. A tobacco clyster sometimes given, or tobacco smoke injected into the rectum, seems, from the narcotic quality of the herb, rather injurious than useful. A little soap is always at hand, and will form a more convenient laxative in this form.

See Smellie's, Le Motte's, Denman's, and Hamilton's Midwifery. See ABORTIO MENORRHAGIA, PRÆSENTATIO PERITONITIS.

PA'RTUS, (from *partio*). See PARTURITIO.

PARU'LIS, (from *παρεν*, and *αλον*, a gum). AN INFLAMMATION, BOIL, OR ABSCESS IN THE GUMS. (See ABSCESSUS GINGIVARUM.) From similar causes, viz. decayed teeth, excrescences of different consistences, from the fungus to the wart, grow on the gum. A decayed tooth, if suspected as the cause, should be removed, and the excrescence removed by the ligature or the knife. After the operation, the wound should be allowed to bleed for some time; after that astringent washes, at first more strong, to act as styptics, and at last milder, to heal the sore, should be frequently used.

PA'SMA. See CATAPASMA.

PA'SPIER. See CRITHMUM.

PA'SSA, (from *pando*, to spread). A FIG OF GRAPE, hanging down from the limb or bunch; generally used as an epithet, as in *uva passa*, the raisin. See PARONYCHIA.

PASSIFLORA LAURIFOLIA and MALIFORMIS, Lin. Sp. Pl. 1355 and 1356. The fruits of

these species of granadella are cooling, and gently laxative.

PA'SSIO, (from *pati*or, to suffer). A PASSION, AFFECTION, OR DISEASE. See AFFECTIO, and HYPOCHONDRIACUS MORBUS.

PA'SSIONS. See PA'THEMA.

PA'SSUDE, (dim. of *passa*, a fig). See UVÆ PASSÆ.

PA'SSUM, (from *passa*, a grape or raisin). See VITIS.

PA'STA RE'GIA, and PA'STILLUS, (from *παρσσω*, to sprinkle). See COLLIX, and TROCHISCI. PASTE, as an article of diet, has been highly reprobated, and indeed it is somewhat unwholesome, though we cannot accuse it with some eager dietetic reformers of producing obstructions in the mesentery, atrophy, and dropsy. If boiled without suet or fat, it is not easily digested; and if baked insufficiently it is equally insoluble. With suet or butter it is light, and not peculiarly injurious; but the oil when baked is an empyreumatic state, and rises inconveniently on the stomach of those subject to indigestion. As an article of diet it should be used sparingly and with caution; should be thoroughly baked, but not burnt.

PASTINA'CA, *pastinaca sativa*, α, Lin. Sp. Pl. 376, (from *pascor*, to feed; useful as food). PARSNIP. The root is thick, fleshy, and juicy; the leaves large, broad, and strengthened by a thick rib; the seed oval, large, thin, marginated, casting its husk. It grows in meadows, and on the borders of fields, flowers in July, and is chiefly noted as a food most agreeable to rabbits. The name is given to several vegetable products, *branca ursina Germanica*, *spondylium*, cow parsnip, a species of *sium*, *daucus*, *tordilium*, and *cuminoides*.

PASTINA'CA HORTE'NSIS. See PASTINACA SATIVA.

PASTINA'CA OLUSA'TRA, *opoponax pseudocostus*, *panax heracleum majus*, *panax pastinacea*, *spondylium vel pastinacæ Germanicæ affinis panax*. HERCULES' ALL-HEAL, or WOUND WORT. The leaves are entire, heart shaped, but with one side lower than the other; the middle ribs bearing the several sets of leaves, which stand in pairs along a larger rib. It is a native of the warm climates, but bears the cold of ours, and produces the gum OPOPONAX, q. v. The seeds are much warmer than those of the wild or the garden parsnip.

PASTINA'CA SATI'VA, Lin. Sp. Pl. 376, β, *pastinaca hortensis*. GARDEN PARSNIP. The leaves are paler coloured than the wild, smooth, and indented. The roots are sweet, contain much mucilage, and are very nutritious: they yield with rectified spirit of wine a sweetish extract, and in distillation with water a small portion of essential oil, with the flavour of the root; the seeds are aromatic, but inferior in this respect to those of the wild species.

PASTINA'CA SYLVE'STRIS, *elaphoboscum*, *elaphicon*, *banica*, and WILD PARSNIP, a variety of the *pastinaca sylvestris*, as authors have supposed, but more probably a species of *ananthe*, perhaps the *æ. pimpinelloides* Lin. Sp. Pl. 366.

It hath dark green indented leaves, and slender woody roots; is common about the sides of fields, flowers in June and July, and ripens its seeds in September. On eating the roots a heat is complained of in the mouth, soon followed by thirst; the pupil gradually di-

lates, the sight is lost, and a delirium comes on. When discharged by vomiting these symptoms abate; but the dilatation of the pupil is the last which disappears. These wild parsnips are harder when boiled than the good ones, and may be thus easily distinguished.

PATE'LLA, (a diminutive of *patina*). The KNEE PAN, *rotula*, *mola genu*, *scutiforme*, *cartilagosum*, *et disciforme os*, *oculus genu*, *caucaloides*, *epigonatis*, *epimulis*, *mylacris*, *myle*, and CAP OF THE KNEE. It is a flattened bone, situated at the anterior part of the joint of the knee, broad upwards, and pointed downwards. Its anterior surface is smooth, but perforated with many holes, formed by the attachment of ligamentous fibres: its posterior surface is covered with a cartilage; divided internally by longitudinal and transverse ridges, into four cavities, the two lower of which move upon the femur in the extension, the two upper in the flexion, of the leg. The upper cavities are adapted to the pulley of the os femoris, on which they rest when the leg is in an ordinary unrestrained posture; but when bent, the patella descends on the condyles, and when extended rises above the pulley. The edges and lower points of the bone are rough, for the attachment of the tendons or ligaments.

The knee pan is cellular, but the cells are so small that it is a strong bone, and can resist a smart blow; but it is broken by a violent contraction of the muscles when the leg is extended. (For fractured knee pan, see vol. i. p. 683.) The tendons of the extensors are inserted into the upper part of the patella, and a ligament runs from the lower part to be connected to the tibia. The patella suffers the leg to have some degree of rotation, which if it had been a fixed process like the olecranon it would not: it likewise is less incident to fractures than if it had been one solid bone with the tibia. At the time of birth it is cartilaginous.

PATE'LLA DOCUMA'STICA. See CUPELLA.

PATE'TÆ UVÆ, or PATETHEISÆ. See UVA PASSA.

PATHE'CA. See JACE BRASILIENSIBUS.

PATHE'MA, (from *παρχω*, to suffer). See AFFECTIO.

It is not our present object to engage in minute disquisitions on the subject of the passions; for the question, so far as it is medical, lies within a narrow compass. It has been confused rather than illustrated by the metaphysicians, whose speculations we need not follow.

Much inconvenience seems to have arisen from the metaphorical language employed. Affections, emotions, and passions, have not been clearly distinguished, nor has it been carefully pointed out that they are degrees only of similar changes in the brain. That pleasing sensation, for instance, which arises from the contemplation of objects of taste is an affection, which, arising to admiration, is an emotion, and in a still greater degree styled ecstasy, becomes a passion. The inaccuracy of language is felt also in the first step. Emotions and passions imply active energy, and can scarcely be proper terms to characterize fear, which depresses; terror, which for a time annihilates all the functions; or grief, which kills. The error arises from considering them as distinct mental affections; but they are so only in a remote degree. They are occasioned by the sensible impressions, which excite ideas;

by the associations or reminiscence, which recal them; and are interposed between the idea and volition, influencing the latter apparently as distinct causes. Thus the passionate man, in his violent fury, is not agitated by the cause, which is often trifling, but by the passion of anger excited by the idea; the jealous man, not by the actions or words of his mistress, but by the suspicions which these excite. In the common mental operations there is a step between the idea and volition, distinguished by the term motive; but we proceed often so rapidly from the impression to action, that volition and the motive are not observed, though each exist. In this intermediate period the connections and associations have often a considerable effect in changing the views and objects, sometimes exciting to violence, depressing to despondency, or composing the mind in the pleasing delusion of contemplative admiration. These different and opposite mental affections produce corresponding changes in the body, and act as exciting and depressing powers. We see their distinct effects only as corporeal; for they produce the same consequences as the more material agents. Thus the excitability is destroyed by grief as well as by the slow action of a narcotic poison, or more suddenly exhausted by passion, as in the case of the death of lord Chatham. Moderate joy acts exactly like a gentle stimulus, and the admiration excited by beautiful objects, either of nature or art, like those gentle narcotics which diffuse calmness and serenity, though undermining the more active energies of our constitution. So true is the general position, which we have often endeavoured to inculcate, that we see in medicine nothing but what is corporeal; our agents and the changes produced are the same, at least in their effects.

Passions are divided into the exciting or depressing: each again, in a medical view, into such as excite suddenly, and with temporary violence, or more slowly and permanently. Were we, therefore, to draw out a short scheme of this kind, it would be the following, which, though in itself imperfect, may be of use when we consider the subject in a medical view. Passions are either,

I. EXCITING.

- α In a violent degree, as ANGER, PASSION, ECSTASY.
- β More moderately. JOY, EMULATION, DESIRE, HOPE, BENEVOLENCE, LOVE.

II. DEPRESSING.

- α In a violent degree. TERROR, GRIEF.
- β More moderately. FEAR, JEALOUSY, ENVY, RESENTMENT.

III. CALMING.

VENERATION, ADMIRATION, CONTEMPLATION of the excellent or beautiful in nature or art.

1. Music.
2. Painting.

Persons of strong active imaginations, sanguine in their temperaments, eager in their pursuits, and expectations, are most liable to, and suffer most from, the violently *exciting passions*. The effects are often

apoplexy, palsy, hæmoptoe, jaundice; or if they escape from such severe diseases, they experience all the consequences of too great excitement in subsequent depressions. The passions which excite moderately are peculiarly conducive to health. They keep up the balance of the circulation, by which the blood is regularly distributed to the surface, increase the active powers of mind and body, render the sleep sound and refreshing, the appetite and digestion excellent. Yet these effects are only the consequence of the sunshine of prosperity; for when emulation is followed by disappointment, or even not cheered by due encouragement, hope long delayed, benevolence rewarded by ingratitude, each degenerates into its corresponding depressing passion. The more violent passions are the ocean in a storm; the less violent, the salutary breeze, which gently agitate the waves, and prevent stagnation and putridity.

The *depressing passions* are, in different degrees sedative. The more violent ones are sometimes fatal in a moment. The others slowly undermine the constitution, weaken every function, and induce dyspepsia, palsy, dropsy, with the whole train of asthenic diseases.

We have added the *calming passions*, to point out the injurious effects of their indulgence. It was the remark, we believe, of Mr. Burke, that they were sedative; and they certainly are so, perhaps in consequence of their not so powerfully engaging the more active intellectual exertions: yet we think the resemblance to those narcotics which give serenity, offered lately rather as an illustration than as an argument, is so striking, that we would call them the mental opiates. People of acute sensibility and refined taste, of indolent habits and less inclined to active exertions, are most liable to take copious draughts of these intoxicating engagements.

In the early periods of these respective mental diseases, when they become such, the treatment must be moral and intellectual. It is of the utmost consequence, therefore, to trace the passions in the infant state, for they may be observed at a very early period of life, and to apply due restraints on their excess. Even the most salutary passions should be moderated, or emulation may arise to envy, desire to greediness, benevolence to a painful refinement, joy to ecstacy, love to jealousy. The suitable mental treatment requires little discussion; for it must be varied according to the temperament, the disposition, the situation of the patient. When they induce corporeal disease, they belong to the different parts of the work.

PATHE'TICI, (from the same). See DYSOREXIE.

PATHE'TICUS, (from the same). An epithet of the fourth pair of nerves, because they direct the eyes to intimate the passions of the mind. They are the smallest pair in the body, and appear below the edge of the transverse processes; they pass by the side of the sella turcica, and go through the foramen lacerum orbitale superius, to the superior oblique muscle.

PATHOGNOMONICUS, (from παθος, a disease, and γινωσκω, to know). An epithet for a symptom or a concurrence of symptoms inseparable from a distemper, and found in no other. *Quod convenit omni, soli et semper*. Pathognomonic symptoms are, therefore, those by which a disease may with certainty be distinguished, the enumeration of which forms the most concise definitions.

PATHOLO'GIA, (from *παθος*, a disease, and *λογος*, a discourse).

We have already observed that the institutions of medicine were usually divided into the physiology, pathology, hygiene, and therapeutics. The more general division was, however, into the hygiene and jatrike; the latter including the pathology, the prognostics, and the therapeutics. In this view the pathology includes the differences, the nature, the causes, and effects, of diseases; but even this division is now neglected. The differences of diseases are referred to nosology, though this, at the period of the publication of Sauvages' first edition, was styled *pathologia methodica*. The particular causes and effects of diseases are referred also to the particular description, so that little remains under this head in modern authors but the general doctrines.

We have already anticipated the greater part of the disquisitions respecting the general doctrines under the article *MORBUS*, q. v.; for there, in a work of this kind, the reader would look for the diseases of the fluids, of the simple and the vital solids. The diseases of the containing solids, of the organized solids, and the particular secreted fluids, could not be separated from the particular diseases.

The distinction of the causes of diseases in general we have also noticed (see *CAUSA*), and the particular causes might perhaps be referred to the diseases which they produce. We have certainly anticipated almost every part of such disquisitions, as they rest on the more improved chemical knowledge of modern times, and to combat ancient fancies would form a very uninteresting part of the present work. It is sufficient then to observe, that the causes of diseases as distinguished by the latest pathologists, are those from the injurious effects of the atmosphere; from food and drink; the improper use of remedies; poisons; errors in the animal motions; injuries from particular positions or motions; immoderate mental exertions; perturbations of mind; excesses of sleep and watching; unnatural excretions and retentions; causes of calculus; diseases from animated beings, or other external causes, as clothing; accidents from bruises or fire; substances swallowed, or in any manner introduced into the cavities.

The predisposing causes, *seminia*, are those common to each sex or age, or those peculiar to particular temperaments and constitutions. To which are sometimes added preternatural predispositions, which are little else than concealed idiosyncracies excited to action by accident. See *AIR*, *ALIMENT*, *VENENUM*, *HYPOCHONDRIASIS*, *SOMNUS*, *CALCULUS*, *VESTITUS*, *AMBUSTIO*, *PROGNOSIS*.

PATIE'NTIA, (from *patior*, to bear, from its gently purging qualities). See *LAPATHUM HORTENSE*.

PATIE'NTIÆ MUSCULUS, (from the same,) because its action is expressive of patience. See *LEVATOR SCAPULÆ*.

PA'TOR NA'RIUM, (from *pateo*, to be open). See *NARES*.

PATRA'PIUM. See *APIUM*.

PA'TRUM CO'RTEX, vel *PU'LVIS*, (because it was introduced by the Jesuits). See *CORTEX PERUVIANUS*.

PATU'RSA. See *LUES VENEREA*.

PAU DE SA'NGUE. See *GUMMI RUBRUM AS-TRINGENS*.

PAULI'NA. *Confectio*, (from *paavo*, because it pro-

cured rest). A warm opiate; the *paolina* of Aristarchus, and the same with the *confectio Archigenis*. The London college have rejected it from their *Pharmacopœia* of the year 1788.

PAVA'NA, i. e. *MOLLUCCE'NSE LI'GNUM*. See *CATAPUTIA MINOR*, under *GRANA TIGLIA*.

PAVA'TE, PAVETTE. See *MALLEAMOTHE*.

PAVI'NA. See *HIPPOCASTANUM*.

PA'VOR, (from *haveo*). FEAR. See *PRURITUS* and *PATHEMA*.

PECHE'DION, (from *πηχιδιον*). See *PERINEUM*.

PECHURIM CORTEX. (See *FABA PECHURIM*). It agrees in quality with the bean, and is used in dysenteries and dyspepsia.

PECHYA'GRA, (from *πηχυς*, the elbow, and *αγμα*, seizure). See *ARTHRITIS*.

PE'CHYS, (from *πηχυς*, the elbow). See *OLECRANON*.

PECHYTY'RBE. See *SCORBUTUS*.

PE'CTEN. See *PUBIS OSSA*.

PE'CTEN VENERIS. See *SCANDIX*.

PECTINA'TIO, (from *pecten*, a comb). COMBING; a species of friction.

PECTINE'US vel **PECTINA'LIS MUSCULUS**, (from *pecten*, the pines,) from the colour *lividus*, rises from the upper part of the os pubis, on the outside of Poupart's ligament, runs downwards, backwards, and outwards, and is inserted into the linea aspera below the little trochanter: it draws the thigh outward and inward, and assists in rolling it.

PECTINATI MUSCULI, (from their resemblance to *pecten*, a comb,) the fasciculated muscular fibres of the right auricle of the heart.

PECTORA'LE DECO'CTUM. See *HORDEI DECOCTUM COMPOSITUM*.

PECTORA'LIS, (from *pectus*, the breast,) an epithet for medicines appropriated to disorders of the breast. Employed in this general sense the term is improper, and the more limited one of modern authors, viz. *expectorantia*, should be commonly used. If the pectoralia may, with M. Lieutaud, be of three kinds, demulcents, astringents, and resolvents, it will be very obvious that the general term will lead to confusion.

PECTORA'LIS MAJOR, vel **ADDU'CENS HU'MERI**, rises in a radiated manner from the anterior and inferior part of the clavicle, then from the sternum, and at the lower part from the third, fourth, and fifth ribs from the cartilage, and partly from the bony portion of the sixth rib, sending its tendinous fibres over the upper part of the external oblique and rectus abdominis, passes towards the arm with its upper edge contiguous to the deltoid, and between them the cephalic vein penetrates. Near its insertion the pectoralis doubles in on its lower edge, forming a posterior and anterior lamella, and runs to be inserted into the anterior part of the biceps groove. This doubling has occasioned Winslow to divide the muscle into two parts. From its tendon it sends off fibres, which contribute to form the fascia that covers the muscles of the arm; and this muscle, with the latissimus dorsi, forms the cavity of the axilla. The pectoralis is partly a rotator of the arm, but its great use is to bring the arm forward close to the body. It assists also in moving the trunk of the body when the arm is fixed, and Haller thought that it assisted respiration.

PECTORA'LIS MI'NOR, *serratus anticus* and *serratus*

anticus minor, lies beneath the pectoralis major, rises by three digitations from the third, fourth, and fifth ribs, then passes obliquely upwards and outwards, and joins with the short head of the biceps, to be inserted into the coracoid process of the scapula. It is sometimes called a muscle of the scapula, or of respiration, according as the one or the other termination is considered to be the fixed point.

PECTORA' LIS INTE' RNUS. See TRIANULARIS STERNI.

PECTORA'RIA HE' RBA, (from its use in affections of the breast). See ANGELICA SATIVA.

PE' CTORIS OS. See STERNUM.

PE' CTUS, (from *πηκτος*, compact). The BREAST; *chelys*; from its resemblance to the back of a tortoise, *χελωνη*; also the *metatarsus*.

PECTU' SCULUM, (dim. of *pectus*). See META-TARSUS.

PEDICULO' SUS MO' RBUS, (from *pediculus*, a louse). See PHTHIRIASIS.

PE' DIBUS BO' VUM O' LEUM EX. NEAT'S FOOT OIL, prepared by boiling the joints of horned cattle in large vessels. See ANCHYLOSIS.

PEDI' CULI INGUINA' LES et PU' BIS. See MORPIONES.

PEDICULA'RIA, (from its destroying lice.) See STAPHISAGRIA.

PEDICULA' TIO, (from the same). See PHTHIRIASIS.

PEDI' CULUS, (from *pes*, a foot,) from their great number of feet. A LOUSE. *Pediculus humanus* Lin. Systemæ Naturæ, vol. ii. p. 1016; an animal "familiar to man," though often inconvenient from its bite. Lice have been supposed hermaphrodites; and are certainly oviparous. A louse will lay, in six days, fifty eggs, without exhausting its store, and in twenty-four days the young ones are capable of laying eggs themselves. From calculation, it is supposed that two female lice may produce eighteen thousand in two months. The largest animals of this kind were discovered by Linnaeus, in the warm caverns of Falhum, in Sweden. Those which conceal themselves in clothes are apparently different from the lice of the hair; for in India, however dirty the person, he is only infested with the latter. It is a common remark, that navigators lose them in the tropics, and recover them on their return to the same spot; but it is not supported by observation. Monkeys, the Hottentots, and some races of negroes, are said to eat them; and in some receptacles of lunatics, it is reported that they are put into the hair to produce irritation. When new-born children were affected with a suppression of urine, a louse was formerly introduced into the urethra; and the same remedy has been used, in similar complaints of horses. It acts, as is supposed, by its irritation.

It is said also that they quit any person ill of an infectious disease, multiplying most in the strongest constitutions. It is at least certain that animals, particularly fish, are seldom infected with them but at the period of their greatest perfection. They are said to be useful to children in epilepsies, diseases of the head, and in scrofula, by producing sores; and it is added, that the worst consequences have arisen from drying these sores. As a remedy, this animal is not likely to be again employed, and it is carefully destroyed, when discovered.

The most fatal poisons to it are the mercurial calces, the seeds of veratrum, staphisacre, menispermum, rue, opium, angelica and laurel, saffron, pepper, sedum, lycopodium, pinguicula, and nicotiana. In botany, the term is synonymous with *pedunculus*.

PE' DICUS, (from *pes*, a foot). See EXTENSOR DIGITORUM BREVIS.

PEDI' LUVIUM, (from *pedes*, and *lavo*, to bathe), *lavapedium*, A BATH FOR THE FEET. The extreme vessels of the feet sympathize with those of the rest of the system, the stomach, and the head. If the feet are cold, colic pains come on, the skin is rough, perspiration defective, and the salutary evacuations from the uterus and hæmorrhoides checked. Pediluvia are consequently extensively useful. Baths for the feet should be used at bed-time, to procure a general perspiration. If used a few days before the menstrual discharge, they are said to promote it, and are particularly useful in affections of the head, as well as the commencement of febrile complaints. It is sometimes injurious, by determining too powerfully to the head, and should be used with caution in its diseases, or the temperature should not be raised above 98°. See BALNEUM.

PE' DION, and PELMA, (from *pes*). The sole of the foot. See PES.

PE' DORA, (from *pes*). The sordes of the eyes, ears, and feet.

PE' DRO DEL CO' BRA. See COBRA DE CAPELLO.

PE' DRO DEL PO' RCO. See BEZOAR HYSTRICIS.

PEDU' NCULÆ CEREBE' LLI. See CEREBELLUM.

PEDUNCULA' TUS, (from *pedunculus*). Growing upon foot-stalks.

PE' GANON, (from *πηγνω*, to condense). See RUTA.

PE' GE. A FOUNTAIN. See OCULUS.

PE' LADA. A loss of hair from a venereal cause.

PELECA' NUS, the name of an instrument for drawing the teeth; and of a glass vessel, formerly used for the digestion and circulation of liquors, poured in at their narrow necks, which were afterwards hermetically sealed: at present two mattresses are used, instead of a pelecen, the neck of one being inserted into that of the other.

PELIO' MA, (from *πηλος*, black). See SUGILLATIO.

PELLAGRA, (from *pellis*, the skin, and *αγρα*, a disease). This singular disease has attracted particular attention, within these last thirty years, not wholly from its novelty, but from its becoming more violent, and from its being more generally accompanied with peculiar nervous affections. It comes near the *lepra asturiensis* of Sauvages, but seems more closely to resemble the *elephantiasis*, as we have described it, vol. i. p. 598. As a new disease, it is necessary to notice it with some minuteness, but we shall, at the same time, confine our account within limits of no great extent, and refer, at the end, to a numerous list of authors, who have treated of it, in a chronological series, from the era of *Frapolli*, who first publicly noticed it, in a tract, published at Milan in 1771.

The symptoms which show the approach of the disease are those of debility only; languor, listlessness, gloom, a weakness and stupor in the legs, unsteady walking, imperfect ideas, and vertigo. After these

appearances, which are, however, sometimes absent, at the approach of summer, a sense of tension, burning, and itching in every part exposed to the sight, except the head, is felt, and followed by an inflation of the epidermis, and tubercles of a shining red colour. If exposed to the meridian sun, those affected become languid, faint, and fall down insensible, though they soon recover, on being carried into the shade. After some days, the tubercles desquamate, the skin appears at first red, but soon recovers its natural colour. The advancing summer removes every complaint; and, though some relapse in autumn, in the winter every disagreeable symptom vanishes. While the disease continues, the pulse is small and weak; when it recedes, the usual strength returns; and no return of the complaint is, in many cases, observable for several years.

In the second stage, every symptom is exaggerated; the itching is more pungent, the heat more fiery, the skin harder, cracked, and chapped, the debility greater, the mental functions disturbed, with peevishness and impatience, the sleep broken, the appetite irregular and unequal, pain of the head and spine, with delirium and confusion of ideas. The local disease is not now troublesome; but the nervous complaints are greatly exasperated. Vertigo increases, the patient is sad, loves solitude, and the melancholy delirium occasionally alternates with the more violent: the tedium vitæ is insupportable, and self-murder is a frequent consequence. Strambio remarks, that those who labour under pellagra have the greatest tendency to drown themselves, "as by a delirium opposite to the hydrophobia." Coercion is at last necessary; and a diarrhoea, atrophy, or dropsy, closes the dreadful scene, if the patient does not sink, from a loss of both mental and corporeal power.

It is necessary to mark a few of the symptoms more distinctly. The affection of the skin first appears truly erysipelatous; but with different degrees of burning heat, redness, and desquamation, sometimes attended with large phlyctenæ, full of an acrid, often a yellow, fluid, as from burns. The crusts on the hands appear first to resemble the effects of heat and hard labour, though, when minutely examined, they are very different. They affect the parts exposed to the sun, particularly the backs of the hands and feet, seldom the head, except on the tip of the nose or the forehead. Those who have dreaded the disease have avoided the sun; but though they have escaped the cutaneous affection, have suffered in the other respects, and scarcely in any instance have the lips escaped being dry and chapped.

The pains of the head and back are almost constant attendants, and often even precede the cutaneous affections. Those of the head are pungent, lancinating, piercing, gnawing, with a sense of burning, as if flames were kindled in the brain, with a most troublesome singing in the ears, and a pulsation in the substance of the brain. The spine suffers from an uneasy titillation, and occasionally from a stroke resembling that of electricity. The pain passes through every part to which nerves are distributed, and from this pain the weakness of the muscles, and the spasms which affect different portions of the body in all their varied forms, occasionally rising to epilepsy or syncope, seem to proceed. Hemiplegia sometimes attacks one side; sometimes the palsy is more general.

Vertigo was also a very early symptom, but most conspicuous in those who exposed themselves to the burning sun. From this the double vision and the tinnitus aurium apparently arose. The delirium sometimes proceeds like an acute disease, terminated by a most offensive sweat, resembling mould, or the cocoons of silk-worms macerated in water. At other times it is chronic, and gives a fierceness to the countenance not to be described. From this description, the essential or pathognomonic symptoms are obvious, and pellagra may be defined, "inflation of the skin with tubercles, in parts exposed to the air, except the face; at first remitting; preceded by melancholy and debility; at last constant, with increased irritability and alienation of mind. It is thus related to lepra, elephantiasis, &c.

Pellagra is sometimes complicated with nervous fever, with inflammations, and, towards its close, with dysentery. It is sometimes, from the descriptions of Odoard and Soler, accompanied with every variety of scorbutic symptoms; an union which appeared to them more singular, as scurvy is almost unknown in the duchy of Milan, though occasionally observed at Venice, and in both districts it is endemic. These appearances are, however, symptoms of debility only; and with them may be united petechiæ, vibices, &c. which often attend the disease. Strambio mentions an herpetic affection as a concomitant, and Soler the Grecian elephantiasis. Dissection seems only to have shown the effects of the disease in numerous visceral obstructions.

The pellagra is indisputably hereditary; and, though it seldom appears till after puberty, even in infancy the experienced eye can, it is said, trace the germ of the complaint. It is not always, however, conveyed to the offspring; but the means by which it is avoided are by no means clear. It does not depend on air or situation, though an endemic disease; for in every variety of soil and situation, in the districts of Milan and Venice, it is observable. The condition of the peasantry is, indeed, in these truly miserable. Their strength is exhausted, at a very early age, by labour, to which they are unequal; and their diet chiefly consists of bad, ill fermented bread, made of maize; their drink of stagnant water, or, on the mountains, an inferior kind of wine, *la posca*. Their habitations are close, confined, and filthy in excess, which they share with their cattle. Their countenances are, consequently, gloomy, their complexions yellow, face tumid or contracted, the limbs stiff, the catamenia irregular, abortions frequent, births laborious, old age premature. The foundation of the disease is certainly debility, and causes of debility often induce it, when dormant; but similar causes frequently occur, without producing pellagra. Weakness is, therefore, a predisposing cause only, and the activity of some latent contagion is necessary; a contagion constitutionally conveyed to the offspring. Though very unusual, persons, otherwise firm and strong, are sometimes affected; nor is it, apparently, communicated, by infection, from husbands to wives, or the contrary. Yet it is singular that, at the little town of St. Rivolta, in the district of Lodi, after a man, infected with the disease, had resided there, it became comparatively frequent, though unknown before. Titius seems to suspect that it may have been originally communicated by cattle.

Some authors have attributed the pellagra to the

influence of the sun, and supposed similar to a *coupe de soleil*; but the disease begins in the spring; and those, we observe from authors, who endeavour to escape it by avoiding the burning heat, only experience a slighter cutaneous affection. The other symptoms come on with equal severity. It seems probable that the virus is collected in winter, and produces its effect in spring, drawn to the surface by the warmth; and it is certainly connected with the manners and habits of a country life, since the inhabitants of villages are very rarely, those of cities scarcely ever, affected. If evacuated by the skin, that is, if the tubercles discharge and desquamate regularly, the nervous symptoms do not appear, or are more slight; but when the skin is more hard and solid, the worst consequences follow; and if the tubercles are repelled, sudden death is often the consequence. To this must be added, that persons not exposed to the sun often experience the nervous symptoms without the impetigo. The solar light, therefore, only produces the eruption.

Authors have divided this disease into hereditary and acquired, into moist and dry; but these distinctions do not contribute to our knowledge of its nature or treatment. Each is little understood. It has been considered as a particular species of scurvy, from the spots on the surface; as hypochondriasis, from the visceral obstruction, and the gloomy delirium; as elephantiasis, from the tubercles; as the *lepra asturiensis* of Thierri; and as a periodical chronic nervous erysipelas. The two first opinions are wholly without foundation; but as we have stated the pellagra to be of the family of elephantiasis, we must now notice the distinguishing marks.

They agree in being founded in an exhausted constitution, in the pustules being symptoms rather than essential marks of the original disease, in their fatal termination by dropsy, atrophy, or some other asthenic disease. They differ, as the elephantiasis affects the face, the roots of the hair, the palate bones, and as the disease of the skin increases with the increase of the other complaints. In pellagra, it lessens when the nervous symptoms are most violent. The pellagra also is distinguished by the thick urine, double vision, and the peculiar mouldy smell of the sweat.

The *lepra asturiensis* agrees with the pellagra in many of its symptoms. The pustules are, however, very painful, offensively fetid, and attack the head indiscriminately with other parts, as well as the roots of the hair. The mind is but slightly affected, and its disease is that of timidity rather than delirium. The last opinion, that of Titius, is not supported by any conclusive evidence. It must, therefore, as we have said, be placed among the impetigines, between the lepra and elephantiasis.

The cure, unfortunately, is very difficult: indeed, when the disease has proceeded so far as to affect the nervous system, it is impracticable. All the evacuants are injurious, and the tonics have not been sufficiently tried. The metallic tonics, as mercury or arsenic, promise most success, if given with medicines which assist the cuticular discharge. Mercury, conducted so as to salivate, has been found injurious. When the first symptoms have appeared, persons have escaped by removing into towns, or wholly leaving the district. Perhaps removing into a warmer climate, without being exposed to the sun, might be useful.

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PELLI' CULA MEMBRANA' CEA, (dim. of *pellis*, the skin,) any thin-membrane, as the amnios.

PE'LMA, (from *πελω*, to move forwards). See PES.

PELTA' LIS, (from *pelta*, a target). A leaf, whose stalk is inserted in the middle, and not in the margin.

PELTA' TA CARTILA' GO, (from *pelta*, a buckler). See ASPERA ARTERIA.

PELVIMETER. An invention of M. Coutonli to measure the different diameters of the pelvis; and another in the form of calipers is recommended by M. Baudelocque. Each is, however, more curious than useful, and neither is much used in this country. The form and shape of the woman shows deformities from irregularity of the brim of the pelvis, and the operator, used to the measure of his fingers, can ascertain, in touching, the distance from pubes to sacrum, as well as any irregularities of shape at the lower diameter.

PE'LVIS, (from *πελος*, a basin). A name for the inferior part of the cavity of the belly, bounded forward by the os pubis; backward by the os sacrum above, and coccygis below; laterally by the ilia above, and ischia below. In infancy the bones are more numerous than in the adult state, and the edges of several are cartilaginous, so that the pelvis of the child may yield a little in difficult labours. Yet the motion of the parts on each other is so inconsiderable, that no great advantage can be this way obtained.

The pelvis consists of the os sacrum, os coccyx, and the ossa inominata: the latter contain the ossa ilia on

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the sides, the pubes, branching from the front above and below; and the ossa ischia, joining the lower ramus of the pubes to the sacrum. See plate.

The union of these bones is more or less perfect. In adults the sacrum is sometimes ankylosed with either os inominatum; and, from long confinement, violent shocks, or diseases on the other hand, it is considerably loosened, so as to make walking unsteady and difficult. The os coccygis, which in adults consists of bones separated by cartilage, sometimes coalesces into one bone, and is also firmly united to the sacrum. In this process its length is diminished, and it usually turns inward, forming a very considerable impediment to the progress of the child. This impediment is sometimes overcome by the propelling pains, and some motion between the sacrum and the coccyx is restored. Lateral motion is prevented by strong muscles and ligaments. The ossa pubis are connected in front, it is said, by a cartilage, but it is rather by a mixture of cartilage and ligament. The former belongs to each bone, and at their junction unites. It is thicker in front, from the upper to the lower part, than behind; and the ligamentous fibres, mixed with it, are, of course, longer in front. In their reticulations they leave intervals, which contain small red bodies, described as resembling synovial glands; and some authors have mentioned a kind of capsular membrane in its back part, while the cartilages on each side seem calculated, by their separation, to admit of a small motion. This cartilaginous separation is, it is said, discovered near the middle of the symphysis, extending a little lower behind. Other authors have denied the existence of this apparent joint; and though we have seen a cavity in the cartilage, it did not appear to be regularly organized, at least in that instance. The ligamentous fibres, which we have described, are reinforced by others, and by tendinous expansions from all the muscles on either side; so that if Nature designed by this structure an obscure motion, she has taken anxious care to prevent its being considerable, apparently to prevent it entirely.

The union of the sacrum with the ossa inominata is more close and compact; nor do we find that when the connection is loosened, that the former intimate union again takes place. The os sacrum is united to the lowest lumbar vertebra, nearly in the usual manner; but there are two little articular masses fixed in the posterior edge of the impression, by which they are mutually received into each other, which answer to similar substances in the vertebra. The union of the sacrum with the spine is secured also by ligamentous fibres, so that the motion is inconsiderable; but the convexity of the spine in the loins is in part lessened by the small motion which each vertebra admits; and by altering the angle at which the woman reclines, or by bending forward, we can thus often effectually change the direction of the axis of the pelvis.

In midwifery the knowledge of the structure and peculiarities of the pelvis is an important circumstance. The brim of a well shaped pelvis represents an irregular oval, or something that approaches to a triangle; if it is considered as an oval, its greatest axis is from side to side; if we consider it as a triangle, the posterior part is far longer, and the ossa pubis constitute the other two sides of the triangle; the lower circumference

is formed behind by the sacrum and os coccygis, on each side by the ischium and sacro sciatic ligaments, and before by the lower part of the pubes. When the body is gently reclined, the brim of the pelvis is horizontal, and a line would pass from the navel through the middle of the cavity; but when a woman is in labour, or near her time, this imaginary line must fall from between the navel and scrobiculus cordis; and accordingly we find that the head of the child presses behind the anus, and gradually advances from thence up the perinæum, until it comes to the lower part of the symphysis of the ossa pubis. The chief use of this supposed line is to place the woman in the most favourable position during labour, that she may act more advantageously with her abdominal muscles, and that the child's head may fall more directly into the middle of the pelvis. It will be a rule also to direct the forceps on the child's head, and the hand into the uterus. The obliquity of the pelvis from behind forwards is equal to an angle of nearly 40° .

In considering the pelvis, we should observe its width, the depth and form of its cavity, and the extent of its brim from the fore to the back part, which, in a well-formed pelvis, is an inch less than it is from side to side; four inches and a half from the fore to the back part; and five inches and a half from side to side.

The lower circumference of the pelvis is nearly equal; but when we allow for the os coccygis being moveable, it makes a quarter of an inch more in its longer direction from the os coccygis to the os pubis than from ischium to ischium. The depth of the pelvis, from the upper edge of the sacrum, where it articulates with the vertebræ lumborum, to the lower part of the os coccygis, is about five inches in a straight line. When the os coccygis is pressed back, it is then six inches: from the brim of the pelvis, to the lower part of the symphysis of the os pubis, is only two inches; while from the under part of the ischium it is four inches. The brim is concave internally all round.

The inferior aperture is usually, in the natural state, smaller, and of a more irregular figure than the superior, as it is not wholly formed of bone. The base is broken by the coccyx, the tuberosities of the ischia, &c. into different angles, which are filled up by ligaments, forming in front what is styled the *arch of the pubes*, which expands from an inch and a quarter to four inches in breadth in a well formed pelvis. The transverse diameter is largest in its natural state; but, from the yielding of the coccyx, is the smallest in delivery. The largest diameter also of the inferior aperture is opposed to the smallest of the superior; and from hence arises the necessity of the half turns in delivery, which we have mentioned as necessary in PARTURITION, q. v.; and the greatest diameter of the superior, crosses the smallest of the inferior at an angle more or less acute. From an attention to this circumstance, we can often, with the finger alone, remove apparently insurmountable obstacles. The curvature of the sacrum also removes many inconveniences if attended to; and on this account the child comes with so much facility when the face is in that hollow. This concavity also prevents pressure on the sacral nerves.

The pelvis may be faulty either from too great or too small a size. In the former case the child is often too suddenly excluded, and dangerous hæmorrhages are

the consequences. In this case also the uterus is often propelled with the child, particularly when the woman has had many children; in the earliest and latest months also the child rests on the rectum or meatus urinarius, producing constipations and strangury: in the intermediate period it rests on the edge of the pelvis.

The pelvis is, however, more often faulty from its narrowness. This defect is seldom conspicuous in every part of the basin, and most generally in the superior aperture. The small diameter is most commonly contracted, and sometimes one side only of the bony circumference is pressed in. When the inferior diameter is lessened, it is usually effected by the approach of the tuberosities of the ischia. M. Baudelocque accounts for the former deformity, by attributing it to a softness of the bones in the early state; and he remarks, that the direction of the weight of the body carries the sacrum forward, and the ossa pubis backward. This is not, however, a perfectly correct view of the circumstances. The disease arises from the prominence of the abdomen, usually attendant in such cases, which renders it necessary to throw the shoulders back to preserve the equilibrium. In consequence, the line of pressure is upwards and backwards, instead of being upwards and a little outwards. In weak states it is common to recline on one side to relieve often the weaker leg, or to change the position. From this it arises that one ramus of the pubes is chiefly pressed in, that one of the acetabula often approaches nearer the sacrum, and that a line drawn perpendicularly from the symphysis of the pubes towards the sacrum, divides the pelvis into two very unequal parts. The inferior aperture in the same softened state of the bones will be affected by the child's sitting, lolling on one side in preference to the other, or twisting the body into unnatural attitudes for the sake of present relief.

The dimensions of the pelvis itself often greatly vary. In the diameter from pubes to sacrum the diminution sometimes scarcely exceeds half an inch; in others the bones approach so near, that often scarcely an inch of aperture is discovered. A pelvis cannot, however, be considered as *very* narrow, unless each diameter be less than three inches and a half. M. Baudelocque informs us that he has seen pelvises, where the distance from pubes to sacrum above was not more than six or eight lines; and in one which he possessed, the distance from the right acetabulum to the sacrum was only between three and four lines: in another the distance from the projection of the sacrum to the symphysis of the pubes was but fourteen lines. An increased projection of the sacrum, from the causes assigned, viz. a swollen abdomen, in consequence of great debility, contracts the superior aperture to very small dimensions; and this projection is sometimes straight forward, sometimes to one side only. In the latter case an aperture is often left on the other side sufficient for the passage of a child.

Labour will be tedious when the aperture is little more than three inches; yet the bones of the child's head, by yielding, may be moulded into an oblong form, and at last pass, and the head will soon recover its natural shape. If within three inches, the difficulty is greater; and when so little as two inches and a half, the mother and child are in a dangerous situation. The difficulty from the diminished aperture of

the superior part appears very early in labour. The pains, though strong, do not propel the child, and the woman's strength is exhausted before the child's head can pass into the pelvis. Nature, however, is all powerful in this respect, and the head will pass through an almost impermeable strait. It is then more within reach; and the difficulty arising from a deformity in the inferior aperture is more easily removed, as the head is often within reach of the shorter forceps.

When the head comes into the cavity of the pelvis the pains for a time cease, and the head, recovering its former shape, requires the renewed action of the propelling powers to protrude it beyond the second obstruction. When the deformity is only at the inferior aperture, the symptoms of difficulty appear later, and labour is peculiarly difficult. The practitioner must, therefore, be cautious in his prognostic, not to promise a quick termination from a prosperous commencement, nor a particularly tedious one from difficulties in the earlier period.

The middle of the pelvis is more seldom faulty than the superior or inferior diameters. The defect in this part is sometimes owing to exostosis, and more often to the direction of the sacrum, which is straight, or occasionally convex instead of concave.

Another variety in the form of the pelvis, which renders labours tedious, is the less elevation and sweep of the arch of the pubes, in fact, an approach in form to the male pelvis. A different direction of the spines of the ischium, their too great length, or an ossification of the coccyx, may have a similar effect; but the latter is not often the cause of any considerable delay.

In the article on parturition we have stated that the operation of the symphysis of the pubes is no longer practised in this country, and that the separation of these bones by an operation is calculated to gain but little space. The great question, however, which we have not yet noticed, is, whether all or any of the cartilages yield during labour. Should they do so, considerable space may be gained. It is contended that this separation is possible; by others that it is the effect of disease only; by others again that it is natural, and very commonly takes place. Truth, as usual, lies between. It is certainly not common; but there is much reason to suppose that it does occasionally take place, independent of disease. That the bones do sometimes separate we know, since, in consequence of the disunion, abscesses occasionally form in the interstices. These abscesses are formed chiefly at the union of the ossa inominata and sacrum, or at the symphysis of the pubes. The former is the less violent disease, and is often cured. The latter produces hectic fever, and the cause is often not discovered till after death. The matter sometimes bursts into the cellular substance, occasionally into the bladder; sometimes passes down under the periosteum to the acetabulum, and from thence to the surface on the upper and inner part of the thigh.

A straight pelvis will cause a difficult labour; and it is known by introducing the finger up the vagina: if you can feel the os sacrum, the pelvis is straight; or if you can touch the ossa pubes with your fore finger, and the vertebræ of the loins with your middle finger, it is considered as narrow, and vice versa.

Pelvis is also the name for a cavity in the kidneys, for the cochlea of the ear, &c.; and hence *pelvis renum*,

aurium and cerebri. See Denman, Baudelocque, and Hamilton's Midwifery.

PE'LVIS. See also CEREBRUM and RENES.

PEMPHIGO'DES, or PEMPHINGO'DES, (from *πυμφοξ*, a blast of wind). Fevers distinguished by flatulencies and inflations, in which an ærial effluvium seems to pass through the skin of the patient, and to strike on the finger. (Galen's Commentaries on 6 Epid. sect. i. aph. xvii.) Other authors give this name to a fever, by the intenseness of whose heat aphthæ are excited in the mouth. It is supposed, according to Fæsius, to be a synochus, in which the blood vessels are inflated, and consequently called an inflated fever.

PE'MPHIGUS, (from *πυμφοξ*, bulla, a vesicle). The VESICULAR FEVER, *febris bullosa, exanthematica, serosa, mortua*. Dr. Cullen places it in the order *exanthematica*, defining it a contagious typhus: on the first, second, or third day of the disease, little vesicles, the size of a nut, appear on different parts of the body, continue a few days, and at last exude in the form of a thin ichor. To this he annexes the following observations: "From the opinion of others, rather than my own, this character is taken; because I have seldom seen this disease, and never have observed it epidemical, or pursuing a regular course, as is here described."—With regard to the species, he says, "Since I never have seen a pemphigus which I could consider as an exanthematic fever, and have found only very few observations in the writings of physicians concerning a disease of this kind, almost every thing inserted in our Nosology must necessarily be taken from Sauvages; therefore, I have followed him, though I would willingly have omitted this malady, since almost all that has been said about it appears to me doubtful, obscure, and ambiguous. Francis Home, however, my eminent colleague, shewed me a man slightly feverish, in whom vesicles, the size of a hazel nut, arose first on his arms, and afterwards, successively, on his whole body, which, in two or three days after, exuding a little serous humour, collapsed. But this fever discovered no peculiar disposition or type, and, being by no means contagious, soon disappeared." Synopsis Nosologia Methodicæ, p. 148, 149.

Dr. Withers remarks, that "in the case of E. P. the vesicular eruption, which was very sore and painful, was preceded and accompanied with some feverish symptoms, evidently of the low kind. It continued only for a few days, and then gradually went off." By tonics and antiseptics, he adds, that he cured two patients, not long before, of the pemphigus, in which the fever was extremely putrid, with many gangrenous sloughs, of a fetid smell and most dreadful appearance, following the eruption of the blisters, attended with a low delirium for many nights, the greatest dejection of countenance, and prostration of strength. Since this time it has been noticed by different authors, though the most distinct account of the disease is given by Dr. Dickson in the Irish Transactions. From his description it appears to be a true exanthema, not constantly attended by fever of a given kind, but occasionally mild, though often highly putrid. The treatment is varied according to the nature of the fever; and when the pustules appear on the internal parts, which sometimes happens, irritation must be guarded against by opiates and demulcents. See Acta Helvetica, vol. ii. p. 260; Cullen's First Lines, ed. 4. vol. ii. p. 254; Edinburgh

Medical Commentaries, vol. vi. p. 79; Withers on the Asthma: Gaitshell and Upton in the Memoirs of the Medical Society, London; Dickson in the Transactions of the Royal Irish Academy; and Christie in the Medical and Physical Journal.

PEMPTÆ'US, (from *πεντες*, the fifth). See INTERNITTENS FEBRIS.

PENÆ'A SARCOCO'LLA. See SARCOCOLLA.

PENICILLUS, (dim. of *peniculum*, a brush). A TENT, or PLEDGET.

PE'NGUIN. See KARATAS.

PE'NIS, (*à pendendo*, from its hanging down,) *caulis, coles, mentula, friapus*, is composed of three parts, viz. the two corpora cavernosa, and the corpus spongiosum urethræ. Its skin, which is thin, and without fat, is doubled at the top, forming a hood, the præputium, which covers the glans penis, *cuspis* or *balanos*: the small ligament, by which it is tied to the under side of the glans, is called *frænum, canis*, and *filettum*. The prepuce keeps the glans soft and moist, prevents excoriation, and preserves its sensibility. The penis, where it joins the body, is connected by a small ligament, which arises a little from its root on the back part, and ties it to the upper part of the os pubis. It receives two branches of veins from the hypogastric vessels, and its arteries from the hypogastriæ and pudicæ; the two veins unite towards its root, and make one trunk, which runs on the back of the penis. It hath two nerves from the sacrum, several lymphatics, which pass through the inguinal glands, and three pair of muscles, viz. the erectores, acceleratores, and transversales. Cowper observes, that the cuticle on the glans is villous or downy, and that the cutis is thinner on it and the scrotum than any other part. See Cowper's Observations on the Penis, Ruysch, and de Graaf.

PE'NNA, (from *πτερουσαι*, to fly,) *mentula alata*. A FEATHER. In the third volume of the London Medical Observations and Inquiries, p. 7, &c. is an account of a successful attempt to recover a fibre of a feather from the œsophagus, by means of a whalebone, with a sponge at each end. By threads loosely connected with both, the feather was entangled and brought up. If, however, it can be forced into the stomach, no inconvenience will probably arise.

PENNATIFO'LIUS, (from *penna*, and *folium*). Having leaves resembling feathers.

PENO-AB'SOU, *piné obsou*. A tree in America, whose bark is very fragrant, and whose fruit, about the size of an orange, contains from six to ten nuts, from which an oil is expressed. The fruit is poisonous, but the oil is said to cure the wounds received by poisoned arrows. Its genus is unknown.

PENTADA'CTYLON, (from *πεντε*, five, and *δακτυλος*, a finger, because it has five leaves upon each stalk). See CATAPUTIA.

PENTAGY'NIA, (from *πεντε*, and *γυνή*, a woman). The name of an order in the 5th, 10th, 11th, 12th, and 13th classes of the Linnæan system, containing those plants which have five pistils in an hermaphrodite flower.

PENTA'NDRIA, (from *πεντε*, and *ανδρ*, husband). The fifth class in the Linnæan system, comprehending those plants which have hermaphrodite flowers with five stamens.

PENTANEU'RON, (*πεντε*, and *νευρον*, a nerve, from its five ribbed leaves). See PLANTAGO MINOR.

PENTAPHA'RMACUM, (from *πεντε*, and *φάρμακον*, a drug). A medicine consisting of five ingredients.

PENTAPHY'LLUM, (*πεντε*, and *φύλλον*, a leaf; from its five leaves on each stalk). CINQUEFOIL. See QUINQUEFOLIUM.

PENTAPLEU'RUM, (from *πεντε*, and *πλευρον*, a rib; synonymous with pentaneuron). See PLANTAGO MINOR.

PENTO'ROBUS, (*πεντε*, and *οροβος*, the wood pea; from its five seeds resembling the wood pea). See PEONIA.

PEPA'STICA, PE'PTICA, (from *πεπαινω*, to concoct). DIGESTIVE MEDICINES, supposed to promote the production of a proper pus in wounds and ulcers. It, however, seems doubtful whether this general term be proper or necessary; because, though there are medicines which certainly seem to answer this purpose, yet as they act on general principles, for they are chiefly stimulants, or correct those circumstances which impede the operations of nature, they ought not to form a separate class from one effect.

PE'PITA NUX. See NUX VOMICA SERAPIONIS.

PE'PLION, or PE'PLOS, (*πεπλος*, a purple veil, from their colour). Purging medicines formerly used for evacuating bile and phlegm; styled also *mecon*, *meconium*, *chamæsyce*, *hahaver spumeum*, *symphytum*, and *tithymalus*. See MEDICINE. History.

PE'PLIOS LUTETIANO'RUM. See FABAGO.

PE'PO, (from *πεπλω*, to ripen). COMMON POMPION. As an aliment it is cold, flatulent, and indigestible; but by pressure an oil is obtained from the pulp, which softens the skin. See Raii Historia.

PE'PTICOS, (from the same). See PEPASTICA.

PEQUE'TI RECEPTACULUM, (from *Pequet*, the discoverer). See RECEPTACULUM CHYLI.

PERA'GU. *Clerodendrum infortunatum* Lin. Sp. Pl. 889. A shrub in Malabar whose juice kills worms, and its roots are said to cure the lientery, colic, &c. See Raii Historia.

PERCOLA'TIO, (from *percolo*, to strain through). A term sometimes applied to secretions, sometimes to the transudation of fluids through their coats. See DEPURATIO.

PER DELIQUIUM. An old chemical term expressive of the fluidity which salts acquire by exposure to air.

PER DESCENSUM. A kind of distillation, in which the vapour has a descending course.

PERDE'TUM. See SISARUM.

PERDI'CIUM, (*perdix*, partridge; because that bird feeds upon it). See PARIETARIA.

PEREGRI'NUM LIGNUM. See NEPHRITICUM LIGNUM.

PERETE'RION, from *περαω*, to dig through). See TREPANUM.

PERE'XYL LUSITA'NIS. See CAAPONGA.

PERFE'CTI MAGISTE'RII O'LEUM. See LATER.

PERFOLIA'TA, (from *per*, and *folium*, a leaf; because its stem surrounds the leaf like a cabbage). See BUPLEURUM. This plant was sometimes celebrated for curing ruptures.

PE'RFORANS MA'NUS, (from *perforo*, to pierce through). See FLEXOR TERTII INTERNODII DIGITORUM MANUS.

PE'RFORANS PE'DIS. See FLEXOR LONGUS PEDIS.

PERFORA'TA, (from *perforo*). See HYPERICUM.

PERFORA'TIO, (from the same,) penetrating by an instrument into any of the cavities of the body, as into the abdomen by a trochar. See also SETACEUM.

PERFORA'TUS MA'NUS. See FLEXOR INTERNODII SECUNDI DIGITORUM MANUS.

PERFORA'TUS PE'DIS. See FLEXOR SUBLIMIS PEDIS.

PERFORA'TUS CASSE'RII. See CORACO-BRACHILEUS MUSCULUS.

PERFRICA'TIO, (from *perfrigeo*, to be very cold). See HORROR.

PERFU'MES. See MATERIA MEDICA; ODOURS, aromatic, fragrant, and ambrosiacal, p 134.

PERIA'MMATA, and PERIAPTA, (from *περιαπλω*, to hang round). See AMULETA.

PERIADY'SMIA. See GASTRODYNIA.

PERIA'NTHIUM, (from *περι*, around, and *ανθος*, a flower). The calyx, when contiguous to the fructification. When it includes the stamina and germen, it is the perianthium of the fructification; when the stamina without the germen, the perianthium of the flower; when it contains the germen and not the stamina, the perianthium of the fruit. See CALYX.

PERI'ANTHIUM ABBREVIATUM. Shorter than the tube of the corolla.

PERIBLE'PSIS, (from *περιελεπω*, to stare about). The wild look of delirious persons.

PERI'BOLE, (from *περιβαλλω*, to surround). Sometimes it signifies dress; at others, a determination of fluids to the surface.

PERICA'RDII ARTE'RIA, (from *pericardium*, the membrane surrounding the heart). The ARTERY OF THE PERICARDIUM, rises from the anterior middle part of the common trunk of the subclavian or the carotid, runs down upon the pericardium to the diaphragm, to which it sends some branches.

PERICA'RDII VENA. The VEIN OF THE PERICARDIUM, sometimes springs from the trunk of the superior cava, at others from the origin of the right subclavian. The left vena pericardii comes sometimes from the left subclavian before the mammaria, sometimes from the mammaria or diaphragmatica superior on the same side.

PERICARDI'TIS, (from the same). See INFLAMMATIO PERICARDII.

PERICA'RDIIUM, (from *περι*, about, and *καρδια*, the heart,) *capsula*, *involucrum*, and *succulus cordis*, the membrane which surrounds the heart filled in the living body with an halitus, which is condensed in a watery fluid after death. The first membrane of the pericardium is formed by the pleura, which leaves it where it adheres to the diaphragm. The substance of the *pericardium* is a firm membrane, composed of two lamellæ, the external of which is the stronger, and apparently composed of tendinous fibres crossing each other in every direction: the internal is a complete bag, without perforation, being reflected over the heart itself, and nearer a spherical than a conical figure. This internal coat contains the liquor pericardii, supposed to be secreted by glands, but more probably exhaled from the small continuations of the arteries. In healthy persons, the quantity of fluid is small, in others more copious, generally resembling serum tinged with blood, owing to the transudation of blood through the muscular cavities of the heart, for the longer the body is kept, the redder is

the liquor. The use of the pericardium is to supply the fluid, and to confine the heart; and it is very intimately connected by a great surface to the diaphragm, near the middle, where it has little motion in inspiration or expiration. The pericardium is much larger than the heart; it is not fixed to the basis of the heart, but round the large veins above the auricles before they send off the ramifications, and round the large arteries before their divisions, which alters the general rotundity of its figure. This membrane is subject to different affections; particularly dropsy, inflammation and suppuration. See HYDROPS, INFLAMMATIO, and ABSCESSUS PERICARDII.

PERICARDIO-DIAPHRAGMATICÆ VE'NÆ. See DIAPHRAGMATICÆ SUPERIORES.

PERICARPIUM, (from *περι*, about, and *καρπος*, the fruit). The germen, or seed vessel, from which the seeds drop when they are ripe. It is analogous to the ovary of animals; but its place in the vegetable kingdom is occasionally supplied by the calyx. It is distinguished by several appellations, according to its nature or shape, as *capsula*, *siliqua*, *legumen*, *conceptaculum*, *drupa*, *pomum*, *bacca*, *strobilus*, *folliculus*. See also CATAPLASMA.

PERICHO'NDRIUM, (from *περι*, and *χονδρος*, a cartilage). The perichondrium is said to be only a continuation of the periosteum, which, according to Dr. Hunter, may be true of that which supplies the place of bone in an adult, as the trachea; or in such as in maturer age become bone, as the epiphyses of infants; but on the cartilages that are expanded over the extremities of articulating joints, the perichondrium is the inner layer of the capsular ligament reflected over them. This is only discoverable in young subjects, where the parts are capable of separation.

PERICHRISIS, (from *περι*, and *χρισω*, to anoint). See LINIMENTUM.

PERICHRISTI, (from the same). An unguent applied to the eye lids in ophthalmia.

PERICLASIS, (from *περι*, and *κλαω*, to break). A fracture with a considerable wound, wherein the bone is laid bare.

PERICLY'MENUM, (from *περικλυζω*, to roll round). A climbing plant. See CAPRIFOLIUM.

PERICLY'MENUM PARVUM. See IPECACUANHA.

PERICRA'NIUM, (from *περι*, and *κρανιον*, the head). The membrane which immediately invests the bones of the skull, under the hairy scalp, made up of two laminae, closely united. The external lamina parts from the internal at the semicircular plane surrounding the temples, and becomes a very strong aponeurotic or ligamentary expansion, which covers the temporal muscle, and is afterwards fixed in the external angular apophysis of the os frontis, in the posterior edge of the superior apophysis of the os malæ, and in the superior edge of the zygomatic arch, as far as the root of the mastoid apophysis. At this place the aponeurotic coil seems to form the external lamina of the pericranium, and they both communicate with particular aponeurotic expansions of the mastoid, masseter, zygomatic, and other neighbouring muscles.

PERIDESMICA, ISCHU'RIA, (from *περι*, and *δεσμος*, a ligature). A suppression of urine from stricture in the urethra. See ISCHURIA.

PERIDRO'MOS, (from *περι*, and *δρομος*, a course). The extreme circumference of the hairs of the head.

PERIESTECOS, (from *περιεστειναι*, to surround).

An epithet for salutary symptoms, prognosticating the recovery of the patient.

PERI'GRAPHE, (from *περιγραφο*). An inaccurate, circumlocutory description or delineation. See also RECTUS ABDOMINIS.

PERI'GUA. See CASSINE.

PERIN, (from *πηρα*, a bag). See TESTES, PERINÆUM, and ANUS.

PERINÆOCE'LE, (from *perinæum*, and *κελη*, a rupture). A rupture in the perinæum.

PERINÆ'UM, (*περινω*, to flow round; from its moisture,) *interfemineum*, *gressura*, *pechedion*; the space between the anus and the parts of generation; divided into two equal lateral portions by a distinct line, called RAPHE, q. v., longer in males than in females.

In midwifery, when the os externum is so much dilated by the head of the fœtus as to allow of its delivery, the perinæum is generally stretched to the length of three, and sometimes of four inches, so that without care, a laceration would be often the consequence. Instead of stretching back the perinæum with the finger, it should be supported with the palm of the hand, and the head of the child at the same time moderately opposed in its force, that the distention may be made gradually, until sufficiently dilated for delivery. Inflammations and lacerations of the perinæum, if they occasion vomiting, are soon fatal. When this accident happens, the woman should be kept long in bed, with her knees constantly closed, and her bowels should be kept soluble.

The puncture of the perinæum was an operation usually performed in cases of a suppression of urine, which cannot be relieved by gentler methods. The operation was performed by pushing a trochar at the place where the external wound in the old way of cutting for the stone was made, into the cavity of the bladder. At present the water is evacuated by pushing the trochar into the bladder, from a little above the os pubis, or through the rectum. This method of discharging the urine hath succeeded, but when the suppression has been of long continuance, the operation is dangerous; for the bladder, by distention, has lost its tone, and mortification, at least an incontinence of urine, is the usual consequence. See Le Dran's Operations. Sharp's Operations. Sharp's Critical Enquiry. White's Surgery, p. 466. There are also abscesses formed in this part. See ABSCESSUS PERINÆI, and FISTULA IN PERINÆO.

PERINÆA'LIS ISCHU'RIA. See ISCHURIA; the varieties of the fourth species.

PERINENEUCOS, (from *περι*, and *νεω*, to nod). See EPINENEUCOS.

PERI'N PANEL. A bacciferous Indian shrub, the leaves of which are used in fumigations in hysteria. It has yet found no place in the systems of the botanists. See Raii Historia.

PERINY'CTIDES, (from *περι*, and *νυξ*, the night). PUSTULES, or PIMPLES, which break out in the night.

PERIOSTEUM, (from *περι*, about, and *οστειον*, the bone,) *circumossalis*, is that membrane which covers the bone, divided by authors into two layers. The internal or proper periosteum lies close to the bone, and appears furrowed like it. This is a very fine membrane, and appears, on a successful injection, to be extremely vascular, from the ramification of vessels which run to the bone. The external layer is of a white glistening

appearance, composed of the fibrous expansions of membranes, ligaments, and tendons, running in various directions according to the insertion of these tendons. The periosteum is not elastic: Dr. Hunter thinks it is not very sensible; and advises, in amputations, not to scrape it, but only to pass the knife round it, a little above the place where you intend to saw. The periosteum is wanting on those parts of a bone where strong tendons enter, as in the trochanter. Its uses are, to prevent the bad effect of friction on the bones; to protect the vessels running into them; to connect epiphyses; and to give origin to muscles. See *ABSCUSSUS PERIOSTEI* and *INFLAMMATIO*.

PERIPHYMO'SIS. See *PARAPHIMOSIS*.

PERI'PLOCA, (from *περιπλέκω*, to twist round). Italian and French *SCAMMONY*; *scammonia Monspelica rotundioribus foliis, apocinum latifolium; cynanchum monspeliacum* Lin. Sp. Pl. 311. Its concreted juice purges in somewhat larger doses than the scammony of the shops.

PERIPNEUMO'NIA, *PERIPLEUMO'NIA*. *PERIPNEUMONY*, from *περι*, about, and *πνευμων*, the lungs; *pulmonia, pneumonia*. Dr. Cullen defines it a *peripneumonic pneumonia*, attended with a pulse not always hard; sometimes soft; an obtuse pain in the thorax; a constant difficulty of breathing, often not perceived unless in an erect posture; the face swelled, and of a purple colour; most commonly with a moist cough, and often bloody sputum. Of this he makes three divisions. 1. Simple idiopathic peripneumony. 2. Idiopathic peripneumonies, complicated with fever, as the putrid, ardent, and malignant peripneumony. 3. Symptomatic peripneumonies, viz. the arthritic, exanthematic, phthisical, hydrophobic, and rachialgic. Other authors distinguish three kinds of peripneumony: the true, or inflammation in the lungs; the spurious, or when mucus obstructs the vessels of the lungs; the catarrhal, from a thin acrid defluxion on the lungs.

The true peripneumony is produced by cold applied to the skin, mouth or stomach; an over exertion of the lungs; or by any of the general causes of inflammation.

The disease commences with the usual symptoms of fever. The cold fit is violent, succeeded by great heat, head ach, dryness of the tongue and skin, urine of a dark or a yellowish redness, countenance full and of a purple colour. These symptoms occasionally continue for a day or two before any pain in the chest comes on, though sometimes the pain attacks on the first accession of heat. The pulse is at first hard and strong; but in the true peripneumony frequently soft, and apparently labours with a distressing load; at last it is weak, fluttering, irregular, and indistinct. When the pain is felt, a short, dry, distressing cough soon follows, which greatly exasperates it, and continues during the whole complaint; but, on its salutary decline, is freer, easier, and looser. In the beginning of the disease scarcely any sputum is discharged, but a little frothy saliva, followed by a yellow viscid gluten, and at last by a whiter softer matter if the disease proceeds favourably. The pain is occasionally in almost every part of the chest, but usually between the ribs of either side, more frequently, it is said, on the right side than the left. It is increased on laying down, and considerably more so by laying on either side, whether it be the side affected or not. It is singular that this symptom should vary so considera-

bly in different cases; nor could all the anatomical dexterity of Morgagni, or the pathological ingenuity of Dr. Cullen, explain satisfactorily the reason of what is styled the varieties of the *decubitus difficilis*.

The difficulty of breathing is chiefly felt on inspiration, but the expiration is performed frequently by a convulsive effort, and often an obscure sound. The bowels are generally constipated, though in a few instances a diarrhoea attends.

If peripneumony proceeds favourably, the pulse becomes slower and softer; the yellow, tenacious, and often bloody, sputum is mixed with points of a whiter matter, and the proportion of this more salutary expectoration gradually increases with the amendment of every symptom, for the cough is less violent and straining, the breathing freer, the skin more moist, and the tongue cleaner at the edges. If less favourable in its progress, the sputum becomes more dark and viscid, the pulse lower, indistinct, and often intermitting; a wandering low delirium comes on, with subsultus, and the patient dies, apparently suffocated, from the oppressed vessels no longer permitting the expansion of the lungs.

Peripneumony is, in general, confounded with pleurisy; with inflammation of the other contents of the thorax; with rheumatic affections of the muscles of the chest; with catarrh, and asthma. It is, however, an active inflammation, which at once excludes the two latter diseases. The rheumatism in the side is attended with acute pain, but with scarcely any cough, and with a hard pulse, nor is the face full and flushed. True pleurisy resembles, in many respects, peripneumony; but, in general, the face is less flushed, the pulse harder, the cough less violent, and without, at any period, expectoration.

Pleurisy and peripneumony, however, are seldom wholly distinct, and the diagnosis is of less importance, as the remedies are nearly the same. (See *PLEURITIS*.) Where cough exists, whatever be the name of the disease, expectoration must be brought on, if possible. Various other inflammations of the chest, as of the pericardium and diaphragm, are attended with similar symptoms, but the treatment differs so little, that no injury can arise from mistake. It is necessary, however, to remark, that the seat of peripneumony is often changing, that it shifts from one side to the other, to different parts of the same side, and when the lower part of the right lung is inflamed, a similar affection is communicated to the liver, occasioning pain in the right epigastrium, with an expectoration yellow, copious, and frothy. See *HEPATITIS*.

Peripneumony terminates, like other inflammations, in effusion, suppuration, or gangrene. It has, however, a termination peculiar to itself, viz. hæmorrhage in the lungs, from the increased vis a tergo. Effusion is the salutary termination; and when we perceive an apparent resolution by expectoration, some effusion always accompanies it; for after violent peripneumonies, adhesions are often found between the lungs and pleura, or watery effusions take place in different parts of the chest. Suppuration is known, as in other parts, by a remission of the pain and shivers, followed after some time by heat and increased perspiration. Throbbing pain is seldom felt, except when the seat of the disease is just within the intercostal muscles; and in that case a fullness, as well as pain, on pressure, point out very

distinctly the part affected. Gangrene is shown by the sinking pulse, general debility, with a sunk countenance, and the usual placidity, or occasionally with a ghastly stare. The termination by hæmorrhage is sudden; and it is discovered by dissection, since the lungs are found to resemble in substance the liver.

If we perceive, on the fourth or fifth day, the spitting more free, less glutinous, whither, approaching in the distinct clots to a globular form, the disease is evidently remitting. The usual signs of a freer, slower pulse, a white sediment in the urine, and a soft clammy moisture on the surface, are equivocal, without some change in the expectoration; for unless the sputum assumes the salutary appearance, should even the fever remit, suppuration or phthisis are frequent consequences. The suppuration, however, from peripneumony, is very different from that which constitutes consumption, and we have in one or two instances suspected that a salutary termination of the former has checked a beginning hectic. On the other hand, however, inflammation of the lungs often excites a similar state in a previously indolent vomica, and consumption is thus the consequence of peripneumony. It has been doubted whether the salutary effusion may not by absorption, perhaps by the drying power of the air, assume the purulent appearance; because purulent matter is sometimes said to appear independent of any abscess, or indeed of any loss of substance. This induced De Haen to consider pus as a secreted fluid; but though we have admitted that secretion may take place from arteries without any glandular apparatus; yet, on the whole, there is no evidence, at least in this disease, that pus is secreted, or that the dried effusion assumes its semblance. (See Pus.) If pus in peripneumony appears, suppuration has preceded.

A bloody sputum is often alarming, as the forerunner of an hæmorrhage; but such consequences seldom follow: on the contrary, we have often found it a salutary symptom, not differing in its effects from a topical bleeding. A diarrhœa coming on about the fifth or sixth day is often a highly dangerous event, as it prevents the salutary discharge by expectoration, or if the latter has appeared, checks it, without supplying its place. A moist skin, with an improving sputum, is often advantageous; while a dry heat, oppressed breath, with great anxiety, are alarming. To be able to lie low for a little time on either side is favourable; but the prognosis is always peculiarly uncertain, since the disease is so often exasperated unexpectedly, and changes its seat, with a new accession of fever frequently in its course. The cough is often most distressing, which we dare not mitigate, as every remedy for this purpose checks expectoration. We have not, however, found that the most incessant cough is a prognostic of a peculiarly dangerous state of the disease. Delirium is often a dangerous symptom; but we have sometimes seen peripneumony alternating with delirium, and in that case the disease has yielded with little trouble. Favourable signs appearing on the seventh day give a probability of a safe termination, should no metastasis occur; but in no disease is the strictest caution more necessary, since in none are there more unexpected changes, in none is the fatal event frequently so sudden, while our apprehensions are lulled by promising symptoms. If we pass the seventh day without any favourable change the patient seldom recovers. If the

changes are not decisively salutary before the fourteenth, complete recovery cannot be expected.

The remote causes of peripneumony are those of inflammatory fever in general. An inflammatory diathesis, by which we understand increased tone of the arterial system, is usually necessary to give the usual active form of the disease; but we shall find that it may take place when this state is in an inconsiderable degree, or when it is wholly absent. That more topical causes, as straining, obstructions, or any injuries of the lungs, may induce it, appears doubtful. They may perhaps predispose to it, or, on the accession of exciting causes, may render the subsequent complaint more violent. The effect of the causes of inflammatory fever directed to the lungs is the constriction of the extreme vessels, and this, with the increased vis a tergo, as explained in the article INFLAMMATION, q. v. will explain all the symptoms.

Dr. Fordyce, in the second part of his Elements, observes, that nature without assistance sometimes relieves the complaint by an increased secretion of mucus from the lungs, which at first is spit up thin, and with uneasiness, becomes gradually thicker, of a yellowish or greenish cast, and at last white. It is often, he adds, mixed with blood, relieving, and gradually diminishing, the symptoms, so as to remove the disease before the fourteenth day. Peripneumony is sometimes cured by an hæmorrhage, or by an inflammation arising in some other part of the body.

The artificial cure depends on the same principles. Expectoration, we have observed, is the only salutary evacuation, but to procure it, the inflammatory stricture must be first taken off. To these views every part of the curative plan must be directed. Indeed, in true peripneumony nature can seldom relieve without the aid of art; and in those cases in which disease has spontaneously or with little assistance yielded, it has probably been rather catarrhal than peripneumonic. Catarrh, we have seen, consists in an inflammation of the bronchial glands, and if it extends farther into the substance of the lungs becomes peripneumony, though in that case the disease is seldom of the more active, the more acute, kind.

BLEEDING is the only remedy for the former purpose, and it has been often employed with freedom, often with temerity. In the use, however, of this mode of relief, we must anxiously consider the patient's constitution, habits, and situation. The strong and robust; those who have lived full, and been subject to inflammatory diseases; the laborious rustic, who breathes the pure air of a mountainous district; will bear very large and repeated bleedings. In such cases it is often necessary to take from eighteen to twenty-four ounces at once, to repeat the operation after twelve hours, scarcely to a less extent, and again after twenty-four or thirty hours. The limits in these cases are the relief of the pain, some mitigation of the hard pulse and burning heat. We have proceeded even farther with this evacuation in particular circumstances; but when in the constitution we have described, the attack is violent, the discharge of blood must be considerable within a short period, and it should be taken from a large orifice. The appearance of the blood affords us also some criterion for the propriety of the repetition. If the clot is dense, of a buffy surface, contracted round the edges,

resembling in form a cup, the patient will usually bear with ease farther evacuations. The buffy appearance, however, is often seen when the texture of the clot is loose, sometimes even in the blood from scorbutic persons, so that the density must also be examined. A convenient method for this purpose is the pressure of any substance of a given weight, as of a key kept constantly in the pocket.

The evacuation must be more guarded in different circumstances, and, in all, the shades from the extreme case already described to the indolent inhabitant of a crowded town, or the sedentary mechanic, exhausted by labour and poverty, our conduct must be cautiously varied. The practitioner must recollect, that this remedy is designed to obviate the inflammatory diathesis, which is chiefly distinguished by the general firmness and vigour of the whole habit, and by the hardness of the pulse. The former is not always to be certainly ascertained, and the latter is still more equivocal. The resistance formed by the obstruction of the larger vessels will often give a seeming hardness where there is a slight degree only of inflammatory action, and the pulse has been denominated harsh rather than strong. In all doubtful cases, therefore, the greatest care is requisite, particularly in ascertaining distinctly the effects of the first bleeding. If these are doubtful, we should lessen the subsequent evacuation, even should symptoms appear to require it. In these uncertain cases we seem to relieve pain; but the pulse, instead of becoming fuller and softer, is often more contracted, or more weak; the countenance may, indeed, appear less flushed, but it is also sunk; the difficulty of breathing is greater; and the little expectoration which might have appeared is checked. The disputes, whether blood should be taken from the side affected, or the opposite side, chiefly relate to the use of bleeding in PLEURISY, q. v., and we shall notice them under that article.

When we feel doubts respecting the propriety of general bleeding, we may still evacuate blood from the part affected, by means of cupping glasses or leeches. The latter are often preferable, as they do not render the subsequent applications of blisters inconvenient. If the disease is violent, the number of leeches to the side should not be less than eight or ten; but in exhausted constitutions the less number may be more advisable. If cupping glasses are applied, not more than five or six ounces should be taken, as the evacuation is more rapid.

When the increased tone of the arterial system is thus in part removed, it may be farther lessened by *laxatives* and *refrigerants*. Whatever may be the inconvenience of *laxatives* in the advanced stage, they are highly useful in the earlier periods, and in the three first days may be freely employed: the milder saline *laxatives* are preferable. The most useful refrigerant is nitre, which may be combined with the citrat of potash, or determined more certainly to the skin by the addition of camphor, and of antimonial wine, or by a combination with the citrat or acetat of ammonia.

Emetics may be given in the earliest stage; but when the violent obstruction of the vessels of the lungs has taken place, they are doubtful remedies, and the nauseating antimonials are preferable. These, with the refrigerants, are the only safe and most effectual diapho-

retics. Of the antimonials, the Kermes mineral has been preferred, though without any peculiar advantage.

The more violent fever will be, in some degree, lessened by these plans, and the local affection will be alleviated by *blisters*. These have been objected to in the earlier period of the complaint, as danger was apprehended from their stimulus; but there is little foundation for the caution. If bleeding be necessary, it should always be premised; and in the extreme case of highly inflammatory diathesis first mentioned, two bleedings at least are required before the blister will act with advantage. It should then be applied on the part affected; nor, as we have said, are the wounds from leeches any impediment. Should cupping glasses have been applied, a little delay is necessary, before the wounds are closed by an inflammation of their lips. If blisters are applied very early, they sometimes drive the pain to another part, often to the opposite side, and it will be necessary to follow it with another blister, though, if the inflammatory diathesis is violent, bleeding must be repeated.

The cough may be alleviated by oily emulsions, by demulcents, or by inhaling the steam of warm water. Opiates, however, during the whole course of the disease, seem to be injurious; yet De Haen gave, as we have remarked, the tincture of opium, with olive oil; and other authors have occasionally employed this medicine; but, except when a sudden check is necessary for a diarrhoea, we have seldom used it, and even then with disadvantage in other respects. The extract of the white poppy has been given by Dr. Saunders; but this is so slight an opiate as scarcely to militate against the general opinion; and Dr. Hamilton, of Lynn, combined it with calomel, he thought with advantage; but his practice has not become very general. We cannot speak of this combination from our own experience.

The *expectorants* are the chief remedies; and the most effectual of these, in the first days of the disease, are the remedies already recommended for the fever, particularly the camphor, and the nauseating doses of antimonials. When the inflammatory obstruction is in some measure removed, when the expectoration is less glutinous, and assumes a more globular form in the basin, with a whiter colour, a gentle stimulus on the bronchial glands is useful. The gum ammoniac is less irritating than the squills, and it was formerly combined with soap, to render it was said, the sputum whiter. However ridiculous this language may appear, we have suspected that the effect had some foundation, and that with soap the expectorants were more effectual than in any other form. Those who are fond of pursuing analogies may, from the same source, explain the little inconvenience experienced by De Haen from opium when combined with oil. After a day or two the squills may be combined with the gum, and the dose gradually increased.

When every circumstance seems, in this way to be favourable, and every symptom to assume a more salutary appearance, our progress is often checked by two events. The expectoration will sometimes suddenly stop; or a diarrhoea coming on will have the same effect. The expectoration stops occasionally from some irregularity, from the strength having been exhausted by previous bleeding in excess, or without our being able to trace the suppression to any cause. In this

case, breathing the steams of vinegar, the ammonia added to the medicines, increasing the dose of the squills, or a blister to the back part of the neck, will often bring it back. Whatever is attempted must be closely followed, for the danger is imminent; nor is there any great impropriety in adopting, nearly at the same time, each means of relief, provided the doses are not so considerable as to exhaust the excitability. In this situation, also, we are advised to put blisters to the inside of the thighs or legs; and, though it is not easy to explain their effects on any principle but the erroneous system of revulsion, we have thought them serviceable. In reality, when nature is sinking, the obstruction often yields, and the last remedy gains the credit; so that when medicine seems to fail, if we support the patient with good broths, or jellies, interposing, when necessary, a little wine, we shall often succeed. Slight emetics will be frequently of service at this time, and restore the expectoration, whose return was before hopeless: the seneka root seems to have gained reputation from its effects in these emergencies.

A diarrhœa supervening is a more distressing event; and it is not uncommon either from some irregular and erroneous exertion of nature, or from the medicine. It has been usually attributed to the squills, but these will not produce this discharge when most wanted; to the gum ammoniac, which is scarcely in any case laxative; to the oily emulsions, the usual vehicle which contains a proportion of oil inadequate to the effect. Whatever be the cause, the event is equally distressing and dangerous. We have in emergencies interposed opium, but the expectoration is by this means more effectually checked; and if we attempt to restore it by emetics, we incur the risk of their operating on the intestines rather than the stomach. The seneka is liable to the same inconvenience; and the effects of vitriolated zinc and copper are too uncertain, often too violent, to be trusted in such a dangerous situation. Difficulties, so painful we have more lately endeavoured to elude; and by adding the pulvis à creta c. cum opio in the dose of about five grains, often with a drop, or more, of the oil of cinnamon to each draught, we have patiently waited the event. This plan, when a diarrhœa seems to impend, we often had reason to be better satisfied with than the more active opiate. The extract of logwood is an useful addition, and will sometimes alone check the diarrhœa, but cannot alone be trusted.

Through the whole course of the disease warm diluting liquors should be freely given, the room be airy, the curtains open, avoiding equally too great heat, or a current of cold air. An erect position is generally recommended; but sitting up occasions fatigue, and a half erect posture, supported by pillows, is equally advantageous. Bathing the feet and legs is an equivocal remedy, and should not be attempted without the greatest caution. If the water is too warm, the stimulus will be too great; if too cold, it may produce a shiver. Every means of avoiding either should be carefully guarded.

Many slight remedies have been spoken of with high commendation. If such have succeeded, it is fortunate for the patient and the practitioner. We have found, however, peripneumonies so intractable and so dangerous, with every precaution, that we have suspected vio-

lent catarrhs to have been raised into importance under this more formidable title.

See Baroni de Pleuro Peripneumonia; Huxham on Fevers; Stoll Ratio Medendi, 1776, and Aphorismi de Febris; Morgagni de Sedibus et Causis Morborum; Baglivi Opera; Lancisi Opera; Vogel Prælectiones Academicæ; De Haën Ratio Medendi, tom. ix. et xi.; Sarcione Istoria Ragionata de Mali osservati in Napoli, part ii.

PERIPNEUMONIA PUTRIDA. Inflammatory peripneumonies do not merit the appellation of an epidemical disease; for, though frequent about the same time, they seem rather to arise from the severity of the weather than any peculiar miasmata. The putrid peripneumony, on the contrary, proves often a very formidable epidemic, and its nature is that of the typhus, with which the peripneumony is accidentally combined. It is the property indeed of every epidemic fever to assimilate each accidental disease to its own nature.

The putrid forms of inflammatory diseases have not shared the attention of nosologists, because their systems would not always consistently admit them. They claim, however, particular notice, not only on account of the diagnostic, but of the very different and opposite treatment which they require. When lately speaking of measles, we mentioned Dr. Willan's opinion, that the supposed putrid form of the complaint was really a different disease, the scarlatina. We then observed, that though we had not seen such a disease, from analogy its existence was highly probable; and the sheet had scarcely passed the press, when measles, in its least equivocal form, but attended with putrid fever, and every mark of debility, occurred to us. In short, it was exactly such a complaint as we supposed in that article it might be. (See MORBILLI.) The putrid peripneumony we have had occasion to see in four distinct epidemics, and shall now shortly describe.

It begins with coldness, like other peripneumonies; but the cold continues long, without being followed by heat: the depression of strength is perceived very early, and the countenance, though sometimes reddish, is usually sunk. The pain of the side is highly distressing, and the cough almost incessant. The pulse has the semblance of strength, but beats with a stroke less firm and full than in the inflammatory peripneumony, and may be distinguished from the oppressed pulse lately described, by its being soon stopped when pressed. The rest of the scene is soon concluded. Debility hastens rapidly on; the pulse flutters; the countenance becomes truly hippocratic; and life soon ebbs, without our having the power to recall it.

Expectoration scarcely in any instance comes on, for the final scene anticipates the period of its approach; and the vessels, even when the duration of the disease is prolonged, are no longer able to propel it. Every evacuation hastens the event; nor is there often room for the mildest emetic, or the most gentle laxative. The disease is usually fatal on the fourth or fifth day; and if any blood is incautiously drawn, or any laxative has a violent effect, on the third, frequently on bleeding, the patient has sunk in twenty-four hours.

The best remedy is camphor, with the aromatic confectio, and wine in large quantities. After a day or two the bark may be given in doses as large as in the

most putrid fever; nor has it appeared to increase the difficulty of breathing. A gentle salutary moisture on the skin, the diapnoe of Chenot, is the most favourable symptom, together with a return of the natural character of the countenance. Should an evacuation by stool be necessary, a clyster only should be trusted. In fact, every rule in the treatment of the true peripneumony must be abandoned, and the strength by every means be supported.

Dr. Cappel, a pupil of Frank, the great admirer of Brown on the continent, has described an epidemic of this kind which occurred in Dr. Frank's institution, but not so acutely putrid as it has occurred to us. Purgatives were useful in the early state; and where the debility was not very great, we have found them in the very earliest stages salutary, if given with caution. He enumerates also the Kermes mineral, seneka, camphor with calomel, and all the medicines which he could find had been recommended in inflammatory peripneumony as likely to be useful. With no little inconsistency also he prefers the Brunonian doctrines, though Brown speaks only of bleeding and purging as remedies for peripneumony, while bleeding, even with leeches, is pronounced fatal, and purges only admitted in the earliest periods. Such perhaps were the commands of Frank.

Authors generally speak of this disease as an erysipelatous inflammation of the lungs. See Sarcone Istoria Ragionata; Ludwig Adversaria, part i. p. 52.; Huxham de Aere, &c. vol. i. p. 324, 326; Forestus, lib. i.; Obs. 16, 17, in scholio; Huxham, vol. ii. p. 63; Baglivi Appendix de Pleuritide.

PERIPNEUMONIA NO'THA. The SPURIOUS or BASTARD PERIPNEUMONY; *catarrhus suffocativus* of authors, may appear at any time in the year, but it usually approaches early in the spring, particularly after a very sharp winter. This kind of peripneumony resembles the true, but the heat, pain, and thirst, are not so considerable, and the accumulations of mucus in the lungs are more considerable.

This disease is strictly and originally catarrhal, affecting those advanced in years, or who have weakened their constitution by any excesses. It is brought on by cold, and particularly by the north-east winds of early spring. The catarrhal accumulations are not readily thrown off, and the obstruction excites fever and inflammation; but, as may be expected in such constitutions, of a languid, sluggish kind. It is said to be occasionally produced by drying up an old ulcer, or by a dropsical disposition; but it is then apparently confounded with hydrothorax.

Boerhaave observes, that the bastard peripneumony steals upon the patient with a slight weariness, weakness, debility of the intellectual functions, dyspnoea, and an oppression of the breast. The uneasiness it excites is so small, that the heat and fever are scarcely sufficient to make the patient sensible of his disorder: afterwards slight shiverings, returning in paroxysms, and the attacks of a gentle fever suddenly increasing the dyspnoea and debility, bring on death, without any particular change in the pulse or urine. Sydenham, who first distinguished this disorder from the catarrh, gives the following account of its attack and progress. The patient is hot and cold alternately, giddy, complains of an acute pain in the head, when the cough is most

troublesome. He vomits all liquids, sometimes with and at others without coughing; the urine is turbid and intensely red; the blood taken away resembles pleuritic; the patient breathes quick and with difficulty; if advised to cough, his head aches, as if it would burst; a pain is felt in the whole breast; and a wheezing is observed by the attendants whenever the patient coughs. To this may be added that the patient's cheeks and eyes often appear slightly inflamed, the pulse is small, often intermitting. Lying low, or on one side, is peculiarly painful.

If the strength does not return after the disease is removed, the pulse continues quick and weak, breathing difficult and oppressed, with at times shivers, followed by flushing in the cheeks: if the lips are dry, and the appetite defective, the patient soon sinks with suffocation.

The disease is therefore in every view catarrhal, and peripneumonic only from obstruction or accidental cold. Its most frequent termination is in hydrothorax, and, indeed, in the description of every author symptoms of hydrothorax are occasionally mixed. It is undoubtedly difficult to avoid confounding diseases similar in their symptoms, and rapidly changing, to each other; nor is it of consequence, since the treatment differs so slightly. The very inconsiderable degree of inflammation which occurs in peripneumonia notha requires no very peculiar conduct. It arises from accumulation of mucus, and is relieved by lessening the load.

The indications of cure will be to expel the accumulated mucus, and to strengthen the habit in general. The warmer expectorants, with those which gently stimulate the bronchial glands, are the principal remedies. The former are the balsam of Peru, and the different turpentine; the latter the gum ammoniac and the squills. Perpetual blisters to the breast are often essentially serviceable, and issues or blisters on the legs or thighs have been recommended, though it is not easy to ascertain the principle on which they act, or, indeed, whether they are really advantageous.

If the cough is violent, opiates may be given as soon as expectoration is tolerably free; a mixture of the pil. ex opio and pil. ex aloe cum myrrhâ may be safely given in such doses as circumstances may require. To keep the bowels lax is essentially necessary, and in giving the opiate we must never interfere with the discharges by stool.

The tetradynamiaë are very useful as stimulant expectorants, and the mustard whey is a common as well as a salutary drink. The seneka is often too violent in its operation, but in moderate doses may be useful, for active emetics are often injurious. Warm weather or a warm climate are often useful auxiliaries.

The strength is restored by the warm balsams, with the purer bitters; by chalybeate waters; moderate and constant exercise; by a strict attention to diet, which should be generous, without being too rich or flatulent; and by a steady moderate discharge from the bowels. For this purpose the warmer laxatives, in the form of tincture, are useful, and none are more so than the tinctures of rhubarb, senna, and jalap, in equal proportions.

When the disease is apparently combined with hydrothorax, or, in other words, when the mucus or water is in the cells of the lungs, the active expectorants and

diuretics must be joined with brisker purgatives. The squill and the gum ammoniac are the chief remedies in these circumstances, and they may be conveniently combined with a proper proportion of the extract of jalap.

See Sydenham's Works, part i.; Huxham, vol. i. p. 163: Grimm on the Epidemics of Eisenach; Boerhaave's Aphorisms, with Van Swieten's Commentary.

PERIPYEMA, (from *περι*, and *πυρ*, *pus*). A collection of matter surrounding any part.

PERIRRHOEA, (from *περίρρεω*, to flow from every part). A copious flow of humours from every part.

PERIRRHOE'XIS, (from *περι*, and *ῥήγνυμι*, to break). See HEMOPTYSIS.

PERISCEPASTRUM, (*περι*, and *cepastrum*, a wild onion; from its encircling the head in successive folds like the coats of that bulbous root). See FASCIA.

PERISCYPHISMUS, (from *περι*, and *κυφος*, *gibbous*). An incision made across the forehead, or from one temple to the other, over the coronary suture; formerly used in considerable inflammations of the eyes. The lips of this wound were kept asunder with lint; and when the disorder abated, the denuded bone was rasped, and the wound healed. P. Ægineta, lib. vi. c. 7.

PERISTALTICUS, (from *περιστῆλλω*, to contract). The vermicular motion by which the intestines protrude their contents.

This motion is not apparently downwards, but the contained matter is moved backwards and forwards, though, on the whole, the tendency is to the inferior portion of the intestine. This kind of motion is evidently designed to expose the alimentary mass more completely to the mouths of the lymphatics. In the large intestines, where the hardened mass is moved with greater difficulty, the contractions are stronger in consequence of the fixed points which the plaits of the intestine afford, and the contracted portion forms a valve to prevent regurgitation.

PERISTAPHYLINUS EXTERNUS, (from *περι*, and *σταφυλη*, *uvula*). See CIRCUMFLEXUS PALATI.

PERISTAPHYLINI INTERNI. See PETRO-SALPINGO-STAPHYLINI.

PERISTAPHYLO-PHARYNGÆI, (from *περι*, *σταφυλη*, and *φαρυγξ*). Two small muscles inserted between the uvula, and lower extremity of the internal ala of the apophysis pterigoidæus, and running obliquely backward on the sides of the pharynx. They are difficult to find in very lean subjects, and seem to be what Santorini calls *hypero-pharyngæi*, or *palato-pharyngæi*.

PERISTERIUM, (from *περιστῆρες*, a pigeon, because pigeons are fond of it). See VERBENA.

PERISTROMA, (from *περιστρίνω*, to strew about). See INTESTINA.

PERISTO'LE, (from *περιστῆλλω*, to compress). The interval of rest betwixt the systole and diastole of the heart.

PERITERION, (from *περι*, and *τηρῶ*, to preserve). See TREPANUM.

PERITOMATICOS, (from *περιτῶμα*, an excrement). See APERITTOS.

PERITONÆORE'XIS, (from *περιτοναϊον*, the peritonæum, and *ῥήσσω*, to break). A bursting of the peritonæum, and consequent hernia.

PERITONÆUM, (from *περιτείνω*, to extend round). This membrane, which lines the belly, and invests all

the viscera contained in it, is of a close texture, though very pliable, capable of great extension, and so elastic as again to recover its ordinary size, as appears in pregnancy, &c. It is connected to all the circumambient parts by a cellular membrane, generally called the *external lamella of the peritonæum*, which forms what are styled the *processes of the peritonæum*. The peritonæum, nevertheless, hath productions peculiarly its own, which run from without inwards, and cover externally the contained parts. (See ABDOMEN.) The cavity of the peritonæum is the receptacle of effused water in ASCITES, q. v.

PERITONITIS, (from *peritonæum*). INFLAMMATION OF THE PERITONÆUM, including the mesentery and omentum, inflammatio mesenterii. Dr. Cullen defines it to be a fever, with pain in the belly, increased when the body is erect, but without the proper signs of abdominal inflammations; and places this disease in the class *pyrexia* and order *phlegmasia*. The species are: 1. *Peritonitis typhosa*; 2. *Peritonitis omentalis*, *omentitis*, or *epiphloitis*; 3. *Peritonitis mesenterica*. See INFLAMMATIO MESENTERII, and PUERPERALIS FEBRIS.

The general directions for the cure of peritonitis are the same with those of ENTERITIS, q. v. But it is necessary as we have already observed, to distinguish them, since stools, though necessary, are not equally essential, and the application of a blister is more so. Opiates also may be given more freely, and, with the addition of the ipecacuanha to determine to the skin, they are often highly useful. The deeper seated species, as they are more difficultly distinguished, cannot be opposed by any particular plans. They must be in general treated as enteritis.

PERLE. See ALBUGO OCULORUM.

PERLÆ, (Ital. and Span.; *perl*, Welsh; *perlea*, Germ.). See MARGARITÆ.

PERNIO, (from *πῆμα*, the heel,) *chimetlon*, *erithema à frigore*, *bessamen*, *bugantia*; a variety of phlogosis erythema, in Dr. Cullen's system; KIBE or CHILBLAIN: this disorder attacks the hands, feet, heels, ears, nose, and lips, usually of children, and those of a sanguine habit and a delicate complexion. It arises from severe and continued cold, or from heat too suddenly applied after it.

The parts affected are inflated, and afterwards heat, redness, pain, and itching come on; small blisters are formed, which soon burst, leaving a slight excoriation, which at length becomes a deep and obstinate ulcer, discharging a sharp sanious matter; in the worst degree degenerating into a gangrene.

Its immediate cause is a diminution of the excitability of the extreme vessels, and the erysipelatous appearance of the earliest period is only the first stage of gangrene. It seems chiefly to occur to children whose vessels are full; and, in many instances it has appeared to be an inflammatory deposition, which it has been injurious to repel hastily. If it be a deposition, the nature of the complaint will be easily known by the fulness of the habit, and the relief of some general indisposition; and in that case laxatives, alteratives, and a simpler diet, will be necessary.

If from cold, the constitution should be gradually strengthened by the cold bath, bathing the feet and legs frequently in cold water; avoiding too much heat, when the feet are cold, and particularly warming the

feet when without shoes. It may be for a time prevented by warm socks, &c.; but these only render the person more subject to the complaint when they are neglected.

When a cough, or other circumstances, forbid the application of cold to the extremities, the best substitute is, to wear dog skin socks, or gloves, day and night, until the inflammation is removed. Linnæus recommends bathing the part with diluted marine acid; and the following embrocation is often an efficacious remedy. R. aceti, sp. vini tenuioris aa 3 vi. aluminis 3 ij. m. In greater degrees, when the part is frost-bitten, the treatment must be the same as directed in the article CONGELATUS.

Oil of turpentine, camphorated spirit of wine, camphorated oil, and volatile liniment, are often useful applications; and electricity has been employed, it is said, with success. In Scotland the fungous ulcerations which sometimes ensue, are destroyed with a hot iron; and in other places, alum beat up with the white of an egg is applied with advantage.

Vapours are sometimes more effectual than baths, and the vapours from vinegar are the best; but cold and astringent applications should follow, as these applications relax the vessels of the part. When ulcerated, the steams of vinegar and a warm digestive should be applied to the sore.

See Heister's Surgery; M. A. Severini Dissertatio de Pernionibus in Libro de Abscessibus; Tissot's Advice to the People; Bell's Surgery, vol. v. p. 440; Pearson's Principles of Surgery, vol. i. p. 142; White's Surgery, p. 22.

PERONÆA ARTERIA, (from *perone fibula*), is the smaller division of the posterior tibialis, passing down behind the fibula, between the soleus and the flexor pollicis. It then crosses the interosseous ligament, and about the upper and back part of the os calcis forms an arch with the tibialis posterior.

PERONÆUS BREVIS, (from the same,) *peronæus anticus* of Douglass, and *medicus* or *anticus* of Winslow; a muscle covered in part by the peronæus anticus. It rises from the outer part of the fibula, its fleshy fibres continuing to adhere to that bone, lies in a groove in the malleolus externus, and is inserted in the basis of the last metatarsal bone of the little toe.

PERONÆUS LONGUS; *primus* or *posticus* of Douglass, rises from the external lateral parts of the head of the tibia, and from the anterior outer surface of the fibula; its tendon is turned back under the tarsus, bound down by an annular ligament with the brevis, passing over the os cuboides, at which place it hath a sesamoid bone, and runs across the sole of the foot to be inserted into the basis of the first metatarsal bone, being an abductor. Near the insertion of this muscle there is a small bursa mucosa.

PERONÆUS SECUNDUS, *semifibularis*, rises about the middle of the outer part of the fibula, and, as it runs under the malleolus externus, becomes tendinous, and is inserted with the tendon of the peronæus brevis into the metatarsal bone of the little toe.

PERONÆUS TERTIUS, *nonus Vesalii*, is situated at the anterior inferior side of the lower part of the leg, closely connected with the outer edge of the peronæus longus. Its tendon passes under the annular ligament, and running obliquely outward, is inserted into the

metatarsal bone of the little toe. It is by late authors considered as a portion of the extensor longus digitorum pedis.

PERONÆA VE'NA is one of the divisions of the poplitea; and runs nearly the same course with the artery of the same name.

PERONE, (from *πείνω*, to fasten; because it fastens the tibia and muscles together.) See FIBULA.

PERONE'US BRE'VIS, (from *perone*; see above). See EXTENSOR DIGITORUM LONGUS.

PERSEA, (from *Persia*, whence it was brought). See MALA ARMENIACA.

PERSICA, (from *Persia*, *Rhodacinea*, from *Rhodes*). The PEACH TREE; its kernel is called *machærna*; the fruit *malus Persica*, *amygdalus Persica* Lin. Sp. Pl. 676. The fruit is spongy, cold, and watery, but not unwholesome, except in weak flatulent stomachs. The leaves are a narcotic bitter, and perhaps nearly as deleterious as the laurel leaves. These, as well as the flowers, are given as a vermifuge, sometimes with success. Half an ounce of the recent flowers, or one quarter of this quantity, when dry, is considered in infusion as the proper dose.

PERSICA'RIA U'RENS, (from *persica*, as its blossoms resemble those of the peach,) *hydropiper*, CULRAGE, LAKE WEED, WATER PEPPER, BITING ARSMART, *polygonum hydropiper* Lin. Sp. Pl. 517: is an annual, aquatic plant, with oblong uncut leaves, pointed at both ends, and with imperfect flowers set in spikes on the tops of the stalks. The cup is thick and fleshy, divided into five oval segments, which closing, form a cover to an angular glossy seed. The leaves have a burning taste, nearly allied to the arum; but their acrimony is dissipated or destroyed in distillation. They are said to be antiseptic, diuretic, and aperient; but are not used in the present practice. See Raii Historia.

PERSICA'RIA MACULA'TA. DEAD OR SPOTTED ARSMART; *persicaria mitis*, *polygonum persicaria* Lin. Sp. Pl. 518; grows also in wet grounds, and is said to be antiseptic, but is not in use as a medicine. See Raii Historia.

PERSICA'RIA SILIQUO'SA; *balsamina lutea*, *noli me tangere*, *impatiens herba*, *mercurialis sylvestris*; QUICK IN HAND, TOUCH ME NOT; is not a species of persicaria, but of the *impatiens*. It is the *impatiens noli me tangere* Lin. Sp. Pl. 1329; and is said to be a forcible diuretic, but is never used. See Raii Historia.

PE'RSICON, (from *Persia*). See JUGLANS.

PE'RSICUM BALSAMUM. See BENZOINUM.

PE'RSICUS I'GNIS. See CARBUNCULUS.

PERSI'STENS FE'BRIS, (from *persisto*, to persevere). A REGULAR INTERMITTING FEVER.

PERSONA'TA, (from *persona*, a mask, because, on the Roman stage, the leaves were used as a mask. Pliny). See BARDANA MAJOR, and BARDANA ARCTICUM.

PERSONATÆ, (from *persona*, a mask). One of the natural orders of Linnæus' Fragments, distinguished by an irregular ringent corolla. The greater number of genera agree with those plants which have two stamina longer than the others, and seeds in a silique.

PERSPIRA'TIO, (from *perspiro*, to breathe through). PERSPIRATION, *transpiratio*, *anapneusis*, *discussio*, *diaphoresis*, *diapnoe*, *difflatio*. The importance of this evacuation from the skin is very generally understood and

acknowledged. Cheerfulness and hilarity accompany its free discharge, languor and distress its suppression. We anticipated this subject under the article *DIAPHORETICA*, q. v., where we noticed the different forms in which the perspirable matter is discharged, as well as the sources from which it is produced. We there distinguished the halitus that forms the salutary, insensible perspiration thrown off probably in a gaseous form, from that more sensible discharge whose form is seemingly a vesicular vapour; and again from a decidedly fluid sweat. The two former are from the same sources, either exhalent arteries or cuticular follicles; the latter more probably from exhalent arteries, as it is apparently serum unchanged, and as the skin sometimes feels harsh and hard, though bathed in sweat. Perspiration also, in the two former states, is attended with cheerfulness and serenity; sweat, even when it relieves pain, leaves the patient languid and oppressed. It is not an objection to this opinion that anatomy has not discovered any glandular apparatus under the skin for either evacuation, since it is evident that the extreme vessels can alone separate, perhaps form, peculiar fluids; and there is not a greater difference between the rarest halitus and the most fluid sweat, than between the mild mucus of the Schneiderian membrane, and the acrid discharge, when this membrane is inflamed by a catarrh, or between the tears in the natural state, and the burning streams which flow from the eye in ophthalmia.

From the consequences of perspiration in excess or defect, it is evident that the state of the extreme vessels is intimately connected with that of the stomach and the brain; nor does the commonest observation require any aid to explain fully the changes in the functions of the latter, when in the access of fever perspiration is retained either by a spasm or a quiescence of the capillaries. Various other appearances show a similar connection with different parts of the nervous system. When a catheter or a bougie, for instance, is introduced into the urethra, a shivering is often induced, sometimes so great as to excite a hot fit, and a single paroxysm of fever. A dislocated ankle, Van Helmont informs us, produced in himself a shivering. Violent pain, a harsh sound, terror, and many purely mental affections, will have a similar effect; so that it was not inaptly said, that, like some insects, we live on the surface almost exclusively.

The perspiration, when fluid, contains a large proportion of water, some gluten, and a small quantity of muriated ammonia. When in the form of air, its chief ingredient is carbonic acid gas, sometimes azotic gas. It is highly probable that the nature, at least the proportions, of each vary in different constitutions, and in different circumstances; but experiment has not pointed out what these are, nor indeed are physiologists perfectly agreed which is the most common discharge. Azote, we have reason to believe, is taken in with the air in respiration; so that it is scarcely probable it should be discharged by an organ similar in its office to the lungs. The proportion of carbone in the system is constantly decreasing in the process of animalization, and therefore it is the more excrementitious fluid. It will not also have escaped the reader, that the difficulty we felt in tracing the changes of the diet in its assimilation, were those chiefly connected with the proportion of azote in the animal fluids.

We hinted in the article *MEDICINA STATICA*, that during the reign of the mechanical physiology, the state of health was measured by the weight; and if the egesta were equal to the ingesta, all was supposed to be well. When the balance turned, showing that the former were supplied, the morsel raised on the fork was rejected. In this inquiry, it was found that of eight pounds of aliment, five passed off insensibly; for the excrementitious matters amounted only to three. It appears, however, by subsequent experiments, that the smallest proportion of the quantity lost is discharged by the skin, and, from calculation, the surface of the lungs greatly exceeds that of the body, so that its perspiration, from this view also, is probably more considerable; and in colder climates than those of Italy, where Sanctorio's experiments were made, the quantity passing off by the lungs is probably far greater than the calculation. Is it that the skin is chiefly destined to convey the halitus, and the lungs the watery fluid? This is not very probable, since carbonic acid is discharged from the latter; nor is there more probability in the supposition, that azotic gas is separated exclusively by the skin.

Perspiration may either be in excess, defective, or altered in its qualities. Perspiration in excess is often partial in the feet and the axillæ; and the fetid odour, as well as the inconveniences from the suppression, shows that the quality is also altered. It is apparently in excess also in hectic; but as for a great portion of the twenty-four hours it is retained, there is some doubt whether it may be, on the whole, too great, and whether the debility may not arise from the loss of the gluten, combined with the perspiration when in a fluid form. In the *sudor anglicus* it seemed to sink the patient from the excess of the discharge, perhaps combined with the sedative nature of its cause. In weak states of the system the perspiration is usually too great, and the debility is increased by its excess. Wearing flannel next the skin occasions also, in warm weather, too copious an evacuation: it was formerly supposed that the too frequent change of linen was injurious in the same way. The means of obviating this excess is to remove its cause when known; to strengthen the system, particularly by cold air and the cold bath, except in cases of hectic. In the partial sweats, however, every astringent should be carefully avoided: the offensive smell may be lessened by the strictest attention to cleanliness; but to stop the discharge would be often fatal, always dangerous.

Excess and defect of perspiration are, in many persons, habitual, so that unless they produce disease, they never require any attention; and we have already shown that, in consequence of the balance of the secretions, neither viscosity nor tenuity of the fluids can arise from either. The latter is distinguished by a dry chapped skin, and by scaly eruptions, often leprous. It is induced, occasionally, by the drying powers of the harmattan; and in some peculiar occupations, as in dyeing, where the astringency of the dyes produce it topically in the hands; and in millers, as the hygrometric affinity of meal is so considerable, as often to split the planks of mill houses. In these circumstances the disease is scarcely produced till the skin is hardened, for the perspiration is not originally defective, but too hastily carried off. When it is established, little real inconvenience seems to result,

for the excess of fluids is carried off by other organs; and as the change is gradual, and the state of the vessels unaltered, no disease is the consequence.

The altered quality of the perspiration is a subject which requires greater attention than it has received. We find from the peculiar smells of small pox, miliaria, pellagra, and many other diseases, that some alteration has taken place; but its nature is unknown. In cancer, for in such cases the perspiration also is tainted, it seems to be the hepatised ammonia; in gout, the phosphoric acid. The nature of the odour of excessive partial perspirations in the feet, axillæ, &c. has not been ascertained. If it were more purely alliaceous, we should suppose it to be phosphoric, without such a proportion of oxygen as gave it acidity; but it is rather hircine, whose peculiar nature we cannot understand. But as all hircine odours show a sedative and deleterious power, this will sufficiently point out the necessity of assisting its discharge.

PERTURBATIO A'LVI, (from *perturbo*, to disturb much). See **DIARRHŒA**.

PERTUSSIS, (from *per*, and *tussis*, a cough,) *tussis ferina*, *convulsiva*, *rheumatica*, a KINK COUGH, HOOPING or CONVULSIVE COUGH; is an epidemic, contagious, spasmodic disease, resembling often an intermittent in the regular return of the fits, and recurring often in the returning spring. See Huxham de Aëre, &c.; Morb. Epid. p. 76, 77.

The whooping cough usually begins with hoarseness, a cough of the common kind, with sometimes a slight fever. This cough becomes by degrees more harsh, and on inspiration a ringing sound is occasionally perceived; at first perhaps once only in two or three days, then more frequently, till it attends every fit. Previous, however, to this sonorous inspiration, the cough will appear peculiar in its violence, and by the convulsive rapidity of the inspirations threatening suffocation. In many cases these convulsive efforts alone mark the disease, for the whooping never occurs. The violence of the cough frequently brings on vomiting, which terminates the fit, and is a favourable sign. The fits frequently occur irregularly, and are often numerous in a day and night. It is almost constantly observable that, within two or three minutes after a violent fit, a slighter will occur: a circumstance which points out the nature of the disease at a very early period.

The duration of the complaint is various; and it often recurs with violence, after it has appeared to remit, and almost to vanish. This is sometimes owing to taking cold; but occasionally happens without any assignable cause. The general health of the children is often unimpaired; and they will rise from their knees, where they usually throw themselves on the approach of a fit, and with a face of a dark purple from the straining, the eyes staring from their sockets, return with unimpaired spirits to their play. After a violent fit also, terminated by vomiting, they will eat greedily and voraciously. Some uneasy sensation precedes the paroxysm, which occasions crying in infants; and the elder children, as we have said, often fall on their knees at a chair. Though we speak of children, persons of every age are affected; but in adults it is usually slight.

After a short time, the whooping cough is attended with expectoration, frequently tinged with blood, which

infants often swallow, and even children do not always fairly expectorate. This produces a diarrhœa, or renders occasional laxatives necessary. The disease affects children only once in their lives; and should there be exceptions to this position, we believe they are equally rare with a recurrence of small pox. It is generally epidemic, and certainly contagious, though not highly so. Pertussis is not in itself dangerous, but it sometimes becomes so in infants by the debility it occasions, and in the more adult state by inducing peripneumony and hectic. In very weak children a fit has been fatal, apparently by occasioning a rupture of a vessel in the brain, sometimes by producing suffocation.

Whooping cough has been supposed to arise from acrimony in the stomach, on the diaphragm, or in the mucous follicles of the lungs. No satisfactory argument in support of either cause has, however, been adduced. It is apparently a spasm, purely nervous, from a miasma conveyed by the air, whose effects continue till the constitution is habituated to its stimulus, and again return, from any cause which increases irritability. The discharge of mucus is apparently not critical, but the glands are emulged by the violence of the cough, and the expectoration, at least, contributes to relieve the over distended vessels.

This disease is not subdued by medicine: it will run its course, in spite of every effort. Medicine is not, however, useless; and we shall point out the foundation of our most salutary exertions.

We have said that the chief source of danger is from accumulation and inflammation of the lungs. In the robust and plethoric, therefore, bleeding is sometimes necessary, and a perpetual blister to the side or back is often useful in this view. Expectoration should be encouraged with the same intentions, and this renders frequent emetics very advantageous. In infants, for reasons already stated, occasional laxatives are also necessary.

Opiates may be given safely in moderate doses, but it is necessary to prevent their constipating effect by interposing laxatives. The tinctura opii camphorata is a safe and useful medicine.

Various antispasmodics have been at different times employed. The hemlock proposed by Dr. Butter has not succeeded in other hands; and the castor, combined with bark, in the proportion of one part to two, recommended by Dr. Morris, is scarcely more effectual. The asafœtida, spoken of with confidence, often fails; and the tincture of bark, with opium and tincture of cantharides, has been given for a long period with little success. The proportions are, ten parts of tincture of bark, four of elixir paregoric, and one of the tincture of cantharides, given by tea spoonfuls. The white vitriol seems a more powerful medicine; and as it often excites vomiting, may perhaps be useful: it is apparently the active ingredient in a celebrated quack medicine, the *anti-pertussis*. The *Moschus Artificialis*, q. v. has been lately recommended, but has not been very successful. The arsenic has not, we believe, been tried. External applications have been numerous. In Poland, where the disease is endemic, oil of amber, with the aqua ammoniæ, sometimes diluted, is rubbed in on the spine. The old women of this country improve on the plan by rubbing it on the spine, the palms of the hands, and the soles of the feet, three times for three nights

successively. Garlic is also sometimes rubbed on the spine and sides, sometimes applied in the form of cataplasms to the feet. Change of air is highly commended; and repeated changes are sometimes apparently useful. We have thought the more high elevated situations less useful, and the lower damp ones more serviceable; but in the whole of the practice there is great uncertainty. Whatever determines to the surface is useful, so that exercise and cheerful society are often salutary. In some instances the sea air, and keeping the feet wet with sea water, has been apparently beneficial.

Dr. Cullen places this disorder among the spasmi, defining it a contagious disease, attended with a convulsive strangulating cough, and sonorous, reiterated inspiration, often with vomiting.

In general, however, numerous medicines have, as usual, gained the credit due to nature. The disease will run its course, and at last disappear; and the last medicine, consequently, gains the credit. We may mitigate the effects, but we cannot cure.

See Sydenham's Works; Huxham de Aëre et Morbis Epidemicis, p. 76, 77; London Medical Observations and Inquiries, vol. iii. p. 281—286, 319—325; a Treatise on Kink cough, by W. Butter, M. D.; Dr. Cullen's First Lines, vol. iii. edit. 4; London Medical Journal, vol. ii. p. 398.

PERUANUS CORTEX, (from *Peru*, the place of its origin). See CORTEX PERUVIANUS.

PERUVIANUM BALSAMUM, (from the same).

BALSAM OF PERU; *hoitziloxitl* of Hernandez; *Mexican balsam*; *Indicum* and *Americanum balsamum*; *cabureiba* of Piso; *myroxylon peruvianum* Lin. Sp. Pl.; Willdenow, vol. ii. p. 546. There are three kinds of this balsam; viz. the pale yellow, the balsam of incision, which is the best, but very rare, and of the consistence of honey. The shell balsam, the yellow sort inspissated by the sun's heat in gourd shells, in which it is sometimes brought to Europe, of a reddish colour, a very agreeable smell, and semi-transparent. The common or black Peruvian balsam is the kind we usually receive. It is extracted from the bark, branches, and leaves of the tree, by boiling in water; in consistence resembling honey, of a dark black colour in the mass; but, in small portions, of a clear reddish or yellowish brown, an agreeable smell, approaching that of a mixture of benjamin and storax, and of a bitterish pungent taste; easily inflammable, not in the least miscible with water.

Distilled in a retort with an open fire, it yields a butter like that of benzoin, and sometimes a considerable quantity of concrete saline flowers similar to those from the same resin. If this balsam is rubbed with sugar, the white of an egg, or with the mucilage of gum-arabic, it is suspended in water in the form of an emulsion.

It is applied to wounds in nervous and tendinous parts; strengthens the stomach; is an useful expectorant in cases where the circulation through the bronchial glands is languid; consequently of service in peripneumonia notha, in asthmas, and, if the dose be moderate, in those cases of hectic where the expectoration is diminished from a want of irritability.

As a tonic it is useful in suppressed or asthenic gout; and according to Sydenham in the colic of Poitou: a

tincture of it in spirit of wine is warmly recommended by Hoffman.

It has been recommended as an antispasmodic; but has no claim to extraordinary powers in this respect. It is sometimes adulterated with turpentine, a fraud not highly injurious, as the latter is an useful medicine for the same complaints.

See Tournefort, and Lewis's *Materia Medica*; Neumann's *Chemical Works*.

PERVER'SIO UTERI, (from *perverto*, to turn over). See PROCIDENTIA UTERI.

PERVIGILUM, (from *pervigilo*,) *Agrypnia*; a WANT OF SLEEP; a symptom very common in fevers, and always a bad presage. Sleeping with the eye lids half closed is equally dangerous, as it shows considerable insensibility. When the watchfulness is intense, it shows that a considerable irritation exists in the brain; often owing to increased circulation through its vessels, but sometimes purely nervous from excess of excitement.

PERVINCA MAJOR, (from *pervincio*, to tie together; because its roots were used as cords.) See VINCA PERVINCA.

PES. The FOOT is divided into the tarsus, metatarsus, and toes. The tarsus consists of seven bones, viz. the astragalus, whose upper head is received into the cavity of the tibia; the calcaneum, or bone of the heel: the naviculare, or naviforme; the cuboides, the external of the anterior bones; the cuneiforme externum; the cuneiforme medium; and the cuneiforme internum. These bones being convex above, and concave below, make the tread more secure, and from their number the shock is broke in jumping. A caries in those parts is dangerous on account of their spongy substance, size, and number. The sole of the foot is called *peza*, *thenar*, *pedion*, or *felma*, a term applicable also to a sock.

Children's feet are sometimes distorted at their birth, or turned into a bad position. This often arises from a faulty position of the child in utero, and consists only in distortion, which may be easily remedied by bringing the diseased foot as near as possible to a natural position; then, with a bandage dipped in flour and the white of an egg, confining it by rolling from near the knee to the toe. When the egg has coagulated it will preserve the position. The bandage should be changed every fortnight.

Other methods of curing this imperfection have been, to bring the foot into a natural position, and confine it by leg irons of different constructions; confining the foot in a natural position in boxes of tin or copper; binding them in strong leather boots; or by a more complicated apparatus, after confining them in metal shoes, to turn out the toes by a wheel, which is fixed by a ratchet. Either method may succeed where the foot can be easily reduced to its proper situation, but if the bones are defective or the distortion is considerable, each is useless.

A deficiency of some bone often occasions the disease, and in that case these methods will not remove the complaint; but they will assist in reducing the position of the foot, and nature will accommodate the other parts, so that no inconvenience will remain but a slight limp, unless the deficiency be considerable. This, however, rarely happens.

The inconveniences of all these plans are, that if sufficient room for loco-motion is not given, the joint becomes stiff: if there be, the support is not sufficient. Mr. Sheldrake has ingeniously contrived to lessen these inconveniences by substituting a spring for the acting power; which is so contrived, that when the limb is moved the spring is excited to stronger action. This undoubtedly is a very ingenious idea, and the plan has often succeeded. It should, however, be attempted early, for after the child has begun to walk, the cure is more difficult.

PES ANSERI'NUS. See CHENOPodium.

PES ASINI'NUS. See ALIARIA.

PES CA'PRÆ LUSITA'NICÆ. See BINTAMBURU ZEYLAN.

PES CA'TI. See GNAPHALIUM.

PES COLUBI'NUS. See GERANIUM COLUBINUM.

PES LEO'NIS. See ALCHEMILLA.

PES LEPORI'NUS. See LAGOPUS.

PES VI'TULLI. See ANUM.

PESSA'RIMUM, (from *πῆσσω*, to soften). A PESSARY; *balanos*, and *balanocastanum*, from its original shape resembling an acorn. Among other external remedies used by Hippocrates were pessaries, introduced into the vagina; and they were much used amongst the ancients, formed of different ingredients, according as the diseases which required them. P. *Ægineta*, vii. 24. At present their use is chiefly confined to the support of the uterus, when it falls into the vagina. They are useful to women, also, who labour under an incontinence of urine from that cause. Sponges of such a size as, when expanded, fill up the cavity of the vagina, are very good pessaries; and they may be dipped in any liquor that will assist the intention of using them. They support the uterus; and, by a string, the woman can remove and again apply them herself.

Commodious pessaries are described in Heister's Surgery, in the article *Procidencia Uteri*. Dr. Simpson described one, which he invented, in the *Edinburgh Medical Essays*, vol. iii. p. 313.

Some authors suspect that pessaries, by the pain and irritation they occasion, may produce leucorrhœa. It is evident that pessaries only prevent the descent of the womb, by obstructing the passage; and while a part is continually distended, it never can be strengthened by the power of art or nature. If the pessary is introduced too small, it will soon be forced away by the first fit of coughing or straining, and if too large may bring on the *fluor albus*. It generally is painful, and often injurious; so that, except where the irritation it produces is inconsiderable, and the woman obliged to exert her strength, it should be avoided.

Pessaries sometimes produce violent inflammations; and instances have occurred of their passing into the rectum by the inflammation and suppuration excited. In some persons, however, they are worn without irritation; and the simplest, which are rings of cork or ivory, are the best.

PESSOLA'TÆ. See MORPIONES.

PESTILENTIA'LIS, (from *pestilentia*, pestilence). A high degree of malignity in a fever, and hence generally applied to the plague.

PE'STIS, (from the Hebrew term *pasat*, to despoil). The PLAGUE. Dr. Cullen places this disease among the exanthemata, defining it a typhus, very highly con-

tagious, attended with extreme debility, adding that contentions have arisen among physicians concerning the character of the plague, which are easily cleared, so that the characteristic signs which occur in every case of the plague may be assigned with perspicuity: it, therefore, will be sufficient to give such as happen in the greater number. It is chiefly varied by its degrees of violence; hence the *pestis benigna, vulgaris, Ægyptiaca*, &c.

The plague is the most violent, rapid, and suddenly fatal degree of putrid or asthenic fever. In the beginning it is sometimes attended with inflammatory symptoms, particularly in the higher latitudes, but it speedily becomes very highly putrid. Whatever be the nature of its miasmata, the effects are immediately to diminish, and, according to the degree of its power, to extinguish, the vital power, dissolving the texture of the blood, from whence arise the purple spots.

The plague approaches with a chilliness and shivering, often with coldness only, which continues for a long time; soon after, a violent vomiting, a painful oppression of the breast, and a burning heat, particularly in the internal parts, come on, which continue till death changes the scene, or till the eruption of a bubo or a parotis appears to relieve. Sometimes the disease is mortal before the signs of fever approach; the broad purple spots, which denote the highest degree of malignity, coming out even while the person is engaged in business: these spots recede and return before death's approach. Sometimes swellings appear, without having been preceded by a fever, or any violent symptom. The breath and sweat are very offensive. The pathognomonic symptoms are the buboes and carbuncles, which appear in various parts of the body. If these are absent, the disease is generally styled a putrid or a malignant fever.

The more particular symptoms are, very early and considerable prostration of strength, with every mark of debility in the vital and animal actions, frequent hæmorrhages, or a colliquative sweat, muddiness in the eyes, coma, and loss of speech. On dissection, the heart and liver are found to be greatly enlarged. The whole train of symptoms marks excessive debility, but the disease is seldom highly putrid: in many cases it is in no respect so. Since the inflammations and abscesses of the glands, usually the parotid, the axillary or the inguinal appear at no determined period of the fever, sometimes even without a regular febrile attack, and are occasionally wanting, there is no foundation for arranging plague among the exanthemata, and it should be reduced to the asthenic remittents. We say remittents, because, in the beginning, remissions are sometimes observed, and because the most dangerous asthenic fevers are usually of this kind.

The disease is not, as supposed, highly infectious. It is described as propagated like the epidemic catarrh, by miasmata conveyed through the air, and re-appearing in places to which this scourge is familiar at regular seasons, but by no means at the periods of extreme heat: on the contrary, in the hottest seasons it often vanishes. When not depending on miasmata it is conveyed in what pathologists style *fomites*, goods generally of woollen or cotton, which contain the contagious matter from an infected person, and becomes more virulent by confinement. The infection is not readily conveyed

by the atmosphere, and contact, or confinement with the patient in a close room, is necessary for its activity. Our campaigns in Egypt have rendered us more familiar with the disease, and divested it of a great part of its terror. Many fevers are more general; many more fatal.

The plague used to visit England every thirty or forty years; but one hundred and thirty have now elapsed without its occurrence, and during this period our connection with the east has been more considerable. This will not be readily attributed to the practice of quarantines, which appear to be carelessly executed, and indeed the directions are highly injudicious. The period is too long for the disease to lie latent in the crew; and too short for the ventilation of the goods. Our escape may, therefore, be owing to different habits, to a diet more antiseptic, to more free air, &c.; but these would probably prevent only its spreading. If imported, some victim would fall the sacrifice, but there is little reason for thinking that it would ever be general, or very generally fatal.

If we look to the later experience in Egypt, we shall find these ideas strongly confirmed. Assalini, attached to the French army, calls it only the epidemic fever; yet if the plague is to be distinguished by any concurrence of symptoms, it was undoubtedly the same disease.

If this author's observations, and indeed those of the French and English surgeons who attended the armies in Egypt, be true, the nature and source of the disease will appear to be very different from the representations of former practitioners. All these concur in the opinion that it is not highly infectious; many that it is slightly, if at all, so; and, instead of deriving it from peculiar miasmata, of considering the eastern countries as its great source, they attribute its appearance to common marsh miasmata, and its propagation to superstition, filth, and inattention. Assalini traces its progress in the French armies with great care; and if his facts are true, of which there is little doubt, these positions follow as rigorous conclusions. We have said that it is not *highly* infectious, of which a strong proof is, that those connected with the sick are seldom infected unless confined in the rooms. Casual intercourse is certainly by no means dangerous, as is shown by the medical attendants having very seldom suffered. When they appear to be infected, it is by no means certain that they may not suffer from its original cause, miasmata, since the strictest confinement does not insure perfect security. In one point of view it is, therefore, epidemic, in another, endemic; for the miasmata, which, in Germany and England, produce tertians, in Hungary petechial fevers, in Italy remittents, in Syria and Egypt seems to occasion the plague. Many of the absurdities detailed by Thucydides, Lucretius, and Boccaccio, appear to have no foundation; and to all may be applied what Galen said of the first, Thucydides, *quæ agrotis contigerunt tanquam idiota idiotis scripsit; Hippocrates vero tanquam artifex artificibus*. Negroes, who resist the yellow fever of America and the West Indies, an epidemic apparently more violent and fatal than the plague, yield easily to the latter. It has been disputed whether this disease attacks the same person twice; and it is in general supposed that it may, though a second seizure rarely occurs in the same epidemic. M. Sortira, one of the attendants on the French army, seems to think that

when the bubo freely suppurates, the patient is afterwards invulnerable from this poison.

In Europe the disease is only spread by infection: it cannot be styled an epidemic, for the separation of the healthy invariably preserves them. During the plague at Rome, in 1656 and 1657, all the monasteries escaped. The prisons were equally free, notwithstanding their closeness and filth. From the certificates annexed to the treatises on the plague of Marseilles, a similar security was obtained, by separating the healthy from the diseased. Even in its native country seclusion is of service, since it inspires confidence, and the night air is avoided.

The plague, we have said, consists in extreme debility in every function. "I drank neither wine nor spirits," said General Menou, "yet I am as giddy as a drunken man: the taste in my mouth is insupportably offensive, and I am so weak that I can no longer walk: my legs seem as if they were made of cotton." The eyes are red and muddy, the head heavy, and the sensibility often extinguished. The patient feels an anxious wish to sleep. If you even tell him what his disease is, when in a violent degree, he will rather sleep, though informed that it will be his last. The anxiety soon increases to palpitation, and that to syncope; the pulse is peculiarly irregular, the vomitings of bile often incessant; petechiæ quickly extend to vibices; the diarrhœa is colliquative; the speech faltering; the motions unsteady, with a wandering delirium and convulsions. It is impossible to accumulate symptoms which would together show a greater deficiency of the vis vitæ, and its consequence, the accumulation of blood in the heart, the lungs, the biliary system, and the brain. The marks of putrescency are less striking, for debility is more often the cause of extravasations under the skin than a putrid dissolution of the blood. The elegant lines of Lucan formerly quoted, in which poetical hyperbole has only perhaps a little overcharged the picture, show that such effusions may take place suddenly, before putrefaction could be communicated to the whole mass (see HÆMORRHAGIA). In the plague, persons often walk out, with the spots, as they are called, on the skin, not feeling any disease but debility.

The cure of the plague was formerly supposed to be a desperate attempt. We now know that, though a dangerous disease, it is more often conquered than victorious; nor is there the slightest doubt, but, if it should ever be again introduced into this kingdom, that it would soon excite little alarm. We have seen many epidemics which have been, for a time, more fatal than the plague would probably be, in the present state of society, with judicious political regulations.

The great source of difficulty to the practical physicians has been the good effects of *bleeding*. Sydenham employed it to a considerable extent, preceded only, as he tells us, by Botallus, who bled largely in almost every complaint. Yet Oribasius, long before, had employed this remedy on his own case; for, when the plague was epidemic in Asia, he was seized with the disease; and on the second day, *during the remission*, scarified his legs, taking off two pounds of blood. Modern authors, and particularly Dr. Russell, have been more cautious, limiting the evacuation to a single bleeding, and then only when the disease attacks with symptoms of inflammation. Chenot confines it to those

cases where the turgescence of the vessels seems to impede the diapnoe; and the Russian physicians, De Mertens and Samoilowitz, scarcely mention it. When, therefore, in a strong robust habit, the face is flushed, the skin hot and dry, the pains violent, particularly in the side, bleeding by general consent may be employed. But must we wholly resign the observations of Sydenham? We should do it unwillingly; and for this purpose, under the article FEBRIS, q. v., we have mentioned the facts, and stated the principle on which we would reconcile the supposed utility of bleeding, with symptoms of considerable debility. (Vol. I. p. 652.)

When symptoms of indigestion appear, and even when the disease has attacked, after a full meal, it has been usual to give an *emetic*. Probably in every case this remedy is proper, since, from the accumulations in the liver, bilious discharges are common and useful. These are usually directed so as to keep up a slight diarrhoea; but excessive evacuations in either way are injurious. Samoilowitz, and the Russian practitioners, are very fond of the early use of emetics. Slight purgatives of the saline or acid kind are also useful through the whole course of the disease.

Diaphoresis is the evacuation which relieves most certainly and effectually; and this is usually kept up by warm liquids, vegetable acids, often by opium. In cases of greater languor and debility, the warmer opiates, as the *confectio opiata*, are employed, assisted often by camphor and ammonia. Yet on the whole these appear, on comparing the testimony of different authors, to be less generally effectual, though sometimes essentially necessary, from the debility which prevails. In the early stages, to drink freely of the camphorated julep, with a large proportion of the vegetable acids, seems particularly useful.

Blisters have been freely employed from the observation of Galen, that those cases have best succeeded in which there were eruptions or ulcers on the skin; but later authors have found them less effectual, and generally confine the application to cases where topical pains are violent, or partial congestions considerable.

External applications have been various. The *oily frictions* have numerous advocates; but Sortira suggests, that advantage was taken of Mr. Baldwin's benevolence, and the cures by the oil exaggerated and multiplied by those who wished to have oil gratis. Mr. Baldwin is not, however, the only evidence, nor are his representations unusually strong. Father Louis of Padua, director of the hospitals at Smyrna, is still more pointed in his recommendations of this remedy; and Assalini thinks it may be useful. If the other French physicians speak slightly of it, there is reason to suppose that they have not employed it properly, or that its effects in different epidemics, perhaps in different constitutions, may vary.

Frictions with ice seem to have been employed, exclusively, in Russia, and Samoilowitz gives several cases in which it succeeded. His patients were, however, chiefly among the strong and robust. If we estimate the utility of this remedy by what we have been told of the effects of cold applications in typhus, we should consider it as dangerous in a disease of so great debility. He used a large piece of ice with a polished surface, formed by friction against another piece, and rubbed the arms, the legs, and thighs chiefly, the belly slightly,

and the breast scarcely at all. Rubbing the spine with alcohol, impregnated with aromatics, is recommended by Sortira, who remarks, that animals wounded in the vertebrae are recovered by spirituous and aromatic injections on the membranes of the spinal marrow. From these effects, he supposes that aromatics were employed in the temples of the gods, and he derives the appellation from the Ionic verb *αρωμαίνω*, I pray.

In every stage of this complaint, wine given in proportion to the debility is useful; and in the highly asthenic cases, bark, with the mineral acids, has been freely employed. These, however, are spoken of so vaguely, that we suspect they have been seldom necessary. They must often, however, be the only resources.

The conduct of the buboes has been the subject of much controversy. It is necessary, however, to remark, that these are not the only external affections in this disease. Carbuncles (see ANTHRAX,) and vibices, (see PETECHIAE,) often covering a deep putrid ulcer, are occasionally observed at the conclusion, sometimes in the commencement, of the plague. These were usually called *tokens*. Whatever may therefore be thought of buboes, neither the carbuncles nor the vibices can be supposed critical; and on the whole it is highly probable, that the last are rather accidental symptoms than critical depositions. It is in general advised to bring the bubo to a suppuration. This is, however, always difficult; and to open it, before this process is at least begun, appears to be an useless torture. Poultices, cataplasms, and even the actual cautery, often fail; and, if the bubo does not suppurate, the danger is supposed to be more considerable. This may, however, be the case, though the tumour is not critical; for the want of suppuration is often a symptom only of considerable debility. Friction, with warm tepid oils, was found the most easy and effectual method: perhaps mercurial ointment might have been more successful.

To guard against the plague is an object of no little importance; and this subject divides itself into the means of preventing its importation from the countries where it is occasionally epidemic, and those of preserving the health of individuals during its ravages. The late observations have greatly assisted us in each respect.

The regulations of quarantines are vexatious and ineffectual; nor can there be a doubt, but that if the fomes of the plague was contained in any vessel from the Levant, the disease would be propagated in this country. But, as we have said respecting the yellow fever of America, unless an eastern constitution and eastern manners were at the same time imported, the danger would be inconsiderable. The period of forty days, originally perhaps determined by religious observances, is not necessary to ascertain the state of health of individuals, when we reflect that they have been already more than a month on their voyage, and in varied climates. A medical man would not run the slightest risk in examining individuals, and these in fresh clothes might be immediately liberated. The goods would require a much longer time, unless ventilated; but if in a raw unmanufactured state, a very slight ventilation would be sufficient; nor might any one fear to engage in the task if he took advantage of a fresh breeze, and

stood to the windward. The great danger would arise from manufactured apparel, unless it were of leather. These should be ventilated with the utmost care and caution. Yet the clothes which the author wore during the voyage would be probably incapable of conveying the disease, if he himself were in health. Perhaps it would be less expensive, and would be infinitely less vexatious, if all the wearing apparel of the crew were destroyed in case of the slightest suspicion of infection.

If the plague were to reach a town, it would be easy, we think, to avoid its spreading, if the family were not permitted to mix with others till their health was ascertained; and if the nurses or necessary attendants on the sick were cautiously to avoid communication with others, except at some distance. This we add for the sake rather of calming the mind than from necessity, since the disease is certainly not infectious in any considerable degree. Every thing from the house should be cleaned and aired; the linen immersed in water, and kept there for some time, and exposed to the air before the operation of washing begins. It has been the common error of physicians to disbelieve the existence of a plague till its mortality has forcibly evinced the truth. If then an epidemic fever has continued, and it is uncertain how far its seminum has been dispersed, all crowds should be avoided. Those most certainly free should be suffered to leave the town, after perhaps a slight quarantine in the neighbourhood; and all suspected goods should be destroyed. To assert that the disease is not infectious, is to lull persons into an incautious security; to say that it is highly so, renders the fever most highly dangerous, by depressing the spirits. In this country it is propagated by infection only, and with moderate caution may be avoided, notwithstanding an occasional communication with those who are diseased.

The necessary rules for this purpose are not numerous. If the mind is busily engaged, and the person has little time to reflect on his danger, it is greatly lessened. The good bishop of Marseilles escaped, by his hourly engagements in the works of benevolence. If not engaged, cheerfulness, confidence, and serenity, are the best guardians; and it is a pious fraud to tell those who must remain, that with moderate caution there is not the slightest danger, and to make light of any accidental ailment, or even the first attack of the disease. To tell a person that he had not the plague was the most certain mode of curing him, when he was really infected.

Another rule of no little importance is to be often in the open air; to change the linen and the clothes frequently; and not again to put on the woollen garments till they had been freely ventilated. The diet should be generous, and the wine in a larger quantity than usual. The bowels should be kept free; and perspiration, at night, be induced by warm liquids, with vegetable acids, and some portion of spirit. Every depressing passion should be avoided, as well as every cause of debility. Diemerbroeck remarked, that newly married persons were peculiarly subject to the infection of this disease.

Tonics are sometimes necessary, and the occasional use of the cold bath, of bark, and the mineral acids, have been found useful. Camphor, an excellent antiseptic, palliates the appetite; and its effects in a bag round the neck are at least equivocal, probably imaginary. Above

all, free open air is the best method of rendering the infectious matter effete; and a cheerful serenity, with the most frequent changes of clothes, every mode of supporting the strength, and a free discharge from the different excrementitious glands, the most certain means of preventing its effects.

The earlier the tumours appear on the surface of the body the better; for thus all other symptoms are removed. See BUBO and CARBUNCULUS.

When the plague is fatal, some die of a fainting the first or second day; others, in whom the poison is not thrown out upon the external surface, or, if thrown off, returning back, of a mortification of the nervous coats of the more important organs, as the œsophagus, pleura, stomach, intestines, &c. whence the bodies swell, and have an intolerable stench. Sometimes, when the tumours are too numerous, the patient dies of a symptomatic fever, from the inflammation, pain, and heat.

See Samoilowitz sur la Peste en Russie, 1771; Mead on the Plague; Cullen's First Lines, edit. 4, page 200, vol. ii.; Sydenham's Works; Dr. Russell on the Plague; Chenot de Peste Transylvanica; Memoires Medicales d' l' Armee de le 'Orient, par Bruant; Memoires sur l' Egypt, vol. iv.; Observations on the Plague, &c. by Assalini; De Mertens' Account of the Plague, which raged at Moscow in 1771; De Foe's Account of the Plague in London, an imaginary narrative, which has been quoted as the result of real observation. The facts, however, preserved respecting that epidemic are often new and important.

PE'TALA, (from *πτεῖλαι*, to extend or unfold). PETALS. The flower leaves distinguished from folia, the leaves of the plant. Flowers with one leaf are called *monopetalous flowers*; with two, *bipetalous*, &c.; with more than six, *polypetalous*.

PETALO'DES, (from *petalum*, and *ειδος*, likeness). A scaly or leafy sediment of the urine, sometimes attending an ulcer in the bladder. In botany an epithet for plants furnished with petals.

PETASITES, (from *πετασος*, a hat, because the leaves are large, have a hollow in the middle, and extend horizontally round it). TUSSILAGO MAJOR, GALERITA, PESTILENT WORT, BUTTER BUR; *tussilago petasites* Lin. Sp. Pl. 1215; a perennial plant, found by the sides of ditches and in meadows, producing early in the spring a thick, naked, roundish stalk, with a spike of small naked purplish flosculous flowers on the top: the flowers and stalks soon wither, and are succeeded about May with very large roundish and heart shaped leaves, standing on long pedicles, somewhat hollowed in the middle, so as to resemble a bonnet; the root is long, thick, of a dark brown or black colour on the outside, and white within.

The roots are said to be aperient and alexipharmic; have a strong smell and a bitterish acrid taste, of the aromatic kind, very durable and diffusive, scarcely to be concealed by a large admixture of other substances. Their virtue is in the resin, distinguished by the eye in the dried root, and readily extracted by spirit of wine. See Lewis's Materia Medica.

PETE'CHIA, (from an Italian word, signifying small pox of a purple colour). It originally signified elevations of the skin; but custom hath now confined it to spots diffused on the skin without raising it. (See

STIGMA.) Their appellations are various, viz. *punctula*, *lenticula*, *fulicaris morbus*, *purpurata* by the French physicians, and *taberdillo* by the Spanish. The term *lenticularis*, however, usually confined to pimples rising above the skin, is peculiarly improper. Commonly they are reddish, purple, or blackish spots in the skin, like small points, but soon spread, and gradually grow broader: when extensive, they are often styled *vibices*, and have different appellations, according to their forms.

These spots are not uncommon in fevers; see Pringle's Observations, p. 287; Monro on Military Hospitals; and Cleghorn on the Diseases of Minorca, p. 147. In the intervals of the pustules of small pox, and of the efflorescence of the measles, they are frequently observable, sometimes without any danger, though their appearance is always a source of alarm.

Their nature is sufficiently obvious. They are little ecchymoses, often arising from a putrid dissolution of the blood, sometimes from debility, independent of putrefaction. In general, on their appearance, bark is given, and it usually renders their colour more florid; but when the bark might be injurious, as in asthma, or in measles, we have found the vitriolic acid equally useful.

Petechiæ sometimes occur alone, without any evident cause, of which there is an instance in Dr. Duncan's Cases, page 90, and we have recorded another, under the article *HÆMORRHAGIA*, as it was peculiarly violent; but, in slighter degrees, if no peculiar disease attends, we have usually disregarded it, and, in numerous cases, have seen it spontaneously vanish. This is the *morbus petechialis sine febre* of the German physicians, which they represent in very formidable colours. Richter, the great oracle of our predecessors, supposed petechiæ to be from bile, because, when attended with fever, emetics cured it, with the addition of vitriolic acid. Either or neither would have been equally successful.

PETECHIA' LIS FEBRIS, (from the *petechiæ*, which sometimes attend). The **PETECHIAL FEVER**; which, though often treated as a distinct species, is only the low or the putrid fever, attended with purple spots, as a symptom. See **PUTRIDA FEBRIS**; Hoffman, Pringle, and Huxham, on Petechial Fevers.

PETI'GO, (quod semper vicina serpendo petat). Synonymous with impetigo. See **LICHEN**.

PET' TRÆ O'LEUM. See **PETROLEUM VULGARE**.

PETRIFA'CTIO, (from *petra*, a stone, and *facio*, to make). A disease of the eyes. See **ANCUBITUS**.

Petrifications, in the nomenclature of the natural historian, are animal or vegetable productions, incrustated with stony matter, or become actual stone. Petrified wood is an exact imitation of real wood, so that from the concentric laminæ the species of tree can often be ascertained. In these changes, the stony matter is gradually substituted to the vegetable, till the latter is decomposed; and as the substitution is gradual, the stone is moulded on the original cavities, and the organization is exactly copied. Though each earth may form petrifications, they most commonly consist of the siliceous, as its molecules are much smaller, and may be suspended in water. Indeed, they are, at times, deposited on the addition of water, when contained in fluor acid air.

The mineral kingdom has also its peculiar changes, to which the appellation of petrifications can scarcely be applied, so that, in the latest works, they have been styled *pseudomorphoses*. As none of these have been ever employed as medicines, we must not enlarge on the subject, but refer to Cronstedt's Mineralogy, by Magellan, Appendix; Haüy, i. 142. For the theory to the younger Monges, Journal de Physique, 1781, page 255; and Daubenton's Leçons de l'Ecole Normale, iii. 393.

PETRO'LEI O'LEUM. The purer substance of petroleum: the British oil, extracted from a species of stone coal, is of this kind; and every species is recommended externally, in chronic rheumatisms and paralytical complaints, as powerful stimulants. See **PETRO'LEUM BARBADE'NSE**.

PETRO'LEI BARBADE'NSE AMMONIA'TUM LINIMENTUM. See **AMMONIA**.

PETRO'LEUM, (from *πέτρα*, a rock, and *oleum*, oil, because it sometimes distils from rocks,) *callicola*; *terreæ oleum*. Petroleum, in consistence, is next to naphtha, but grosser and thicker, of a yellowish, reddish, or brown colour, but so light as to swim on spirit of wine. It is inflammable, less fluid and transparent than water, of a pale yellow, with a shade of red or green, sometimes of a reddish brown or black, specific gravity 0.8783, yields, when burnt, a soot, and a small quantity of an oily residuum. (Hatchett, in Nicholson's Journal, ii. 201, &c.) Its taste is bitter, its smell strong and penetrating; qualities greatly diminished, when it assumes its solid form and black colour.

Petroleum, like oil, is composed of hydrogen, carbone, and azote, in a peculiar state, and modified by oxygen. These principles, and the marine bodies often found in bituminous strata, lead to the suspicion that the origin of bitumens is organized bodies, chiefly marine ones, decomposed. The rare occurrence, however, of these marine bodies in bitumens, and the numerous marine strata, which contain not an atom of bitumen, render the conclusion doubtful, though supported strongly by the azote, an animal ingredient.

The liquid bitumens are the pure *petroleum*, and the *white*, or the *naphtha*. The solid are the *mineral pitch*, or *maltha*, the *asphaltum*, the *mineral choutchouc jet*, *canal coal*, *common* and *spurious coal*, and *amber*. The last only of the solid bitumens is used in medicines. See **SUCCINUM**.

PETRO'LEUM A'LBUM. **WHITE PETROLEUM**. It is nearly colourless, almost as fluid and limpid as water, of a strong, penetrating smell, not disagreeable, somewhat resembling that of the rectified oil of amber. It is found only in the duchy of Modena.

PETRO'LEUM BARBADE'NSE. *Bitumen Barbadosense*, *pisæleum Indicum*, **BARBADOES TAR**, is a species of petroleum, of a reddish black colour, a thick consistence, approaching to that of treacle, or common tar, and found in the American islands, particularly in Barbadoes.

These different kinds issue from the clefts of rocks, chiefly in Persia, near the shores of the Caspian, or swim on the surface of lakes, in volcanic countries. They are often obtained, by distillation, from bituminous substances, but we rarely meet with them genuine. Fine petroleum catches fire, at the approach only of a

flame, and burns, without leaving any residuum: concentrated mineral acids, mixed with petroleum, effervesce with violence, and often flame; and their addition increases its consistence and odour. Petroleum does not readily mix with alcohol, but is easily united with the essential oil of vegetables.

The finer petrolea are more agreeable than oil of amber, and more mild than oil of turpentine: they have been used, in nervous complaints, as antispasmodics or diuretics, but chiefly as external applications, in rheumatism, palsy, and chilblains, &c. For these purposes, the British oil, and similar productions of our own, are equally efficacious. The Americans use the Barbadoes tar internally, as a sudorific; externally, as a discutient and stimulant. On distillation, the Barbadoes tar yields an empyreumatic oil, which, when placed between the eye and the light, appears of an orange colour, but, in other positions, of a blue; though, by long keeping, it is yellow in all situations.

See Neumann's Chemical Works, and Lewis's *Materia Medica*.

PETRO'LEUM FLA'VUM, *naphtha Italica*, ITALIAN ROCK OIL, or YELLOW OIL OF PETRE, is of a clear yellow colour, less fluid, less penetrating and agreeable than the white, more nearly approaching oil of amber. It is found in the duchy of Modena.

PETRO'LEUM SULPHURATUM. See SULPHURIS BALSAMUM BARBADENSE.

PETRO'LEUM VULGA'RE, *petræ oleum*, *petroleum rubrum*, *petroleum*, and *oleum Gabianum*, COMMON ROCK OIL, RED PETROLEUM, is of a blackish red colour, of a thicker consistence, and a less penetrating, and more disagreeable smell, than either the white or the yellow kinds. It is found in Italy, and about the village Gabian, in Languedoc.

PE'TRO-PHARYNGÆ'I. These muscles rise from the lower part of the extremity of the apophysis petrosa, and run backwards, to be inserted into the linea alba of the pharynx.

PETRO'SA APOPHY'SIS, (from *πετρα*, a rock). The rock, or harder portion of the temple bones; in children, easily separable from the mastoid and squamous portions.

PE'TRO SALPI'NGO-STAPHYLI'NI, *peri-staphylini interni*; *salpingo-staphylini interni*. Each of these muscles is fixed by one extremity, partly to the inner side of the bony portion of the Eustachian tube, or to that next the apophysis petrosa, partly along the cartilaginous portion of the same tube. It passes a little way under the soft membranous part, and then turns towards the septum palati. See Winslow's Anatomy.

PETROSELI'NUM, (from *πετρα*, and *σειλιον*, *fiarsley*). See APIUM HORTENSE.

PETROSELI'NUM MACEDO'NICUM. See APIUM MACEDONICUM.

PETROSELI'NUM MONTA'NUM. See OREOSELINUM.

PETRO'SUM OS, (from *petra*, a rock). See TEMPORUM OSSA.

PE'TUM. (Indian.) See NICOTIANA.

PEU'CE, (from *πεικη*). See PINUS.

PEUCEDA'NUM, (from the resemblance of its leaves to those of *peuce*, a pine tree). *Feniculum porcinum*, *cauda porcina*, *pinastellum*, *agrion*, *agriophyllon*, *marathrophyllum*, SULPHUR WORT, HOG'S FENNEL;

peucedanum officinale Lin. Sp. Pl. 353. It is perennial, grows wild, by the sea shores, and in moist, shady places, flowering in July. The roots have a strong, fetid smell, with an unctuous, acrid, bitter taste; and, when fresh, in spring or autumn, yield a considerable quantity of yellow juice, on incision, which soon dries into a solid gummy resin, retaining the taste and smell of the root. It is chiefly recommended in hysteria, and is supposed to be also an aperient. See Lewis's *Materia Medica*.

PEUCEDA'NUM SILA'US. See SAXIFRAGA ANGELICA.

PEW'TER, a compound metal, composed of tin, lead, and copper. It is supposed to be dangerous, from the mixture of lead, but without foundation. The lead is too minutely covered with the other metals, to be affected by beer, cider, acid fruits, or animal fats. Vinegar will dissolve no portion of it. The horrible phantoms raised by the apprehensions respecting lead begin to disappear.

PEY'RI GLA'NDULÆ. PEYER'S GLANDS. See BRUNNEIRI GLANDULÆ.

PE'ZA, (from *πῦς*, a foot). See PES and ASTRAGALUS. It sometimes means every part of the leg under the tibia.

PEZI'ZA, (from *πεζα*, the sole of the foot, because it sometimes rests without a pedicle). A species of fungus, whose edges are so divided as to form a remarkable cavity. It is of an uniform substance, neither distinguished by lamellæ nor pores.

PEZI'ZA AURI'GULA. See AURICULA JUDÆ.

PHA'CE, or PHA'COS, (from *φακη*, a lentil). See LENS.

PHACOI'DES, (from *φακη*, and *ειδος*, likeness,) resembling a lentil. See OCULUS.

PHACO'SIS, (from *φακη*, a lentil). A black spot in the eye, resembling a lentil.

PHAGEDÆ'NA, (from *φαγω*, to eat,) is sometimes taken in an extensive sense, for every ulcer which eats away the sound parts contiguous to it, and is called *dehascens ulcer*; sometimes in a more limited one, for a deep, tumid ulcer, which destroys the flesh underneath, as well as the neighbouring parts. It is occasionally described as only destroying the skin; at other times, as a particular species of ulcer, called *herpes phagedæna*, or *exedens*. There is a considerable confusion in authors, respecting the distinction of phagedenic ulcers, and Celsus includes under this term even a spreading gangrene. Wiseman distinguishes phagedenic ulcers from herpes, defining them deep, eating ulcers, with swelled lips, beginning in the flesh with matter; while herpes begins in the skin, and is comparatively dry. Dr. Adams, in his morbid poisons, divides them into two species, viz. successive ulcerations and sloughings; secondly, ulceration kept up by the irritation of newly formed pus. The treatment of Dr. Adams' species we must consider under the article of ulcers; the second species of Celsus has been already noticed, under MORTIFICATIO, q. v. It is the appellation, also, of an affection of the stomach, requiring an immoderate quantity of food. See BOULIMUS.

PHA'LACRA, (from *φαλακρος*, bald). *Calvata*. Blunt and smooth surgical instruments, as a probe, or any other, with a button at the end. Hippocrates.

PHALACRO'TIS, (from the same). See ALOPECIA.

PHALA'NGIUM ALLOBRO'GICUM, (from *φαλαγγξ*, a joint in the finger). See LILIASTRUM ALPINUM MINUS.

PHALANGO'SIS, (from *φαλαγγξ*, a row of soldiers). A disease in which the eye lid turns inwards, so that the hairs stimulate the eye. (P. Ægineta, lib. vi. c. 8.) The eye lid is tumefied or relaxed, proceeding either from a paralytic disorder of the musculus elevator palpebræ, or from the relaxation of the skin above. An œdematous tumour is sometimes formed in the eye lids, but this should be distinguished from the disease which proceeds from relaxation, and requires an excision of the skin. The disorder sometimes returns, notwithstanding the operation. See Hippocrat. lib. de Victus Ratione; Celsus, lib. vii. c. 7. V. PROSIS.

PHALANGO'SIS TRI'CHIA. See TRICHIA.

PHA'LANX, (*φαλαγγξ*, an army of soldiers). The bones of the fingers, called from their regular disposition. See DIGITUS.

PHA'LARIS, *Canariensis* Lin. Sp. Pl. 79, (from *φαλος*, shining). *Gramen spicatum*. CANARY GRASS. It grows amongst corn, and is found in many places besides the Canary Islands. The seeds are diuretic. See Raii Historia.

PHANTA'SMA, (from *φανταζω*, to make appear). See PSEUDOBLEPSIS.

PHARMACEI'A, (from *φάρμακον*, a medicine). A discharge from the abdomen, from the exhibition of a cathartic.

PHARMACEUTICA, (from *φάρμακον*, to exhibit medicines). PHARMACEUTICS constitute that branch of our art which teaches the method of rightly preparing and exhibiting medicines.

PHARMACEUTICÆ, *φαρμακευτική*, MEDICINE, (from the same). The art of healing by medicines. See MEDICINA. History, and Kirkland's Inquiry, vol. i. p. 64, &c.

PHARMACI'A, (from *φάρμακον*, a medicine,) is the art of preparing and compounding medicines, and may be traced to the earliest eras of medical records. When medicines were first given, some preparation was, of course, necessary; and we find in Hippocrates not only ointments, but infusions of different vegetable substances in oils, called from the basis, *myrtinum, rosatum*, &c. In fumigations he employed troches, *φθοιςκοι*, which required preparation. It is probable that this union of pharmacy with the practice of medicine continued for many ages; for we first find it as a separate profession at Rome in the time of Theophrastus. (MEDICINA, vol. i. p. 945.) To the Arabians we are, however, indebted for the more complicated processes of pharmacy; though, as we studiously pointed out, MEDICINA, vol. i. p. 951, some parts of pharmaceutical practice were known to Actuarius, whom we have styled the last of the ancients. See MODERNI.

The Arabians first rendered pharmacy more complicated by increasing the number of distilled waters, preparing tinctures and syrups, and accumulating the ingredients of their formulæ. The first great division of pharmacy was, however, effected by the chemical sect, early in the sixteenth century. This introduced the distinction of preparations into *galenical* and *chemical*; the former containing the decompositions and preparations, in which the heat was inconsiderable, not greatly superior to that of boiling water; the latter, those pro-

duced by the greatest violence of fire; but neither this nor any other distinction is followed very closely in terming a preparation either galenical or chemical. The earliest code for preparing medicines, we have said, was published by the authority of the senate of Norimberg in 1542; but we have since seen an earlier account of lists published at Lindau, settling, by authority, the price of drugs. The progress of pharmacy, as ascertained by authorised codes, we have already traced with some care in the article DISPENSATORIUM.

Pharmacy must necessarily go hand in hand with chemistry; but it has only become a science since the introduction of the pneumatic chemistry, and we must regret that we have received no work which embraces its whole extent since that period. The new Dispensatory of Dr. A. Duncan is the most valuable and complete of this kind, but it is limited to the preparations in the established dispensaries of Great Britain and Ireland.

The objects of pharmacy are obvious from the definition; and we shall consider in their order the general rules by which medicinal substances are PRESERVED, PREPARED, and COMPOUNDED: the particular ones must be learnt under the proper heads.

To separate decayed from sound portions of vegetable substances, for to these our attention is now chiefly directed; to dry them with care; to prevent the dissipation of volatile parts, the access of insects or impurities, are obvious precautions. Vegetable substances should be collected in the countries where they are indigenous, and in soils and situations where they naturally flourish with the greatest luxuriance. Annual roots are in the greatest perfection just before their shoots spring forth, biennial ones in the spring of the second year. In the autumn of the first their virtue is not greatly inferior; but there is danger of gathering the effete exhausted root, hastening to decay, by mistaking the second for the first year. Perennial roots are best in the spring, just before the period when the sap begins to rise. Juicy roots, if their medicinal portion be not volatile, may be rapidly dried by a heat of from 90° to 120° of Fahrenheit; but if aromatic, in a current of cold dry air, not exposed to the sun. Thick roots should be sliced and hung on strings. Some roots should be kept moist; and these must be buried in damp sand.

Herbs and leaves in general acquire activity from their age, but mucilaginous ones become woody. No very great nicety is required in their collection but what this hint will supply, except in the cases of helleboraster and digitalis. The former has the leaves of the first and the second year at the same time, distinguished by their colour and their acrimony. It is necessary, therefore, to select one kind only, and the oldest are the most active. The digitalis is a biennial, and the leaves, previous to the flowering of the second year, more active than those of the first: they should, if possible, be distinguished. Aromatic leaves are to be collected after the flower buds are formed; annuals about the time of flowering; biennials before the sap mounts; and perennials before they flower. They should be dried rapidly in a current of free air, and, if succulent, by artificial heat.

Resinous barks are best collected in spring, gummy ones in autumn; and of the former the heaviest are the best. Flowers, as well as herbs, should be collected

in dry weather; and, in a few instances, it is unnecessary to separate them from the calyx, if small, as the whole plant has similar virtues. If any peculiar advantage is expected from small doses, however laborious, the separation is proper. In general, they should be dried with artificial heat, though not to such a degree as most slightly to destroy their colour.

Seeds and fruits should be gathered when ripe, but before they would fall spontaneously. Pulpy fruits are compressed, or deprived of their cores or kernels. In general their natural coverings should be preserved; but in the nicer sweet meats they are taken off. In some medicinal substances, also, they are taken off, as in the colocynth, &c.

Every vegetable substance should be kept dry. Herbs and leaves, which, when friable, appear to have lost their odour, regain it by keeping in a close box. Oily seeds and fruits should be kept in a dry cool place, but not beyond the season of again collecting them. Those vegetable substances are best preserved, in every form, which have grown and been gathered in a dry season.

Animal substances in a moist state should be preserved with care, so as not to be more or less dry. Those which are solid, and minerals, require no peculiar attention.

Medicines are PREPARED, if solid, by *mechanical division*. The means are, pulverisation, trituration, levigation, granulation, and sifting; if fluid, by decantation, filtration, and despumation: if moist, by expression. Compound formulæ are prepared by mechanical mixture; by solution, either simply or with the assistance of a third body; and by heat.

Mechanical mixture is performed by agitation, by trituration, or beating in a mortar; but if the substances are fluid and incapable of chemically uniting, they soon again separate; an inconvenience lessened by employing an albuminous or a mucilaginous intermede. The union, however, though more lasting, is only temporary. Trituration is a more steady and continued agitation; but when employed to assist solution, the weight of the pestle contributes to a further mechanical division. The mechanical mixture, by beating or kneading, is more lasting, because the substances employed, at least one of them, is in a semi-fluid state, and the heavier body cannot subside.

Solution requires some time, assisted by agitation and a gentle heat. It is effected by chemical affinity, and sometimes a third body united to the menstruum is necessary before its attraction is sufficiently strong, as salt is added to the nitrous acid to render it the proper menstruum for gold. Heat is necessary not only in simple solutions, but often in so great a degree as to raise both the solvent and the menstruum in vapour when their union will only take place. Thus, water and the essential oils of vegetables unite in a state of vapour, when a very slight, imperfect union would take place in a fluid form.

Pharmaceutical operations chiefly depend on a change of form, on combination or decomposition. THE FORM IS ALTERED by solution, fusion, a change into a state of gas, vaporisation, exciccation, condensation, congelation, and coagulation. In each, however, some decomposition takes place.

Solution is a common pharmaceutical operation; but under this title we include the fluid forms of every sub-

stance, whether vegetable or mineral. The most simple form is a solution of the common neutrals, whether alkaline or metallic salts, and the various combinations found in mineral springs. Infusions are solutions of the vegetable extractive matter, and decoctions are solutions by means of heat; the various vinegars, wines, elixirs, and tinctures, are similar preparations: but while infusions contain the vegetable substance, separated only from the woody fibres, in the decoctions, some decomposition apparently takes place, and a part of the extractive matter, or the oil, by the union of oxygen, becomes resin. Vinegars contain the vegetable matters with little change, but they are adapted chiefly to what are styled the alkalescent plants, the tetradynamia; while in the wines, elixirs, and tinctures, the vegetable is decomposed in proportion to the diminution of the quantity of water in the menstruum. The spirit extracts principally the resin, and the form of tincture is adapted to those medicines which are chiefly resinous. Even to the strongest spirit the resin, however, conveys some portion of gum; and, on the contrary, the cold watery infusions are not without some, though a very small, proportion of resin. Water is the appropriate menstruum of salts and mucilages; but some portion of each may be combined with a weak spirit, though not in a quantity to be effectual, unless in the metallic salts, where the dose is inconsiderable in bulk.

Fusion is scarcely a pharmaceutical operation. It may be termed a solution by means of caloric, and is chiefly employed for the purpose of *granulation*; a method of powdering metals by continued agitation while cooling. Modern practice only employs this process in preparing the filings of tin.

A change into a state of gas is employed to impregnate water with some ingredients in imitation of the mineral waters. Hepatized hydrogen, carbonic acid air, and other gaseous fluids, are employed in this way. (See *AQUÆ MINERALES ARTIFICIALES*.) The pneumatic chemistry, though it has thrown considerable light on numerous pharmaceutical processes, has, however, added little to our stock of resources.

Vaporisation is a very extensive operation. It is employed to separate substances which differ in volatility, and, as we have said, to facilitate chemical action. In *deflagrating* metals, the acid of the nitre in part is volatilized, while its oxygen is combined with the metal, forming a calx. Thus the flowers of zinc, diaphoretic antimony, &c. were formerly prepared; and in *ustulation*, the roasting of metals, the sulphur and arsenic are dissipated. When, however, it is proper to retain the volatile portion, we apply a receiver, as in the various modes of *distilling* fluid and *subliming* solid substances. When the operation is more simple, consisting in exposure of the fluid to heat in a shallow vessel, it is styled *evaporation*. Saline solutions are to be *concentrated* when evaporated in order to crystallization; other moist bodies to be dephlegmated; but alcohol must be dephlegmated by other means, for its volatility requires distillation. It is sometimes, however, dephlegmated by chemical affinity, when, by adding pot ash, the solution is very slightly soluble in the pure spirit.

Exciccation is often performed by vaporisation, as in making extracts from vegetable substances, when some decomposition always takes place. It is sometimes effected by placing the moistened body on blotting paper, or a chalk stone. The heat is sometimes

considerable, as in calcining alum, and depriving salts of their water of crystallization. When some salts, particularly common salt, are exsiccated, they crackle: a sound called *decrepitation*.

Condensation is applied only to vesicular vapour, for the permanently elastic gases cannot, by any pressure or change of temperature, be reduced to a solid form. It is the second part of the process of *DISTILLATION*, q. v.; and when, by the position of the vessels, the condensed vapour repeatedly returns into the receiver, to be as often again raised in vapour, the operation is called *circulation*. When a fluid is repeatedly distilled in fresh vessels, the process is called *rectification*; and if the distilled fluid be repeatedly distilled from fresh materials, *cohobation*.

Congelation is chiefly used to concentrate vegetable acids, occasionally alcohol, and is performed by the natural cold, in higher latitudes, and by evaporation, or freezing mixtures (see *COLD*), in these climates.

Congelation is effected by means of heat, sometimes by chemical affinity, by abstracting water, by acids, rennets, &c.

COMBINATION is one of the most important pharmaceutical operations, and chemical combination consists in an intimate union of the particles of two or more heterogeneous bodies. To unite chemically, the bodies must possess an affinity for each other greater than the attraction of aggregation, and their particles must approach within a given distance. It is not always necessary that they should be in a fluid state, but they must be mechanically divided into very small particles; and the operation is assisted by caloric, by agitation, sometimes, though not in every instance, by compression. Some air is generally separated in solutions, which compression impedes.

Gases generally mix with gases; and they seem, in very few instances, to combine, unless from the impulse of electricity or galvanism. They appear to be mutually diffused; each given portion of the gaseous compound containing the same proportions of each. They dissolve fluids or solids: thus the hepatic air is sulphur, dissolved in hydrogen; or are absorbed by them, as the carbonic acid air by water or lime. Fluids dissolve solids, or are rendered solid by them, as a supersaturated solution of salts, by rapidly crystallizing, becomes a solid mass, or, more simply, as chalk absorbs water, without showing the slightest humidity. What we have said of the diffusion of gases, however, does not apply to known bodies, in a gaseous form, for the muriatic acid and alkaline airs exert their mutual affinity in this aerial state; nor is it quite certain, though probable, that no union takes place between the discordant ingredients of our atmosphere.

Solution is evidently a chemical combination, and of extensive operation in the practice of pharmacy, at least in the way we have explained it. The degree of affinity of bodies for the most common menstruum, water, is various. Some salts, as potash, will extract it from the driest atmosphere, and they are then said to *deliquesce*: others will yield readily the water which they entangle in their crystals, and are then said to *effloresce*. We sometimes employ solution, to separate salts from insoluble impurities, and the process is called *lixivation*; sometimes to separate soluble impurities, and it is thus called *edulcoration*. When one portion only is separated from

an heterogeneous compound, it is styled *extraction*. Different kinds of solution, as already explained, are styled *infusions*, *decoctions*, &c. *Maceration* is infusion long continued, often interposing triture; and *digestion* is infusion with a continued heat below the boiling point. The solution of metals in mercury is termed *amalgamation*. *Absorption* is the condensation of gas, in consequence of its union with a fluid.

There are, however, combinations, independent of chemical affinity. The suspension of oils in water, by means of an intermede, styled *emulsions*, is one of these; and the solution of resins with water, by means of gum, as in the gum resins, galbanum, asafetida, &c. is another instance. The union of oils with mucilages, in a *linctus*, is a simple mixture, and the greater number of combinations, in extemporaneous prescriptions, are the same.

DECOMPOSITION is chiefly effected by the superior affinity of some added substance to that by which the bodies were previously united, the abstraction of one of the bodies, or an alteration of the circumstances connected with their union. Thus vitriolated potash is decomposed by adding the smallest particle of barytes; salts are deposited from water, by evaporation, or by the abstraction of caloric.

Dissolution, by some late authors, is opposed to solution, and it is applied when, in the solution of two bodies, a previous union is destroyed. It is a solution of pure calcareous earth, in muriatic acid, but a dissolution of carbonated lime in the same acid, since the carbonic acid is separated in the form of gas. This separation of gas is called *effervescence*.

Precipitation comprehends those processes in which the body, previously dissolved, becomes solid. Thus flint is separated from fluor acid air, in a solid form, and magnesia from Epsom salts. This, however, commonly styled a *precipitate* when heavy, is cream when it swims on the surface, as the lime separated from lime water is called cream of lime. Precipitation is effected by abstracting a portion of the menstruum, or diminishing its powers. The latter is sometimes effected by dilution; as when alcohol dissolves resins they are precipitated by adding water, while the abstraction of water produces the precipitation of salts. Another cause of precipitation is the addition of a body which has a superior affinity to the menstruum, or to the dissolved substance; but the latter is not precipitated, unless it is insoluble in the new fluid.

Precipitation is employed to procure substances which nature offers in a compounded state, as magnesia from Epsom salts; sometimes to separate impurities, as lime is separated, in a considerable degree, from neutrals, by the vitriolic acid. The whole system of chemical re-agents, in the analysis of mineral waters, is connected with precipitation. The conduct of this pharmaceutical operation requires minute attention. The re-agent must be peculiarly pure; it must be added slowly, and never in excess. We must be cautious also in our examination of the precipitate, that other bodies may not be accidentally mixed; for the whole may be a solution in a compound menstruum, and, destroying the combination, may precipitate other bodies besides those which are affected by the chemical affinity of the re-agent.

Crystallization is a slow precipitation; and in this gradual process the particles of salts assume particular

forms, perhaps from a certain polarity in the minute particles. Though we find crystallizations particularly in salts, yet every body, when the attraction of aggregation is completely removed, and the menstruum is sufficiently fluid to admit of its motions, seems capable of assuming a regular form, except perhaps the fat oils. The experiments, which seemed to show some determined forms in their particles, were probably optical delusions.

M. Hatty has rendered it probable that there are only three forms of integrant particles, the parallelepiped, the triangular prism, and the tetrahedron. The primitive forms of crystals are, however, six; the parallelepiped; the regular tetrahedron; the octaedron, with triangular faces; the six-sided prism; and the dodecahedron, terminated by rhombs, or by faces of isosceles triangles.

It has been observed that the menstruum should be so attenuated as to give perfect freedom of motion to the particles; nor, perhaps, is there an instance of bodies perfectly dry crystallizing. Gunpowder is sometimes decomposed by the nitre crystallizing, but only when it has previously deliquesced. In this case we perceive that the operation of crystallization is effected with some momentum, as it overcomes the attraction of aggregation; and we recollect an observation of Vauquelin, that in one instance it appeared to break a thin vial. When, from the deposition of some impurities, the fluid becomes thick, the crystals are no longer formed, and the fluid is then called the *mother water*, *mater crystallorum*.

The liquefaction by fusion is equally favourable to crystallization, if conducted with care, as by solution; but the crystals first formed should be removed, or the future ones will fill up the interstices. In the formation of all crystals by solution, some water is entangled between the crystals, called their *water of crystallization*; and, in the experiment before alluded to, where many salts, rapidly crystallizing, form a solid mass, it is from the whole of the water being entangled between crystals, of many different shapes. Those salts which are far more soluble in boiling than in cold water, contain the greatest proportion of the water of crystallization; and those which differ little in this respect, the least. For the crystallization of the latter, evaporation is always necessary.

In many respects, crystallization is an object of curiosity, rather than use; but it is employed to separate salts from impurities, and from other salts which differ greatly in solubility, or their different affinities to hot or cold water. It is probable, also, that some of the metallic salts only crystallize when they contain the acid, or rather are oxydated in a given proportion. Hence, emetic tartar, in the form of crystals, is a more certain medicine than when confusedly crystallized in powder. The perfection of the needle-like crystals in the sublimation of calomel is a test also of its goodness.

Oxygenation is frequently a necessary pharmaceutical operation. It was formerly styled combustion; but this operation, attended with the production of heat and light, is only one mode of oxygenation. When the saccharine acid, for instance, is formed by the addition of the nitric acid to sugar, the process is called oxygenation, though neither heat nor light are produced.

Combustion is a process sufficiently known. It is em-

ployed to procure the alkaline salts of vegetables, and more partially in *charring*, where the heat, and perhaps the light, are forced to combine again with the wood, in a looser union. When attended with flame, in the usual manner, it is styled *inflammation*; when with violent heat and light, rapidly separated, *deflagration*. In the latter process the materials must be dry, they must be projected in small quantities, and the deflagration must be completely over before more is added, or the metal will not be properly oxygenated. The operation is assisted by stirring, when the first violence of the explosion is at an end. In all these processes the oxygen is derived from the air, from the decomposition of water, or from acids, when they are employed. When the various modes of oxygenation are designed to produce an oxide, modern refinement has styled it *oxydizement*; when an acid, *acidification*.

In medicinal pharmacy, metals are the common subjects of oxydizement or acidification; for many of the metals, as we have seen, are acid when in the form of oxyds. Iron and manganese are oxydized merely by the action of the air. Gold and platina scarcely undergo this change, in the most violent heats. The action of the air greatly assists the operation of water, in producing oxydation. When acids are employed, they are sometimes decomposed, and afford the oxygen; but most commonly enable the metal to decompose water. The sulphuric acid is decomposed by few metals, but powerfully promotes the decomposition of water. The nitric acid, on the contrary, in almost every oxygenation, is itself decomposed. The muriatic acid is never decomposed, and only acts on metals capable of decomposing water. When oxydized, it readily yields the superabundant oxygen, but no portion of that which contributed to its original formation. The more rapid the process, the more complete is the oxygenation; and when it proceeds too slowly, it may be accelerated by heat; when too rapidly, diminished by cold. When metals are oxygenized by acids, they are generally united in the form of salts; but, if oxygenized in a great degree, they are insoluble in acids.

The *disoxygenation* of metallic oxyds is seldom required in medical pharmacy; but compound oxyds may be farther oxygenized by treating them with nitric acid. In this way various acids are formed; but scarcely any of these are employed in the practice of medicine. The combination of oxygen from the atmosphere with various vegetable matters, which takes place in the different forms of *FERMENTATION*, we have already considered. Vide in verbo.

If we were to arrange more regularly the objects of the pharmacist's attention, we should propose the following plan. In the usual dispensaries no scientific arrangement has yet been attempted; and this, as a first attempt, may be found imperfect.

I. MEDICINES IN A FLUID FORM.

a Not decomposed.

EXPRESSED JUICES, SYRUPS, SOLUTIONS, INFUSIONS, VINEGARS.

b Partially decomposed.

WINES, DECOCTIONS, TINCTURES.

c Completely decomposed.

DISTILLED WATERS and SPIRITS; ESSENTIAL and EXPRESSED OILS.

II. IN A MORE SOLID FORM.

CONSERVES; INSPISSATED JUICES; RESINS;
POWDERS.

III. CHEMICAL COMBINATIONS.

SALTS; *neutral, earthy, and metallic.*
OXYDS.

INFLAMMABLES.

IV. MIXTURES.

*a Fluid, JULEPS, EMULSIONS, LOTIONS, LINI-
MENTS.*

*b Semi-fluid, CATAPLASMS, OINTMENTS, CE-
RATES.*

c Solid, PILLS, TROCHES, PLASTERS.

Medicines in a *fluid form*, not decomposed, or at least the juices only separated from the woody fibres, soon spoil. A little fermentation commences, they become foul and ropy; so that they should be quickly used, unless preserved by a mixture of spirit. The *syruhs*, from their inspissated form, are not equally susceptible of fermentation, but in a cool place may be long preserved; though the sugar, after a certain period, begins to crystallize. The *vinegars* are less liable to change; and the *solutions*, in which we chiefly include the salts in a fluid form, appear to be less so. The metallic salts, however, are sometimes deposited when the phial is frequently opened; and the solutions of emetic tartar, of muriated barytes, and quicksilver, are stronger at the bottom if shaken, but weaker if dropped out without any agitation. Under the head of solutions we include all mineral medicines in a fluid form, though the menstruum be wine, as in the antimonial wine, or spirit, as in Van Swieten's solution of sublimate, or the *tinctura ferri muriati*.

In the *wines, decoctions, and tinctures*, vegetable substances, we have said, are partially decomposed; the least in the wines, and most considerably in the tinctures, which, if the spirit be rectified, contain almost the pure resin. In the wines and decoctions the depositions are considerable, and they should not be long kept: in the tinctures they are less; but as the spirit evaporates, and the closest stoppers will not wholly prevent it, the dissolved substance is no longer suspended. No means can wholly prevent the deposition, and tinctures are always unequal unless when recent. Fortunately the dose is usually not small, and no great dependence is placed on them. To this, however, the tinctures of opium and digitalis are exceptions.

A more complete decomposition takes place in *distilled waters, spirits, and oils*. These, in fact, are the essential oils of vegetables, combined with water or alone. The water in these cases is free from impurities, and will not spontaneously change; but in the simple water the oil sometimes separates, rising to the top; so that, if long kept, they should be frequently shaken. In the spirit the oil continues without any separation. These are the liqueurs of the French and Germans, in which the spirit is disguised by the sugar, and softened by the oil which communicates the flavour. The least hurtful are those which are flavoured by aromatics; but all are seductive, and accustoming the palate to a stimulus, it soon requires a much stronger one, regardless of the flavour which first allured. The expressed oils are well known, but when the separation is assisted

by heat, which is usually applied by heating the plates of the press, they soon become rancid. This is the foundation of the direction, when *cold drawn* linseed oil is prescribed. Essential oils are subject to a change in consequence of the formation of crystals (see GAUBII ADVERSARIA); but their nature and source is not known; and as they form gradually without being conspicuous till after many years, it is sufficient to mention the change only in this place.

Medicines in a *solid form* are the *conserves*, which, after a little time, ferment, if not kept cool; the *inspissated juices*, which, if moist, contract a mucus, if hard, become friable, and not very distant from the form which follows, the *resins*. The *conserves* and *inspissated juices* should be in a moist state, and covered with paper, dipped in spirit. Powders should, in general, be kept dry, and in bottles closely stopped.

The *chemical combinations* require no particular remark. The oxyds are sufficiently known, and under the inflammables we include the hepatised ammonia, and the preparations of sulphur.

The *mechanical mixtures* in a fluid form can seldom be so accurately mixed as to prevent separation, and they are not adapted for long keeping. Those which are of a greater consistence do not separate, but the oils of the *plasters* and *cerates* often become rancid, and irritate the wounds they are intended to sooth. In general they are in a very imperfect state. The *plasters* and *ointments* we have styled mixtures; but in the articles EMPLASTRA and NUTRITUM we have given more correct views of these formulæ: as the chemical action, however, is apparently confined to the calces of lead, we thought it better to follow the more common ideas in this place. *Pills* and *troches* are undoubtedly mechanical mixtures; but it is necessary to remark that the first are usually so soft as not to preclude chemical action. By keeping, therefore, they often lose their virtue, or acquire different qualities. They often, also, become so hard as to be insoluble in the stomach.

An abstract of ancient pharmacy would have afforded some subjects of curiosity, but would not have been particularly interesting, and certainly of no utility. To assist, however, the reading of a few ancient authors which still hold their place in libraries, it will be necessary to notice some of their terms, and the same arrangements of medicines peculiar to the language of pharmacy. Thus the term *julepum* is often confined to medicines used as alteratives; *distillatio instaurans*, or *jusculum*, to a nutrient mixture; *bochetum* to a diaphoretic; *hordeatum*, or *ptisana ex hordeo*, to a diluent; *potio* to a laxative. *Opiatum* is often the term for a bolus, as resembling in consistence the theriac; *morselli* and *mandaleones* for pills; *drophaces* for stimulating plasters; and *spanadrafti* for adhesive ones. A semi-fluid application to the head is often called *frontale*, or *apophlegmatismus*; a more solid one, *cucupha*. To the stomach an application of the solidity of a plaster is called *scutum*; and the softer kind of pessary, *nascate*.

The pharmaceutical classes of medicines are,

THE FIVE EMOLLIENT HERBS; malva; althæa; violaria; mercurialis, and parietaria. To these are sometimes added branca ursina; beta, and atriplex.
THE FIVE CAPILLARY HERBS; adiantum nigrum et

- album; polytricon aureum; tricomanes, and ceterach.
- THE FOUR GREATER WARM SEEDS; semina anisi, fœniculi, carui, and cumini.
- THE FOUR LESSER WARM SEEDS; semina ammeos, amomi, apii, and dauci.
- THE FOUR GREATER COLD SEEDS; semina cucumeris, cucurbitæ, citrulli, and melonum.
- THE FOUR LESSER COLD SEEDS; sem. endiviæ, scariolæ, lactucæ, and portulacæ.
- THE FIVE GREATER APERIENT ROOTS; radices opii, fœniculi, asparagi, petroselini, and rusci.
- THE FIVE LESSER APERIENT ROOTS; rad. graminis, rubiæ, eryngii, capparis, et ononidis.
- THE FIVE KINDS OF MYROBOLANS; citrini, chebuli, indi, emblici, and belerici.
- THE FOUR CORDIAL FLOWERS; flores boraginis, buglossi, rosarum, and violarum.
- THE FIVE PRECIOUS STONES; lapides saphyri, granati, smaragdi, hyacinthi, and carneoli.
- THE FOUR PLEURITIC WATERS; aquæ eardui b. mariæ, taraxaconis, cardui benedicti, and scabiosæ.
- THE THREE STOMACHIC OILS; oleum absynthii, cydoniorum, and mastichinum.
- THE FOUR WARM OINTMENTS; aregon, martiatum, altheæ, et agryppæ.
- THE FOUR COLD OINTMENTS; album camphoratum, rosatum mesue, populeon, and infrigidans Galeni.

These classes the young pharmacist was directed to commit very carefully to memory, and was frequently examined on the subject.

We had intended to have enlarged farther on the modern NOMENCLATURE of pharmacy, vide in verbo; but the few remarks already offered are probably sufficient. We wish they may be so to correct redundancy in titles. The botanist was glad to escape from the descriptions of Ray and Caspar Bauhine, by the substitution of a trivial name for each species; and when custom had established such, a change was sacrificing convenience to accuracy, and to accuracy misplaced. It is the object of the pharmacist to point out the species employed, in his list of the materia medica, not to repeat it on every occasion in his title.

As we have enlarged on the distinguishing characteristics of the skilful surgeon and judicious physician, we may be expected to speak also of the character of a pharmacist. We supposed, however, that common honesty, and an acquaintance with the properties of each medicine, was sufficient. Yet these are enlarged on with some originality, quaintness, and energy, by an old author on the subject, now lying before us (Renodæus), that we are tempted to extract a small part of it.

"Probity is no less necessary in a pharmacist who prepares medicines for the preservation and recovery of health, than in a philosopher; for in his hands are disease and health; death and life. If ignorant or malicious, he is able essentially to injure, or to kill. A pharmacist should, therefore, be as conscientious as Socrates.

"Principally he ought to be religious, to reverence the Almighty; wholly free from envy and malice;

sound in mind; acquainted with grammar; neither indigent nor covetous; and able to bear fatigue both by day and night. The atheist is equally regardless of the Creator and the creature; and the invidious man pines at his neighbour's prosperity. The fool is anxious to do mischief; and the unskilful man thinks nothing right but what he does himself; and no one is more unjust. The covetous man benefits nobody, and is most unjust to himself: the poor man is easily tempted to poison. His poverty but not his will consents. (Ad turbia enim cogit egestas.)

"Drunkards, buffoons, mimics, chatterers, impostors, and mountebanks, who deceive by trifling, fraud, boasting, vain promises, flattery, and lies, who thus exhaust the purses of the common people, are unworthy the name of *pharmaceutists*. Nothing is more injurious in a state than such reptiles. (Cane quovis potioribus et angue.)

"Since the subject of pharmacy and medicine is the same, viz. the human body as susceptible of either disease or health, the physician and apothecary must have many common qualities, such as prudence, probity, diligence, and a knowledge of medicine; but since pharmacy is subservient to physic, and has only for its object the medicine itself, or its due form, when the pharmacist proceeds farther he becomes a quack and a cheat.

Nor must we trust pretenders, who assert that gentle medicines may be given at any time without danger; for lettuce at an improper season, and in too large a quantity, is as fatal as hemlock; and though wine is familiar to the constitution, it is often more destructive than the sword: though a cordial, the milk of old men, the restorer of the principles of life, if given at an improper time it is highly injurious.

"The duty of the apothecary is confined, therefore, to the medicine, to apply it to the purpose of restoring health. That he may execute this office with success, he must select, prepare, and compound the remedy; but before he selects it he should know what it is." J. Renodæi Institutiones Pharmaceuticæ vel Dispensatorium Galeno-Chimicum, quarto, Hanoviæ, 1631. Lib. 1. cap. 2. page 3.

A. Duncan's Edinburgh Dispensatory; Renodæi Dispensatorium; Pharmacopeia Augustana Zwelferi; Schroeder Pharmacopeia Medico Chimica; Lewis's Dispensatory; Dossie's Elaboratory laid open; Baumé Elemens de Pharmacie; Gaubius de Formulæ; Annales de Chymie.

Pharmacia extemporanea. If pharmacy, in one view, be the art of compounding medicines, extemporaneous prescriptions may be properly distinguished by this title. We long hesitated about introducing an article of this nature; and it may be easily supposed that the accomplished physician, when he has ascertained the nature of a disease, and sees the changes necessary in the constitution for the restoration of health, will be readily able to adapt his means to the end in view. This, however, is not always an easy task. A young physician, anxious for his patient, perhaps for his own credit, feels this part of his duty difficult; and it is unfortunately that which the apothecary can best judge of, and in which mistakes will be most readily caught

at and ridiculed. We conclude, of course, that he has not been bred in the dull circle of an apothecary's shop; yet it is singular, that those who have climbed over the counter into their chariots have not appeared always the most ready in this part of their duty. A few remarks on this subject may not be, therefore, improper; and we shall translate them from a little manual, which, in early life, we wrote for our own use, with such additions as a long experience has suggested.

It is not our present object to point out the doses of medicines, as it is our design to enlarge farther on this subject under the article *Posologia*, q. v. We may remark, however, in this place, that the rules laid down on this subject by authors, when they teach us how to vary the dose according to age or sex, are liable to numerous exceptions. Thus a child of a year old will often bear a larger dose of calomel than an adult; and a weak female a larger dose of rhubarb than a robust labourer. Gaubius, Wedelius, and Boerhaave have, however, regulated the doses with mathematical accuracy, from the age of fifty-six, the standard, to ninety-eight on one side, and to seven weeks on the other. We need not add, that such tables are wholly useless.

It is scarcely necessary to remark that the general qualities of each medicine, and of its most common forms should be known. An emulsion, for instance, will be decomposed by a variety of medicines which it is sometimes necessary to add, particularly by the camphorated tincture of opium. The physician should know also the effects of mixture, that camphor, v. g. will soften the fetid gums, and different ointments, reducing what may be ordered to be spread on cloth, to the consistence of a liniment. It is needless to add that practitioners should be acquainted also with the chemical properties to prevent decompositions; and for this purpose we anxiously pointed out in the article *Chemia*, q. v. the different preparations which would destroy each other's properties. Sometimes, indeed, decompositions are apparently intended; for if Griffith's mixture be given in the form of pills, they are of a very imperfect consistence, but harden as the different ingredients act on each other; and in the mode we have recommended for making Plummer's pills, the calomel and the sulphur auratum evidently combine in the mass. It sometimes, however, happens that this combination of different ingredients renders the pills hard and insoluble; an inconvenience severely felt if the pills are kept for a long time.

The taste, the smell, and the general appearance of the medicine, require particular attention in an age so luxurious as the present. Unfortunately, active medicines cannot always be rendered pleasant, and the most disagreeable are usually given in the form of pills. If these cannot be swallowed, for some people are unable to swallow what they have not masticated, the inconvenience of the taste cannot be avoided. It may, however, be often lessened by choosing a proper vehicle. Thus milk covers the taste of bark, of volatile tinctures of guaiacum and valerian. A solution of the juice of the liquorice, or a light decoction of the root, covers more effectually than sugar every bitter taste; and a small proportion of kali changes it at least to a different, often a more agreeable one. Any change is sometimes sufficient to reconcile a delicate taste to the continuance of a medicine.

It is easier for some individuals to swallow a small bolus than pills, and a bolus wrapt in wafer paper slightly moistened, slides often with ease through the œsophagus. Some unpleasing medicines, if the bulk be not large, may be conveniently conveyed into the stomach in this form. It is highly necessary, however, if we regard elegance or convenience in prescriptions, to be aware of the different specific gravities of medicines. The bulk of some medicines in moderate doses renders their exhibition in pills or boluses inconvenient, while the weight of others in small ones subjects them to be lost, if given in a liquid form. Yet we once saw two grains of calomel ordered in a four ounce mixture to be taken by table spoonfuls.

The forms of fluid internal medicines extemporaneously prescribed are *draughts*, *mixtures*, *juleps*, *emulsions*, *infusions*, *decoctions*, *solutions*, *tinctures*, *drops*, and *clysters*. The solid forms are, *powders*, *boluses*, *electuaries*, *lozocs*, and *pills*. The ancient pharmacutists employed many others, and were minute in their distinctions.

Draughts and *mixtures* differ only in the quantity sent; as the draught is usually taken at once, and should not exceed an ounce and a half. In a larger quantity it has been styled a *potion*; but this term was almost exclusively confined to a purgative, and is now disused. The young practitioner will endeavour to make his draughts as pleasant as possible, combining the more nauseous ingredients in pills. At all events they should not be too thick, and a single draught should never contain more than two scruples of a powder, seldom more than half a drachm; of electuaries and conserves not more than a drachm; of inspissated juices or extracts, a scruple. The mixture may vary from three to six ounces; but in this form we should avoid oils, which soon become rancid in warm weather; conserves, which will ferment; and such combinations as will not be permanent. In general, mucilages are more convenient media to combine oils with water than the yolk of an egg; and the mucilage of gum tragacanth is apparently better than that of gum arabic. If oil is employed, about half the quantity of mucilage is necessary; if balsams, an equal; and if resins, a double quantity. *Spermaceti* requires nearly an equal quantity; wax (previously rubbed with spirit of wine), and balsam of sulphur, double; camphor, it is said, four times, and musk five times, as much. Camphor may, however, be conveniently suspended by rubbing it previously with magnesia; wax, by a mixture of soap; magnesia itself, by previously rubbing it with sugar; and resins, by trituration with almonds.

Juleps, in the strictness of the ancient pharmacutists, is a sweet mixture, as the Persian name imports, to disguise or carry off the taste of the more disagreeable medicines. Its characteristics are pellucidity and sweetness; but at present the name is employed without any determinate meaning, or as synonymous with mixture.

Emulsions are oils united with watery fluids, by means of mucilage, sometimes by ammonia. The latter are, however, easily decomposed, and seldom continue in perfect union many hours; so that they are chiefly adapted for draughts, or at least no more should be ordered than can be taken in twenty-four hours. The others are more permanent in their union; but even of

these no very large quantity should be directed, unless intended for a common drink.

Infusions are made with cold or with boiling water. Many bitters yield a pleasant impregnation to the former, and a harsh disagreeable one to the latter. Camomile flowers, the carduus, and some others, are of this kind, and probably the bark may be added. We now know that cold water dissolves the extractive matter only, boiling water the resin, probably increased in quantity by the oxygen absorbed from the air if the vessels are not close. It has been supposed that previous trituration with magnesia will enable the water to dissolve a larger portion of the bark, but the colour only is apparently heightened, for the same effect will be produced if the magnesia or kali is added to the strained fluid. Infusions, however, are not to be depended on in emergencies: they are chiefly adapted to a medicine which must be long continued, and are seldom given alone without some medicine to add to their warmth. From what we have remarked under the article COMBINATION OF MEDICINES, it is probable that the formula will be more effectual if the addition is of a different kind.

Decoctions are prepared by boiling; but, for the reasons assigned, the proportion of the ingredient should be increased, the time of boiling shortened, and the vessels carefully closed. In many instances, when we wish to preserve their strength unimpaired, they should be strained warm, and those ingredients which yield their virtues readily should be added only at the end of the process; for the water might be otherwise saturated and the more useful ingredient yielded in a less proportion. It was formerly not unusual to add a neutral salt, as in the decoctum bardanæ. This should be guarded against if we ever wish to unite a mercurial with it. The usual proportion of the vegetable is from one ounce to two, to a pint and a half of water, to be boiled to a pint, if not of a resinous nature.

Solutions are, as may be supposed from the term, saline bodies dissolved in water, and may appear to require no particular directions. The first and most obvious remark is, that the water should be pure. Distilled water is necessary in many solutions, but rain water, carefully filtered, is pure enough for almost every purpose. Muriated barytes, for instance, is decomposed by all water containing selenite; nor are the solutions of tartarised antimony or muriated mercury wholly unaffected by the common contents of water. A reason already assigned renders it inconvenient to order a large quantity of these solutions, since, by frequently opening the bottle, the access of air occasions same decomposition, so that the latter part differs greatly in strength from the former. The aqua ammoniæ is from this cause very unequal in strength; and it is always safer to order the salt. Arsenical solutions are subject to the same inconvenience; and we have found it safer to add these in a determinate proportion to a small mixture composed chiefly of distilled water, and in a quantity no larger than is sufficient for three or four days. In solutions of neutral salts we find the cathartic power often increased in proportion to the quantity of the menstruum, so that three drachms of Rochelle salt in a pint

and half of water will often have more effect than twice that quantity in three ounces. The deposition of any portion of muriated mercury is prevented by adding the muriated ammonia; but, in general, if we wish to prevent precipitation, it is best effected by adding the acid which has the greatest affinity, not to the metal, but to its oxide.

Tinctures are officinals, and scarcely the object of extemporaneous prescription. We notice them only to remark that if the weaker spirit is combined with the stronger, some decomposition will ensue, and injure the elegance of the formula. A small proportion of alcohol should, therefore, be occasionally added. It is not common to add any other ingredient to tinctures; but laxative ones are rendered occasionally more active by a small proportion of emetic tartar, and the tonics somewhat altered in their appearance, if not improved in their power, by a fixed alkali. No prudent physician will neglect occasional changes in appearance, to inspire confidence: no skilful, we had almost said, no honest one, will alter the essential parts of plans which he finds advantageous.

Drops. If these are in small doses, the size of the mouth of the phial and the quantity of fluid in it may make a material difference in the quantity taken. It is necessary, therefore, to dilute it with at least a triple quantity of the fluid, that the little variation, from the causes mentioned, may not essentially alter the real dose. Some colouring matter in this form is often necessary. The precautions suggested under the two last heads will require attention in the prescription of drops.

Clysters. Elegance of the formula is in this mode of relief less important when given with a view of evacuating merely; but when medicines of a different kind are injected, some attention to their mixture is requisite. Camphor, for instance, should be carefully divided, lest portions should adhere to the rectum, and produce unpleasant consequences. Turpentine we have also found it necessary to mix with care, to avoid an inconvenient stimulus. When mucilage, or the yolk of an egg fails, we have found the coarsest brown sugar contribute to its union with the watery fluid. Clysters, for the purpose of procuring a discharge, should exceed a pint: if they are to be retained, they should not be in a larger quantity than three or four ounces. If intended as nutrients, the latter quantity is fully sufficient, and some opium should be added to retain it. Antispasmodic clysters should be equally restrained from passing off, by opium; and these in children should never exceed two ounces, though their purgative clysters may be more than six. In general, the dose given in clysters is allowed to be triple that taken by the mouth.

Powders is a simple form scarcely requiring a remark, except that deliquescent salts should be avoided. There are some powders also which decompose each other in a dry state, or at least render each other inert: sulphur, for instance, destroys the activity of mercury, and lime will decompose muriated ammonia. In prescribing powders, this circumstance requires very particular attention.

An *electuary* differs from a *bolus*, as a draught from a mixture, in the quantity being either a single dose or several together. Each consists of powders or extracts

brought to this semi fluid form by means of syrup. Other fluids will not give it sufficient cohesion; and if the dose of the powders is large, conserves will add too much to the bulk. All essential oils, however, including camphor, require conserves: turpentine is best covered by honey; but all these are more safely and properly combined in draughts, if we except camphor, which should, if possible, be directed in a bolus or pills. The interest of the apothecary is not injured in this way, as he has learnt to charge a bolus in a draught. Conserves in general are best adapted to the metallic oxyds, many of which are heavy; but such electuaries should be sent in small quantities, lest they be injured by fermentation, or rather in boluses, as an error in the quantity may be injurious. In general, every medicine to be taken in a precise dose should be sent in a bolus or a draught.

Lohoc is a form of Arabian invention, as the title implies. It is generally composed of oils with mucilages, but any of the mucilaginous conserves, as that of hips, may be employed. It is of an intermediate consistence, between an electuary and an emulsion, and should be so dense as not to be immediately lost on the fauces, and so fluid as not to excite deglutition; for when it has passed the fauces its utility is at an end. Small quantities of a mild fluid seem in general equally efficacious, particularly the common emulsion with nitre, or barley water sweetened with capillaire.

Pills are sufficiently known; but we have already remarked that whatever decomposition may take place by time, should be considered, and the change, whatever it may be, guarded against. The various extracts, the fetid gums, camphor united with the conserve of hips, metallic salts, are best adapted to this formula. Few persons will swallow more than four or five at a dose, but many swallow them so easily that they make little difficulty of taking ten, fifteen, or twenty. When this is the case, almost every medicine, except deliquescent salts, may be given in this form; and these may be easily avoided.

The external formulæ are, GARGLES, FOMENTATIONS, CATAPLASMS, LINIMENTS, OINTMENTS, and PLASTERS; but they require no particular remarks. The gargles are mixtures; the fomentations, decoctions; the liniments, like the lohocs, of a consistence between a solid and a fluid.

Various other formulæ are chiefly officinal: the different distilled waters of former dispensaries, lozenges, syrups, and vinegars, are seldom the objects of extemporaneous prescription.

Before we conclude this article, it will be necessary to enumerate and shortly explain the various terms of former pharmaceutical authors, and we shall, for the convenience of referring, adopt an alphabetical order. Though many of these have already occurred in our pages, it may be useful to bring them together in one view.

Anacollema, a glutinous cataplasm, applied to the forehead to intercept, according to the ideas of the ancients, the flow of blood to the nostrils in cases of epistaxis. *Apozema*, a decoction.

Bacilli; small sticks for the production of smoke, or for inhaling. *Claretum*; wine rendered aromatic by the infusion of spices, sweetened with sugar; vide in verbo. *Collutiones*; washes held in the mouth. *Crœcus*; any

calx of a bright yellow colour. *Cucupha*; a bonnet filled with cephalic medicines, vide in verbo. *Dropax*; a strongly adhesive plaster, whose chief ingredient was pitch. *Eclegma*; a lohoc. *Elixir*; a tincture. *Embrocha*; a stillicidium, dropping or pouring water. *Essentia*; besides its common meaning, sometimes signifies inspissated juices, sometimes eleosacchara. *Epi-thema*; a liniment. *Frontale*; a liniment applied to the forehead. *Galreda*; an inspissated animal glue. *Glandes*; see SUPPOSITORIA. *Holipha*; sweet cakes rendered medicinal by some infusion. *Lapis vegetabilis*; any fluid medicine inspissated by evaporation, and dried to the hardness of a stone. *Liquor*; the fluid of deliquescent salts, often a distilled fluid. *Lonzoga*; lozenges. *Malagma*; cataplasma. *Magisterium*; vide in verbo. *Martius panis*; almond bread, made also of pistachio and other nuts. *Masticatorium*; any acrid medicine chewed to promote a discharge of saliva, or as was said of PITUITA, q. v. *Mel*; not only honey, but any preparation in which it was used, or of the same consistence. *Morsuli* or *morselli*; lozenges usually of a square form. *Moretum*; a preparation of mulberries joined with aromatics, and some absurd ingredients, which was formerly supposed useful, and cordial to the fœtus, but capable of expelling a false conception. *Nascale*; see PESSUS. *Opiatum*; an electuary of the consistence of the confectio opiata. *Oxyrrhodynon*; an application consisting of vinegar and roses, designed to relieve pain, formerly applied to the head, forehead, or neck.

Pandaleum is a lozenge poured, while fluid, into a box as a mould. *Pasta regia*; see MARTIUS PANIS. *Pastilli*; lozenges. *Pessus* vide PESSARIA in verbo. *Perramma*, and *periapton*, an amulet hung round the neck. *Phænignus*; a slight rubefacient. *Pineatum* and *pineolatum*, martius panis, made of pine nuts. *Pomum ambra*; an odoriferous mass, supposed to ward off infection. *Rotula*; lozenges of a round form. *Sacculus*; an application consisting of dry medicines, sometimes odoriferous ones, included in a bag. *Sapa*; inspissated must; sometimes a conserve. *Saponca*; a linctus made of almonds. *Sief*; a dry collyrium. *Smegma odoratum*; an odoriferous soap. *Spanadrapus*; linen dipped in a fluid plaster, chiefly adhesive. *Stymma*; the dry mass which remains after expressing the oil, in which flowers have been macerated. *Suppositorium*; a solid, round, conical body introduced into the anus, often to excite its action and procure a motion. *Tragea*, *tragema*; a pleasant powder. See MEDICINA. *History*, and Kirkland's Inquiry, vol. i. p. 64, &c.

PHARMACI'TIS, (from *φάρμακον*, a drug; because as a drug it was formerly used). See AMPELITIS.

PHARMACOCHEMIA, (from *φάρμακον*, a drug, and *χημία*, chemistry). Pharmaceutical chemistry in contradistinction to the spagirical art, which treats of the transmutation of metals.

PHARMACOPŒIA, (from *φάρμακον*, a medicine, and *ποιω*, to make). See DISPENSATORIUM.

PHARMACOPOLÆ, (from *φάρμακον*, a drug, and *πολεω*, vendo). See AGYRTÆ.

PHARYNGÆA CYNA'NCHE, (see ANGINA PHARYNGÆA, *pharynx*).

PHARYNGÆUM SA'L, (from *φάρυγξ*, *pharynx*). A salt used in quinsies, thus prepared: R Crystal. tart. sal. nitri $\bar{a}\bar{a}$ $\frac{3}{4}$ i. alum. ust. $\frac{3}{4}$ ss. dissolve in distilled

vinegar, and coagulate the solution. This salt was formerly dissolved in water for gargarisms.

PHARYNGE'THRON, (from φαρυγγεθρον). See PHARYNX.

PHARYNGO-STAPHYLI'NI, (from φαρυγγ, and σταφυλη, uvula,) are two small muscles fixed to the lateral part of the muscoli thyro-pharyngæi, as if they were portions detached from these muscles, running obliquely forward along the two posterior half arches of the septum, and terminating in the septum above the uvula, where they meet: the thickness of the posterior half arches is made up by these muscles. See Winslow's Anatomy.

PHA'RYNX, (απο το φερειν, because it conveys the food into the stomach,) *infundibulum*, *pharyngethron*, a muscular bag fixed behind to the basis of the skull at the cuneiform process of the occipital bone, laterally to the bottom of the face, and below to the larynx. The muscles which cover the first vertebra of the neck are behind: on the sides the upper portions of the carotids and jugulars, the apophyses of the sphenoid bone, and the pterigoid muscle.

The pharynx in shape resembles the wide part of a funnel, of which the œsophagus, q. v. is the lower portion. The top is styled the *arch*, which opens to the nostrils; the body communicates with the mouth, and the extremity with the stomach. The arch on each side terminates in a point towards the jugular cavities of the basis of the cranium. It afterwards contracts on each side, and behind the larynx is again enlarged. The muscles which constitute the pharynx are sufficiently described by their names: they are the *crico-pharyngæus*, from the cricoid cartilage to the *pharynx*; *thyro-pharyngæus*, from the thyroid cartilage to the *pharynx*; *hyo-pharyngæus*, from the os hyoides to the *pharynx*; *stylo-pharyngæus*, from the styloid process to the *pharynx*; *pterygo-pharyngæus*, from the pterygoid process to the *pharynx*; *mylo-pharyngæus*, from the dentes molares to the *pharynx*; *salpingo-pharyngæus*, from the Eustachian tube to the *pharynx*; *cephalo-pharyngæus*, from the basis of the skull to the *pharynx*; *syndesmo-pharyngæus*, from the white ligament to the *pharynx*; *chondro-pharyngæus*, from the cartilaginous appendage of the os hyoides; *glosso-pharyngæus*, from the root or upper part of the tongue laterally. Some anatomists have limited the muscles of the *pharynx* to two or three; and others have multiplied them to thirteen or fourteen on each side. Albinus divides them into six pair, viz. the *stylo-pharyngæus* of Douglas; *constrictor inferior*, the *crico-pharyngæus*, and *thyro-pharyngæus*, of Douglas; the *constrictor medius*, the *hyo-chondro*, and *cephalo-pharyngæus*, of Douglas; the *constrictor superior*, the *glosso*, *mylo*, and *pterygo-pharyngæus*, of Douglas; the *palato-pharyngæus*, *thyro-staphilinus*, of Douglas; and the *salpingo-pharyngæus* of Douglas. The lowest of these muscles between the sides of the cricoid cartilage form the first muscular circle of the œsophagus, which is continued in complete muscular circles to its extremity. Some of the upper ones, according to Santorini, contribute to modulate the voice.

In their various actions they enlarge and compress the gullet, so as to forward the aliment into the stomach.

The pharynx is made up partly of several distinct

fleshy portions, which are looked upon as so many distinct muscles, so disposed as to form the large cavity mentioned, and partly of a membrane which lines the inner surface of this whole cavity, a continuation of that of the nares and palate. This membrane is wholly glandular; and it is thicker on the superior and middle portions of the pharynx, than on the bottom or lower portion. Immediately above the first vertebra it forms several longitudinal rugæ, very thick, deep, and short, and we generally find in them a collection of mucus in dead bodies. In the great cavity there are no rugæ, the membrane adhering, as well as in the upper part, very closely to the muscles. At the lower part, where it is the thinnest, it covers the posterior part of the larynx, and is very loose, formed into irregular folds.

In the London Medical Observations and Inquiries, vol. iii. p. 85, &c. is an instance of a difficulty of swallowing, occasioned by a dilatation of the pharynx.

PHASE'OLUS, (from φασηλος, a little ship, which its pods were supposed to resemble). The BEAN, *vicia faba* Lin. Sp. Pl. 1039; *bona*; hath a long pod full of kidney shaped or oval seeds, which as a food are flatulent, though more nutritious than the other legumina.

PHASE'OLUS MAJOR, *smilax, hortensis, faba major, phaseolus vulgaris* a Lin. Sp. Pl. 1016. FRENCH BEANS, or COMMON KIDNEY BEANS, are cultivated in gardens; flower in July; the pods are used as aliment, and said to provoke urine. They are less nutrient and less flatulent than beans or peas.

PHASE'OLUS ZURRATE'NSIS, vel BRASILIA'NUS, *phaseolus pruritus excitans, nai corona, cow HAGE, cow ITCH, and STINKING BEAN, dolichos pruriens* Lin. Sp. Pl. 1019. The hairs upon the pods, if scraped off and mixed with syrup, may be given to children in doses of a tea spoonful, and two to adults, for destroying the long round worms. If ten or twelve pods are steeped in a quart of beer, and $\frac{3}{4}$ iv. of the infusion taken every morning, they are said to act as a diuretic, and to be useful in dropsies. See Raii Historia; London Medical Journal, vol. vi. p. 313. Vide STIZOLOBIUM.

PHASE'OLUS. See CAJAN FABIA MUCUNA GUACU.

PHASIA'NUS, (from Φασις, a river in Colchis; upon whose banks they abound). PHEASANT. See ARGUS.

PHAUSI'NGES, (from Φαυσις, fire). Red circles in the legs, excited by fire; sometimes used to signify spots from other causes.

PELLA'NDRUM, (from φελλος, cork, because it floats upon water). See MEUM ALPINUM GERMANICUM.

PELLA'NDRUM AQUATICUM, Lin. Sp. Pl. 366. *Cicutaria palustris tenuifolia*, SKELETON WATER WORT, WATER HEMLOCK, FINE LEAVED; when not thus distinguished it is often confounded with the *cicuta virosa*. Withering, Bot. Arrang. i. 176, gives the following description of the *phellandrium aquaticum*: the rundle with many spokes; rundlets, the same; general fence, none; the empalement, a partial fence of seven leaves, sharp, as long as the rundlet; cup, of five teeth, permanent; the blossoms general,

nearly uniform; florets, all fertile, individually unequal; petals five, tapering, heart shaped, bent inwards: *chives*; threads, five, hair like, longer than the petals; tips roundish: *pointal*; seed bud beneath; shafts two, awl shaped, upright, permanent; summits, blunt: seed vessels, none; fruit, egg shaped, smooth, crowned with the cup and the pointals, divisible into two parts; seeds, two, egg shaped, and smooth; florets in the centre smaller than the others. The branchings of the leaves are straddling, the stem very thick, hollow, scored, petals white.

Withering observes that the seeds are recommended in intermittent fevers; and the leaves sometimes added to discutient cataplasms: the plant is generally esteemed a fatal poison to horses, occasioning palsy, owing to an insect (*curculio paraplecticus*) which generally lurks within the stems; the usual antidote is pig's dung.

PHE'LLODRYS, (from *φελλος*, the cork tree, and *δρυς*, an oak; because its bark is a kind of cork, and its appearance that of an oak,) *ceris*; *quercus ceris* Lin. Sp. Pl. 1415. The LAUREL OAK, grows in Dalmatia and Greece. The leaves, bark, and acorns, agree in virtues with the common oak. See *QUERCUS*. Raii Historia.

PHE'NION. See *ANEMONE*.

PHI'ALA. A large round glass vessel with a long neck, often used for chemical solutions. The common phial also of the apothecaries.

PHILADY'NAMOS, (from *φίλος*, a friend, and *αδυναμис*, weak). An epithet of water, as a salutary diluter.

PHILA'NTHROPUS, (from *φιλειν*, to love, and *ανθρωπος*, a man; because it sticks to the garment of those who touch it). See *APARINE*. Sometimes the appellation also of a compound antinephritic medicine.

PHIL'LITIS. See *LINGUA CERVINA*.

PHILLY'REA. See *LIGUSTRUM INDICUM*.

PHILO'NIUM. An opiate, called from its inventor Philo; one of the oldest of its class, except perhaps the mithridate. The *philonium Romanum* is originally a prescription of N. Myrepsus. There are different prescriptions for this medicine in various pharmacopœiæ; but in that of London, 1788, it is made in the following manner, styled *confectio opiata*. Take of hard purified opium, powdered, six drachms; long pepper, ginger, and caraway seeds, of each two ounces; syrup of white poppy boiled to the consistence of honey, three times the weight of the whole. Mix the purified opium carefully with the heated syrup; then add the rest previously powdered.

PHILOSOPHO'RUM MERCU'RIVS, *arca arcanorum, mercurius metallorum*, is a pure fluid substance, said to be found in all mercury, and capable of being extracted from it. The existence of this principle was founded on the idea that quicksilver, fixed by sulphur, was the basis of all metals.

PHILOSOPHO'RUM O'LEUM. See *LATER*.

PHILOSOPHO'RUM LA'PIS. See *ADAMAS*.

PHI'LTRON, (from *φιλειν*, to kiss). *Amatoria veneficia*. A medicine to excite love. We need not add that no such exists, except in the imaginations of the credulous: lust may be excited, but never love. It also signifies the depression on the upper lip, situated immediately under the septum of the nose.

PHIMO'SIS, (from *φίμων*, to tie up). *Capistratio*, a disease in which the prepuce cannot be drawn back so as to uncover the glans penis. Dr. Cullen places it as a variety of the phlogosis phlegmone.

This disease is not exclusively confined to syphilitic affections, though then most troublesome, and more peculiarly dangerous. It is sometimes natural, from a contraction of the prepuce at its termination, as if drawn together like a purse by strings; and in that case at once relieved by separating the extremity, suffering it to bleed, and dressing it as a common wound. It sometimes arises from inflammation, in consequence of an acrimony in the mucus of the odoriferous glands; but then the prepuce is not straitened, the glans only is inflamed and swollen, and to draw back the skin is consequently painful. In such circumstances the steam of warm water, or its opposite, cold applications, will often relieve. To inject a fluid between the glans and the prepuce is in such states more easily advised than executed; but if it can be done, it will be often beneficial.

The principal cause is inflammation, excited by gonorrhœa or a chancre, and it is then a more formidable complaint, because the mischief is confined, and we know not its nature and extent, nor can we apply a remedy. If the constitution is robust, and much fever present, bleeding, low diet, and frequent saline laxatives, are useful. Cold applications to the penis are more beneficial than warm, and topical bleeding, with leeches, is occasionally useful. These, however, often fail, though assisted by opiates, a recumbent posture, and absolute rest. The operation then becomes necessary. It is simple, and by no means dangerous. A sharp pointed knife, concealed and defended by a grooved directory, which must be previously introduced between the prepuce and the glans, are the only instruments. The point of the knife should pass through the prepuce at the bottom, and the section be made by drawing it towards the operator. Common dressings are sufficient; but linen or lint should be interposed between the glans and the prepuce, to prevent adhesions. The treatment of the affection of the glans is connected with its cause, the *LUES*, q. v.

Paraphimosis is the opposite disease, where the prepuce cannot be drawn over the glans. Warm relaxing applications will sometimes assist; but it is rarely so troublesome as to require an operation. See Bell's Surgery, vol. i. p. 528; and White's Surgery, p. 343.

PHLA'SMA, (from *φλαω*, to bruise). See *CONTUSIO*.

PHLEBOPALIA, (from *φλεψ*, an artery, or vein, and *παλλω*, to leap). See *PULSUS*.

PHLEBORRHA'GIA, (from *φλεψ*, and *ρηνω*, to flow). A HÆMORRHAGE FROM A VEIN.

PHLEBOTO'MIA, (from *φλεψ*, a vein, and *τεμνω*, to cut). *PHLEBOTOMY, venæsectio*, the cutting or opening a vein. When several veins were opened in a day, the operation was formerly called *neroniana*.

The first instance of bleeding on record is that of Podalirius: Hippocrates did not often direct this operation; Aretæus, Celsus, and Galen, used it more freely; but at different periods, and by different professors, it was encouraged, or nearly prohibited. Until the circulation of the blood was demonstrated, the principles

of this practice were unknown, and indeed at present they are not, we think, clearly understood.

The discharge of blood procured by this operation is inconsiderable in proportion to the whole mass, so that, though it lessens the whole, the diminution only can produce no effect. The relief which, therefore, follows from bleeding, when properly employed, must arise from another source, and is connected with that state of the system characterized by the term *diathesis phlogistica*. This is the state of the strongest and most robust constitutions, marked by a full strong pulse, florid look, great firmness of the simple solids, and activity of the muscular system. In such habits tension is followed by a proportional reaction, and the fulness of the vessels produces a more powerful contraction of their coats.

The first effect of bleeding, therefore, is to lessen this tension; and as will be obvious from our remarks on INFLAMMATION, q. v. this diminution will lessen the power of the vis a tergo, and the congestions will be relieved by the action of the affected vessels only. Another effect must also be considered. The relief of this tension will take off from the excessive excitement of the brain; for we have shown (see NERVI) that nervous excitement is intimately connected with the state of that part of the arterial system dispersed on the nerves, or in the brain. This is the source, then, of that fainting which follows a moderate bleeding; and the fainting is in a greater degree, and comes on more quickly in irritable constitutions, where this tension is least, as well as in an upright posture, where the heart acts with disadvantage, as opposing the power of gravity. This general relaxation is attended also with a proportional relaxation of the smaller vessels, and pains are relieved, the general feeling of oppression removed, a sweat breaks out, and a quiet sleep is often induced. Similar consequences, as we have seen, probably follow (see FEBRIS and PESTIS) when the viscera are overloaded, even in asthenic or putrid fevers, and explain the apparently inconsistent practice of Sydenham, Dover, and Rush.

This view of the effects of bleeding will explain the peculiar advantages of topical bleeding. In this case the vessels are emptied near the part affected; and vessels, thus depleted, gradually again filling from the trunks, will lessen the tension of the inflamed arteries, without diminishing the general tension of the vessels of the brain. We must look then to the advantages, and indeed the injuries, which result from bleeding, as connected with this more general or more particular relaxation of the system, and with the assistance of these views we shall examine its effects in the various diseases for which it has been recommended. We may be accused, however, of neglect and inattention in not noticing, with therapeutical writers, the diminution of the actual quantity of blood, or of its crassamentum. The diminution of the absolute quantity, however, is so inconsiderable, that in animals bled to death the redness of the muscles is scarcely, if at all, changed; and in young animals bled repeatedly to whiten the flesh, the effect is rather from the debility excited than the abstraction of the red particles. In these cases, however, the latter circumstance has some effect; for, by whatever mechanism these particles are formed, their

formation is not rapid; and if we regularly detract these while the vessels are filled with gelatinous and albuminous fluids, after some time the colour will be necessarily changed. Repeated bleeding may have the same effect in the human body; but we can connect this alteration only with chronic weakness, not with the salutary changes from bleeding. In the same way debility may arise from the abstraction of the gluten or fibrin of the blood, and we may thus attain the object of former pathologists, of rendering it thinner; but till we can trace diseases to viscidities, we shall not employ bleeding for this purpose, which will at the same time gradually destroy the vigour of the system. When regularly repeated in cases of asthma, or from the frequent recurrence of inflammation, we find no benefit resulting from this effect. Anasarca or other dropsical effusions, the effects of debility, are, on the contrary, frequent consequences.

Bleeding was employed in excess by the mechanical physicians, who thought to lessen the moles movenda by this means, and, consequently, to restore the equilibrium between the weight and the power. We usually employ it inversely to lessen the power. As the mechanical system continued to prevail till a very late era, and the practice founded on these doctrines is not yet obsolete, it is not surprising that bleeding is still frequently and indiscriminately employed. The humoral pathologists used it constantly with another view. As they supposed the cause of diseases existed in the blood, they were anxious to examine its state. Eight or ten ounces were often taken with this view; and if the operation was not carefully attended to, the appearance of a slight buff on the surface would determine the repetition of the evacuation. While both views were adopted in the widely extended system of Boerhaave, the remedy was, of course, more fashionable, and the error very generally infected the schools of medicine even in our own era. If, as a late author observes, the practitioners of this country are in general Boerhaavians, we shall be less surprised that it is not yet reformed.

Bleeding is supposed to be indicated by a full strong pulse, by difficulty of breathing, and by local pains, in almost every fever of the young, the strong, and plethoric. Various views will, however, limit its use in each state. A full strong pulse will often usher in fevers most purely asthenic; nor is it true that if, with the Cullenians, we diminish the reaction, we shall relieve the consequent debility. If we succeed at once in checking the fever, as is certainly sometimes the case, it is a remedy highly useful; but, in ninety-nine out of a hundred cases, perhaps in ten times that number out of a thousand, the pulse sinks; and in the latter part of the fever we have to regret the loss of that strength which we so improvidently wasted. In all such cases we must bleed with boldness, or not at all: when we draw the sword, we must throw away the scabbard.

Again: every practitioner, we suspect, is not able to distinguish the really strong pulse from that which is hard in consequence of irritation. In the epidemic now approaching in this country, the pulse in the earliest period is reported to be full and strong; but the fever is in its nature truly asthenic, and from the time, the previous seasons, and the nature of the other prevailing complaints, we are convinced that the report is fallacious;

but a physician seldom sees fevers on their first attack, and must act from a comparison of many cases. We recollect well the first case we saw of putrid peripneumony: the pulse felt strong, and the fatal fiat was issued to bleed; but a source of doubt arose from the other appearances, and the operation was suspended: the patient was preserved at last, with difficulty, by bark and cordials. In general, therefore, to a full strong pulse we must add a firm constitution, a flushed face in which the character of the features is not lost, and considerable bodily strength. The origin of the disease from cold, without any prevailing asthenic epidemic, the situation of the patient in a dry elevated spot, and the season of spring, will contribute to render bleeding more certainly a proper remedy.

Difficulty of breathing, from any cause, or a fit of asthma, has always been supposed a proper indication for drawing blood, and we have more than once seen it employed in the middle of asthenic fevers from this occurrence. The event was in every instance fatal. On better grounds, and on the sanction of more approved authority, it is employed in the violent asthmatic fits. The relief is, however, purchased, if the fits frequently recur, by exhausted strength and anasarctous swellings. The remedy, which is borne with advantage in youth, is injurious in a more advanced period; but unfortunately before this time it has become a habit, which cannot without danger be broken. In nervous asthmas we can often attain the end by a less dangerous remedy, and it is not the natural cure of a disease which is relieved chiefly by expectoration.

Local pains more decidedly call for this remedy; yet it is often not only ineffectual but injurious. In the weak, the nervous, and the irritable, these pains are common; and it will appear, in a moment, absurd to employ with them a remedy adapted to the firm and robust constitution. Even local discharges of blood will frequently weaken, when with irritability plethora is combined. The latter coincidence often takes place, and on this account we did not mention the full pulse as an indication for bleeding. In fact, we would confine bleeding only to local pains on the access of fever, with the former limitations. It is used also with propriety when these pains attack robust constitutions, though without fever, as in colics; in hernia, in sciatica, in jaundice from calculus; for in such constitutions fever soon comes on, from the causes of inflammation, and proceeds with rapidity to some of its most dangerous terminations.

Fevers of every kind in the young, the strong, and plethoric, are supposed to call for the use of this remedy; but we have already shown the dangers of such indiscriminate conduct. We should not have spoken of this practice distinctly, for, in fact, it has been already noticed, except to guard against what we think a radical and widely extended error. We remember the former Dr. Gregory, than whom no man was more accurate and cautious, speaking of bleeding as safe, and often useful, in the beginning of all fevers, if the patient were young and strong. Dr. Cullen, the antagonising spring to every part of the Boerhaavian practice, was led to the same plan from his system of reaction. Both practised in a northern latitude, where it was not considerably injurious; and without noticing this distinction, disseminated, we fear, a dangerous

mode of proceeding. Brown was led to violent indiscriminate bleeding in his revival of the methodic system, and he could not discover his error, as he had little experience. His pupils have unfortunately not always been enlightened by their errors.

If, on the principles laid down in the beginning of this article, we consider the use of phlebotomy in distinct diseases, we must begin with *FEVERS*, and, of course, with *INTERMITTENTS*. In these, bleeding is seldom useful. The effects of relaxation may appear to indicate it in the hot fit to bring it sooner to a conclusion; but we shall gain little in our ultimate object, the cure of the disease, by preventing the return of the paroxysm. If, however, the delirium in the hot fit is violent, if the circulation is so rapid as to endanger hæmorrhage in persons predisposed to an hæmoptoe, bleeding will be necessary to prevent the occurrence of such an event. In general, however, it is unnecessary; and evacuations, with low diet in the interval, and opium on the access, or near the termination of the heat, will conduct the paroxysm more safely to its conclusion. In those irregular intermittents, which attack with local inflammation, it may be useful in the same view; but the great object is to prevent the return. Those which attack with syncope and apoplexy also sometimes require it.

Remittents are seldom of the inflammatory kind; but these are the fevers in which the American practitioners have bled copiously. The principles, however, on which this practice rests have been often mentioned.

Continued fevers of the inflammatory kind, with the limitations lately stated, certainly require bleeding, particularly as we have remarked that local inflammations often begin with fevers, which show no tendency to the subsequent complaint. The great difficulty arises from asthenic fevers often beginning with inflammatory symptoms, and our former distinctions must be here applied. In cases of the slightest doubt it is better to abstain; for it is an error that may be remedied: its opposite cannot. When local affections arise during the continuance of a fever, we must first examine if the disease be such as, in its progress, might be attended with inflammatory congestions. If it be, we must inquire whether any marked exacerbation has taken place, whether the pulse has become suddenly full and strong, the eyes red, and the face flushed. If the circumstances are such as to afford the slightest doubt, we may employ topical bleedings; and if still more doubtful, a blister. In other circumstances the camphor with opium will very effectually relieve.

In the *phlegmasie* we find this remedy most generally necessary, and have already explained the foundation of its use in the article *INFLAMMATION*, q. v. The great object is to relieve the general affection, the diathesis phlogistica, which is shown by a remission of the hardness of the pulse, and some relaxation of the surface. The topical affection may, in this way, be alleviated; but the evacuations would be much too copious were they continued till it was removed. This purpose topical bleedings and blisters will supply. The discharges of blood in these cases were formerly enormous. From altered manners and constitutions, such considerable bleedings are now neither necessary nor useful; and under the articles *PERIPNEUMONIA* and *PLEURITIS*

we have pointed out the utmost extent to which they are at present practised. With a view to facilitate this discussion, we attempted (see INFLAMMATION) to arrange the phlegmasiæ according to the violence of the inflammatory diathesis, and consequently to point out the comparative necessity of bleeding. Some practical doubts may arise respecting gastritis, enteritis, and a few others, where late practitioners, particularly Dr. Pemberton in his very valuable work on the Diseases of the Abdominal Viscera, have carried the evacuation farther than we have proposed in the separate articles, supported by the observation that the pulse rises on bleeding; but, in general, we have offered what has been the result of our own practice. In this second class of active inflammations we have not often seen a second bleeding necessary; but, in a robust, strong constitution, where the pain continues violent, the pulse firm, full, and strong, a second and a third are sometimes required. We have seen enteritis requiring bleedings as copious as pleurisy. In medicine there are no universal propositions.

In the *erythema* (for we must now take leave to follow our own arrangements) bleeding is highly injurious, if we except the peritonitis puerperarum, where it has been employed, it is said, with success. But this subject we shall soon resume in the article PUERPERALIS FEBRIS, q. v. In *catarrhus* the extent of the remedy must be proportioned to the violence of the fever, but this is seldom considerable, and in very few instances is the loss of blood requisite. When coryza becomes peripneumonic, or when dysentery threatens enteritis, it may be admissible; but either happens very rarely. In phthisis, as we shall soon find, it is not an appropriate remedy. Of the species of *arthritis* rheumatism only requires bleeding, and this is often necessary to a considerable extent in all its varieties. Indeed no disease in many cases demands larger and more repeated evacuations. Even in arthrodynia, from the violence of the pain, it is occasionally necessary; and some practitioners employ copious bleedings on the accession of gout. We have known instances in which they have lessened the fit repeatedly, without injuring the constitution; but we dare not recommend the imitation of the practice, especially in the weaker or more irritable habits.

In the *exanthemata* (order *eruptiones*) it is only adapted to the epidemic exanthemata; and from among these we must except all but the *variola* and *rubeola*; for of the *pestis* we have lately spoken. In the former it is only used in excessive inflammatory action, with a determination to the head. In the latter, from its peripneumonic tendency, it was formerly supposed to be the principal remedy, and especially in the diarrhœa, which often follows. Since, however, we have learnt the good effects of laxative medicines, we have found bleeding less necessary, and have indeed very few cases which have required it.

In the *profluvia* the use of this remedy is confined to the active hæmorrhages, those discharges which agree with phlegmasia in their connection with increased activity and tone in the arterial system; and in these at times it must be employed to a considerable extent; for the more rapid evacuation diminishing the tone of the arteries and the tension they impart to the nervous system, brings on fainting, during which the hæmorrhage stops, and the ruptured vessel heals. We have

said that some increased action occurs in even the passive hæmorrhages; and bleeding has sometimes been directed in these, or at least in cases which partake of the nature of each.

In the genus *constrictoria* (order *suppressorii*), asthma only, at times, requires this evacuation; but it must be confined to the strong and plethoric, where there is danger of violent inflammation, or of immediate suffocation. The usual conduct of practitioners, in this respect, we have already noticed. The *suppression of sanguineous evacuations* sometimes depends on spasm, from increased inflammatory action; and when a suppression of the menses, the lochia, or of the hæmorrhoidal discharge, is attended with great load, a flushed face, and other symptoms of inflammatory fever, bleeding is essentially necessary. It should not, however, be hastily employed, or frequently repeated; for it soon becomes an inconvenient, if not a dangerous, habit. In *icterus*, *ischuria*, and *dysuria*, it is only useful when the pain is attended with fever, and inflammation is threatened, or has come on.

Adynamie. In the genus *coma*, violent apoplexy and palsy, depending apparently on active hæmorrhage, alone require bleeding. It has been lately advised in the variety styled *hydrocephalica*; but the practice is confined to a few individuals only: and we have not found that it has been eminently successful, though perhaps suggested by the early appearance of irritation. In the variety of syncope, from affections of the heart, small bleedings have been sometimes repeated with success.

Spasmi. In this order also it is scarcely ever employed but in the more violent convulsions of the plethoric and robust, to prevent the consequences of too great determination to the head during a paroxysm; in *fertussis*, for the purpose of avoiding peripneumony, when it impends; in colica, to prevent inflammation; and in hydrophobia, from an idle theory. The few diseases which remain we shall mention, without any attention to arrangement, in their order. In *hallucinatio* it is sometimes beneficial to lessen irritation; in *mania* when the determination to the head is violent and apparently inflammatory; in *hydrothorax*, as a temporary expedient to prevent suffocation; in the various *hernia*, to prevent inflammation, sometimes to produce deliquium; and in all violent wounds and contusions, for the former purpose.

We have mentioned bleeding generally in convulsions, to prevent determination to the head; but in one disease of this kind, the convulsions of puerperal women, it has been employed with little reserve, and, we may add, little discretion. It sometimes appears at first to relieve; but there are few practitioners who have adopted this plan but have regretted, in the sequel, the loss of that strength which they were unable to restore.

Bleeding has also been recommended to preserve health, and the custom of letting blood regularly in the spring is not yet quite obsolete in the county where the author of this article resides. In females, at the cessation of the menses, it is sometimes empirically employed, and occasionally to procure abortion. It were well if no more active means were used; for this is totally ineffectual. On any sudden terror and surprise it was formerly employed, apparently to prevent any

irregular determinations to the different parts, or probably accumulations in the heart: in such cases it is at least not injurious.

When we treated of the BLOOD, q. v. we described its constituent parts, and their spontaneous separation. It appeared that the buffy stratum on the top was not the effect of viscosity or lentor, but owing rather to tenuity of the blood, which allowed the red particles to fall down before the gluten coagulated. This sometimes arose from a more intimate mixture of the parts of this heterogeneous mass, sometimes, as in scurvy and typhus, from a real tenuity. Since this sign, however, has been greatly depended on, it is necessary to make some distinctions which will render it less equivocal.

As this appearance is owing to the time in which the coagulation takes place, it is necessary to ascertain its existence, that the blood should not be too quickly or too slowly cooled. Blood does not coagulate readily in cold or in warm weather. Either extreme, therefore, should be avoided. It coagulates more rapidly in small masses, and when exposed with an extensive surface: it should consequently flow freely from a large orifice, not drop from the arm, and be received in vessels of a moderate depth, and of no large surface, as a tea cup. The bleeding dishes of our ancestors were too wide and shallow. The blood would too often appear buffy; and this may have been among the reasons for the frequent repetition of bleeding.

A circumstance which formerly appeared inexplicable, will, on these principles, be easily accounted for. In inflammatory diseases the first drawn blood was not buffy. The second tea cup, or the second discharge, was covered with a crust. In such cases the pulse labours, and is oppressed with the load; though the fever is considerable, the face flushed, and the pain, for instance, in the side violently acute, the pulse continues soft, and not peculiarly strong. From considering the constitution, the cause, and other circumstances, bleeding may appear indicated, and in such cases the first cup appears natural. When the load is removed, the pulse becomes fuller and stronger, the circulation more free, and the heterogeneous ingredients more intimately mixed; of course the blood becomes buffy: and though there is sometimes no time for the production of this change in the first bleeding, it is constantly found when the operation is repeated.

This increased fulness and strength is the change expressed by the language, that the pulse rises on bleeding. It is followed by a relief of the load, a remission of pain, a diminution of the burning heat, and the appearance of a gentle moisture on the surface. But because one bleeding has relieved, it does not follow that the operation must be repeated. We must take advantage of this remission to procure a continuance of the favourable change by other means (see FEBRIS and INFLAMMATIO), nor again repeat the operation, unless the former symptoms of diathesis phlogistica recur. On the contrary, if the first bleeding has been injurious, languor, paleness, a rapid, weak, and almost indistinct pulse, with frequent returns of syncope, are the consequences, indicating a state of debility, which, in many cases, we cannot conquer. Bleeding should, therefore, be employed with caution.

Blood is usually taken from the subcutaneous veins in the flexure of the fore arm. It is sometimes drawn

from the jugulars, sometimes from the saphæna in the leg, and in a few instances from the veins in the back of the hand. The last part is selected from necessity only, as the veins of the arm are sometimes very small. Blood is taken from the jugulars in children, as the vein is large, and will admit of a rapid depletion; but the chief advantage supposed to be derived is from the vicinity of the parts affected. In affections of the head a discharge from the jugulars appears to combine the good effects of a general and a topical evacuation; but in diseases of the throat it seems to possess no very striking advantage, except from the size of the vein in children. We are not aware that it produces faintness more quickly than when the blood is taken from other veins. Bleeding from the saphæna is a branch from the obsolete stock of derivation or revulsion, where an evacuation at a distance was supposed to have an effect greater in proportion to the distance. Had the mechanical physicians, with whom this was a favourite doctrine, employed their mathematics, they might have soon found it less. In uterine complaints the choice had a better foundation, as to lessen the quantity of blood in the lower extremities would probably assist the circulation through every branch of the descending aorta; but it would have been more reasonable had practitioners used it in abundant rather than deficient menstruation.

The operation itself has been detailed with a formality which would be only excusable in describing that of lithotomy, or dividing the ring of the abdominal muscles for the reduction of hernia. We shall suppose the minutiae known, and notice only the more important circumstances.

The ligature should be moderately tight, so as to stop the circulation in the veins, but not in the artery, which should be felt at the bending of the arm, after the ligature is applied. When the veins have swollen, the operator, with a spear-shaped lancet, which is preferable, since it makes the wound of the integuments scarcely larger than that of the vein, divides the skin, and immediately plunges the lancet into the vein itself, in an oblique direction, to prevent its passing through the inferior parietes of the vessel. In general, the operator chooses the vein most remote from the artery or tendon; but should no such be found of a proper size, it will only require a little additional caution. He should, in that case, press his lancet only so low as to be sure of wounding the vein, and then divide it in a direction more near to a horizontal one. Veins that do not roll are preferred; but this is an useless refinement, since it is necessary to confine the vein a little below the part where the puncture is made by the thumb of the left hand.

When the blood begins to flow, the posture of the arm should not be changed, as it may occasion the wound of the integuments no longer to coincide with that of the vein, so that the position should at first be an easy one, that is, half bent; and the operator, if he sees that the apertures do not coincide, can easily draw the skin, so as to correct the error. If the blood stops from faintness, fresh air and a horizontal posture will restore the flow. If from too tight a ligature, it should be gently slackened. Moving the muscles of the hand by rolling any thing in it promotes often the discharge. After the operation, a bit of lint, with some sticking plaster,

is only necessary, unless the orifice has been large, or the bleeding has appeared to continue after the ligature is removed. In that case the usual bandage with a compress is necessary. In the choice of veins the median basilic is usually preferred, as the largest, nearest the surface, and the integuments are thinnest over it; but it must be recollected that the artery often lies under it, so that, though bleeding is less painful, the danger is greater.

Simple, however, as this operation is, various inconveniencies, and some very dangerous affections, often follow it. The tendinous aponeurosis of the biceps passes under the integuments, and though this is thinner over the median basilic than the other veins of that part, wounds in it seem to produce inconveniencies. The tendon also of the muscle is sometimes punctured, and occasionally a subcutaneous nerve wounded. The pain sometimes immediately felt on the introduction of the lancet is probably, as we shall soon find, caused by a wounded nerve; for the tendons, in a sound state, are insensible, and in every instance of bleeding the aponeurosis is necessarily cut. When, however, the acute pain just mentioned does not soon recede, but continues to increase, there is always reason to fear the most disagreeable consequences. The wound inflames, its lips become sore and hard, and, after a few hours, a watery serum or a bloody sanies oozes from them. After the continuance of these symptoms for a few days, with little variation, the acute pain is changed to a burning heat, which increases to a very violent degree. The lips of the wound swell still more, and the tumour is communicated to the whole limb, which at last appears erysipelatous. The pulse then becomes hard and quick, the pain is intense, the patient restless, and subsultus, convulsions, or a locked jaw, close the scene.

Events so distressing, from causes apparently inadequate, have excited the attention of pathologists, who have hitherto laboured with little success to explain them. The original idea was, that the wound of the tendon occasioned all the subsequent distress. In vain was it alleged that tendons were insensible, that nerves could not be traced to them, that they must be cut and wounded in a variety of operations, as well as by numerous accidents: equivocal facts were still produced in opposition, nor, till within a few years, was it concluded that such consequences could not arise from any wound of these organs. A partial wound of a nerve often produced similar complaints; and nervous irritation was the forerunner of the inflammation and the spasm. In this state of contending opinions, Mr. Hunter, active and ingenious, though occasionally whimsical and eccentric, suggested a very different cause. He had found in horses, who died in consequence of venesection, the internal surface of the vein inflamed, and similar effects had occurred in the human frame. Air then admitted into the cavity of the vein was followed by inflammation, and its usual attendant suppuration, while the pus, thus mixed with the blood, produced all the symptoms of irritation. Without doubting the facts, we may, however, arraign the consequences. The access of air to the coats of the vein is at best improbable, since it always continues full; but, if admitted, the pungent pain at first, the rapid appearance of the inflammation, and its pro-

gress, precludes the idea of a cause always slow, and, in general, gradual in its effects. If still allowed, symptoms of nervous irritation do not follow the absorption of pus, and a locked jaw is never the consequence of absorbed purulent matter. In fact, all the circumstances coincide in the idea of a nervous irritation, from a wound in the medullary organ; and, from the facts adduced, we must admit that an inflammation of the internal surface of the vein is a frequent consequence of this irritation.

The remedies usually advised for this complaint seem to be in part derived from the idea of an inflammation on the internal surface of the vein. Their operation, however, equally admits of another explanation. When an unusually acute pain is felt in the operation, which does not subside in a few hours, the arm should be kept in a perfectly relaxed state; emollient poultices which would perhaps be rendered more effectual by the addition of opium, applied; the patient's diet below; a large dose of opium given, followed soon afterwards by a purgative. If the pain still continues and the inflammation of the wound increases, leeches, near the part, are recommended, with a liberal bleeding from some other vein. In this state warm emollient applications often increase the heat as well as the pain; and the sedative astringent ones afford most relief, particularly solutions of vitriolated zinc applied cold, and Goulard's cerate. Applications of opium seem not to have been sufficiently tried, and no case of this kind has occurred in our practice to enable us to speak for ourselves.

When the symptoms, however, have increased to a dangerous degree, opiates have been given freely, and every means of allaying irritation attempted; but these means have been usually found inefficient, and the only alternative is dividing all the subcutaneous nerves above the wound, or an amputation of the limb. In this case the wounded vein must be tied above and below, and the intermediate part cut out. If then we dissect down to the tendon of the biceps, and a little on each side the injured nerve, if such has been the cause, must have been divided. Amputation is, however, our last resource; and it would probably have been more often effectual if attempted earlier.

It must not, however, be concluded that every inflammation of the arm, or the neighbouring parts, after bleeding, is so dangerous and fatal in its consequences. A phlegmon will sometimes form on the part from an inflammation of the cellular substance, and this inflammation in many instances becomes erysipelatous. Each is removed by the common remedies, and, after the suppuration, the coat of the vein is found to be free from induration: its substance was never affected.

We have observed, also, that inconveniencies have arisen from the wound of the integuments not perfectly coinciding with that of the vein. The consequences have been, that the blood has passed into the cellular substance, and enormously distended the arm. The sudden appearance of this distention, and the absence of acute pain, sufficiently point out its cause, and the little comparative injury to the constitution likely to result. If from want of caution the lancet is plunged *through* the vein, the injury is more considerable, and mortification has been the consequence. The coagulation of the blood, however, opposes a sufficient

obstacle to the discharge; but the blood itself must be removed by an operation, sometimes the wounded portion of the vein cut out.

Among the accidents from bleeding, an irritation and a consequent inflammation of the absorbents have been enumerated. These vessels we know to be muscular, and they become, by inflammation of their coats, hard and acutely sensible cords. Inflammations of this kind are distinguished from those which arise from the absorption of acrid matter, from the glands not always enlarging, and from the hardness being felt below as well as above the source of the disease: sometimes indeed the gland is affected; but the pain is greatest at the first appearance of the tumour, and it has little tendency to suppurate.

Though inflammation of the vein be not the cause of the dangerous symptoms before enumerated, it certainly sometimes takes place, at least as an effect, and Mr. Abernethy has recorded three cases of the kind. The symptoms of general inflammation were considerable; but the disease yielded to common remedies. The sides of the vein apparently adhered above and below. Our author advises a compression on the vein above, to assist this adhesion, since inflammation is speedily communicated along membranes, and may otherwise extend to the heart, of which, if our memory does not fail us, we recollect one or two instances.

A consequence of bleeding not sufficiently discriminated in the general systems, is the injury which the tendon of the biceps receives from a puncture. The effects of such a wound would alone disprove the symptoms formerly attributed to it; for they are very different. The general distinguishing symptom is the sensation of a cord bound tightly round the arm, with an inability to move it. This seems in some instances to arise from matter confined under the aponeurosis; and in one case an opening made at a small point, near the external condyle, discharged a considerable quantity of pus, by which the patient was immediately relieved. At other times, however, this sensation of tightness really arises from spasm. We know that the tendons are incapable of contracting; but they seem to communicate irritation to the muscular fibres, by which contraction is excited. In the case recorded by Mr. Colby (Medical Communications, vol. ii. p. 18.) there was no suppuration; and in those described by Mr. Watson, though an obscure sense of fluctuation was communicated to the finger, there was no purulent matter. The latter seems to attribute the contraction to a thickening of the aponeurosis from inflammation; but the symptoms, from the description of the patient, evidently point out the source to be a spasmodic contraction; and it is highly probable that as this has occurred in so few cases, while the aponeurosis must be divided in every operation, that a nerve distributed on the tendon was wounded. In the first case an incision was made between the brachialis internus and supinator radii longus (Medical Communications, vol. ii. p. 236), where an obscure fluctuation was seemingly felt. Various other incisions were tried with little effect, till one was made into the middle of the biceps, carried deep into the body of the muscle down to the tendon, in the direction of the fibres, and so low into the latter

as could be done with safety. The relief was immediate, and continued.

In all such cases it seems that opiates have not been tried to a sufficient extent, if we except that recorded by Mr. Colby of Torrington, and his success seems owing to his bold and very judicious exhibition of this remedy. Opium would be apparently useful, not only internally but as an external application, and we could wish that in future events of this kind it might be tried.

We recollect only one other accident from bleeding, viz. the wound of a lymphatic. It continues to discharge lymph for a few days, but is soon cured. At least a watery solution of sulphurated copper will produce this effect. See CUCURBITULA and HIRUDO.

On the subject of blood-letting, see Galen de Sanguinis Missione; Botallus de Venæsectione; M. A. Severinus on Bleeding; An Essay concerning Blood-letting, by R. Butler, M. D.; Bell's Surgery, vol. i. p. 63, &c.; White's Surgery, p. 167; Abernethy's Surgical Essays; Mr. J. Hunter's Works; Medical Communications, vol. ii.

PHLEBO'TOMUS, (from φλεψ, *a vein*, and τεμνω, *to cut*). A LANCET, or a FLEAM, for bleeding.

PHLE'GMA, (from φλεγω, *to excite*). PHLEGM, a mucous or excrementitious fluid discharged from the bronchiæ. Galen gives this denomination to every cold humour: in Hippocrates it often signifies inflammation.

In chemistry phlegm signifies the water obtained by distillation.

PHLEGMA'SIA. See INFLAMMATIO.

PHLEGMA'TIA, (from φλεγω, *to burn*). See ANASARCA.

PHLEGMA'TIA DOLENS. See LYPHÆDUCTUS.

PHLEGMATORRHA'GIA, (from φλεγμα, *mucus*, and ρεω, *fluo*). A discharge of thin phlegm from the nostrils. See Salmuthus, obs. 37.

PHLEGMONE, (from φλεγω, *to burn*). See INFLAMMATIO.

PHLEGMONE ARTICULI. See ARTHROPOUSIS.

PHLEPS, (from φλεω, *to abound*; because it is filled with blood. See ARTERIA.

PHLOGISTICI, (from φλογίζω, *to burn*). Inflammations and fevers, with a hard pulse and topical pain.

PHLOGISTON, (from φλογίζω). INFLAMMABLE PRINCIPLE, on which the ignition of all bodies was supposed to depend. The existence of this element was first asserted by Becher, an opinion adopted by Stahl, and since by other chemists; but the late discoveries of Lavoisier and others have wholly disproved its existence. The opinion since the death of Dr. Priestly has not one scientific advocate; and the addition of oxygen is now established to explain all the changes attributed to the separation of phlogiston.

See on this subject Lavoisier's, Chaptal's, and Fourcroy's Elements of Chemistry. In Mr. Nicholson's Elements the reader will find the fairest representations of both theories, as applied to different processes.

PHLOGOSIS, (from φλογω, *to inflame*). See INFLAMMATIO, and ÆSTUS VOLATICUS.

PHLO'MIS, (from φλοξ, *a flame*; from its flame-like colour). See SALVIA SYLVESTRIS.

PHLYCTÆ'NÆ, (φλυκταίναι, *small bladders*, from φλεγω, *to be hot*), *holophlyctides*, *phlyzacion*, applied by

Linnæus and Vogel to *hydatidæ*. (See BULLA.) Pustules on the tunica cornea of the eye, including the *unguis* and *phlyctenæ*, strictly so called: when they arise in the conjunctiva they are reddish at first, and afterwards white; but when on the transparent cornea, dusky, at last white. Their seat is usually under the external coat of the cornea, and they have been cured by taking off its external lamina, to remove the stagnating matter. They are generally occasioned by inflammation, and should be dressed three or four times a-day with six or eight grains of cerussa acetata, dissolved in three ounces of aq. rose water, and when they yield, washed with equal parts of brandy and water. If they neither disperse nor break speedily they must be opened with a lancet, and dressed with the aqua saphirina. Little watery pustules, full of a hot acrid fluid, are styled *phlyctenæ*; but we shall consider this complaint under the two following articles, q. v.

PHLYCTIS, (from *φλυζω*, to be hot). A watery pustule or eruption on the skin, with a circular base slightly inflamed, containing a lymph, sometimes clear and pellucid, but more frequently whitish, like whey, or pearl coloured. The pustule terminates in a laminated scab. Under this head may be ranked the hydroa or hidraea, boia, and sudamina, of authors.

PHLYXA'CION, or PHLYZA'CION, (from *φλυζω*, to be hot). A pustule or vesication on the skin, excited by fire or heat. Dr. Willan defines it a pustule (the size of a pea) containing pus; and raised on a hard, circular, inflamed base, of a vivid red colour. This disease seems to be only a greater degree of phlyctis, and each may be readily understood by what has been observed under MORBI CUTANEI, q. v. It is succeeded by a thick, hard, dark coloured scab.

PHŒNICIUS MORBUS. See ELEPHANTIASIS.

PHŒNIGMOI, (from *φαισσω*, to become red). See EPISPASTICA.

PHŒNIX, (from *Phœnicia*, its native soil). See LOLIUM.

PHOS, (from *φωσ*, to shine). LIGHT. See PUPILLA.

PHOSPHATS, (from *phosphorus*). Salts formed by the union of the phosphoric acid with different bases: those with the phosphorous acid are called *phosphites*.

PHOSPHORIC ACID. (See CHEMIA.) It has, we observe, been used in hectic, and as a tonic in cases where mineral acids have been recommended. Though found, however, in the mineral kingdom, we would rather consider it as an animal acid. It occurs in the blood, in the bones, in the enamel of the teeth, and the gluten of seeds, particularly of maize. The Bolognian stone is the radiated sulphurated barytes. Hallé, ii. 332.

PHOSPHORUS, (from *φωσ*, light, and *φωσ*, to bring,) *autophosphorus*, the name of a collyrium in Galen. Phosphorus was first discovered in 1669 by Brandt, but kept as a secret, and in 1674 by Runckel, and afterwards by Boyle, from whom it was called the English phosphorus, as it was supplied by a London apothecary, to whom he taught the secret. It is an oxide originally prepared from urine; nor was it discovered till the year 1769 that its acid was contained in bones. For its chemical properties, see CHEMIA, vol. i. p. 420.

It was given many years since, according to the ac-

count of Hankwitz, the apothecary to whom Boyle communicated the secret, in France, in colics; afterwards by Mentz in low fevers, as a cordial and sudorific; and by Le Roi, in rheumatic and nervous diseases. It is, however, a medicine of considerable acrimony, and, from Le Roi's experiments, highly dangerous (Memoires de la Societé d'Emulation, vol. i.) He found the most painful and distressing effects from three grains of this oxide, though it is the dose given by Mentz in petechial fevers as a cordial. Wackard has cautioned us by relating the dangers and inconveniences which resulted from its use. A similar case is recorded in the Medical and Physical Journal; and others might be offered from the records of private practice.

The exhibition of phosphorus is not an easy task. It must be reduced to powder, but the slightest heat inflames it. If put into warm water, and agitated, it diffuses itself like oil, and, on the sudden affusion of cold water, is precipitated in a powder. This may be rubbed with mucilage into a lohoc, with powder of gum arabic into pills; but, camphor, in general, assists its union. A quarter of a grain is now considered as a sufficient dose. The exhibition of phosphorus has again of late been attempted in the cure of rheumatism; but it is a remedy so truly dangerous, that we should earnestly dissuade any future trials.

Combined with soda it is a tasteless neutral, recommended by Dr. Pearson as a laxative for children, and highly useful in their complaints. The other phosphates have not been used, except the phosphorated mercury, which we noticed vol. i. p. 176, and the phosphorated and oxyphosphorated iron, lately recommended in cancer by Dr. Carmichael, of Dublin. See BONONIENSIS LAPIS.

See the different processes in Chaptel's Elements of Chemistry, vol. iii. p. 350, &c.; Thompson's Chemistry; Fourcroy's Chemistry, ix. 245.

PHOSPHORUS BONONIENSIS, and KIRCHE'RI. See BONONIENSIS LAPIS.

PHOSPHORUS LIQUIDUS. One grain of the phosphorus, in powder, cautiously mixed with ten of camphor, dissolved in the oleum caryophyllorum, make a liquid phosphorus, which may be rubbed on the body without danger of inflammation. It is chiefly used as an amusing experiment, since it is luminous in the dark.

PHOSPHURETUM, (from *phosphorus*). PHOSPHURET. Combination of phosphoric acid, with different bases. (See PHOSPHATS.) In these the oxygen is in a still less proportion.

PHOTOPHOBIA, (from *φωσ*, light, and *φοβία*, to dread). Too great sensibility of the retina, either from inflammation, increased nervous sensibility, as in hydrophobia, or from a disuse of light.

PHOXOS, (*φοξος*). The sugar loaf shaped head.

PHRAGMOS, (from *φρασσω*, to enclose). An anatomical term for the double series of teeth.

PHRAS'IUM VIRIDE. See ÆRIS FLOS.

PHRENES, (from *φρην*, supposed to be the seat of the mind). See DIAPHRAGMA.

PHRENE'SIS, or PHRENETI'ASIS, (from *φρην*, the diaphragm). See PHRENITIS.

PHRE'NICÆ ARTE'RIÆ, and VE'NÆ, (from

the same.) See DIAPHRAGMATICÆ ARTERIÆ, and VENÆ.

PHRENI'SMUS. See PHRENITIS.

PHRENITI'CI NE'RVI. The nerves which run in the diaphragm. See NERVI.

PHRE'NITIS, (from *φρενις*, *diaphragm*.) *cephalitis*. Phrenitis was formerly supposed to arise from inflammation of the diaphragm, which was called *phrenes*, as if assistant to the intelligent principle. The term is now applied to an inflammation in the brain, or rather its membranes, with a violent delirium, and an acute continued fever, named *cephalalgia inflammatoria*; by the Arabians *karabitus*; by the Greeks *phrenesis*, *phrenismus*, and *sphacelismus*. Dr. Cullen places this disease among the *phlegmasiæ*, defining it a violent febrile affection, attended with pain of the head, redness of the face and eyes, incapability of bearing light and sound; pervigilium; fierce delirium; and typhomania.

It is idiopathic when the head is primarily affected; and symptomatic when the morbid affection is translated to the head, from some other part, as from the side in pleurisy. The former is inseparably accompanied with an acute fever; the latter is followed by the fever, and styled *desipientia*.

The idiopathic is rare; but the symptomatic is sometimes met with, and most frequently appears about the crisis of other fevers, attended with a rigor, a tremor of the joints, tension of the precordia, coldness of the extremities, thin urine, discharged either in too sparing or too large a quantity. The symptomatic phrensy scarcely differs even in degree from the idiopathic.

An approaching phrenitis is announced by intense continual watchings: or, if the patient sleeps, his sleep is interrupted and troubled; he starts, and is affected with terrible dreams; soon forgetting what is said. If at any time he returns an answer to a question, his fierceness and anger seem to be increased; the pulse is small and hard, a pain is constantly felt in the occiput, and as the disorder increases the eyes become more fixed and red, tears, at the same time, flowing from them. The phrenitis is marked by an acute fever, a pulse low and tense, sometimes hardly perceptible; but in most instances full and strong. The sleep is disturbed, the delirium violent, with noise in the ears, and excessive headach. The tongue is dark and black; the urine high coloured, and in small quantities.

In many instances the violence of these symptoms is less; and unsteadiness, want of recollection, tremblings of the limbs, are the principal symptoms. In short, if there is a distinction between an affection of the membranes and the substance of any part, it appears to be found in the brain. Thus the *membranous* or *parenchymatous* inflammation of nosologists is established; and though the distinction in some respect takes place, yet it is not fully ascertained by dissection, nor is it universally applicable.

The principal distinction necessary to point out is that of phrenitis from mania. The sudden attack of the former, the violent fever, and an evident exciting cause, will, however, be sufficient for this purpose; but the second variety noticed is distinguished with more difficulty. If, however, the symptoms be carefully examined, neither false perception nor erroneous judgment will appear, and the whole complaint be found to consist in weakness and unsteadiness of mind, in con-

fusion, when the intellectual powers are exerted, a want of memory, and a difficulty of discrimination. We have known a man, from this disease, not able to count five in succession for many months.

But while phrenitis appears in these two distinct and opposite forms, various affections of the head have been attributed to it, and treated like true inflammation of the brain. In various articles, particularly in *Concussio*, we have pointed out the difference between active inflammation from increased action, and a similar state from atony and congestion. At the end of fevers an increased fulness of the vessels is found, and each state has been styled inflammation of the brain. Yet the causes, the symptoms, and the cure, are essentially different. It is necessary, therefore, to limit the *true phrenitis* to the active inflammation, with increased action of the vessels, depending on phlogistic diathesis. Of this then we must first treat; and we shall next point out the distinction between the two states, with the variety of conduct which the symptoms suggest.

The remote causes are those of inflammation in general, cold topically applied after great heat, or cold liquors incautiously drank when heated: violent excitement from excess, particularly excess in drinking spirits, is sometimes also a cause. Those subject to the disease are the strong, the robust, and the plethoric; and it seems that the predisposition is hereditary. The treatment is nearly the same as of general inflammation. As resolution is, however, the only safe termination, bleeding is an indispensable remedy. From its effects, as explained in the article *PHLEBOTOMIA*, q. v. it will appear peculiarly applicable to this disease, as it lessens the tension of the nerves by most powerfully diminishing that of the arterial system. Even general bleedings, however, carried to their utmost extent, will not always succeed. Fainting sometimes takes place, while the increased tension continues, with little diminution; and topical bleeding must supply its place. It is recommended to bleed in a standing posture, that faintness may be more readily induced. This is, however, a mistaken direction. Fainting is the impediment to a sufficient bleeding, and the contrary direction has better foundation. Bleeding from the jugulars, as has been explained, seems better adapted to the complaint; but in this climate the disease is seldom so acute as to require these extreme measures. In aid of general and topical bleeding by leeches or cupping glasses, *blisters* are generally necessary; but as cold applications to the vertex are peculiarly useful, the blisters should be first applied to the nape of the neck, and afterwards behind the ears. The head may then be shaved, and cold oxycrate constantly applied to the vertex. The cooling saline purgatives should be given freely, so as to produce copious watery discharges, and nitre in as large doses as the stomach will bear. The room in which the patient lies should be cool and airy, not too light. When this plan has been adopted for a short time, if the delirium be not relieved, the disease is at least brought to that second stage which we must next consider.

The milder delirium, already described, depends on the more languid inflammation, probably in the substance of the brain, and, as we have suspected from dissection, chiefly at the base of the cerebrum. Different degrees of this form of the disease are owing to

suppressed evacuations, sometimes of the menstrual, at others of the hæmorrhoidal, discharge; occasionally to repelled eruptions and gout, though each occasionally produces a degree of phrenitis of a more violent kind, particularly in those constitutionally predisposed to it. Yet even in its greatest violence it must be distinguished, since the very active remedies of the former variety are unsuitable to the present. The inflammation from CONCUSSION, q. v. is of this kind, as well as from ICTUS SOLARIS, q. v. and require the milder plan of cure.

General bleeding is not always necessary, and then not to a great extent. Its degree must be limited by the violence of the symptoms, particularly the delirium. Topical bleeding is more useful, but by no means always necessary; and blisters are better adapted, by a slow, steady discharge, to lessen the accumulation. Each, as general bleeding, must be proportioned to the delirium. The camphor, with nitre, is often useful; and a steady discharge from the bowels equally necessary. The coolest free air, rest, with the utmost tranquillity of mind, are indispensable. When the accumulation is removed, its effect, unsteadiness of mind, often continues. This is sometimes supposed to be owing to remaining inflammation, and the violent evacuations are, with little discrimination, employed: a plan which increases instead of mitigating the disease; for it depends on the too great previous excitement. We have found no mode of conduct particularly serviceable, except absolute rest of mind, with moderate exercise of body. The camphor, bark with valerian, and some other medicines of this tribe, with cold bathing, and gentle alvine evacuations, seem occasionally to have contributed to the relief; but from time alone a cure may be expected.

See Alexander Trallian; Cælius Aurelianus; Ætius; Willis's *Pathologia Cerebri*, cap. x.; Hoffmann; Boerhaave; Baglivi; Fordyce's *Elements*, part. ii.; Cullen's *First Lines*, vol. i. p. 272, edit. 4; Bell's *Surgery*, vol. iii. p. 147.

PHRENI'TIS APYRE'TA. See MANIA.

PHRENI'TIS VOGELLI. See SYNCHUS.

PHRI'CASMUS, (from φρικα, horror). See HORROR.

PHRI'CODES, (from the same,) *carcaros, querquæra*. A fever described by the ancients, attended with horror, rigor, and tinnitus aurium, apparently a semitertian.

PHRY'CTE, (from φρυα, to parch or dry up). See COLOPHONIA.

PHRY'GIUS LAPIS. The PHRYGIAN stone, from its being used by the dyers in Phrygia, rises in Cappadocia, is pale and ponderous; but when calcined, reddish. Its virtues are similar to those of the lapis calaminaris; in fact, it is an earth of alum, and simply an astringent.

PTHHA'RTICOS, (from φθειρα, to corrupt). DELETERIOUS, DEADLY.

PTHETIRO'CTONON, (from φθειρα, a louse, and κτενω, to kill). See STAPHISAGRIA.

PTHIRI'ASIS, (from φθειρα, a louse,) *morbis pedicularis, pediculatio*, a rapid increase of lice, most frequent in warm moist situations. Besides the PEDICULI and MORPIONES, q. v. there is a kind which chiefly breed in dirty clothes. It is this species which forms the morbus

pedicularis, as La Treille asserts; and it is this kind which probably at times burrows in the skin, producing violent itching, and from this cause even insanity. They are called *acari, cyrones, and pedicelli*; but it is probable that these are insects of a different kind.

A decoction of the seeds of stavisacre or coculus indicus, or the powder of either scattered among the hair every night, is an effectual remedy. The last is said to exceed all other means, and it may be mixed in lard, and applied every night to the hair. The pulvis corticis radice sassafræ sprinkled on the head, and confined with a handkerchief, is said to destroy the lice in one night. The neatest and least offensive applications, however, are the mercurials. The white oxide, the mercurius precipitatus albus, may be easily disguised in pomatum, and is a certain remedy for the lice in the hair. The coculus indicus is equally effectual for those of the clothes.

The black soap and the flowers of the *cardamine pratensis* are said to be specifics in all cases of lice on the human body.

PHTHI'SIS, (from φθω, to corrupt). This word, expressing generally *corruption* or *emaciation*, is commonly limited to those states which arise from a previous disease of the lungs; and the term *phthisis pulmonalis* generally means what is styled a consumption, sometimes distinguished by the term *pulmonary*.

Various distinctions of what have been styled species of this disease are found in authors; but we must consider it as one simple complaint from a known cause, viz. an ulcer in the lungs.

The ancients, aware of the cause, could not readily account for the difficulty of healing the ulcer. They found their boasted balsamics useless, and suspected that the constant motion of the organ destroyed the union as fast as it was formed. But we find wounds in the lungs heal with little difficulty; large abscesses, from other causes, even from peripneumony, often yield to common treatment, and the patient perfectly recovers; but when the disease approaches in the manner to be described, recovery is peculiarly rare. We have now probably ascertained the real reason, and must, with Dr. Cullen, attribute this intractable ulcer to the supuration of a strumous gland, which, we know, heals with peculiar difficulty, for reasons to be afterwards explained. See SCROPHULA.

The disease is chiefly confined to the young, the fair with light skins and blue eyes, florid complexions, contracted chest, and high shoulders. In constitutions disposed to hectic, the fingers are often long, and the nails bent; they grow rapidly, but seldom expand in breadth and bulk. From the age of twelve or fourteen to that of about thirty-five is the hectic period; more generally from sixteen to twenty-four; and the tendency seems to return about forty-five or forty-six, especially in women at the period of the cessation of the catamenia.

This disease often attacks insidiously. The patient continues, as we have said, to increase in height without expanding at the shoulders and chest. He becomes languid, loses his appetite and spirits. He is supposed to have grown too rapidly, and the case is neglected, or supposed to be within the reach of the exertions of nature. In the mean time, a slight cough comes on, often only a slight heck, as if a little phlegm hung at the edge of the

epiglottitis, which is generally disregarded. Yet, at this time if the state of the patient be carefully examined, the pulse will be found quick, and above eighty in the most favourable state; after meals, and towards night, more nearly 100. He will not be able to lie on one side with the same ease as on the other, and will experience slight chills. If in females these symptoms appear about the period of menstruation, the catamenia do not come on, and every inconvenience is attributed to this cause. Medicines are directed for this purpose, which are often injurious to the real complaint. Its approach is sometimes more rapid; and a neglected cold is followed by a slow fever, with a continuance of the cough, emaciation, &c. Peripneumony, is sometimes followed also by hectic, but in constitutions only which are predisposed to it; for we have seen many cases of peripneumony terminating in abscess where the matter has been freely discharged, and the patient has recovered. The far greater number of phthises may be referred to neglected colds.

Another precursor of phthisis is hæmorrhage from the lungs. It often appears to be accidental, and is little noticed. The patient seems to recover perfectly; but it returns, and each time in a greater degree, leaving the strength more exhausted, and a slight fever, which soon comes on, more obvious. If hæmorrhage from the lungs often recurs, or continues for any time, however slight the discharge may appear, the danger is considerable.

After the state already described has continued for a few weeks, shooting pains are felt in the chest, sometimes wandering and uncertain in their seat, at others more fixed. It is difficult to fix the source of the pain; for the patient with the greatest dexterity eludes every inquiry. It is in the stomach, in the bowels, from wind, from indigestion, from straining of the cough, &c. When it is ascertained that the patient cannot lie with so much ease on one side as on the other, we may soon discover a pain in that side more fixed and constant than in any other part. Whatever be the difficulty which in cases of peripneumony attend the decubitus difficilis, there is little doubt in the present case. If there is a pain in the side, and the patient can best lie on it, the case is not phthisis. Even when these symptoms have increased to an alarming degree, there is often no expectoration; sometimes a little frothy sputum is discharged, at others a greenish mucus, like that which accompanies recent colds. After a little time, however, some spots of a more suspicious appearance are observed, and at last the spitting becomes decidedly purulent. In many cases of phthisis a caseous matter is discharged very early in the complaint, which curdles in water, while round the edges of the curd pus is often conspicuous.

At this time the chills, frequently observable at a very early period, are strongly marked and followed by burning heat, terminated by a copious sweat. In fact, a true hectic fever is formed. The cough is now often incessant, aggravated by the access of fever; it is in the early part of the night almost incessant.

During the fever, the cheeks have a circumscribed spot of pure florid red; the lips and tubercles in the canthus of the eyes are also brighter than when in health. The fever is augmented after eating, particularly solids, with flushing in the face, and burning heat

in the palms of the hands and soles of the feet. In the morning patients find themselves relieved, but rise languid, pale, and unrefreshed by their sleep. Though the pulse is always quicker than natural, yet there is a remission of the fever for some hours in the forenoon. The countenance now gives evident signs of wasting, the eyes are hollow and languid, the cheeks prominent, the nose sharp, the patient's flesh wastes, and the strength fails; the breathing is short, quick, and offensive; sleep little and disturbed; morning sweats more profuse, and the interval from fever less distinct. The spitting is more loaded with matter, brought up more easily, and in greater quantity, sometimes a pint in twenty-four hours. The menses usually cease, when the hectic exacerbations are strongly marked. From the beginning the body is in general costive, particularly after the morning sweats take place; but about this time also patients, from being costive, have frequent motions, and soon a confirmed diarrhœa; every thing taken into the stomach quickly running off by the bowels. The fever, heat, and cough, abate of their violence, and the morning sweats become less profuse; but if the diarrhœa is checked, these return. The strength totally fails; frequent fainting at last comes on, sometimes a slight delirium; the sputum becomes of a dark brown colour, and sometimes sanious; the lower extremities swell, and at last death closes the scene.

The distinction of consumption, particularly in its early stages is of great consequence; nor is it an object of small utility to point out its original source. At the age of about fourteen in each sex, while the genital organs are evolving, there is often a considerable debility and irritability. The debility in females, as we have seen (see *Menses*), is often formidable, and a slight cough is no uncommon attendant. At this time phthisis may come on, and often does so, with little suspicion: all the symptoms are referred to the great change that then takes place. Similar states of languor are occasionally observed in males, and the same mistake often occurs. In general, in such cases, if either a slight fever from cold, or an hæmorrhage from the lungs, has preceded, it will lead to a suspicion of the truth; and if it should not, the patient may find it difficult to lie on one side, or on taking a deep breath a slight spasm or a cough will come on. No diagnosis can arise from the existence of fever, since in the chlorotic state, coldness, with occasional flushing, are not unfrequent. In general, however, the fever of phthisis attacks most pointedly in the evening; that of chlorosis in the morning: the appetite of hectic patients is best in the forenoon; of chlorosis at night; and the latter can eat meat suppers frequently with impunity. If these diagnostics fail, we must rest till each disease appear more distinctly, or, in the mean time, give only the slight bitters of the purer kind, with such laxatives, generally rhubarb, as will keep the bowels free. Change of air, cheerful company, with a light easy diet, will relieve, if either be the disease.

Syphilis at times assumes the form of phthisis; but, in general, the chest is free, while pains are more violent at night, and more frequently in the middle of the bones of either extremity, or deep seated in the head, than in the trunk. It has also seldom proceeded so far as to mislead, without showing its nature by eruptions, or by an affection of the throat. From the state of

mind we may draw some distinction; for cheerful hope illumines every hour of the hectic, despair darkens each moment of the syphilitic, patient.

Atrophy, from induration of the mesenteric glands, or from abscess in the liver, resembles in its effects, rather than its appearance, the true phthisis. Each is attended with fever, often with regular evening exacerbations, and in the latter we often find a dry short cough. The distinction is not, however, difficult. In the former, the absence of cough, the tumid abdomen, and lying with equal ease on both sides, sufficiently point out the disease: in the latter the dark yellow complexion, and the symptoms of dyspepsia.

After a catarrh, a cough, with a discharge of thin acrid mucus, often threatens consumption, and our apprehension is only relieved by reflecting on the period of life, the absence of hectic fever, the ease with which the patient lies on either side, and, in general, the nature of the expectoration. Truly purulent matter is often also discharged, with such an equivocal exertion that we can scarcely pronounce it either expectoration or vomiting. In this case we have found some foundation of distinction from the nature of the pus. If such as is usually discharged from a common abscess, if in large quantities at once, and not attended with the gradual progress of a hectic, we have usually prophesied a favourable termination, and such has been the result, though in one instance the Solar Tincture, privately taken gained all the credit.

When we spoke above of the source of the disease, it was with a reference to the opinion of a late author, that pulmonic consumption originated in disorders of the liver. It was not an idle nor an unfounded suggestion; for in many instances we have found infarctions of the liver to have preceded; and, when authors speak of consumption arising from a sedentary life, hard study, and distress of mind, we strongly suspect that the foundation of the disease has been laid in the liver. We have mentioned it to direct the attention of practitioners to the early stages of the complaint; nor was it without a view of this kind that, in doubtful cases, we mentioned as a remedy the pure bitters, with rhubarb, to which the fixed alkali may be advantageously added. Is it from this connection that the idea and the term of "a stomach cough" are derived? Stoll has pointed out its connection with a sedentary life; and many authors have enlarged on the injuries which result from the exhibition of astringents in this complaint, which are peculiarly injurious in diseases of the liver: we can add, from observation, that coughs of this kind which have degenerated into phthisis, have been found to originate from a disease of that organ.

We have limited our consideration, however, of phthisis to a consumption arising from an abscess of the lungs, and have expressed our opinion that it is such an abscess as arises from the suppuration of a stumous gland, generally distinguished by the name of *tubercle*, or, when in a suppurating state, of *vomica*. Yet the opinion of other authors must not be passed over without some consideration.

As phthisis follows by hæmoptysis, it has been supposed that the wound arising from the rupture degenerates into a foul ulcer, which heals with difficulty. If, however, the habit is not previously injured, it is not easy to say why a wound from hæmoptoe should not

heal as easily as one from a small sword, pistol bullet, or from the vicarious hæmorrhage from suppressed menstruation. It is, therefore, more probable that the bleeding is the consequence of the contraction of the chest from tubercles, sometimes from a diminished cavity in consequence of deformity.

Suppuration from protracted peripneumony, has also been accused, in general, with less reason. We have seen this happen in several instances, without consumption following. The matter has been fairly spit up; the abscess has pointed externally, and the matter been discharged by a wound; it has been absorbed and carried to the kidneys, within our own observation, with a favourable termination. It is, therefore, probable that this cannot be a cause, except, as already hinted, when the inflammation has been communicated to an indolent tubercle. Peripneumony is indeed a comparatively rare disease; but our recollection does not furnish a fair instance of phthisis originating from it, though so frequently arising from a catarrh, a less degree of the same complaint.

Yet even this view of the case is not without its difficulties. Catarrh is a mild disease, originating from cold, and producing only a moderate degree of inflammation, in a part far above that affected in consumption. We know, too, that catarrh has continued for a series of years without terminating in consumption. The difficulty may be reconciled in two ways. Catarrh, we believe, is never the precursor of phthisis, unless attended with fever, and the fever may be as much the exciting cause, as the inflammation of the bronchial glands; or the supposed catarrh may be only the first symptom of the disease. The former is, we believe, the fact.

Another opinion has been, that the discharge of a continued catarrh has become acrimonious, and produced ulcer. This is, however, truly imaginary. We know no situation in which the discharge is so acrid as during the first inflammatory stage, and this, it is admitted, does not produce consumption; and the discharge of a catarrh in a thin serous state has continued for many years, without a phthisis following.

There is little doubt, therefore, that the true pulmonary phthisis arises from tubercles, and from these exclusively; and the enquiry will remain of what nature these tumours are. External causes of obstruction have been sought, and been found in the dust raised in grinding scythes, in the meal from mills, &c. Dust in innumerable instances is breathed; and were this the cause, Hyde Park, and every frequented turnpike, would in the summer be the prolific source of consumptions. We have never seen calculous concretions in either trade; but we have found them in cork-cutters, and in one instance in a delicate young lady, where the hectic was connected with cutaneous eruptions. Added to this, it must be remarked that, from the analysis of these concretions, they appear, like other calculi, to be formed from the animal fluids.

The tubercles then are conglobate glands, enlarged in consequence of that state of the constitution which constitutes SCROFULA, which we have often hinted consists in a want of irritability to propel their contents, and which we shall soon explain at some length, *vide in verbo*. Their original formation, and their excitement to action, depends on different circumstances.

They are evidently formed in contracted chests, perhaps from the pressure of the crowded parts around obstructing the passage of their fluids; sometimes apparently in consequence of an acrimony. Consumptions are not uncommon in those constitutionally subject to cutaneous diseases from inheritance. When thrown on the surface in a sufficient proportion, the constitution is safe; but where, from debility or external applications, this is prevented, the internal organs suffer, and the inconvenience is particularly felt in the lymphatic system; not that the acrimony is thrown on them, but infecting the fluids exhaled into different cavities, and probably separated in a more acrid state by the conglomerate glands, it is taken up by the lymphatics, and stagnates in the conglobate. Thus we find, in similar circumstances, sometimes the conglobate glands of the lungs, sometimes those of the mesentery, and the lymphatic system in different parts, suffering from obstruction. Infirm health, with atrophy, is the constant consequence, when pulmonic affections are not induced.

Damp air, acrid vapours, and various causes connected with the atmosphere, have been accused; but with little reason except when connected with scrofula, in which case damp situations seem to act as a predisposing cause. Of a sedentary life, of vexation, &c. we have already spoken, and attributed their influence to their effect on the liver.

It remains to consider phthisis as hereditary and infectious. It is useless to engage in a war of words with the partisans of Mr. Hunter respecting the real meaning of hereditary diseases. We only use the term in its common purport—are persons born of consumptive parents particularly liable to the disease? They undoubtedly are so, and it is the consequence of every day's experience. Yet to this there are some exceptions. As in scrofula and other diseases the complaint pursues those children only which resemble in form, in complexion, or temperament, the parent afflicted. The others appear in no respect influenced by the hereditary taint. It is singular, however, not only that the general predisposition but the period of life at which they are affected are the same, independent, with a few exceptions, of the external causes. These exceptions are, removing into a warmer climate previous to the critical period, or in a female being in the increasing state. We have seen the phthisical tendency constantly recurring, and as often removed by pregnancy. The unfortunate patient is, however, at last the victim of a complaint, which may be retarded, but which cannot be subdued.

That phthisis is infectious the medical opinions of southern Europe incontestably show, since it is forbidden to open those who die of the disease, and the bedding and clothes are burnt. We do not interfere with the practices of countries in which we have no experience. In Great Britain we suspect it to be infectious, though not in a considerable degree. The physician who visits, the nurse who attends, the friend who assists, are in no danger. Yet to live in the same room, or to sleep in the same bed, is dangerous, if continued. We have often traced infection; yet where the communication is not constant or intimate, we have thought that the communicated disease is not peculiarly violent or dangerous. Where it has appeared so it has been communicated from parents to children, and the con-

trary; but who can say that in such cases hereditary predisposition may not have had its powerful influence? Let us not deprive the sufferer of the consolations of friendship and humanity; for the disease, we must repeat, unless in similar constitutions, is not highly infectious. It is sufficiently so to inspire caution with respect to too constant confinement, but not to justify neglect.

The course and the progress of the symptoms are not very readily explained. They are in the early stages too considerable for the cause, and in the latter too slight. We have mentioned, not without design, the tall stature, without a proportional expansion, which according to the explanations of the progressive evolutions of the body, shows some primordial defect. To which we must add, that constitutions of this kind generally show a premature expansion of the intellectual faculties, with peculiar debility of the corporeal functions. Deformity, a frequent attendant of each, though it sometimes precedes pulmonic affections, is by no means a necessary attendant. The first marks of indisposition, except those just mentioned, are the symptoms of impeded circulation through the lungs, followed by a slight irritation felt at the top of the epiglottis. These are generally signs of the existence of tubercles, and ought to inspire serious alarm. The former are pointed out by pain and dyspnoea on rapid motion; by a fixed, florid red on the cheeks; by an inability to lie on one side rather than the other: the latter by a hecking cough frequently felt during the day, particularly on motion. The decubitus difficilis is constantly on the affected side; indeed so constantly, that we consider it as a distinguishing mark of the complaint. The explanation, however, is difficult. It might be supposed that respiration would be carried on more easily by the sound lung, if not compressed; and as pain is no part of the symptoms, the pressure on the affected side would produce no inconvenience. We have not pretended to explain any of these appearances which respect the facility of lying on either side. With the fullest collection of the facts before us we have sometimes thought that we had found a clue, when some unfortunate well founded observation has dissipated the visionary fabric. We shall rest on the circumstance as stated, therefore, as a fact, and determine that the side on which the patient *cannot* lie is that which is diseased.

Whether obstruction will alone produce fever is doubted; but the debility, with the obstructions, may undoubtedly occasion an evening hæmic, q. v. The tubercles themselves do not admit of suppuration; and in this respect also resemble scrofulous swellings. The expectoration, we have said, is a caseous substance, *fringed* often with a little true pus, apparently the production of the cyst. Yet in the progress the discharge is truly purulent, and often in considerable quantities; but in such cases the whole substance of at least one lobe of the lungs has apparently suppurated. That the respiration will be affected from such causes must be evident; yet at times it is not so, and in a few cases the patient has been able to lie with equal ease on each side. In such circumstances we have suspected that the glands at the root of the lungs are chiefly affected, but dissections have not been sufficiently numerous to ascertain the fact. The exceptions do not, however, contradict the general cause so frequently observed, and

so often incontestably established. The effect of the more frequent inspiration, and the more rapid circulation, is to expose the blood more frequently to the access of atmospheric air; and consequently to increase its oxygenation: hence the more florid complexion, probably the stronger pulse, and of course the phlogistic diathesis. From the fever arises the increased heat after eating, which is so striking an effect of phthisis, that on its degree we have rested the determination of the digestibility of food (see ALIMENT): from the fever also arises the heat on first going to bed, and the perspiration on the solution of the paroxysm. The febrile exacerbations, we have said (see HECTICA), is owing to the absorption of purulent matter; and when this is not carried to the skin it falls on its vicarious organs, the mucous glands of the bowels, so that the perspiration and diarrhoea counterbalance each other.

In the advanced stages the irritation of the cough is incessant; the heat or perspiration almost constantly distressing; and when these are absent the life seems exhausted from debility. What then affords the cheering ray of expected relief? Such, however, is afforded, for ingenuity invents every fallacious mode of eluding inquiries, and of giving the most favourable view of every symptom. The patient sinks to the grave with the constant assurances of having attained greater strength, and a relief from every dangerous symptom; with eager expectations of the events of another year, when life is limited by another day. Such we would say is the kind interposition of Providence, was the same cheerfulness found in every disease, and was not in many the gloom as distressing to the patient as the ill-founded expectation of the consumptive victim is to the well informed anxious friend. This cheerfulness is said to be owing to the absence of pain; but pain is not always absent; and the difficulty of breathing, the incessant cough, the burning heats, the deluging perspiration would appear worse than the most poignant pain. Yet these are disregarded, represented as trifles, lessened in the report to the most inconsiderable inconveniences: it is truly singular!

The *prognosis* in hectic is always unfavourable. We this day saw a lady whose parents in a long succession have died hectic, and whose brothers have yielded to the same complaint. She feels scarcely more than a slight irritation at the epiglottis, with a delicate nervous habit. Yet the experienced eye must see in a moment her fate, when the breeding period is at an end; for she is now pregnant, and may be again so. Nature assumes her rights, and combats every disease while this important process goes on. We may find no proper place to mark the conclusion of the scene. Each successive pregnancy is attended with greater debility, and the period of suckling must each time be abridged. At last, during the whole pregnancy, the debility is extreme: a healthy offspring, however, is often produced, but with little or no pain in the labour, and the mother dies without a groan within a few days. If the hectic has come on rapidly, the children are often healthy: if it has gradually approached, they soon sink from apparent debility only.

In other respects the prognosis is influenced by the rapidity of the progress, and the degree of the symptoms. A purulent expectoration, with considerable hectic fever rapidly hastening, leaves little hope. If the

pulse in an apparently early stage, exceed in the morning 100, and at night 120; if at the same time the expectoration is purulent and copious, the night sweats constantly repeated and violent, the debility hastening on, and the emaciation following with similar rapidity; much expectation of relief cannot be entertained. If in females who have already experienced a regular return of the menstrual discharge this evacuation should disappear, we must equally despair. While this discharge however continues, while the pulse is at no period more than 90 or 95, while animal food is borne with ease, we have generally indulged a hope of relief: a hope, alas! sometimes disappointed.

Is phthisis then never cured? Whence can arise the confident promises which every newspaper offers, which the most respectable authorities confirm? The deception arises from two sources. Catarrhal complaints are, in many instances confounded with consumptive, and the most experienced eye is occasionally deceived. In some cases also vomicae are completely evacuated by expectoration, and the wound heals. So insidious is the attack of phthisis, that we have mistaken it for catarrh; and, on the contrary, so violent is often a catarrh, that we have apprehended phthisis; nor has the delusion been destroyed but by the expectoration. From such errors many medicines have gained credit; nor can we wonder at the decision of those whose testimony appears convincing, when we own that an extensive experience of thirty five years does not always enable us to avoid error. Confidence is, however, the general companion of ignorance, and those who know of no sources of fallacy conclude that there are none. To say that phthisis is cured may appear equally confident and rash. We shall perhaps be credited when we claim no merit from the cure; but if the same experience which has enabled us to decide on one point will be allowed on the other side, we can say that in six distinct instances we have seen a recovery perfected by nature. The greater number of these were seen and pronounced to be truly phthisical by practitioners of rank, judgment, and experience. We claim, we have said, no merit, and have mentioned the cases to prevent despair: they are so few, that they can scarcely inspire hope.

As the remote causes of phthisis, at least those styled predisponent, are constitutional, we can scarcely expect to be able to avoid them. The exciting causes should occasion the most anxious caution. When, therefore, an hereditary or a constitutional predisposition is suspected, we should with the utmost care avoid every cause of catarrh, every cause of fever, at least during the period of predisposition. To avoid colds, it is not however, necessary to enervate the constitution by heat: on the contrary, the exotics of the conservatory suffer most from every blast. To guard against such a state of febrile irritability on one hand, and to avoid, on the other, too great exposure to cold, is a difficult task. No rules can be laid down. In general, to guard against the sudden impulse of cold by moderately warm clothing; to remove to a warm climate, is the best security; but where, in the present state of Europe, is *personal* security to be found? If we seek for warmth in the Antilles, or in America, we encounter diseases equally dreadful, and we may, perhaps, with equal safety, and more comfort, find it in the warmer spots of this island

in the winter and spring; removing, from the months of July to November, to the inland parts, to avoid the relaxation of too great heat. Cornwall and Devonshire afford retired secluded spots, where the bleak east scarcely intrudes, and where the frost seldom binds the earth for any continued time, even in extreme winter. In these retreats careful exposure to the air will prevent an unnatural tenderness; the strength may be recruited by exercise on horseback, visiting the neighbouring shores in the mildest days, and keeping in the sheltered spots on the coldest; guarding, by a cautiously regulated diet, and a moderately warm dress, against every stimulus, and yet by admitting an admixture of animal food, at the period when exacerbations are less expected, supporting the general strength. When the predisposition is stronger, and when the disease may be said to have commenced, if any pain of the side shows a local affection, a blister should be immediately applied; and the pain shifting to different parts of the thorax, should be followed by the same remedy, wherever it may appear. We have seen many instances of the good effects of this measure, and in particular one, where six promising young men and women of one family had fallen victims to phthisis. The seventh was saved by marriage, and successive lyings in; the eighth by repeated blisters. The number we know not; for, after he found the advantages of the remedy, he applied them himself, in every instance, with temporary relief, and ultimately with complete success. Many similar but less striking instances we have witnessed; and in impending phthisis, if steadily followed, this remedy will very frequently succeed.

When phthisis has come on, the case is more hopeless. Yet the disease has, for years, been warded off by the plans just mentioned; and the critical period once passed, the devoted victim has escaped. We have already hinted that among the prophylactics, in the female constitution, the recurrence of the puerperal state is one of the most frequent and effectual. Shall we be forgiven, then, if in such circumstances we recommend matrimony, for it is sometimes not a temporary relief only? When the disease is firmly established, medicine we fear is useless. We have said, that a pulse exceeding, at any period of the day, 90 or 95; with fixed pain in the side; difficulty of lying on one side, often on either; the necessity, for procuring ease, to lie with the head and chest raised; are the circumstances which portend the greatest danger. We did not before mention the expectoration, because its more decisive appearances occur at this period. Patients have usually spit in water, for Sydenham has said, that sputum swims, and pus sinks. This is, however, an equivocal criterion. When treating of INFLAMMATION, q. v., p. 15, we have said that mucus is generally in rounded masses; pus flows more readily: the latter is softer and whiter, with little globules, swimming through it; and, when mixed with a saturated solution of potash, a transparent tenacious jelly is separated, while the same solution produces no such change in mucus. We cannot add to the force or perspicuity of this description, but may only observe, that the white gently flowing pus often excites, in common observers, little alarm, while the green or yellowish mucus is looked on with the strongest apprehensions.

In the cure of phthisis, we are told that we must

obviate the occasional causes of fever; evacuate the purulent matter from the lungs, palliate the most urgent symptoms, and regulate the air, exercise, &c. Other authors, and those of high authority, gravely tell us, that we must evacuate the matter from the abscess, clean and heal it. They teach us also how to affect these important purposes; but unfortunately, though the indications are clear, the effect of the remedies declared to be indisputable, we find them always fail. We must take up the subject more empirically, for dogmatism lends us no assistance.

While the pulse was full and strong, the pain in the side acute, the phlogistic diathesis violent, and the cough harsh and distressing, *bleeding* was naturally suggested. It was employed freely, and with apparent advantage. The symptoms were less violent, and the never failing criterion, the buffy coat, impelled repeatedly the hand of the operator. But while every amendment appeared the pulse sunk, anasarca swellings came on, and the patient died. Such, however, was the prejudice in favour of the remedy, from the symptoms described, that the practitioner never reflected that he was combating an effect only, and that the cause remained undisturbed. Yet bleeding was, for a time, considered as the only remedy, and the more limited evacuations are still employed. At present, by every rational practitioner, it is only used as a palliative for more immediate relief of distressing symptoms, and never carried to such an extent as to weaken the vital powers.

Emetics were generally dreaded in hectics, from apprehension of inducing hæmoptoe, nor, till the publication of Dr. Robinson's work, were practitioners aware that emetics, by their determination to the surface, were among the most successful remedies for bleedings from the lungs, perhaps for many other hæmorrhages. We have not dared to give emetics in hæmoptoe as such, but have never succeeded so well as when we have insidiously excited vomiting. In other respects, emetics are highly useful: they emulge the bronchial glands; they prevent exacerbation of fever; and diffuse a general, genial glow over the surface. They often succeed in moderate doses, so as to excite one discharge only, repeated every other day. We mean not to say that they will cure the complaint, but they relieve the most distressing symptoms, and sometimes keep it from advancing till the critical period of life is over, and nature resumes her succession of offices in a different direction. The choice of emetics we have not found a subject of importance. If the squills would readily excite vomiting, we might prefer them; but they occasion chiefly a long continued and distressing nausea. The metallic emetics employed are the vitriolated zinc and copper, and the tartarized antimony. The two former act quickly, and not with peculiar violence, in moderate doses. We once thought the vitriolated copper peculiarly useful in this complaint, but, from repeated, more attentive observation, we believe the ipecacuanha more manageable and convenient. The antimonials pass into the bowels more rapidly; and in a disease, where the diarrhœa is often a troublesome symptom, this tendency is inconvenient and dangerous. Where no diarrhœa attends, the antimonials are equally useful with ipecacuanha.

Cathartics are seldom necessary, for the internal accumulations are not considerable or dangerous. In the early stages they are sometimes useful to procure that

equable circulation which is so essential to health; and we must recollect the probability of an affection of the liver preceding. We suspect that this is more frequent than practitioners have supposed. In the advanced periods of the disease there is reason to apprehend diarrhoea, and every medicine of a laxative tendency should, of course, be avoided.

Diaphoretics have been forbidden on no very solid foundation. The *sudorifics* are certainly injurious, and even every diaphoretic, which acts in consequence of increased temperature, should be avoided; but we have pointed out medicines of this class, the *diaphnoica*, less liable to suspicion, and some of the milder relaxing diaphoretics may be occasionally admitted. It should be recollected that the copious sweats are the effect of the febrile paroxysms; and that, to obviate these, would be to prevent what is merely their consequence. Keeping up the action of the extreme vessels we found to be the best means of preventing the formation of a paroxysm, and so far only are diaphoretics useful. For this purpose we give emetics in the evening, previous to the access of fever; and mild doses of antimonials, with opium, are found to be equally useful.

Blisters we have already mentioned in the prophylactic course, and must now add, that keeping up a discharge from the thorax, so near as possible to the affected part, is, through the whole of the disease, beneficial. When we could not distinguish any part of the lungs peculiarly injured, we have applied the blister to the sternum. When it is designed to relieve the harshness and violence of the cough, the nape of the neck has appeared the preferable place for its application.

When any common abscess has apparently pointed outwards, a deep caustic is the best remedy; and many practitioners, with good reason, prefer a seton, as it can be more easily continued, and makes a more certain and steady discharge nearer the part affected. Repeated blistering seems, however, in our experience to have had as good an effect as might be expected from any topical discharge of this kind. When, however, the blistered part begins to discharge a white curdled matter, its good effects apparently cease, and another blister in the neighbourhood must be applied.

The *cooling neutrals* through the whole course of the disease are useful, particularly nitre, which may be advantageously taken in any period of the complaint, in milk of almonds, in the quantity of about a scruple or half a drachm to a pint, with which a light opiate may be combined. The citrat of potash and the other neutrals, when there is no reason to apprehend a diarrhoea, may be also given. *Demulcents* are always indicated, and usually employed with great freedom, to relieve the violence of cough. The *spermaceti*, the most common, seems to have little real power, and is of use no longer than while passing over the epiglottis; so that it is best given in form of a linctus. The compound powder of tragacanth is used in a similar way, with as little real advantage. If demulcents to sheath the fauces and lessen the violence of cough are ever useful, no medicine of this kind is more advantageous than gum arabic, held constantly in the mouth; and, during sleep, it may be stuck against the teeth, so as not to endanger suffocation from being inadvertently swallowed.

For the same purpose opiates may be occasionally

given, and the tinctura opii camphorata is the usual medicine employed, without any peculiar advantage. Indeed there is little room for choice in the preparations, except their greater or less degree of solubility. The camphorated and the common tinctures act quickly, but lose their power in three or four hours; so that it is necessary to repeat them, or to employ a less soluble preparation, as the solid opium, combined occasionally with soap, or with the fetid gums; sometimes, to obviate costiveness, with an aloetic pill, or to prevent the suppression of expectoration, with the pillulae æscilla.

Expectorants, through the whole disease, have been freely employed, though seemingly without correct views. In the beginning, when the disease appears to be truly catarrhal, the more stimulating expectorants probably increase inflammation, and prevent the formation of the mild salutary mucus. If we employ the mild demulcent ones, we shall produce, as already hinted, little effect, except sheathing the epiglottis. Physicians, however, early, and in the middle of the last century, employed very stimulating medicines of this kind, the *turpentine*, the *natural* and *artificial balsams*. These if used indiscriminately must be injurious. Yet at the end of the complaint, when expectoration was checked from debility, and a want of irritability of the glands, we have found them useful; and in this state of the disease only. Even the formerly famous *antihæcticum* of *Potterius* we have thought useful in this stage of the complaint. The advantages of the balsams were supposed to consist in their power of cleaning the wound and healing it.

We have suspected that the myrrh owed its credit to a supposed balsamic quality, or to its effects on irritable sores. Whatever be the source of its employment as a remedy, it is certainly in many cases of phthisis an useful one. It seems, as we have said, to be a narcotic bitter, slightly tonic and sedative; and we have suspected it to be injurious in impending hæmoptoe. (See MYRRHA.) Balsams have been recommended in another way, when breathed in the form of vapour. A balsamic ether has been fashionable as a secret medicine, but seems to possess no very superior powers. In an inflammatory state of the bronchial glands warm watery vapour may be useful, and vinegar has been occasionally added, but it seems often to irritate the cough, and the more stimulant vapours are evidently injurious.

When the pneumatic chemistry introduced to our notice many substances in an aerial form, it seemed probable that many advantages might be derived by introducing medicines which would thus penetrate much farther than vesicular vapours of the greatest tenuity, without being changed by the digestive process. These favourable prospects have not been realized. When oxygen was discovered it was soon tried in this complaint, but it was manifestly injurious, increasing the hectic heats, the fulness and hardness of the pulse, sometimes seeming to induce hæmoptoe. Air of a lower quality was then used with some advantage, and the diluted carbonic acid gas was breathed apparently without injury, though not with advantage. We have been since told of the good effects of the hydro-carbonate, of the advantages derived from breathing the breath of cows, and even inhaling the fumes of fresh dung. As these plans are now disused, we may suppose that they

were not permanently useful, though in some of the earliest trials they appeared to be so. The nitrous oxide which so rapidly intoxicates has not been used in its dilute state. The only artificial air given internally in this complaint is the carbonic acid gas, combined with water, sometimes also with an alkali, in imitation of the Seltzer water. All the natural acidulous waters have been also recommended. The chief mineral water employed, though not an acidulous one, is that of Bristol, which is nearly pure, or at least does not possess any ingredient apparently beneficial to the complaint. Perhaps the water alone, perhaps the air and other circumstances not sufficiently attended to, may have relieved. Shall we add, that the fame acquired by it, in some cases chiefly catarrhal, may have led to its more extensive and indiscriminate use?

As the attending fever is a remittent, the bark was apparently indicated; and when its utility in meliorating the sanious discharges of foul ulcers was observed, it was supposed that it might be equally effectual in this disease. We may, however, assert, that in general the bark is injurious. If given in any dose calculated to lessen the fever, it increases the hectic heats, the flushes of the face, the harshness and tightness of the cough, at the same time diminishing the little expectoration that seems often to relieve the more distressing fits of coughing. When, however, the purulent discharge is copious; the patient's strength exhausted; the morning perspirations profuse; the bark is sometimes borne with more ease, and appears occasionally beneficial when it does not increase the discharge from the bowels. Other bitters, as the cascarilla, the angustura bark, the camomile flowers, the quassia, the columbo root, and the uva ursi, are useful nearly in the order stated as tonics, and injurious in the same order as astringents. The first, however, is most frequently inconvenient in this respect. The astringency of the angustura is slight, and, in the others, is not observable. The uva ursi, lately recommended, seems to act exclusively as a bitter, and one of the weakest of the tribe.

Some of the narcotic bitters have been employed and recommended, as the hop, St. Ignatius' bean, the bitter almonds, and the various plants which partake of this virtue. The *LICHEN ISLANDICUS*, q. v. we suspect, if not wholly a nutrient, is of this class. The neglect, however, of these medicines seems to show that they have been disused as inefficacious, or dreaded as deleterious. Other narcotics, as the umbellatæ, of which the cicuta is the principal, and the solanaceæ, particularly the henbane and foxglove, have been employed. The aconite has been also recommended by Dr. Rogers of St. Petersburg. We have never found the cicuta particularly efficacious, in removing the disease, though as an anodyne it is sometimes useful, and seems to act as such, without the inconveniences which often attend opium. The henbane appears equally efficacious, and is said to be also slightly laxative. We have preferred the seeds as more equable in their effects to the extract, and less subject to sophistication. The digitalis, of late highly commended, seems not to have merited all the praises which it has obtained. It often reduces the pulse from one hundred and twenty to sixty, without relieving the principal complaint. In many cases, also, it occasions such a considerable debility that it cannot be long con-

tinued. In every instance, indeed, where the debility induced is not so striking, it probably lessens the vigour of the constitution in a very injurious degree; nor is there, we think, any doubt of its inconveniences far overbalancing its beneficial effects in this disease. Though we do not in every instance deny the latter, they have been greatly exaggerated; nor, on tasking our recollection, can we say that we have ever seen essential service in phthisis derived from the digitalis that might not, in similar circumstances, have been produced from other plans of relief. Opiates we have already mentioned as palliatives; yet it has been supposed that, by their continued use, they might allay irritation, and contribute to the great object, the healing of the ulcer. They have, however, failed in this view, though we cannot refuse their employment to lessen pain, and keep up the calm serenity, the pleasing delirium, in the midst of pain, distress, and a state hopeless of relief. Vide OPIUM.

Metallic salts and oxyds have been employed with different views. The mercurials have been considered as deobstruents, and they have been used to restore the circulation, supposed to be obstructed in the diseased glands. To render the theory more complete, mercury has been triturated (*killed* in the pharmaceutical phrase) with extract of cicuta, to unite two deobstruents of an opposite nature, so that the stimulus of the one may be rendered less injurious by the sedative powers of the other. Experience has, however, confounded this plausible theory, and, together, they have been found useless, perhaps injurious; nor does the *mercurial salivation* recommended by Dr. Rush rest on a more secure foundation. The preparations of iron have been employed as tonics, particularly in the mixture recommended by Mr. Griffiths, with the myrrh and soda. The chemical inaccuracy in that preparation is avoided by previously precipitating the iron from the vitriolated salt, employed by Griffiths, and using it in a smaller dose. The *ferum precipitatum* is now usually combined with the myrrh and natron in the form of pills. In either mode the remedy appears to be useful; but in the more early, inflammatory state of phthisis, we have thought the iron too stimulant, and have therefore usually omitted it. In the latter stages the addition seems advantageous. Of the copper, as an emetic, we have already spoken. It is recommended by Dr. Senter of Philadelphia, by Dr. Simmons, and by John Wesley, probably from an old author. We mention it here to suggest the enquiry, whether it may not be useful as a tonic. The effects of zinc in this view, of BISMUTH, in Dr. Bardsley's reports, from the authors already quoted, vide in verbo, lead us to think the suspicion not wholly visionary.

As a tonic from the mineral kingdom the vitriolic acid has been already alluded to. It is wholly without suspicion respecting any injurious power, and is often useful. It is usually added to the decoction of bark to restrain the perspiration, which often occurs on the solution of the evening paroxysm, about two or three in the morning. The inconveniences arising from the bark have been attributed, with little reason, to the acid; but on the other hand we have not found it, in any form, highly useful. The other acids do not sensibly differ, or experience has not yet discovered any foundation for a preference.

Various circumstances necessary in conducting this very intractable disease yet remain. These are AIR and SITUATION; DIET; CLOTHING and EXERCISE. Of these in their order.

Air and situation are apparently objects of considerable importance in a disease where medicine must confess the inutility of her resources. Change of air is among the remedies constantly recommended; and *to change* is often professedly the only object. From the experiments with oxygen, it will be obvious that the purest air is not the best, and that air of a lower quality is more useful. We have hinted also that the advantages of Bristol have been, probably in part, owing to the low situation of the former lodgings; and that the place has gradually declined in its credit, since the invalids have crept higher up the hill. Whatever becomes of the suspicion, it is evident that the loftiest and most exposed situations are not the most salutary for the hectic patient, and that a dry, gravelly soil, of no great elevation, defended from the east, is preferable. We have not hitherto gone so far to prefer the neighbourhood of marshes; yet the advantages supposed to be derived from breathing the hydrocarbonate, might lead to a suspicion of the utility of such a situation; and it still remains a subject of enquiry, whether hectics have not increased in proportion to the diminution of intermittents. It is common to send phthysical patients to the neighbourhood of the sea, led probably by the decided advantages of a sea voyage. In the spring and early summer, however, the sea is evidently injurious: in the autumn it is often salutary; and in the winter the neighbourhood of the sea affords a milder and more steady temperature than any other situation. In such places frost is seldom continued; fogs are rare; the cold winds uncommon. While, then, in autumn and winter the sea coasts afford such resources, their neighbourhood in the spring and early summer will afford numerous sheltered situations, where the mildness of the shores is combined with the defence of the woods, equally sheltered from the baneful influence of the east, or the piercing colds of the north winds.

A change of climate is often recommended; and our invalids have been sent to Lisbon; to Madeira, to the south of France and to the West Indies. In the three former the climate is by no means so steady as to preclude occasional blasts of piercing coldness; while the habitations, constructed to prevent the access of heat, have often few resources to guard against cold, which the stranger, whose nerves are unbraced by an unaccustomed temperature, feels severely. In general, also, our invalids, endeavour to avoid the winter, when, in reality, they should avoid the spring. If they sail from the south-western shores, they will usually find no inconvenience from cold till near Christmas, and they should remain until the end of May; but they generally migrate in October, and return in February, when they experience the heat of a later summer in lower latitudes, and the cold of a late spring on their return. On the whole, we have scarcely found any advantage gained from excursions abroad; and, when permitted, have always dissuaded the attempt. We have been justified by repeatedly witnessing their ill success. To the West Indies few resort, for they meet there with a worse enemy; and it is not true, as has been asserted, that phthisis is there

unknown. In the article CLIMATE, q. v. we have introduced some remarks which may be applicable in this place.

The *diet* of phthysical patients is an object of no little care, for they require support by the mildest and least stimulating foods. While the Brunonian fed his patients to avoid debility, the other practitioners carried, apparently, their antiphlogistic system too far. It is certainly improper wholly to forbid animal food. Yet its kind, the time of the day on which it should be taken, and the precautions to be enjoined in the conduct, require particular attention. We have noticed these circumstances with a view to the present subject in different articles (see ALIMENT, DIÆTA, LAC). Let us recapitulate shortly what is connected with this subject.

The phthysical patient should rise early, for nothing weakens so much as the perspiration and the drowsy slumbers from six to nine; but as the day would in that case be painfully long, he should be allowed to rest after his mid day meal for an hour or two. He will then rise refreshed on a second morning, not exhausted by perspiration. At rising, or a little before, he may take some thin chocolate, some whey, or asses' milk, and in an hour or two a common breakfast of tea, with ship biscuits, may follow. This will be completed probably by nine, and three or four hours are then at liberty for exercise, for taking medicine, for light employments, or easy conversation. Dinner, for reasons stated (see DIÆTA), should not be delayed long after one, and it should consist of a single dish of light animal food, not prolonged by luxuries, or rendered heavy by the refinements of cookery. The drink may be water, light porter, or cyder with water; and wine will be unnecessary after it, unless custom has transferred this beverage from a luxury to a necessary. Suppers should be slight, and consist of fruit, if the bowels will bear it; light broth, beef tea, sago, tapioca, or arrow root, flavoured by lemon peel or lemon juice rather than wine. The usual refreshment of tea may be supplied by food of the same kind.

The *clothing* should be so regulated as to guard against cold rather than to increase the heat. As hectic patients, from the morning perspiration, are usually sensible to cold, they should be more carefully guarded when they go into the air. It is usual to direct flannel underneath their linen, and in winter it is highly necessary; but in summer excites too great perspiration, and calico should therefore be substituted in its stead. The flannel and the calico should be changed every other day. The feet should be defended with unusual care. It is not uncommon for the coughs of consumptive persons to be highly troublesome on going to bed; and we have sometimes found that the usual opiate given more early, so as to have began its action at bed time, has prevented this distressing attack. Another precaution has lessened the violence of the cough, viz. not taking off the clothes too quickly, for the cough seems often to be excited by the access of the cold air. We have occasionally directed patients to go into bed after laying aside their upper garments only, and to have a proper warmth come on before the others are taken off: a precaution we have observed to be highly useful in guarding against this inconvenience.

EXERCISE. The various exercises, the principles

on which they act, and the grounds of preferring either, we have noticed under the article *ÆORA*. In hectic cases, *riding on horseback, or in a carriage, swinging, and sailing*, are chiefly recommended. *Riding on horseback* is highly commended by Sydenham, and many authors, as a remedy of the greatest utility, and almost a specific in this disease. Unfortunately the complaint has since proved unusually intractable, or the recommendations have been greatly raised above their real value. We do not find, at this time, riding peculiarly advantageous in the true pulmonary phthisis. A carriage is a substitute for the horse, in cases of greater debility; but if the weather is favourable, the open carriage is preferable, as irregular currents of air from the sashes are avoided. *Swinging* requires probably a little more exertion to support the body in a due equilibrium, and it has the advantage of being a more general exercise, of affording a constant succession of free air, with a gentle agitation. It lowers the pulse, and lessens hectic heats, giving often appetite and spirits, with more refreshing sleep. It has not been easy to ascertain the sources of the advantages from *sailing*, but probably they are of a similar kind. A constant exertion is required to preserve the balance; the air is free and open, usually with a current in some direction. There is not the slightest evidence that the fumes of the pitch contribute to the relief. The use of all occasional exercise should be regulated, like diet, by an attention to the usual febrile exacerbations, for those who are benefited often by riding in the forenoon, feel inconvenience from the same exercise in the evening. In general, riding is preferable in cases where the strength is little impaired, and where there is reason to believe the primary disease to be in the liver. If the exercise has an ostensible object it is more useful; and, on this account, a journey by easy stages, or a voyage to meet an old friend, is peculiarly beneficial. The real object to restore health is forgotten, and the spirits kept alive by the artificial one.

In a disease where a cure is impracticable, it is often of service to *relieve pain* and to lessen the more distressing symptoms. The antagonizing evacuations are, we have said, the diarrhœa and the morning sweats. The opiate, which quiets the cough, will sometimes relieve the diarrhœa; but it cannot often be given in a sufficient dose without inducing dyspnœa, by checking expectoration; and, on the contrary, the opiate often increases the perspiration. In the former case, the compound powder of chalk, the logwood, the kino, or the tormentil, will check the diarrhœa; and in the latter the cicuta will frequently quiet the cough, without increasing the sweats. The perspiration itself we have often lessened by exciting a gentle diaphoresis with the relaxing medicines, as opium with antimonials, early in the evening, and sometimes the mineral acids, with a small proportion of the syrupus papaveris albi, will succeed.

Flatulence in the stomach and bowels, by pressing on the diaphragm, sometimes increases dyspnœa; and it is of consequence to distinguish this cause, as it may be so easily relieved. It is known by the ease which the occasional discharge of flatus procures, and is removed most affectually by the asafœtida taken into the stomach, or thrown into the rectum. The asafœtida is the preferable remedy, as it is easily soluble in the form of pills, and may be given in a watery vehicle; it is, at the same time, an expectorant of considerable value, though

seldom used as such. If more warmth be required, the camphorated julep, with a small proportion of ether, of laudanum, or tincture of galbanum, may be joined. A warm plaster to the pit of the stomach will also be often useful.

In the latter stages of the complaint the vessels lose the power of propelling the mucus, and the dyspnœa is highly distressing, particularly in the morning. Though the greater part of the discharge is usually from vomicae, which are not secretory organs, yet the stimulant expectorants seem to relieve, perhaps from associated motions, or from the space obtained by the discharge of the expectoration merely. The squills and the warmer balsams are at this time useful; and indeed the balsam of Peru, which we omitted to mention, is an advantageous medicine at an earlier period as a warm tonic, if given in small doses. An emetic will always relieve, by exciting expectoration; but in the stage of the disease alluded to, it cannot be borne without great inconvenience and some danger. In the morning we have sometimes succeeded in bringing on expectoration by the aqua ammoniæ, in warm tea, which frequently produces a slight nausea, without vomiting.

When phthisis arises from suppressed eruptions, we are advised to give mercurials, with the hydrolapathum, guaiacum, and mezereon; but the plan has, we believe, never succeeded. We shall take this opportunity of observing, that we have never found this mode useful, and have never been able to restore the eruption. In hectic and other fevers, from this cause, the most successful method has been to support the strength by mild, nourishing food, free country air, and such tonics as can be most easily borne. A long time is required for relief; but, in time, it is often obtained.

We have professedly taken up the subject in an empirical view, and given fairly the result of an extensive experience, attained by many a heart ach, at seeing the most amiable part of the creation sinking under a disease, whose daily ravages we must witness without being able to check. We shall add a few words rather in a dogmatical view; and, if we do not succeed in elucidating the complaint, we will not long detain the reader.

We consider it as established that phthisis proceeds from what are styled vomicae alone, for abscesses, even from inflammation will heal, if the suppuration is not communicated to the coats of some indolent vomica. These are apparently conglobate glands, similar to the scrofulous, full of a caseous substance, whose cohesion may be lessened, but which admits of little apparent change. The glandular lymphatic system is peculiar to early youth: as the body expands in manhood, it gradually lessens. When that expansion does not take place, this system disappears more slowly; or perhaps the obstruction of these glands, which hinders their absorption, may be the cause of the evolution being delayed. It is sufficient to mark, in this place, the principle of the connection, which we may find useful in other enquiries.

The obstruction then of these glands continuing beyond their accustomed period, will occasion some contraction in the cavity of the chest, and the delay of the development will still further confine the space in which the lungs are obliged to act: dyspnœa is therefore felt early, and an irritation from these foreign

bodies, as we may now style them, is perceived, as usual, at the extremity of the tube, viz. the epiglottis. In this state the patient often remains for many years, till the expanding frame, or the absorbed glands, leave the lungs at greater liberty. This change, which usually takes place from eighteen to twenty-two, is in these cases often delayed till after thirty, nor is it completely effected till the period of thirty-six. This is the termination of the critical, consumptive period. But we have found that the danger recurs in females at the end of their menstruation; and in men about fifty-two, or fifty four. These cases are, however, rare, and in men peculiarly so. When the discharge ceases in women, the blood is, for some time, determined, irregularly to different organs; so that it is not surprising to find any remaining vomica subject to inflammation. A similar irregularity takes place in the circulation even in males, when the constitution has passed its acmè; but the determination is more commonly to the hæmorrhoidal vessels.

Independent of these general causes of inflammation, the coats of vomica inflame from accidental colds, from irregularities of diet; sometimes we suspect from irritation in consequence of a disease of the liver. In accounting for the phthisis of men just passed the acmè of life we might have referred the cause to the liver, but that we have usually found this secondary hectic in younger persons, and we will never knowingly sacrifice a fact to a system. Irregular determinations, from suppressed eruptions, may have the same effect of exciting inflammations as well as every cause of fever.

These vomica are not in their substance susceptible of inflammation, and on this account we have styled it an inflammation of their coats; for when their contents are discharged, we see scarcely any other difference than a diminished cohesion: the caseous substance assumes a flaky form, and these flakes are *fringed*, we have said, with pus. In the conclusion of the scene, however, the pus is more copious, and the inflammation and suppuration evidently extend to the cellular substance of the lungs themselves. When numerous vomica have suppurated, a whole lobe has been destroyed. The cause, however, which excited the inflammation contributes to support it; and the intractable ulcers which these glands form, in consequence of suppuration, supply a continued irritation to keep up the inflammation around.

When the suppuration of the vomica at the root of the lungs only takes place, the functions of the organ are not greatly injured. The patient can lie on either side, and expand his lungs with freedom, and without pain; but the irritation is, in every case, felt at the extremity of the glottis; and when the functions of the lungs have been apparently free, the organs themselves have been found often flooded with purulent matter at their base.

If the breathing, in decided hectics, is sometimes little affected, so, in other cases, a purely catarrhal inflammation occasionally assumes all the symptoms of a certain decline. This has given a celebrity to Godbold's syrup, Hill's balsam of honey, and the ten thousand quack medicines daily swallowed, whose virtues are seriously attested. It is, we think, certain also, that vomica, in a state of suppuration, have been wholly discharged, and the wound healed by the efforts of na-

ture alone. This event is, however, too rare to account for all that we hear and have seen; so that there is little doubt of the greater number of these successful cases having been merely catarrhal. The resemblance is so great that though we can sometimes discern the difference by that sagacity which experience gives, we know not how to describe it.

One striking feature of the hectic constitution is the great irritability of the arterial system, and this appears to be a leading symptom, for the constitution is marked by peculiar mobility and irritability of the nerves and muscles. We know not how to reconcile this state with what we conceive to be the distinguishing characteristic of the scrofulous habit, a want of irritability in the lymphatic system, admitting of congestion, or still less with a viscid fluid stagnating in the glands. Yet there is some evidence of the scrofulous habit abounding in albumen, since such constitutions contain a very small proportion of azote, the distinguishing characteristic of gluten and fibrin. We know that in these habits the oxygen is a predominating principle, since it is seen in the fair skins and the florid complexions: we know also, that where oxygen is copious, the azote, and, consequently, the ammoniacal salts are less so. Some connection may therefore be traced in this way, but the chemical nature of our fluids has not received its due share of attention; and in this obscurity we cannot decide. We may resume the subject under SCROFULA.

The cure we professedly treated as empirics, not to mix uncertain speculations with the decisions of sounder experience. Yet we think that they illustrate the practice, and it will detain us very little longer to point out the connection. Every mode of cure is directed to the effects only of the principal cause, and with reason, since the vomica itself is not within the extent of the nervous or circulating systems. The great object is to prevent or lessen inflammation in general; to lessen inflammation or accumulations in the lungs; to diminish the irritability of the arterial system; and by medicines which will not stimulate the action of the heart and arteries, or by their astringency impede expectoration, to add to the general strength. Under these heads all the medicines enumerated may be easily arranged; but it may perhaps be useful to repeat them in this form:

I. To prevent or lessen inflammation in general.

- a By abstracting from the mass of blood.
Bleeding.
- b By lessening its impetus.
Refrigerants.
Neutral salts.
Diæta imbecilla.

II. To lessen inflammation or accumulations in the lungs.

- a Topical bleeding by leeches or cupping.
glasses.
- b Blisters, setons, or issues.
- c Emetics.
- d Cathartics.
- e Diapnoics.
- f Expectorants.
Alliaceæ.
Balsamica.

III. To diminish the irritability of the arterial system.

a Narcotics.

Amara frigida.

Cicuta.

Aconitum.

Opium.

Digitalis.

Myrrha.

b Irritants.

Mild climate.

Bristol waters.

Breathing factitious airs.

Hydrocarbonate.

IV. To support the tone of the system.

Amara calida.

Metallic salts or oxyds.

Iron.

Bismuth?

Mercury?

Some hints have been suggested respecting the possibility of dissolving these vomicae, but no probable plan has been brought forward; and as the tumours are out of the circulation, we can scarcely expect that any such can succeed. The theoretical suspicions respecting the predominance of oxygen, and the diminished proportion of azote, are not on a sufficiently certain foundation to warrant us in drawing any consequences from them. They might, however, suggest in early youth the utility of sea water and sea bathing; the advantages of breathing air of a lower temperature. The solvents of calculus are of more probable efficacy; yet experience leads us to doubt whether phthisis is in any case caused by calculi. In the few instances of this kind which we have seen, they were, if not an effect, an accompanying symptom. The hectic was previously established. For the cause of hectic fever see HECTICA. The modern language on this subject we shall consider under the article STAHLIAN SYSTEM, which it nearly resembles, but from which we cannot suspect that it was copied.

See Morton's Phthisiologia; Desault sur la Phthisie; Bennet's Theatrum Tabidorum; Boerhaave's Aphorisms; Wallis's Sydenham; Hoffman; London Medical Observations and Inquiries, vol. iv. p. 289. &c.; N. Robinson, M. D. on Consumptions; Reid on the Phthisis Pulmonalis; Sim's Observations on Epidemical Disorders; Cullen's First Lines, vol. ii. p. 356, edit. 4; Medical Communications, vol. i. p. 359; Transactions of the College of Physicians, Philadelphia, vol. i. 1793; Stoll Ratio Medendi, iv. 117, &c.; De Haen Ratio Medendi, Pars xii. p. 254; Buchner de Morbis Viscerum Abdominalium Phthisin Mentientibus; Simmon's Practical Treatise on Consumptions; Stark's Experiments.

PHTHISIS ISCHIA'DICA. See TABES COXARIA.

PHTHISIS PUPILLÆ. See AMAURO'SIS.

PHU. See VALERIANA.

PHYGE'THLON, (from *φυω*, nascor,) is sometimes described as a broad, but not elevated, tumour, resembling a pustule, attended with pain, so violent as sometimes to excite fever, ripening slowly, and but partially converted into pus. Its general seat is in the arm pits, neck, and groins. Celsus observes that this tumour is sometimes called *panus*, and occasionally ranks it among glandular swellings. It is certainly a disease of the

conglobate glands, arising most commonly from poisons conveyed through them. See ERYSIPELAS.

PHYLACTE'RIA, (from *φυλασσω*, to preserve). See AMULETA.

PHY'MA, (from *φωω*, to produce). Preternatural tumours, especially of the surface, arising without any external cause, generated, increased, inflaming and suppurating in a short time. (See Galeni Commentaria in Lib. 6 Epidemicorum.) Paulus (Lib. iii. c. 22.) confines the term to the scrofulous tumours of children, or abscesses from tubercles, &c. It is also a little swelling like a boil, somewhat round and flatter.

PHYMO'SICA ISCHU'RIA. ISCHURIA, from a phymosis, q. v.

PHYSA'LIS ALKEKE'NGI, (from *φυσωω*, to inflate, because its seed is contained in a bladder). See ALKEKENGII.

PHYSCO'NIA, (from *φυσκη*, an inflated bladder,) a hard tumour, occupying a large portion of the abdominal cavity, increasing very gradually, not sonorous, and without fluctuation. Dr. Cullen places this disease among the *intumescentiæ*, defining it a tumour, occupying chiefly a certain part of the abdomen, gradually increasing, neither sonorous nor fluctuating. Its synonyms are hyposarca and hyperserchidios. The species according to Cusson may be distinguished according to the viscera diseased, and are the *physconia hepatica, splenica, renalis, uterina, ovarialis, mesenterica, intestinalis, omentalis, polysplachnalis, visceralis, externa lufialis, externa scirrhouea, externa hydatidosa*, and an excrescence. Some tumours on the skin are also called by the name *physconia*; but in no case is the disease within the reach of art.

PHYSICA, (from *φυσis*, natura). Natural science in general; but now chiefly confined to natural philosophy. It approaches natural history on one side, where it treats of the properties of minerals; and chemistry on the other, where its subject is the more subtle, insensible fluids of galvanism and electricity. See CHEMIA.

PHYSIOGNOMONIA, (from *φυσis*, φυσιος, and *γινωσκω*, to know). It is not our design to trace all the fancies which have disgraced this science, but to speak of it as physiologists, with a view of illustrating some of the phenomena of the human system. It was first noticed in a philosophical view by Aristotle, illustrated by his commentator Baldus; and the observations of the Stagyrice dispersed in different parts of his works were arranged early in the seventeenth century by Fontanus. The doctrine has been supported by our countryman Robert Fludd, and by an author, Dr. Gwither, in our Philosophical Transactions. The subject became very fashionable in the sixteenth and seventeenth centuries; and has within these thirty years been revived by an author of eager zeal and a warm imagination, Lavater, whose eccentricities have rendered it interesting, and whose enthusiasm at one time almost convinced the incredulous.

The first question which will occur is, has this science, which may be styled that of judging from the features of the qualities of the mind, any real foundation except in fancy and enthusiasm? Common observation, the practice of anatomists in their denominations of the muscles, and of painters, have decided in favour of the existence of some foundation. In the great outline it is generally admitted; and when we find that frequent exertion

will add to the bulk of a muscle, rendering it also more mobile or irritable, it is not improbable that an indelible character of countenance may be imprinted. In less stronger points the contemplative countenance is distinguished from the spirited; and no one could see both Newton and Voltaire without at once perceiving the imprint of patient thinking in the one, and the active energy of genius in the other. Complacent attention, a sarcastic sneer, apprehensive distrust, confident resolution, and many other qualities, are visibly depicted, probably by the stronger swell of muscles constantly exercised. It is indeed character which gives the great diversity of countenances, as we have remarked in the article FEBRIS, for a likeness to parents is often observable in the last moments, or even after death, which had been never noticed during life. We have already mentioned this circumstance, and thought the remark new, but have since met with it in Lavater's Fragments; in Bartholine's Anatomical History, Cent iv. Hist. 31. An annotator, whose name has escaped us, we recollect has also remarked, that a returning likeness to parents or ancestors is a fatal symptom. Dr. Smith has observed, that even the peculiar features of negroes are changed when their occupations require study and reflection.

Physiologists have also distinguished peculiar constitutions, which they have styled temperaments, accompanied with appropriate faculties of bodies and minds. These we know appear also in the features; and we connect, from experience, the adust, melancholic temperament with intense thought, deep, abstract speculation, and a mind retentive of impressions; the fair, ruddy, sanguine temperament, with eagerness, volatility, and restlessness. These we know are transferred from parents to their offspring. Various occupations give a distinguishing cast of features, derived from the business in which successive days are employed. Intemperance is distinguished not only by the absence of a prepossessing openness, but that insensibility which in a greater degree characterizes intoxication. Idleness not only destroys expression, but gives a vacuity or confusion. Benevolence, with an expanded eye, contrasted with the contracted squint of suspicion, assumes that appearance which it so frequently employs.

So far will physiology go hand in hand with the physiognomist: yet there is one part of his system which we cannot reduce to these principles, though certainly well founded, we mean the high, arched, and expanded forehead, which generally accompanies genius, observation, and judgment. We can only connect it with one remark, that it distinguishes most strikingly the human form from that of animals which approach it, though with greatly inferior understandings. Shakspeare, when he would describe a transformation by enchantment into something mean and ugly, describes the change as into

———— barnacles and apes,
With foreheads villanous low.

In this we may be thought to approach the fancies of Gall, which we have noticed as the Cynthia of the minute, without engaging in its defence or confutation. By the way we may mention a late contest between Dr. Gall and one of his most eager opponents at Heidelberg, professor Ackerman; a contest of words only. The former, it is said, displayed sagacity and discernment

without depth; a spirit of observation without philosophy; an extensive and accurate memory without a speculative genius. The professor, on the contrary, was precise, energetic, occasionally dogmatical, but strictly logical; though Gall might say

Si quæritis hujus
Fortunam pugnæ, non sum superatus ab illo.

The physiognomist, however, steps beyond his limits when he speaks of distinction from gait, from gesture, &c.; for though guilt will generally be betrayed by suspicion, confidence will often cover the apprehension; and, *mauvaise honte*, will often give the most collected philosopher the appearance of hasty unsteadiness. The physiognomy of an apple, or a glass of wine, is truly ridiculous; we prefer, indeed, but often from the most trivial circumstances.

The great point of distinction, the arched forehead, may occasion some speculations, since the loss of a large part of the cerebral hemispheres is not followed by a diminution of the intellectual functions. Yet we have remarked the large bulk of the brain in the human body, and the necessity of a free communication through, as well as an equable excitement in, every part of it as subservient to intellectual operations; and though a part may have been destroyed, there are few whose intellectual functions are so numerous and varied as to find the deficiency. If the accident occurs only once among ten millions, and the greatest mental exertions are scarcely found in all the individuals of the globe during a whole century, it will be obvious that the loss will not be readily detected in its effects.

The forms of parents descend, we have said, often to the children, and, with their forms, their manners, and very frequently their intellectual distinctions. This similarity, often obvious, when the children have not recollected their parents in consequence of their early death, and which cannot have been the effect of imitation, we have often observed with astonishment; and it seems to show that we are more perfectly material than philosophers have supposed; at least the intellect is modified by the corporeal organs, for the body is the instrument only of the immaterial agent. But these discussions would lead us too far.

One only consideration remains of importance to us as physiologists, viz. whether the resemblance which is often seen between the human face and that of some animals, influences a similarity of disposition. In the opinion of Lavater it does so; but from attentive observation we have not found it to be true. We can only draw this general conclusion, that the farther the form of the head recedes from that perfect commanding look which the Almighty has imprinted on its most perfect creatures, so far are the intellectual faculties inferior.

What may be styled medical physiognomy, or those changes of features indicative of and peculiar to different diseases, is a subject of great importance, and has not been sufficiently noticed. We shall speak of them in general under the head of PROGNOSTICS; but shall find it a difficult task, for want of a technical language sufficiently expressive. How various are the expressions, for instance, of debility only in fever, chlorosis, phthisis, scurvy, syphilis, hysteria, expectation baulked, hope delayed, misery, and despair. Yet they may be distinguished by an experienced eye, at least with no

very great chance of error; but where are the words to describe what a single glance will tell?

See *Physiognomonici Veteres*, 8vo. 1780; Lavater's *Fragments* by Hunter; Lancisi de *Physiognomonia* (in operibus); Baptista Porta de *Humana Physiognomonia*; Helvetii *Microscopium Physiognomoniæ Medicum* Amstelod, 8vo.

PHYSIOLOGIA, (from *φύσις*, nature, and *λόγος*, a discourse). **PHYSIOLOGY**, which, from its derivation, seems to imply a discourse on the objects of nature, has been long confined to disquisitions respecting the cause of the vital, animal, or natural functions of the human body. It treats, therefore, of the internal motions of the animal frame; the offices of the different viscera; the changes in the fluids; as well as the powers by which life is supported. The various senses; the means by which we receive ideas of external objects; the influence of the mind; the changes of our aliment into the animal fluid blood; and the means by which successive generations are raised to fill this sublunary sphere; are equally parts of this subject. We need not enlarge farther in the enumeration, since under the article **FUNCTIONS**, q. v. we have inserted the arrangements of Richerand and Vicq. d'Azyr, illustrating the different parts of physiology.

This branch of medicine was for a long time imperfectly cultivated, and indeed until the circulation of the blood was understood, the various functions of the animal frame must have been obscure. Plastic powers, appetites, or a superintending archæus, solved the various difficulties which arose; and physicians were contented to observe what they were unable to explain. The *anima medica* of Stahl cut the knot; and Hoffman with patient industry made very slow approaches to an explanation of our functions. Lancisi, Baglivi, Hales, and Willis, were more enterprising; and in the latter the curious reader may find many valuable hints, the germs of some modern discoveries. Borelli and Bellini in their own departments added also to our knowledge. In fact, however, physiology did not assume a scientific form till Boerhaave collected the scattered limbs from various authors, particularly the mechanical physicians, and compacted it into a system peculiarly elegant and comprehensive, but unfortunately erroneous, from the little attention he paid to the vital powers. Even in the *Commentaries* of Haller on the *Institutions*, no better reason was given for paleness in consequence of terror, and for blushing, except the contraction of little nerves round the extremities of arteries in one case, and their relaxation in another. In more advanced life Haller distinguished with more accuracy between irritable and inirritable organs.

The *Elementa Physiologiæ* of this eminent author display the most unwearied industry, and contain an immense variety of facts on every branch of the subject. Unfortunately not a ray of genius animates the work; no comprehensive views unite the different observations into a luminous focus; no connecting links show their bearings on each other. They are pearls hung together by the slightest string; and, what is of more consequence, there is seldom any distinction between what is true, doubtful, or evidently erroneous.

Since that period the discovery of the lymphatic system, the experiments of Sir Clifton Wintringham on

the comparative density of the arteries and veins, the pneumatic chemistry, and the analysis of the animal fluids, have greatly contributed to illustrate physiology. In the progress of our knowledge on this subject, Dr. Cullen, by his attention to the functions of the brain and nerves, not only cherished a neglected branch, but combined the whole into a comprehensive system, with a labour and a degree of attention, however, not duly proportioned, for the nervous system was his favourite offspring, which he cherished with peculiar care. Since this era we have received no very extensive views on the subject of our science. Richerand and Girtanner; Ludwig and Spalanzani; Fontana and Campar; Fourcroy and Valli, have cultivated different detached spots, but we yet want a general abstract, comprehensive and connected. The works of Richerand and Dumas are the most complete that we have yet received; and the scattered limbs of the present volumes would afford it, were they brought together; we may perhaps make some efforts to give them an arrangement and a form.

In general, physiology has been closely connected with anatomy, and has always formed a part of the different anatomical courses. It rests indeed on the structure of the parts: and the "First Lines" of Haller are almost wholly descriptive. The slow progress of correct anatomy accounts sufficiently for the imperfect state of physiology; and though many parts of the body are apparently not useful in illustrating any function, yet the connection of the whole is so intimate, that one part only cannot be separated with the slightest prospect of advantage. A solitary branch of the ulnar nerve, coming from the dorsal vetebræ, explains the cause of a separate affection of the ring and little finger, and sometimes leads us to the most effectual mode of relief.

As a basis of physiology, comparative anatomy should also be studied, and we have now excellent assistants in Cuvier and Blumenback. The ancients dissected animals, but they described the organs as belonging to the human body; and comparative anatomy is only useful when the human structure is well understood. It was doubted, for instance, whether the bile was secreted from the liver, or the coats of the gall bladder, till it was found that many animals wanted the vesica; but in no one did this supply the place of a liver: an organ more indispensable to animal life than even the brain.

The dissection of living animals has not so well founded an apology. They teach us how bones grow, and are united when broken; and they show to the eye motions which, without that evidence, we know to exist. We know also that galvanism and electricity excite the action of muscles without mangling living frogs.

The use of microscopes and injections teach us, in some degree, the structure of different organs, but their application is limited. No microscope shows the change which takes place in the simple muscular fibre during its contraction, or the nervous fluid acting in the nerve; no injections teach us why the minute convolutions of vessels in the testes secrete only semen, or arteries, branching at large angles, are necessary for the separation of bile.

All the animal functions consist, it is acknowledged, in motion, and this was the great argument of the mechanical physicians in favour of their own solutions.

They did not, however, reflect that the human machine differed essentially from a passive engine; that violent motions sometimes arose from slight causes; and again, that impediments which ought to have stopped, scarcely lessened and sometimes increased them. They seemed not to be aware that the muscular fibre could be shortened beyond their calculations; and that the motion of fluids in vessels, which continually impelled them, was different from the motion in a canal, which only reacted in proportion to the impulse. These were truths which Haller saw imperfectly when he compiled his physiology; but he neglected them to follow the mechanical explanations which he had collected in the school of Boerhaave. They were truths which Cullen saw, and followed with avidity to their consequences, tracing them also backward, so far as he was able, to their cause.

The order in which physiologists have arranged their observations is different. They sometimes trace the nourishment from its first reception into the stomach to the lymphatics, and into the circulation, introducing the functions of the lymphatic, the arterial, and venous systems. The changes produced in the blood by respiration follow; and an account of the separation of the various fluids either nutritious, digestive, or excrementitious, succeeds. Sensation, motion, with its various modifications in different functions, conclude. Haller has taken a different course. From the fibre the transition to the muscles is easy, and the heart and arterial system, with the circulation, next share his attention. The functions of secretion, of respiration, and speaking follow. The brain, nerves, muscular motion, the external and internal senses, deglutition, digestion, with the various chylopoietic organs, and the successive changes of the aliment into chyle; the urine, semen, the female uterine system, and the fœtus, are described in their order. Life and death close the scene.

This undoubtedly is not a natural order, nor is it the most judicious or convenient. We ought certainly to begin with the *source* of sensation and motion in the brain, following it to the extremities of the nerves as the cause of either. With motion is connected the action of the heart and the arterial system, which should be also followed to the secretory organs, and it will include all the peculiarities of the uterine and genital systems. The supply which keeps up the activity of the nerves and muscles brings us to digestion and all its consequences, particularly the lymphatic system. This again introduces the fœtus, first probably nourished by absorption, to life in its various successive stages, and its ultimate termination in death. See CEREBRUM and CEREBELLUM; SENSATIO; OCULUS; AURIS; TACTUS; NARES; GUSTUS; COR; ARTERIÆ; SECRETIO; JECUR; TESTES; UTERUS; DIGESTIO; LYMPHÆDUCTUS; GENERATIO; FŒTUS; VITA; MORS.

PHYSOCE'LE, (from *φύσα*, *flatus*, and *κῆλη*, a *tumour*). See EMPHYSEMA.

PHYSOME'TRA, (from *φύσα*, *flatus*, and *μήτρα*, the *womb*). A TYMPANY OF THE WOMB; *hysterophyse*; Dr. Cullen places this disease in the order *intumescencie*, defining it a light elastic tumour in the hypogastric region, from figure and situation resembling the uterus. It is formed by air distending the womb, which may be discharged by rendering the os uteri internum pervious.

PHYTOLA'CCA AMERICA'NA, (from *φυλον*, a *plant*, and *λακκα*, because it resembles in colour gum lac). *Solanum magnum Virginianum rubrum*; *solanum racemosum Americanum*: *phytolacca decandria* Lin. Sp. Pl. 631; PORK PHYSIC; PORK WEED; POKE WEED; RED WEED OF VIRGINIA; RED NIGHTSHADE. It is a North American plant, with a strong stem and many branches. The leaves are large, smooth, juicy, oval, and entire, and placed alternately. The root is large and perennial, runs deep into the ground, and divides into many branches.

The leaves are anodyne, and sometimes when young eaten as spinage; and the juice of the root is an active purgative. That of the whole plant is sharp and corrosive: it is not used inwardly; but, inspissated in the sun to the consistence of an ointment, is applied to cancers and to ulcers with callous edges. Its juice when dry is useless. If the roasted roots are beat into a poultice, and applied to ulcers with callosities, it dissolves them. See Medical Museum, vol. i. p. 85.

Solanum Barbadosense, another variety, is distinguished only by its lesser fruit.

PI'A MA'TER. The AFFECTIONATE MOTHER; (from its closely embracing the brain and nerves;) *localis membrana, meninx tenuis*; the membrane which immediately involves the brain, so thin as to be invisible were it without vessels. The brain is divided into lobes, which consist of convolutions, resembling in appearance the intestines. The pia mater covers the whole external surface, and sends processes between these convolutions. The principal vessels that go to the brain are dispersed on the pia mater; so that it connects the lobuli of the brain, and supports the vessels. A third covering, the arachnoides, is placed between the pia and the dura mater, sometimes supposed to be the external lamella of the pia mater; but the distinction is of little importance. See DURA MATER.

PIAN. *Frambæsia Culleni*. See YAWS.

PICA. The PIE, (from the bird, said to be subject to this disease,) *malacia allotriophagia, citia, cissa*, LONGING; is a preternatural appetite in pregnant women, and some sick persons on their recovery. The disorder consists in an appetite for things unusual either to eat or drink. Dr. Cullen places this disease in the order *dysorexiæ*, defining it a desire of eating things not fit for food. In pregnant women it is somewhat relieved by bleeding, and about the fourth month disappears. Chlorotic girls are also subject to this complaint; but whether in pregnant women, persons recovering from an acute fever, or those who labour under obstructions of the natural evacuations, this craving may be safely indulged.

It is in fact a species of cachexia, and the fancies are as numerous as the substances. They are often calcareous; but among the negroes any dirt is devoured, and they are called the dirt eaters. Sometimes the most disgusting substances are coveted; and we have heard a lady relate the artifice by which she procured a loaf to be dropped into a barrel of pitch. In general, however, the sound of brittle substances, as cinders, or pipes, between the teeth, seems to please as much as the taste, and even treading on cinders is apparently grateful. We might easily fill a page with instances and quotations of cases in which this depravity has been observed; but

it is unnecessary to extend the article, except to remark that the supposed final cause, the absorption of acid, is erroneous, since the substances chiefly coveted are not always, or indeed very generally, antacid.

PICE'A, (from *πίσις*, *pitch*). See ABIES.

PICE'LT. See NICOTIA'NA.

PI'CINUM O'LEUM. See BRUTIA.

PICRO'CHOLOS, (from *πίκρος*, *bitter*, and *χολή*, *bile*). A person subject to anger, or abounding with bitter bile.

PI'CTONUM CO'LICA, (from Poitou, where it was endemic). See COLICA.

PIE'DRA DI CO'BRA. See COBRA DE CAPELLO.

PIE'RRÉ NOIRE. See AMPELITIS.

PIGMENTUM. The mucous, coloured substance which gives the splendid hues of the iris, and the darker matter which covers the choroid coat. See OCLUS.

PIG-NUT. See BULBOCASTANUM.

PI'LA HY'STRICIS, (from *pileo*, *to bind together*). See BEZOAR HYSTRICIS.

PI'LA MARI'NA. A species of alcyonium, or a round spherical ball, found on sea coasts, among sea weeds. Lemery describes it to be about the size of a fist, lanuginous, of a dark colour, formed by a collection of hairs, sand, and other impurities of the sea, united by means of a glutinous fluid. It is said to kill worms; and Zwelfer tells us that, when calcined, it is useful in scrofula.

PI'LEUS, (from the same). See CUCUPHA. In anatomy, the coil with which some children are born; and then called *pileo*, *galea*, and *vitta*.

PILMI'CTIO, (from *pilus*, *hair*, and *mingo*, *to discharge urine*). A discharge of fibres, resembling hairs, with the urine.

PILOSE'LLA MA'JOR, (from *pilus*, because its leaves are hairy. See HIERACIUM ALPINUM, and GNA-PHALIUM MONTANUM.

PILO'SUS. See CAPILLARIS.

PILOTHI'SMATA. Applications which take off the hair; DEPILATORIA, q. v.

PI'LULA, (from *pila*, *a ball*), *catapotium*, *gongylion*. PILLS are a form well adapted for medicines which operate in small doses, are offensive to the taste, or so heavy as not easily suspended in, or mixed mechanically with, any fluid. They dissolve with difficulty, and produce very gradual and lasting effects. Gold and silver leaf often hinder the pills from dissolving; therefore should seldom be used.

This is a term also given to several compounds, many of which will be found under some of the principal ingredients, as *pilulæ à gummi*. (See ASAFETIDA.) There is a variety of formulæ of this kind in the Pharmacopœia Chirurgica, composed of very active ingredients, as different preparations of quicksilver, cantharides, cicuta, cuprum vitriolatum, opium, turpentine, and vitriolated zinc, which may be found in that work, under the term *pilulæ*.

PI'LUS, (from *πίλος*, *carded wool*). See CAPILLUS. We resume the subject of hair (see CAPILLUS) to supply some accidental omissions, and to add the late experiments of Vauquelin, which have added somewhat to our knowledge of the subject. We have already mentioned that the hair is hollow, and that it grows from a bulbous root, resembling, in many respects, a vegetable substance. The larger extremity of the oval

root is downwards, and the whole is connected to the skin or to the adipose membrane by small filaments, probably nervous and arterial. The root itself, next the branch, seems to be composed of very fine filaments, and a glutinous substance, probably secreted from its vessels. These filaments unite to form the stem, which is covered by an elongation of the external, somewhat elastic, coat of the bulb. The stem or hair passes usually between the papillæ, and sometimes seems to penetrate a papilla; but when it emerges from the cuticle, the latter appears to closely embrace, and to be continued some way on it; this membrane is gradually lost. When the cuticle is porous, as in the scalp, the hair seems to pass out in a cylindrical form, but where less so, and particularly where the bulb is buried in fat, it passes in a serpentine direction, with great difficulty, as in the axillæ, &c.; and it is then tortuous and angular. It has been supposed that this is partly owing to the warmth, since the same curl is found in the hair of negroes; but the Malay, in an equally hot climate, has straight, cylindrical hair. The hair is nourished by the gluten of the root; and as this is more copious, or more fluid, it is more succulent. When in a smaller quantity, or more dense, the hair is dry, crisp, and soon falls off. When not carried to the extremities, these split and become brittle.

The roots or bulbs of hair are found over the whole body; nor is it easy to say why they continue to vegetate on some particular parts only. They are said to have been found also in abscesses of the abdomen, in the fluid of an ascites, in the veins, on the tongue (Amatus Lusitanus), and in the heart. We can neither confirm nor oppose these assertions; and it is not more difficult to account for such appearances than to explain why hair does not grow on the back, on the shoulders, or the neck. Hair in the ovaria is by no means uncommon, and may be owing to the rudiments or remains of an imperfect conception. It has been supposed that the hair grows after death. To prove a negative is a difficult task; but, were this true, it must have been long since placed beyond dispute. The long hair found in persons, after having been buried many centuries, may have been natural. The observations of most importance on this subject may be found in Heister's Anatomy, and Camerarius' Memorabilia, iv. 47.

The hair evidently partakes of the nature of the simple solid, corresponding with it in firmness or softness. The bulb is nourished by arteries, and supplied with nerves; but there is no reason to suppose the hair itself nervous, and it chiefly grows by gradual additions at its extremity. The circulation through it is probably carried on by capillary attraction, or in the manner in which the sap of vegetables is propelled. By combing we free the fluid from those obstructions which must arise in consequence of its being bent in all directions; and, perhaps, by drawing out the hair, we straiten the canal, and render it more strictly capillary. We promote, also, the circulation through the bulb, and relieve the head from accumulations; for though the vessels of the bulb are small, they are numerous.

Long hair has always been esteemed an ornament, but it has been doubted whether it was not injurious, by the quantity of blood which it exhausted in its nutriment, and the consequent debility which it would produce. When very thick, it is uncomfortable from its

warmth, but we have never known it to be a cause of weakness, except from the perspiration which a large mass of hair must occasion. Cutting off the hair has, within our own knowledge, been often injurious, and attended with every appearance of local plethora. As usual, moderation is the best; and if it hang over the shoulders it is long enough, unless it grows, at the same time, thinner, and in that case it must be cut shorter. As a remedy for the headach, to cut off the hair is as ridiculous as to prevent the access of air, with the design of accelerating evaporation.

Such was our knowledge on this subject when, in the autumn of last year, M. Vauquelin read to the National Institute a memoir on the nature and composition of human hair. Hair was not, he found, soluble in boiling water; but when exposed to a greater temperature in Papin's digester, it was readily dissolved. From a solution of black hair a black matter was deposited, found to be an oil, of the consistence of bitumen, with iron and sulphur. The last ingredient seems to point out the source of the smell of the hair in some constitutions, where, perhaps, it is in excess, or where it may be accidentally combined with an alkali. This idea is confirmed by the analysis of red hair, in which the odour is stronger, for it contains a much larger proportion of oil and sulphur, with less of iron. Alcohol extracts from black hair a whitish oil, and a greyish green oil, which separates as the alcohol evaporates. It is probable, therefore, that the black matter is gummy or albuminous; and the white is said to resemble spermaceti in appearance, though it differs in chemical affinity. Red hair affords a white, and, instead of a greyish green, oil as red as blood.

The other component parts of hair were a mucous substance, iron, oxide of manganese, phosphat and carbonat of lime, flint, and a large proportion of sulphur. White hair contains also phosphat of magnesia, and its oil is nearly colourless. When hair becomes suddenly white, from terror, Vauquelin thinks it may be owing to the sudden extrication of an acid, as the oxymuriatic acid whitens black hair; but it may be, more probably, owing to the sulphur absorbing the oil, as in the operation of whitening woollen cloths. From some experiments made on the matter which occasions the plica polonica, he thinks that disease owing to a superfluous excretion of the fluid which nourishes the hair; but it is sometimes bloody, and, if the hair is cut off, the disease, it has been said, is fatal.

To increase the growth of hair, various preparations have been employed, and each perfumer has his secret, though we know not any are particularly successful. They chiefly consist of warm, stimulating, oily substances, to increase, apparently, the circulation through the bulb, and probably to check the perspiration. A fluid seems to exude through the hair, at its basis, and is probably the black matter which unites with the perspiration, producing the scales that soon form on the scalp, if combing is neglected. Powder is useful in absorbing this matter, and preventing its concretion into flakes; but if this is not used, dark hair soon stains the comb, and proves the existence of its exudation.

Of the boasted DEPILATORIES, q. v. we have mentioned quick lime and orpiment (see RUSMA), which Spon, in his Travels through Italy, mentions as chiefly successful; but various others have been added. Kircher

recommends the blood of a bat (*mundus subterraneus*); Laurentini, the bulb of the hyacinth; Morin, the exudations from a vine; and friction with a pumice stone has been used; but none will succeed, unless the bulb be destroyed, and extirpation is the only remedy. For increasing the hair, we find the aqua stercoris humani recommended by Schroeder; and for blackening it, the stercus hirudinum!

PIME'NTO, (from *pimenta*, Span.). See PIPER JAMAICENSIS.

PIMPERNE'LLA. See ANAGALLIS.

PIMPILIM. See PIPER LONGUM.

PIMPINE'LLA, BIPINELLA, called from the double pennate order of its leaves. BURNET SAXIFRAGE, called *saxifraga*, because it grows out of, and seems to break through, the rocks; *sanguisorba*, *pimpinella minor*, *tragoselinum*, SMALLER BURNET SAXIFRAGE, *pimpinella*, *saxifraga*, &c. Lin. Sp. Pl. 378. A perennial umbelliferous plant, growing in dry pasture grounds. It is sometimes the name for agrimonoides; the *poterium hybridum* Lin. Sp. Pl. 1412.

PIMPINE'LLA A'LBA GERMANO'RUM, *pimpinella saxifraga major*, *gythosphyton*. GREATER WHITE BURNET SAXIFRAGE; *p. saxifraga* Lin. Sp. Pl. 378, β . γ . δ . Some of its leaves are deeply cut; the odd one into three sections; common in Germany, but rarely met with in England. The roots have a hot, pungent, but not durable, taste. When fresh, they affect the eyes like mustard and horse radish. In drying they lose all their volatility; and water partially extracts their virtue, but spirit completely. When distilled with water, they afford a small portion of oil, which is highly acrid. These roots are warm, stimulating, aperient, and diuretic. Bergius considers them also to be diaphoretic and stomachic; and they are often recommended, where pituitous humours are supposed to prevail; as in asthmas, catarrhal coughs, in what has been called *angina serosa*; by Hoffman in chlorosis: it has also been employed by way of gargle, for dissolving viscid mucus, and to stimulate the tongue, when paralytic. Its dose in powder is \mathfrak{z} i. in infusion \mathfrak{z} ij.

The species called *nigra* grows wild in Germany and Switzerland, and yields a bluish oil. Whatever has been said of the value of these, as medicines, by Stahl and others, they are not used in the present practice.

PIMPINE'LLA ANISUM, Lin. Sp. Pl. 379, *anise*, which furnishes the aniseeds of the shops. See ANISUM.

PIMPINE'LLA ITALICA, of some foreign pharmacopœia, is the *sanguisorba officinalis* Lin. Sp. Pl. 169. It is not used in this country. Like the other species of *pimpinella*, it is a stimulant only.

PINASTE'LLUM. See PEUCEDANUM.

PINEA'LIS GLA'NDULA, (from *pinca*, a *pine apple*), to which it hath some resemblance. The PINEAL GLAND. See CEREBRUM.

PINE'US PURGANS. See CATAPUTIA MINOR.

PINGUEDINO'SA MEMBRA'NA, (from *pinguedo*, fat). That portion of the cellular membrane which contains the oily matter or fat. See CELLULOSA MEMBRANA.

PINGUE'DO. See ADEPS.

PINGUE'CULA, (from *pinguis*, fat, because its leaves are oily to the touch). See SANICULA EBOR.

PINHO'NES. See CATAPUTIA MINOR.

PI'NNA, (*πinna*, a wing). The lateral and inferior

parts of the nose are called *finnæ* and *alæ nasi*: the superior broad parts of the ears are also called *pinnae*. See AURICULA.

PINNA' CULUM FO'RNICIS GUTTURA' LIS, (from its resembling in shape *pinna*, a wing). See UVULA.

PINNA' TUS, (from *pinna*, a wing). The epithet of a leaf composed of many smaller leaves growing on the side of the footstalk, like the feathers of a wing.

PI'NON. See BRYTON.

PI'NUS, (from *πίλος*, the pine tree,) *peuce*, *pinus pinea* Lin. Sp. Pl. 1419; differs from the fir tree by its leaves standing in pairs, while those of the fir are solitary. The pine abounds with a resinous juice similar to that of the fir tree. The cones are agreeable to the taste, similar in quality to the sweet almonds; and used chiefly as demulcents. The frankincense, which has been supposed the production of a species of pine, is from a species of juniper, or, more probably, of the *amyrus*. See THUS.

The bark of all the pine trees is astringent, and the tops are antiscorbutic; but their virtues chiefly depend on the turpentine they contain. Raii Historia. See ABIES.

PI'NUS IN'DICA, NU'CLEO PURGA'NTE. See GRANA TIGLIA, under CATAPUTIA MINOR.

PI'PER, (from *πίπτεω*; because it assists digestion,) PEPPER, *arum moschatum*, *piper nigrum* Lin. Sp. Pl. 40, *p. aromaticum* of La Marck, is the small round aromatic seed of a trailing plant, which grows in Sumatra, Java, and Malabar.

When ripe and decorticated it is styled white pepper, supposed formerly to be a different species, and called *leuco piper*. It has been said, however, that there is a variety of the plant which produces the white seeds, which is much superior to the factitious; but we can find no sufficient authority for the fact. The white pepper brought to us is inferior in pungency, as well as in flavour, to the black.

The pepper is externally corrugated by drying in the sun, but the ripest, fullest seeds have the fewest wrinkles, and are the best. Pepper appears to be a more general and permanent stimulus than other spices of equal pungency on the palate; and its stimulus does not reside in the volatile parts or essential oil, but in a resinous substance which does not rise in the heat of boiling water. Pepper infused in water impregnates it very strongly with its flavour, but not with its taste; by a slight boiling more of its pungent matter is extracted, and its flavour dissipated. Distilled with water, a light, mild, limpid oil is obtained, which excites only on the tongue a grateful moderate warmth. Rectified spirit completely extracts the pungent part of the pepper; and when the tincture is evaporated a still more fiery extract is left behind. The quantity of extract is nearly the same from the white pepper, but it is less pungent. Peppers, particularly black, have been used as stimulants and aromatics in vertigo, paralytic and gouty disorders: in large doses it has cured intermittents, though in some instances it has produced fatal consequences from its stimulus. In ulcerated throats, biting constantly pepper corns is an excellent remedy, equal to the capsicum gargle of the West Indies. For its dietetic use see CONDIMENTA.

PI'PER I'NDICUM, *capsicum*, *lada chilli*; *vallia capis*

molago, *solanum urens*, *siliquastrum Plinii*, *piper hispanicum*, *lusitanicum*, *turcicum*, *brasilianum*, *guineense*, *calcuticum*, GUINEA PEPPER, *capsicum annuum* Lin. Sp. Pl. 270, is in long roundish taper pods, divided into two or three cells full of small whitish seeds; a native of the East and West Indies. When this fruit is fresh it hath a penetrating acrid smell: to the taste it is highly pungent and acrid, producing a painful burning in the mouth like that from *arum* root. Rectified spirit dissolves its pungency, and the extract is excessively fiery. This kind of pepper is given in small quantities as a most active stimulus in cold, phlegmatic temperaments, in some paralytic cases, in relaxations and insensibility of the stomach, for promoting the efficacy of aloetic medicines, and the deobstruent gums in uterine disorders. When dry it is without odour or particular flavour, and so readily diffusible that it joins agreeably and conveniently with any sauce. It promotes digestion; but much of its pungency is lost on the palate unless given in pills, and it seems not to be an active stimulus to the arterial system. Bergius has often seen long protracted intermittents cured by the following powder, without any relapse. Six grains of Indian pepper and two scruples of bay berries, in powder, divided into three portions, one of which was given on the approach of the first rigor, another the day following at the same hour, and the last on the third day. (Cullen's Materia Medica). In climates of which *capsicum* is a native, we are told that its use is salutary, that it strengthens the stomach, assists digestion, and corrects the putrescency so common in hot climates: as a stimulant of the most acrid kind it may be found efficacious in some paralytic and gouty cases, or to promote excitement where the functions are languid and torpid. In the cynanche maligna it has been successfully exhibited in a gargle; and in the cachexia Africana, considered as the most frequent and fatal predisposition to disease among negroes, in a dose from six to eight grains it is often useful. (Mackittrick.) A species of this plant called in the West Indies BIRD PEPPER, is the basis of a powder brought from thence under the name of *Cayenne*, or *CAYAN PEPPER*. The four species of this pepper, which grow in Guinea, are the *chilchotes*, *chiltepin*, *tenalchiles*, and *chillpelagua*; that which grows in Peru is called *agy*.

PI'PER JAMAICENSE, *piper caryophyllatum*, *cocculi Indi aromatici*; *piper chiahæ*; *amomum*; *caryophyllus aromaticus Americanus*; *pimenta*; *piper odoratum Jamaicense*; ALLSPICE and JAMAICA PEPPER is the dried unripe aromatic berry of a large tree, growing on the mountains of Jamaica; *myrtus pimenta* Lin. Sp. Pl. 676. It is moderately warm, of an agreeable flavour, somewhat resembling a mixture of cloves, cinnamon, and nutmegs, consequently called *allspice*. On distillation it yields an elegant essential oil, which sinks in water; and is moderately pungent, in smell and flavour approaching to oil of cloves, or rather a mixture of those of cloves and nutmegs. The remaining decoction, inspissated, leaves an unpleasant extract, not pungent, and the berry itself is wholly deprived of its taste as well as flavour. Rectified spirit extracts all its virtue, but yields nothing on distillation. The spirituous extract consequently possesses its whole virtue, viz. a pungent warmth, less fiery than that of the black and white peppers.

A distilled water, from half a pound of this pepper to three gallons of proof spirit, is substituted for the *aqua aromatica*, and the *aqua mirabilis* of former dispensatories. The London College order a water to be made from half a pound of the berries of pimento bruised, put into a sufficient quantity of water to avoid an empyreuma; from which, after maceration for twenty-four hours, one gallon is to be distilled, *aqua pimento*. Ph. Lond. 1788.

The oil of Jamaica pepper is sometimes substituted for the oil of cloves, and is very little inferior to the oil of nutmegs.

PI'PER LO'NGUM, *macropiper*, *acapatli*, *catu-tripali*, *pimphilim*, LONG PEPPER, *piper longum* Lin. Sp. Pl. 41, is brought from the East Indies. The pods are round, about an inch long, containing numerous minute seeds. These are hotter and more pungent than the other peppers; but in pharmaceutic properties the same, though in Dr. Cullen's opinion weaker.

The black pepper is most agreeable to the palate, and chiefly employed as a condiment; the *long* is most used in medicine; the *white* is seldom employed in either. When astringents have failed, a diarrhœa hath been cured by ʒi. of pepper with ʒss. of diacodium, twice a day.

PI'PER LO'NGUM FOLIO'RUM NERVIS, &c. See BETLE.

PI'PER MONA'RDI. See BUYO BUYO.

PI'PER MURA'LE. See SEDUM.

The other species of peppers are of little value in medicine. See Neumann's Chemical Works. Lewis's Materia Medica.

PI'PER CARYOPHYLLA'TUM. See PIPER JAMAICENSE.

PI'PER CAUDA'TUM, and CUTEBA CUBEBS. See NHANDU, and CUBEBA.

PI'PER CHIA'PE. See PIPER JAMAICENSE.

PI'PER TAVASEI. See CASSIA CARYOPHYLLATA.

PIPERI'TIS, (from its biting taste). See LEPIDIUM.

PIRAMIDA'LIA CO'RPORA. The small eminences on the lower part of the MEDULLA OBLONGATA, q. v.

PISCA'TOR RE'GIS, (*pisces*, to fish). See ALCEO.

PISIFO'RME, OS, (from *pisum* and *forma*). See LENTICULARE, and CARPUS.

PISSÆ'UM I'NDICUM. See PETROLEUM BARBADENSE.

PISSASPHA'LTOS, (from *πισσα*, pitch, and *ασφαλτος*, bitumen). See BITUMEN.

PISSASPHA'LTUM. See MUMIA.

PISSELE'UM, (from *πισσα*, pitch, and *ελαιον*, oil). OIL OF PITCH, *bitumen Barbadosense*, is prepared by boiling pitch, over which wool is suspended. When it is soaked with the rising vapour, it is said to be wrung into a vessel, and this is repeated as long as the pitch is boiling. The common method of distilling to obtain essential oil is more probably used. See PIX LIQUIDA.

PISSI'NUM O'LEUM. See BRUTIA.

PISTA'CHIA LENTISCUS. See LENTISCUS.

PISTA'CHIUM, PISTA'CIA, *terebinthus Indica Theophrasti*. The PISTACHIO NUT TREE.

Pistachio nuts are oblong and pointed, about the size and shape of a filbert, including a kernel of a pale greenish colour, covered with a yellow or a red skin. They are brought from the Levant. The kernels are agreeable to the taste, sweetish and unctuous, resembling in their nature almonds. See Raii Historia.

PISTI'LLUM, (from *pinso*, to bruise). A PESTLE. In botany, a PISTIL, or POINTAL, that column or set of columns which occupies the centre of the flower, rising on the top of the embryo, generally surrounded with the chives. They are supposed by Linnæus to be a continuation of the medulla or pith; and differ greatly in their form, for in some flowers they are roundish, in others triangular, oval, or square. The pistillum is the female part of generation, whose office is to receive and convey the pollen to the fruit. It consists of GERMEN, STYLUS, and STIGMA.

PISTOLO'CHIA, (from *πιστος* faithful, and *λαχαια*, parturition; because it was thought to promote delivery). See SERPENTARIA VIRGINIANA.

PI'SUM, (from *πισος*, a garden; because it was a garden vegetable). The PEA. Of these there are various species, but they are not medicinal; they are less nutrient and less flatulent than the bean, and generally more tender; the sweeter and more mucilaginous kinds are the more nutritive. See ALIMENT.

PI'SUM ARBORE'SCENS. See CAJAN.

PITU'ITA, (from *πητυα*, coagulum, from its consistence). PITUITA.

This term strictly means the thin lymph which distils from the nose, and from the Schneiderian membrane in all its extent; but it is most frequently confined to defluations from the nose, and accumulations in the stomach. Pathologists have, however, seized on the term as a convenient appellation for fevers of a particular kind; and much confusion has arisen from the extensive indiscriminate use of the word. We are ashamed to say how much labour has been employed to collect in a comprehensive view what authors have said on the subject; but though we have mispent our own, we shall respect our reader's time.

The original meaning of the word was a defluation from the head, and it was supposed to pass from the brain through the foramina of the cribriform bone into the nose. It is amusing to see the difficulties which the ancient pathologists felt in finding a passage for it; but we are gravely told by some authors that it passes down in the form of vapour; and it is plainly hinted that it is condensed by cold, or rather a cold. In fact, it was synonymous to rheum; but in its condensation by cold, it was gravely asked how the brain escaped being frozen.

The great point in dispute, seems to have been whether the pituita was an excrementitious fluid, and whether generated in the brain, or drawn to it as to an alembic from the stomach or liver. It is useless to follow the disquisition; but we may add, that it was at last determined not to be an excrementitious fluid, not to be generated in, or derived from, the fourth ventricle of the brain, nor from the liver. In fact, it is the mucus of the whole pituitary or Schneiderian membrane; and more generally considered, when exceeding in quantity or morbid in quality, to be a disease of the stomach. Thus, when Horace says, "Nisi cum pituita molesta est," he does not refer to catarrh; though Baxter

gravely tells us that bilious constitutions are subject to catarrhs, but to his habitual weakness of the stomach, for he observes in another place,

——— *Stomacho que tumultum
Lenta feret pituita.*

The humoral pathologists, catching at the language of Galen, supposed that a pituita sometimes abounded in the blood, and was secreted in the stomach, and occasionally the cause of fevers. In the usual progress of epidemics, when the inflammatory form, more common in spring, has yielded, and the bilious constitution of autumn has not come on, the pituitary fevers are said to take place (Grant on Fevers); that is, fevers of no peculiar distinct kind. Not the slightest evidence of a mucous fluid in the blood has, however, been adduced; and still less of its power to produce fevers. We have found mucus or pituita discharged in excess, and with altered qualities, in coryza; in the throat (see ANGINA); in the stomach (see DYSPEPSIA); in the intestines (vide CÆLIACA); in the urinary bladder (CYSTITIS); in the urethra and vagina (GONORRHEA). It remains to enquire how far it is connected with epidemics.

Selle and Pinel (vide NOSOLOGIA) have distinguished pituitous fever, referring it to the gastric remittents; and they have quoted as their authorities Sarcone, Glass, Huxham, and Stoll. These authors, however, describe only the milder typhus, complicated sometimes with aphthæ, sometimes with scarlatina; generally with accumulations in the stomach and intestines; with accumulations, not only of mucus, but of bile and of putrid saburra. Indeed every author who speaks of pituitary fevers considers the stomach and bowels as the chief seat. Baglivi calls them mesenteric, other authors slow, gastric, and mucous fevers; nor is the type, in the opinion of Pinel, more accurately described than in Wagler's work *De Morbo Mucoso*, a putrid fever complicated with dysentery. We shall transcribe the description of this fever from Sarcone, whose account is preferred by Selle.

"Constitution of the air cold; diet bad and unalimentary; manner of living excessively dirty; a scarcity of food; tongue glutinous, as if covered with fat; mouth and fauces sometimes covered with a mucous crust; blood covered with a glutinous coat, consisting of lamellæ containing serum, scarcely inflammable; cruor in a dissolved state; fever slow, with a weak intermitting pulse; urine thin and limpid." To this may be added, that blisters were said to discharge gluten; and, on dissection, the intestines to be covered with a glutinous crust. In the whole of this description we perceive only the milder typhus, which is attended with a white tongue, and when protracted with aphthæ. Blisters, after some continuance, always discharge a white matter; and in proportion as the vessels are less irritable or more weak, this matter appears more early: it is only the gluten of the blood. Pinel, in his description of pituitous fever, from Wagler, mentions as peculiarly characteristic marks, continued nausea, a stomach cough, inducing and increasing pains in the breast; diarrhœa with tenesmus, sharp pains or constriction in the transverse direction of the colon; aphthæ or mucosities on the internal membrane of the

larynx, rendering the respiration painful or stertorous. When the fever was violent, these mucous excretions of the mouth were not obvious; but a thick white mucus, sometimes yellowish, sometimes of a deeper colour, at the back part of the tongue, was accumulated. This fever, he adds, sometimes terminates by an internal ulcer or scirrhus, a mucous congestion in the lungs, or a gangrene of the intestines. We did not remark in the account of Sarcone, because it would be more striking in this place, the appearances on dissection. What he styles mucous exudations in the viscera are evidently the effusions from inflamed vessels, which appear in the lungs, the bowels, &c. after the resolution of inflammation, and which, when the patient survives, form adhesions between contiguous parts. We see in this second description, from the pain, the gangrene, &c. every mark of inflammation having preceded. We may add, therefore, with the author before us, though he meant not to apply the observations to himself, the following truly judicious reflections.

"It is well known that complicated epidemics are constantly described as so many singular novelties; fevers which seem to increase without limits the catalogue of these diseases, and to extend the boundaries of the art of healing. But the spirit of analysis soon shows how much this excessive multiplication may be reduced, when we have seized the character of the principal disease; and has not Wagner himself, when he has described the simplest form of the disease which appeared in the epidemic during the siege of Gottingen, given the history of the mucous malignant fever; the same fever with purple exanthemata, &c.?" We may observe in the same spirit, has Wagler given us any more than a picture of the nervous fever, with aphthæ?

We have, perhaps, enlarged sufficiently on this subject, which is a short specimen only of what we purposed to offer on the varieties of fever; a task which, from its extent, we lately (page 277) declined. The remedies peculiar to the pituitous fever are not different from those of fever in general, though we suspect the symptoms would have been milder, and the disease less fatal, had evacuations from the stomach and bowels been more freely excited. In short, it would have been unnecessary in this work to have enlarged on these supposed varieties, as every direction in the general cure applies strictly to them.

The other directions for the treatment of pituitary congestions chiefly relate to collections of mucus in the stomach. Baldinger recommends tartarized antimony in mild doses; and Stoll (*Ratio Medendi*, i. 228) the sal ammoniac: not very different are the medicines recommended by Martin, burnt sponge; and the lime water of other authors. The warm aromatics and the *Geoffrœa surinamensis* have their advocates; but gentle emetics often repeated, mild laxatives, with the purer biters, and the alkaline salts, afford the best chances of relief.

The remedies for catarrh and for coryza, in all their varieties, may be seen under the distinct heads already mentioned.

PITUITA ALBA. See ANASARCA.

PITUITA'RIA, (from *pituita*). See DIARRHŒA.

PITUITA'RIA GLA'NDULA, the PITUITARY GLAND,

is a small spongy body, lodged in the sella sphenoidalis, between the sphenoidal folds of the dura mater, neither medullary nor glandular; but on the outside partly greyish and partly reddish, and within, white. It is transversely oval, and on the lower part, in some subjects, it is divided by a small notch into two lobes, like a kidney bean. It is covered by the pia mater as by a bag, the opening of which is the extremity of the infundibulum, and it is surrounded by the small circular sinuses which communicate with the sinus cavernosi.

PITUITA'RIA MEMBRA'NA, is the membrane which lines the whole internal nares, the cellular convolutions, the conchæ, the sides of the septum narium, and, by an uninterrupted continuation, the inner surface of the sinus frontales and maxillares, and of the ductus lachrymales, palatini, and sphenoidales; continued down to the pharynx, septum palati, &c. Its name is derived from its office of separating the mucilaginous lymph, called *pituita* by the ancients; and it is of different structures in different parts; sometimes thin, at others thick and spongy. It is thickest on the septum narium, the lower portion of the inner nares, and the conchæ; in the sinuses it is thinner; on the side next the peristomium and perichondrium it is plentifully stored with small glands. See CEREBRUM.

PITUITO'SA, (from *pituita*). See DIARRHŒA.

PITUITO'SUS MO'RBUS. See NERVOSA FEBRIS.

PITYRI'ASIS, (from *πιτυρις*, bran,) *porigo*; a scorbutic disorder of the head, chin, and eye brows. It consists, according to Dr. Willan, of irregular patches of small thin scales, which repeatedly form and separate, but never collect into crusts, and are not attended with inflammation. He distinguishes it from *porrigo*, which is a disease of the scalp, attended with ulceration.

The *pityriasis capitis*, the first species of this author, is called the *dandriff* when it affects young children. It appears at the upper edge of the forehead and temples as a slight whitish scurf, in the form of a horse-shoe. The scales on the other parts of the head are flat, semi-pellucid, and distant, though often contiguous, and even imbricated. When it occurs in elderly persons the exfoliations of the cuticle are larger. The head should be shaved, and the scales removed by soap and water; for if the sordes (see PILUS) collect and unite with them, ulcerations are often the consequence.

The *pityriasis versicolor* of Willan are irregular, brown, or yellow patches on the arms, breasts, abdomen, and clavicles; sometimes branched like a lichen, sometimes in irregular lines like the outline of a map. They consist of small scales, which fall off and are reproduced. The cuticular lines are deeper in the coloured portion of the skin, but the patches themselves have no distinct boundaries. The origin of the colour is below the cuticle; but it is not attended with any complaint except a slight itching on going to bed after exercise, or any stimulating liquor. A slight exanthema, or a lichen pilaris, is sometimes apparently interspersed; but seems to be independent of the principal disease.

The causes have been said to be fruit taken in too

large a quantity, mushrooms, alternations of heat or cold, the friction of flannel, and the heat of a tropical region. It seems to resemble the maculæ hepaticæ of Sennertus, and to differ from the dark spots occasionally on the skins of pregnant women. As these have no scales, it should be also distinguished from those maculæ and ephelides which have a marked border. No internal medicine seems to produce a considerable or a permanent change in these spots.

PITYROI'DES, (from the same). See FURFURES.

PITYU'SA, (from *πιτυς*, because the leaves resemble those of the pine). See TITHYMALUS, ESULA MINOR.

PIX, (from *πισσα*, pitch). PITCH, *burina*, *bunnea*.

PIX BURGUNDICA, BURGUNDY or WHITE PITCH, is the resin of a species of pine with a larger proportion of oil than in the common resin. It is extracted from the *pinus abies* Lin. Sp. Pl. 1421. Burgundy pitch is chiefly imported from Saxony, of a solid consistence, yet somewhat soft, of a reddish brown colour, and not disagreeable in smell. In inveterate coughs, affections of the lungs, and other internal complaints, plasters of this resin, by acting as a topical stimulant, are said to be of considerable service. It is now entirely confined to external use. See ABIES.

PIX LIQUIDA. TAR; *hisselaion*; *alkitram*; *cedrium*; is the produce of all resinous trees; at first procured from cedar, larch, and fir, but now chiefly from pine-trees, particularly the *pinus sylvestris* Lin. Sp. Pl. 1418, and the *p. picea* 1420. (See ABIES.) The wood is inclosed in a large oven, which stands within another, admitting the fire between; from the bottom of the inner oven the tar is carried off by a gutter in proportion as it melts.

Tar differs from turpentine by the disagreeable empyreuma it has received from the fire, and by the acid as well as the gummy matter separated by the heat. It thus becomes soluble in watery fluids, which extract nothing from the purer turpentine.

It affords by distillation the common black pitch, an essential oil, called, from the name of the tree whence the tar is obtained, *oleum pini*, or *tædæ*, and an acid spirit. This oil resembles the oil of turpentine, but is impregnated with the empyreumatic flavour of the tar. A leg of mutton, while roasting, basted with tar instead of butter, and a sharp skewer frequently thrust into its substance, in order to let out the gravy, afforded in the dripping pan a composition said to cure the lepra ichthyosis, by anointing the whole body with it for three or four nights successively, while the same linen was worn. Dr. Cullen mentions it as used in one instance with great success. *Materia Medica*.

Water in which tar has been steeped is an useful remedy in many disorders. It may be drunk either warm or cold. In acute diseases it is taken as freely as the thirst may demand; and in chronical, from a pint to a quart may be taken every day, at three or four times, beginning while the stomach is empty. It is said to be a good deobstruent to warm and stimulate, raising the pulse and increasing perspiration.

Common tar water is made by putting two pounds of Norway tar to a gallon of water, stirring them well together for two or three minutes: after settling two days, the clear liquor must be poured off. Of this a pint or

more may be taken every day. In many instances this preparation, says Dr. Cullen, has appeared to strengthen the tone of the stomach, to excite appetite, promote digestion, and to cure all the symptoms of dyspepsia. At the same time it manifestly promotes the excretions, particularly that of urine; and it may be presumed to have the same effect on others. From all these operations it will be obvious, that, in many disorders of the system, this medicine may be highly useful. *Materia Medica*. See the Bishop of Cloyne's *Treatise on Tar Water*.

Pix nigra, sicca, arida, COMMON BLACK PITCH, DRY OR STONE PITCH; called by Dioscorides *galimphissa*, prepared of pitch, twice boiled.

It is tar dried by heat, or what remains of tar after separating the essential oil, its acid, and aqueous parts. A stimulating plaster, bearing the name *emplastrum picis compositum*, is said to be equally stimulating with the euphorbium plaster, and to possess similar properties. It is made in the following manner:

R. *Picis aridæ* ℥ viij. gum ammoniaci, galbani, āā ℥ iv. liquentur simul; deinde adjiciantur, pulveris radicis pyrethri; seminis sinapios; camphoræ, āā ℥ i. olei terebinthinæ q. s. ad consistentiam emplastri.

Unguentum picis aridæ, made by melting nine parts of pitch and of olive oil, with four of wax, together, is said to be efficacious in ulcers, attended with an extraordinary degree of irritability, distinguishable by their languid, purple, and glassy appearance. In these all terebinthinate ointments are inadmissible.

The *unguentum picis cum sulphure*, made by melting sixteen parts of pitch and one of yellow wax together, adding, while fluid, eight parts of sulphur, is employed in tinea, and esteemed very efficacious; but during its use the head must be frequently shaved, and a green oil-skin cap constantly worn.

PLACE'BO, (from *placeo*, to amuse). A common-place method or medicine, calculated to amuse for a time, rather than for any other purpose.

PLACE'NTA, (from its resemblance to *πλακους*, a cake). In botany it is that part of the pod or husk of a plant to which the seeds are fastened, and by which they are nourished until ripe.

In anatomy it is a thick, soft, vascular mass, thin at the edges, where the membranes go off which cover the fœtus, adhering to the uterus during gestation, called *hepar uterinum*, and, with the membranes and funis umbilicalis, excluded after the fœtus. The whole is called the *after-birth* and the *secundines*. The placenta is sometimes oval, at others, divided into two, adhering apparently to each other by the membranes. The internal surface, where the funis is inserted, is convex; the external concave, and, there, seems composed of lobes, which are most conspicuous when the placenta is hastily separated. When there are two children there are two placentæ; and though they appear as one, they have no communication of vessels. The placenta usually adheres to the fundus, but occasionally to any other part, and is sometimes directly over the os tincæ. It is made up of one vein, and of two arteries, which ramify together, the largest being on the internal surface; and even the apparently parenchymatous substance appears, by injections, to be wholly vascular. The ramifications are very minute, and when separated

by maceration, and injected, they appear to rise from the funis, as branches from a tree. No nerves can be traced into the placenta.

Former physiologists saw nothing in the placenta but a congeries of vessels passing from the mother to the fœtus, and a communication, by continuous vessels, was so natural and obvious, supported also by the hæmorrhages which followed the separation of the cake, that it was apparently unnecessary to look farther. Dr. Hunter, by more attentive examination, found reason to doubt of the existence of continuous vessels. He saw evidently a cellular structure, on the separation of the placenta; and comparative anatomy showed him that cells were more conspicuous in the placenta of ruminant animals. The experiments of Haller on the egg, which proved that a large portion truly belonged to the fœtus, led to an inquiry whether the apparently uniform cake might not be composed of two parts, one belonging to the fœtus, the other to the parent. The result was, that almost the whole of the placenta was truly fœtal, that the maternal portion was inconsiderable, and that the blood of the parent was deposited in cells; from which it was seemingly taken up by absorbing vessels, probably red veins. In this view the apparently mamellated structure of the uterus, at the point of union between it and the placenta, was the whole that belonged to the maternal system, except the decidua. Even the decidua reflexa is supposed to belong to the fœtus; but on this subject physiologists are not perfectly decided.

The circulation thus carried on by absorption, and the deficiency of any nerves passing from the mother to the uterus, led pathologists into some difficulty to explain the effects of fright, apprehension, or fever, on the fœtus; and was still more embarrassing to the physiologist in explaining the source of the *nævi materni*. The present structure is perfectly consistent with the doctrines we have attempted to establish respecting the primordial germ, which admits not of any considerable distention beyond its adult state; and it will be necessary to examine shortly the mode of communication, since a remote connection is at least evident; for the child is certainly influenced by diseases which affect both the circulating and nervous systems of the parent.

There can be little doubt but that the extreme vessels in the maternal part of the placenta possess the peculiar irritability and sympathetic associations which distinguish these extremities of the arterial system on the surface. Their sympathy is also more extensive; and fever or terror, which affects the latter, with spasm or insensibility, will equally disorder the former. The want of a supply is consequently felt, and uneasiness must follow. Violent evacuations will often do little injury; for in that case the supply, though diminished, is not wholly stopped. Though there is, however, no immediate communication between the two systems, by means of nerves, it does not follow that the proximity of the minute nervous fibres, when their nonconducting coats are deposited, may not have some influence. If there is any foundation in the doctrine we have endeavoured to establish on that subject, it is probable that the vibrations of an elastic fluid, on one side, may have some influence on the nerves contiguous to them from

the other. We have indeed contended that divided nerves do not unite, so as again to communicate the nervous influence from the brain, or sensations from their extremities; but this apparently arises from their uniting in the usual way, by accretion and effusion, in short, by an inorganic substance, as is represented in the plates of Fontana. Nor is this nervous influence by approximation wholly without examples, were it proper at this time to engage in the subject.

Some doubts have arisen whether the maternal blood is conveyed, without a change, through the vessels of the placenta; or whether some separation, perhaps some secretion, may not take place. The difficulty has arisen from its being observed that infectious diseases are not communicated to the fœtus, or, at least, not readily and certainly, and from the suspicion that the azotized blood of the mother might, in the earlier periods, be injurious to it. It is now, we believe, admitted that fevers have not their origin in the blood; and it will be obvious that the fœtus can suffer only from the disturbance of the balance of the circulation. Even putrid fevers, in a high degree, have been found not to affect the child in utero; and we know, from the experiments of Parmentier and Deyeux, that in these cases the vital fluid is very little altered; though we should, *à priori*, have suspected that the gelatinous fluids of the fœtus were not very susceptible of putrefactive fermentation. Where poisons are more decidedly present in the blood of the mother, the child is sometimes affected. The small pox has certainly been conveyed to the fœtus, and it has been affected from the time the pustules have begun to dry into scabs, at the period when the maternal blood is most full. The lues, it is said, is not communicated; and it has been supposed, that when the child is affected, the communication of the virus takes place in passing through the vagina. We have given some reasons for supposing this not to be the case (*vide LUES*); and may add, that, were it so, the local disease would probably show itself more frequently in the head than in the genital system, since the head is first, and for a longer continuance, exposed to the contact of the virus. We must, from every view, admit of a communication; but some means are found for lessening the deleterious acrimony of the poison, often of destroying it altogether. It is not impossible that with the blood a milder portion of albuminous matter is secreted; perhaps the fluids of the fœtus may not be susceptible of taint; or the poison be soon carried to the surface: a determination favoured by its being constantly bathed in water.

The nervous communications we must leave among the numerous arcana of physiology, unless the communication by the approximation of the ultimate uncoated fibrils on each side be admitted. We were, at one time, inclined to adopt the existence of a nervous aura communicated to some distance; but found that the different facts would by no means support its existence, and that, in the present case, it would be inapplicable. We soon perceived, also, that the admission of this principle would lead to numerous inconsistencies and improbabilities. The influence of the mother in producing the *nævi*, called from thence *materni*, may be very shortly discussed, by denying it altogether. We have already given our reasons for it.

The placenta is often diseased. It sometimes accretes to the uterus, as observed by Morgagni, Stœller, and Gooch; becoming a firm tendinous mass, or, according to the last author, with beginning ossifications. It is often so closely attached, that no power which we can safely use will separate it; and the whole gradually sloughs away in succeeding menstruations. It sometimes degenerates into cysts, or, probably, hydatids; of both we have instances in Bauer, Haller, Ruysch, and Valisnieri. Of its attachment to the os uteri we have already spoken; and in our plate we have preferred a case of this kind as the general attachment might be better understood from the appearances in this case, than the latter from a representation of the former kind.

The placenta was, in general, removed soon after delivery; but within about thirty years, we believe chiefly from the recommendation of Dr. Hunter, it has become usual to delay the extraction; and it has been delayed for many days. We perceive in the older authors various and opposite opinions on this subject. Some contend that it should be immediately extracted, and that any delay is dangerous or fatal; others, that weeks and months may be suffered to elapse without making any attempt to deliver it. More attentive observation has preserved the medium. The extraction is not hurried; but seldom more than a day or two is suffered to elapse without attempting to bring it away, if nature should not perform the office. When the cord is broken, a little longer delay is occasionally necessary, that a partial separation may take place and give advantage to the operator. The inconveniences of suffering it to remain are a constant drain which debilitates the constitution; a mind unsatisfied and uneasy; often putrid discharges: those of too rapid extraction are, pain; violent floodings; often inflammation; and sometimes, from rashness, inversion of the uterus.

The most ridiculous and absurd medicines are recommended to expel it. Myrrh, the skin of a hare, the dung of different animals, and the testiculi equi, are among these. If myrrh has any effect, as we have suspected, of bringing on hæmorrhage, it may be useful, but should it have such a power there is scarcely time for its action.

In general, therefore, we should wait for some hours after delivery to see if nature will produce the separation, which will be shown by fresh pains recurring, bearing down, and the cord elongating when gently drawn.

It hath long since been observed, that hastening the placenta was one cause of the difficulty in delivering it; and the most eminent practitioners agree that a flooding only can justify its speedy separation. When necessity obliges the accoucheur to introduce a hand into the uterus, the back of it should be toward the uterus, and the palm as close to the placenta as possible, that the womb may not be injured in separating it.

PLACITIS, (from *πλαξ*, a crust). See CADMIA.

PLACTULÆ. See MORPIONES.

PLADAROTIS, (from *πλαδαρος*, flaccid). A fungous tubercle in the inside of the eye lid.

PLAGÆ, (from *πλησσω*, to strike). Solutions of

continuity, as wounds; though stripes, blows, &c. are generally included.

PLA'NCUS, (from $\pi\lambda\alpha\zeta\omega$, to turn aside). See LEIPODES.

PLANIPETALUS, a plant which has plain, flat petals.

PLA'NTA, (from *planus*, flat). THE SOLE OF THE FOOT, also a PLANT OF VEGETABLE, because it originally included only vegetables on the surface of the ground, which are trodden under foot.

We have often remarked the difficulty of discriminating even the largest groups of animated nature, in consequence of the imperceptible shades by which one class of bodies passes into another. Even the animal and vegetable kingdoms can scarcely be distinguished with accuracy from this cause. A plant may, however, be defined a living organized body, without feeling or spontaneous motion; which has the faculty of reproduction; which grows and is nourished by intus-susception, through the medium of other bodies to which it adheres by some of its parts. Plants approach animals by an organized structure; perhaps by a power of preserving a greater temperature than the elements which surround them, by a degree of sensibility and irritability: they approach minerals by not possessing a locomotive power, by having no containing vessels; and, in many cases, by the function of nutrition being in part carried on by apposition.

The anatomy of a plant, if fully detailed, would carry us to disquisitions of a disproportioned extent. It is sufficient to remark that every vegetable is fibrous; and its bulk, like that of animals, formed by an inorganic substance interspersed between the fibres. When these admit of no farther distention the tree dies, and at first on the top, where the impelling force is soonest exhausted. The nourishment is conveyed by vessels which pass through the bark, and from it the woody fibres are deposited. The wood gives firmness and solidity, but the tree will live and put forth shoots though the wood be destroyed, should the bark be uninjured; at least in its whole circumference. It has been disputed whether the vessels of a vegetable are canals conveying a fluid *within them*; or whether the nourishment is conveyed along the fibres. Many authors have pretended to have seen canals in different species of vegetables, and have described them; but future observers have not been equally fortunate, and on the whole it seems clear that the nutritious fluid passes along the fibres, which, by their juxta position, may be supposed to form canals. The most convincing argument in favour of the existence of vessels is, that if the plant is placed in ink, some parts will be coloured and others remain of their natural hue, which at least shows some affinity to different fluids in different parts of the vegetable.

Those who admit of vessels distinguish the *vasa propria externa* disposed in small bundles under the bark, forming a net work with large meshes; the *vasa propria interna*, found particularly in the oak and the pine, appearing to convey a fluid, which, on cutting the *chelidonium majus* transversely, may be seen to pass out; the *vasa propria intima*, found in the inner bark, and sometimes in the wood, which can scarcely be demonstrated, but which Dr. Hill is said to have separated in the *piscidia erythrina*, after a long maceration; and

the *vasa propria*, perhaps the only vessels clearly demonstrated. These are large and numerous, particularly near the surface, convey a viscid coloured fluid, and communicate with the utriculi. They are supposed to receive the sap from the lymphatic vessels, and to prepare the appropriate fluids of the plant.

The lymphatic vessels are numerous, and pass from the roots to every part of the vegetable, conveying the nourishment absorbed from the earth. Those who contend for a circulation of fluids in vegetables, suppose them to arise through these, and descend through the *vasa propria*, between the wood and the bark. Hill has described them as consisting of little cells included in each other, forming a hollow cylinder; but this author's fancy was often too predominant; and these appearances have not been seen by other observers. There are probably also *inhalent* and *exhalent vessels*, which are found in the leaves; a part analogous to the lungs of animals.

The utriculi are described as vessels composed of vesicles slightly contracted at equal distances, but preserving a free communication in the whole length of the canal. They appear, however, to be a mere cellular substance, communicating with the *vasa propria*, the lymphatic vessels, and the medulla.

When the leaf of a plant, as an iris for instance, is broken transversely, and the parts slowly separated, small fibres are drawn out, which appear as if they had formed a vessel by spiral circumvolutions. These have been styled air vessels, or *tracheæ*; but with little reason, for they sometimes appear to contain a coloured fluid. They are found in the minutest parts of the plant, even it is said in the stamina; but later vegetable physiologists suspect that these *tracheæ* are peculiar only to the more adult state. Hedwig and Reichel thought them primordial; other authors have supposed them irritable organs, the source of the motion of the sap; and Desfontaines the rudiments of fibres. Nothing, however, is decided on the subject; but as they are found in the organs most completely developed, we should rather suspect them to be expanded fibres than primordial ones. Were they the latter, as Senebier has justly observed, we might discover them in a state of progress to the fibrous form.

Mirbel, in his late work on the Anatomy of Plants, admits of five species of tubes, which supply the office formerly attributed to the vessels described by authors, viz. *simple* and *porous* tubes which contain the appropriate juices (*succi proprii*); the *tracheæ* and pseudo *tracheæ*, which he considers as tubes without assigning their use; and the small tubes which form the bands and the ligneous strata. Independent of these vessels, Mirbel calls the regular and symmetrical vacancies of a soft texture, formerly by tearing the membranes, *lacunæ*. The tubes and *lacunæ* he supposes to be formed of a membranous substance, which is the primordial basis of vegetables. The former are without pores, which are numerous in the other. These pores are insensible, longitudinal, or glandular, according to the parts or species of plants in which they are found.

The epidermis is composed of longitudinal fibres in the greater number of plants; and in some, as the cherry tree, of transverse ones. The external laminae are sometimes inorganic; the internal frequently consist of distinct strata. The epidermis of the trunk and

branches is regenerated if destroyed; that of the fruits and leaves is never restored. It is evidently composed of a net work, or of numerous reticulated laminæ, resembling spiders' webs; and perforated by the pores of numerous vessels. It enjoys life equally with the plant, and is not wholly a crust formed by the vegetable secretions. The glands of the epidermis of the leaves are called the transparent miliary glands by Guettard; and they are of the colour of the parenchyma, separating in the day oxygen, and in the night carbonic acid gas.

The *parenchyma*, or the cellular texture, is discovered on raising the epidermis, and is a net work formed by fibres or transparent vessels filled with a green fluid, anastomosing at their meeting, and swollen at the intervals between their anastomoses. It is formed by contiguous vesicles, connected horizontally at right angles with the longitudinal fibres. In this part the ultimate elaboration of the fluids takes place, and the different gases are separated. Senebier thinks the colour owing to the remaining carbon, but the green matter is a resinous substance, and consequently does not contain carbon exclusively. The decomposition of the water, the cause of the ultimate change, is owing to the action of the solar light.

The *bark*, or vegetable cutis, has been lately styled cortical strata, formed of a cellular substance, with closer meshes than those of the parenchyma. In the flattened net work we perceive transverse and longitudinal fibres, which communicate with the tubes and cells of the parenchyma. These are the fibres which in flax and hemp are employed to make linen and ropes, ultimately paper, either white or brown.

The *liber* is the inner part of the bark composed of reticulated laminæ with still smaller meshes, adhering so loosely as to be easily separated, and giving the idea of the leaves of a book, from whence its name is taken. The tracheæ are very numerous in this portion of the bark. When there is a solution of continuity in the wood with loss of substance, the liber insinuates itself into the wound, and in a few years fills it with a woody substance. Du Hamel compared it to the periosteum of the bones, led by a false analogy, and erroneous ideas of the nature and formation of a callus.

Between the bark and the wood we find strata of what is styled the *albumnum*, differing from the bark by the white colour and greater density. The vascular and tubular portions are more closely compacted, less numerous, and less sensible than in the bark. Some of the species of *salix*, when macerated, show this part most distinctly. It seems to be the wood in its progress to the ligneous state. This is, however, no part of the bark, but a primordial portion of the vegetable developed to receive the fluid, which is to become wood. It is at first almost wholly albuminous, but from the influence of light becomes resinous; for etiolated plants are never woody. When the bark is removed, the ligneous state is sooner brought on; and it is said to be advantageous to bark the oak one year before it is felled. The albumnum then becomes hard, the wood less perishable and less accessible to the attacks of the teredo navalis.

The *wood*, is the hardest portion, and its laminæ are very compact, containing, instead of fluids, a carbon, as bones contain between their fibres phosphat of lime.

The lymphatic vessels are more numerous than in other parts, and convey the sebum, which, when in excess, is evacuated in drops, styled TEARS. These do not arise from the bark or the albumnum; for to procure it, as in separating sugar from a species of maple, the wood must be penetrated. It is an erroneous idea that the number of ligneous strata show the age of a tree. Those of two successive years are sometimes confounded; and in some years two are deposited, so that the stratum of spring and autumn may be distinguished. Ligneous strata should therefore be banished from the vocabulary of the vegetable system; for in every part of animated nature we find, in the successive growth, only successive developments of primordial parts.

The last portion is the *medulla*, confined to the centre of the dicotyledinous plants, and disseminated through every part of the monocotyledinous ones, according to Desfontaines. It is composed of loose vessels and utriculi, which are spongy and long in drying; resembles the parenchyma, varying like it in density, according to the plant which contains it.

The medullary canal is parallel to the longitudinal fibres, in the middle of which it is placed, and communicates by its cells and vessels with the cellular texture. The fluids of these two parts differ only in colour; those of the latter being green from the access of solar light. Some *medullary productions* pass through the wood, and are gradually lost in the bark, or are spread through every part of the vegetable like the nerves of the spine. The *appendices medullares* differ only in extent, scarcely reaching beyond the innermost fibres of the wood. The medulla is in greatest quantity in young plants, and is then green, but the colour is fainter in proportion as the wood excludes the light. The medullary productions which reach the bark are sometimes green, but the appendices always white. In old trees neither of these are found; and it is said that they then produce fruit without kernels. The ancients uniformly supposed the kernel to be a production of the medulla, and deprived their trees artificially of it to procure fruits without a kernel, which were supposed to be more highly flavoured and succulent (*Geoponica*, lib. xx.); but Du Hamel was unsuccessful in his experiment, though he did not follow with accuracy the ancient process. Perhaps it is impossible to separate every portion of the medulla. The more of this substance they contain, the more easily are they propagated by buds and layers. Linnæus supposed that the medulla had a considerable connection with the sexual parts of plants, and thought that the pistil was derived from it. Hales considered it as the most essential organ to the nutrition of plants; but, as Senebier remarks, the old willows which still flourish without a medulla, refute this opinion. Columb, by boring trees at different depths, found the serum most abundant when the auger reached the medulla, and supposed that through it the juices mounted; and Plenck thought that it was a reservoir of nourishment in dry seasons (*Physiologia and Pathologia Plantarum*); but in such seasons the medulla is as dry as the rest of the plant. It is indeed probable that the medulla contains the nutritious juice of young plants, supplying the milk and the albumen of the cotyledons. At a more advanced period, this appropriate nourishment is unnecessary, and the medulla gradually disappears.

We have mentioned the important distinction of Desfontaines respecting the want of the medulla in the monocotyledinous trees, which, like the palm, are cylindrical from the top to the bottom. He, therefore, divides trees into those which have cylindrical and those which have conical trunks: a division founded in nature, and of the utmost consequence to be kept in view. The more minute distinctions, and the growth of the branches, would lead us too far, so that we shall speak shortly of some other parts of vegetables before we treat of their physiology and pathology.

The *knots* of vegetables are protuberances, formed by buds gradually distending. As this process takes place in the liber, the descending sap is arrested in its course, and forced into the bud. The fibres in this part are less strong, and slightly brittle. The knots are, however, the hardest parts of the wood, from the fibres being compressed by the expanding bud. Successive layers of wood cover them, but they are never effaced.

Articulations are a species of knots proper to herbaceous and woody plants, which usually produce branches. The knots or articulations of reeds, examined in a microscope, present a regularly formed tissue consisting of hexagons, mixed with small round bodies of a finer texture. The knots of a sugar cane form rings about five lines in breadth, whose surface contains five ranges of semitransparent points, arranged in a quincunx. The articulations are richer in juice than the other parts. There is much analogy between branches and knots, respecting their reproduction; for the roots usually proceed from the knots in solaniferous plants, as well as in those multiplied by buds and layers.

Buds and suckers are plants in embryo: they are buttons, with the leaves imperfectly formed, and a year is often required before they can assume the name of a bud: the first appearance of a bud is called an eye; and, previous to this, in its first state of dilatation, it resembles in form a reversed cone. The most favourable moment for the evolution of buds is when the leaves begin to fall, as they then attract the fluids, both from within and without, and begin to enjoy an active life.

Suckers are only buds which grow accidentally in consequence of a wound, which, interrupting the course of the sap, evolves a bud. *Thorns* have been supposed abortive branches, because they occasionally become branches. They seem, however, to be constant in the same species, and to have an active office, that of defence, in the infancy of the vegetable. In those monstrous productions, from excess of nourishment, the thorns certainly sometimes become branches; but they are never fertile. To this we may add, that they are always directed to the earth; or, if apparently horizontal, inclined in a gentle angle to the ground, while the branches rise upwards. Thorns are in the first year covered with a bark, in the second the bark disappears, and after the third they usually die like an inorganic body. They have no power of absorption. If an annular incision is made round the branch below them, and the leaves above are taken off, they die the first year. Comparetti found them to originate from a bulb like the hair, and the bulb of the sting of a nettle was found to contain the acrid fluid which distils from its extremity. Thorny plants are stronger, drier, and more compact than others; and when the thorns are

lost, it seems to arise from greater care and a more succulent food.

The flower is not only the ornament but the most essential part of the plant; for it contains the organs by which the species are continued. The sexual system is now established, and the stamina are allowed to be the organs which distinguish the male, the pistils those of the female, flowers. They are sometimes on distinct plants, more frequently indistinct flowers on the same plant; but most commonly the male and female organs are on the same flower, which is consequently called an hermaphrodite. It has been already shown (see BOTANY) that the arrangement of Linnæus is founded on the sexes of plants, and it will not now be soon disturbed.

The flower in all its splendour is said to be only an expansion of the other parts of the vegetable. The calyx has been derived from the bark, the petals from the liber, the stamina from the wood, and the pistil from the medulla. This, we believe, from the experiments and observations of Grew, Malpighi, and Desfontaines, is now rendered highly probable; and if, as has been conjectured, coloured is only attenuated light, we can attain some knowledge of the source of colour which adorns the parterre. The sight is, however, pleased at the expense of the health; for flowers exhale a deleterious gas, often highly injurious to delicate nervous constitutions. The double flowers are the monsters of the vegetable kingdom; for they are produced by an excess of nourishment, and the additional petals are the stamina which assume that form from excess. Like other monsters they are barren, and produce no fertile seeds.

The stamina are the organs least known: those of the tulip are swollen at the lower part, and hollowed, according to Senebier, in irregular tubes through their whole length. The tops are generally crowned by two ovoid capsules seen in the microscope, which are separated by a membranous septum. Spiral vessels are found in the stamina, particularly in those which are irritable, viz. of the barberry and opuntia; and it has been said that these vessels are the seat of their irritability. Others, without deciding on the cause or the seat, attribute this irritability to the stamina of every plant; and Tessier seems to have proved that in all the cerealia, the stamina at the rising of the sun turn towards the pistils, throwing with some force the pollen from the antheræ.

The opinion of Desfontaines, just mentioned, that the irritability is seated in the spiral vessels, seems to be supported by the experiments of Comparetti on the filament of the urtica and parietaria. Dr. Smith places the seat of the irritability at the base of the filaments, and indeed the joints seem the usual seat of this principle in every vegetable. Other botanists have supposed that the motion is mechanical, depending on the dilatation or contraction of the fluids in the vessels, by different degrees of temperature; but the existence of these vessels has been doubted.

The antheræ, placed at the top of the stamina, contain the true vegetable semen, which seems to preserve its prolific power for a long time, since we know that it may be conveyed by the air, and impregnate the female flowers of dioicous plants at a great distance. The globules, which the microscope discovers, are

apparently not the ultimate form of the pollen; for, when placed in water, they burst, and throw out with considerable force some smaller globules, or a sensible aura. Tessier found the pollen the most animalized of all vegetable substances, next to the gluten of farina: it afforded ammonia in the ultimate analysis, and appeared naturally of a resinous nature.

The number of the *pistils*, the female organs, is the same with that of the seeds, and of the stigmata with that of the cells. On a general view, when the seeds are numerous the pistil appears single; but, on minuter examination, it is composed of as many pieces as there are seeds. Its lower part passes into the ovarium, and its surface is without any epidermis, covered usually with a viscid fluid. It is not yet decided whether the pistil is tubular. Bonnet saw in the orange, lily, and the linden tree apertures at the extremity of the stigma, continued through the pistil to the ovary, large enough to admit the fecundating pollen. It is supposed that in the moment of impregnation these apertures open to convey the pollen, and again close when the orgasm is at an end. Linnæus suspected a similar contrivance, and Spallanzani saw an opening, but could follow it no farther than the middle of the style: in some plants he could not discover the smallest aperture. Hill declared that he saw it through the whole track; but Adanson, who only traced it in some species, supposes that the pollen is conveyed through the tracheæ, when the pistil is not tubular. These, however, have not been proved to be pervious tubes. It is probable, as Linnæus supposes, that the aperture is too small to be discovered; and when we consider the minute division of the pollen, it is scarcely probable that it could be brought within the reach of even the best assisted sight. May not the fecundation of the seeds be affected by a seminal aura, as was formerly supposed to occasion impregnation? The whole analogy of animated nature, and the means of reproduction, oppose this opinion, and we were lately unwilling to admit it where its existence and influence were most probable, viz. in the connection between the mother and foetus.

We have spoken of irritability, and given instances of its existence, though many more striking ones remain to be mentioned; yet no organs in which it is accumulated have been discovered, no source of this principle has been pointed out. The solar light decomposes the water, and its oxygen is exhaled, while the hydrogen remains to form the oils and the green resinous matter of the leaves; nor is it improbable that azote is absorbed from the atmosphere. This process is undoubtedly calculated to assist the circulation of the fluids through the lower parts of the vegetable, but by no means accounts for the motions certainly connected with irritability. An anonymous author has endeavoured to show that in meteorological phenomena the decomposition of water is attended with a separation of the electrical fluid, and in this way accounts for the positive electricity of the atmosphere. (Exeter Essays, 372, &c.) If this be the case, may not the electrical fluid be the source of irritability, and may not the medulla be its great reservoir? The pistil, the most certainly irritable organ, is apparently derived from it; but if this be denied, the use of the tracheæ has not yet been discovered, and the structure of these, calculated greatly to

extend the surface, adapts it for the same purpose. This is, however, conjecture only; nor is the present work a place to render it probable, though various facts occur to us which we think would rescue it from the opprobrium of an hypothesis.

The two great powers which convey the fluids of the vegetable through its vessels, or along its fibres, are the capillary attraction at the roots, and the decomposed water in the leaves, if we are not permitted to add the electricity evolved in the latter process. The sap in the early spring rises in waves, falling during the night, and again rising by day, sometimes like the undulations of the ocean, sinking below its former rise, but still, on the whole, progressive. In the early periods the milky and albuminous fluid of the seeds supplies the young plant, as the maternal fluids in the placenta supply the foetus. While the plumula has yet no power to expand its own leaves, nature has provided the rudiments of this organ in an appropriate form, styled the seed leaves; but its own soon expand, and the plant acquires an independent existence. In the progress of its existence it annually extends in height, and increases in bulk. The wood is deposited from the bark, forming in its intermediate state the alburnum, either from the ascending, or, according to Mr. Knight's very ingenious experiments, in the descending vessels. The former, from the experiments with coloured fluids, seem to surround the medulla; but the minuteness of the vegetable physiology must not detain us.

Thus we find, as in the animal body, the principal parts of the vegetable pre-exist in the germ. Every additional organic part is developed, and inorganic matter only added. We see in the peduncle of the pear the fibres which form the fruit, and can trace them gradually expanding to a determinate bulk; and the flower we can often trace to the bark, the wood, and the medulla. If we compare an animal with a vegetable, we must take one of the lowest rank as an example, for instance the polypus. The last appears to be a congeries of animals, and the vegetable seems also to combine in one body numerous individuals. Each may be propagated by buds; but they differ in one essential respect, that the food is taken into a cavity before it is distributed to the parts around. We know not a single instance to the contrary, unless it occurs, as some authors have suspected, in the lower orders of marine vermes, the asterias, and some others.

Irritability and sensibility, which distinguish animal creation, have been lately attributed to vegetables. We have pointed out a possible source in the electricity separated by the decomposition of water; but its operation or its instruments have not been ascertained. The contraction of the sensitive plant is well known; but in others, particularly the *hedysarum gyrans*, *cactus opuntia*, *cistus helianthemum*, the *amarillis formosissima*, &c. the motions are regular, though not spontaneous, and apparently the result of organization rather than volition. It seems to reside in every part of the vegetable, since, when plunged into cold water, every part seems to contract, and the motions of the *mimosa* are said to be checked by watering it with a solution of opium. The irritability of plants is intermitted during the night, which shows its connection with the light, and almost every vegetable closes its

leaves towards the evening; some in the most striking, remarkable manner. Light, however, is not the only cause; for different flowers open and close at various times, and the convolvulus, for instance, soon after the sun has attained its meridian height. Linnæus, from the opening of plants at different hours, has collected what he fancifully styles *horologium floræ*, a botanical clock, viz. the flowers which show in this way the successive hours of the day. If by *sensibility* we understand the power of feeling, and being affected by external bodies without judging of their effect, plants may probably possess this quality. When a plant bends towards the light, or throws out unusually long roots, to penetrate a barren rock, and reach a more genial soil, we cannot deny it some share of sensibility. The same conclusion must follow when we find plants differently affected by the same nourishment or the same aspects. In this view they often show more sensibility than some of the lower animals, as the polypus, the stella marina, echinus, &c. *Perceptivity* implies some judgment of the effects of sensations, and this quality has been liberally bestowed on plants. Philosophy would appear to put on her most repulsive garb were she to deny what has given interest to an elegant and pleasing poem (Botanic Garden), and some entertaining speculations (Percival's Essays). It is necessary, however, to add, that not the slightest evidence has been adduced of the existence of this quality.

Respiration is a function common to both animals and vegetables, though not carried on with regularity and constancy. Oxygen gas is separated, and carbonic acid air, perhaps azote, absorbed. It has been supposed that azote is also separated in the lungs; but we suspect that it is rather received, since many plants which grow in water alone decidedly show traces of this principle, particularly the tetradynamix. *Circulation*, in the sense of an animal function, is not found in plants. The fluids rise and fall: we have said that no tubular vessels have been discovered, and probably none exist.

Digestion and nutrition in the vegetable kingdom are simple functions. Water is the great source of aliment, indeed, many vegetables are nourished wholly by it; and this fluid, when decomposed, furnishes, as we have seen, the hydrogen to form the oils and resins, as well as the other secreted fluids, while the carbonic acid, perhaps the azote from the air, contribute to the formation of the wood, probably the seeds. Vegetable physiologists have supposed that the fluids either absorbed by the leaves or the roots are carried to the utriculi, and there digested; but not the slightest evidence of this process has been given: at the same time there is apparently an inherent power in the plant, to separate those principles from the air and water which form its appropriate and distinguishing fluids. Pease and cresses will grow in distilled water, exposed to the same air, and yet contain very different principles. This peculiar power has not yet been ascertained, and probably will never be understood.

M. Braconnot has, indeed, very lately examined this subject with more than usual attention; and his labours, which we have just received in the *Annales de Chimie*, vol. lxi. may with advantage detain us for a short time. He examined chemically a rich mould, and found that it contained nothing soluble in water; but that its chief characteristic was a power of retaining moisture. He

found in it the usual substances, which are nearly the component parts of vegetables deprived of the oxygen, and a proportion of hydrogen. M. Braconnot repeated the experiments of Tillet and Van Helmont, and found that plants would germinate in substances which could impart nothing to them, as litharge, flower of mustard, well washed sea sand, and even lead shot, though weakly in the latter, from its not retaining the water; and the products were very nearly the usual ones which are found when they grow in the best mould. Radishes in river sand, well washed, produced rather a larger quantity of ashes than in common earth, with a greater proportion of potash. Where then can plants obtain their carbon? It has been said, from the open air, but they will grow in air deprived of its carbon, and even in an exhausted receiver. We are, however, by no means satisfied with the author's reasons for rejecting Senebier's experiment with lime, since he has only proved that lime is volatile when joined with water or alcohol; and in the experiment it was suspended in the bottle where the vegetable grew. He has, however, sufficiently shown that the quantity of carbon is far greater than the air can impart. This principle must be, therefore, derived from the water, and very probably, as he supposes, by the medium of light. The only principle which can in any respect supply the place of light is hydrogen; and our author suspects some affinity between hydrogen and light. Hydrogen is certainly contained in charcoal, and the diamond, which have been supposed to be carbon in the purest forms.

While we thus speak of the food of plants, we may mention the suspicion that a part of their excrementitious fluids are discharged from the roots. A noxious excretion from the roots is evident, in M. Braconnot's opinion, from the unctuous and dark appearance of the earth round them. In several of the euphorbia and ciceraceous plants it is milky; and in the plants which grow in water the roots are, after some time covered with a glutinous substance. This subject, however, requires farther examination.

The more nutritious food of vegetables is manure. They may be divided, like animal stimuli, into the more steady and permanent, and the more active and diffusible. The former are animal or putrifying vegetable substances, probably in part azotic, but generally containing carbonic acid gas. Quick lime or marl may appear an exception to this idea; but it must be recollected that they are not used alone, and are mixed with other substances before they are applied. The calcination renders them more easily divisible, and the remaining causticity seems of service in dividing the too adhesive clods. The more diffusive stimuli are salts of all kinds, particularly the oxygenated ones, which seem to exhaust the irritability; for they push on vegetation with such rapidity, that the plant soon dies. Light may be equally dangerous in excess, if water is freely supplied. Metals, metallic vapours, and metallic salts, are said to be poisonous to plants; but from some late experiments it seems that at least the latter have been usually injurious from their excess: in smaller proportions they seem to be useful, realizing the canon of Linnæus in the vegetable kingdom also, "*Alimenta a toxicis non natura sed dosis distinguit.*"

Reproduction is the last effort of all organized bodies, and the nearer they approach their end, the more

earnest does nature seem to supply successors. In the vegetable kingdom this is particularly striking; for to make a plant produce flowers and seeds no plan is more effectual than to confine, mangle, or weaken it. Of seeds and the early embryo we have spoken sufficiently; and of buds, shoots, or layers, it is enough to repeat, that a plant is a congeries of organized bodies. Separate one of these from the parent plant, and it is itself an independent active being.

Light, we have seen, is the great stimulus of vegetable motion. It is not, indeed, essential to vegetable life; for Humboldt found plants in the shafts of mines, where no light penetrates. We know, however, that vegetables have a strong affinity to light; and if it is a component part of bodies, which, from late observations, we have reason to think, it is not impossible that they may derive some portion of this principle, in dark situations, from surrounding substances. One singular fact merits notice, that, when deprived of light, well known plants appear in disguise from an altered shape of the leaves. They are more round, as if the points were elongated by the discharge of gas; for at the points it is chiefly emitted. Plants confined in darkness lose their colour, and are blanched, or, as it is called, *etiolated*: they lose also their peculiar taste and their acrimony, as is the case with the endive, the chicoreum, &c. The reason, from what has been said, is obvious.

The gases in large proportions, are destructive to vegetables: with oxygenous, azotic, and carbonic acid gas, a plant dies. With equal parts of carbonic acid gas and atmospheric air it dies also: with $\frac{2}{100}$ of this gas they languish; with eight they thrive vigorously. The most active vegetation goes on when a plant is watered with a solution of carbonic acid gas, in an atmosphere with about $\frac{1}{100}$ of the same. Buds take root most certainly in this way, if the light be excluded, or admitted moderately. It is often sufficient, by excluding the external air, to confine the gas which arises from moistened ground; but it is safer to add a portion through an aperture, which may be again closed.

Various other vapours are injurious to vegetation. We have mentioned quicksilver rising in the toricellian vacuum; but it appears, from some experiments of the Dutch chemists, that it may exhale even under the pressure of the atmosphere. Plants covered with a jar, immersed in water, in which a bottle of mercury was suspended, were covered on the third day with black spots, and on the fifth or sixth were quite black. In the experiments of Senebier the vapour of sulphuric ether prevented germination, without changing the quality of the air. Camphor, oil of turpentine, asafoetida, vinegar, and ammonia, have a similar effect, if inclosed with growing or germinating plants.

Vegetables exposed to impure exhalations of every kind flourish better than in the open air. Even the branches of a tree on the side of a dunghill are greener and more vigorous than on the opposite side, and such plants exhale more copious streams of oxygenous gas. Salts, as we have said, are the most powerful stimuli; but we cannot think the poudrette of the French (pulverized stercus humanum) useful only on account of its salts. The azote seems to claim some share, as well in this manure as in the fumes of the neighbouring dunghill. Odoriferous, and even fetid substances, if

mixed in a considerable proportion with the earth, impart their odour, and sometimes an unpleasant taste.

The effects of the vegetable functions are increased temperature. It is, we believe, generally allowed that the vegetable is warmer than the surrounding air, and resists for a long time the effects of frost, if not succulent, or peculiarly full of fluids. It has been said that this is owing to the high refracting power of the resins, by which they admit of the combination of a greater degree of heat; to the carbon being a bad conductor of heat, which confines it more effectually, as it abounds in the bark; and to the heat of the earth, conveyed to the vegetable by its fluids. Each reason is, however, confuted, by the buds of the tallest trees resisting the effects of cold in winter, when no sap ascends, and no leaves are expanded. If the heat of animals be not a property of life, as there is much reason to suspect, the cause of vegetable heat may be the following. During the summer the combination of light seems, as usual, to separate heat; but as it does not appear at any time in a considerable degree, it probably enters into a new combination with some of the vegetable matter, from which, during the winter, it is slowly evolved. The temperature of vegetables appears to be uniform in the heat of summer and the cold of winter, so that there is, probably, some reservoir for its excess, though, in the present state of our knowledge, it cannot be pointed out.

The great line of distinction between organized and inorganized bodies is, that the latter increase by juxtaposition of particles externally; the former by an intussusception of the nourishment, and its application from within. Organized bodies include animals and vegetables, and it would not be improper to compare the functions of vegetables with those of animals of the lower classes, to show more closely the concurring and discordant appearances, but that it would lead us into too extensive discussions. Some observations have led naturalists to consider different supposed vegetables to be the nidi of animals, and these we must shortly notice.

The tremellæ, which have been usually considered as plants, have neither roots, leaves, nor flowers: they wholly consist of a gelatinous substance, and seem, in reality the nostoch only. The latter, in stony ground, may be seen to assume in part the form of the tremella lichenoides, and in part to retain its own. In fact, the nostoch successively passes into the lichen gelatinosus, crispus, rupestris, and fascicularis, as well as the tremella verucosa; and these again change to other plants, the lichen crispus assuming the form of the lichen granulatus. From these observations, for which we are indebted to Carradori, whose memoir is analyzed in the Annales de Chimie, the tremellæ must probably be banished from the vegetable kingdom. In addition, we may observe that Adanson has seen the threads of the nostoch contract and dilate; Fontana has shown that its filaments, like those of the ergot, were truly animals which die and revive by the action of water only; Corti and Scherer have seen the animals escape from the centre to the borders; and the nostoch, in a chemical analysis, yields ammonia. The last, indeed, is not a decisive argument, for many vegetables afford the same principle; but these have such decided marks of a vegetable nature that no error can arise.

It is with less success that late authors have attempted

to raise the *confervæ* to the rank of animals. It is contended that winged insects are seen to escape from them, and that when these no longer appear the green manding on the water does not increase. This may be true; but the *confervæ* expire oxygen. The nature of mushrooms has also been rendered doubtful, because electricity, which hastens the germination of vegetable seeds, and kills the ova of animals, not only prevents the germination of mushrooms, but even destroys those beginning to expand. Mushrooms, however, from their structure, must belong to the vegetable kingdom.

If we thus partly limit the empire of Flora, the latest microscopical observations have greatly added to it. The spots, the rust, the mould, on various plants are true parasitic, organized vegetables, which have each peculiar distinct forms and appropriate habitations; but these belong to the pathology of the vegetable kingdom, to which we hasten.

The diseases of plants are chiefly external. There is nothing analogous to the nervous diseases of animals, but exhausted irritability from excess of stimuli, or its defect from too great succulence. Wounds are common, and cured like those of animals, by excluding the air. Ulcers, in different parts, and of all the various kinds found in animals, are also common. They chiefly arise from lacerated or neglected wounds. Fractures and clefts are also frequent, and easily understood. Decurtation is the death of the upper branches from debility, either in consequence of a barren soil or a severe winter. As soon as the extent of the tree's power is seen, the branches should be cut off close to the living part, and this should not be too long delayed; for numerous vigorous lateral shoots seem to be thrown out by no more exertion than would push the sap to a very short distance in the dead part. Exostoses sometimes occur in consequence of an excess of nourishment; but often of its deviation from the true direction, induced by some weakness of the bark. On the contrary, the bark is sometimes too firm, and binds the tree so close as to prevent the circulation. This disease is styled *hide bound*, and it is necessary to cut down to the wood, in a longitudinal direction, from the first divarication of the branches to the earth. The bark, on the contrary, sometimes *exfoliates*; and it is necessary not only to guard against the access of air, but of insects.

The diseases of the leaves are numerous, chiefly from parasitic vegetables, or from insects; but the leaves occasionally fall off, from a burning sun following a cold, wet season, and sometimes fade from a sterile soil. In cases of insects, some cause of debility seems to precede. An insect never places its nest on a vigorous leaf, or perhaps the copious exhalations of oxygen may destroy it. The *curl* which happens often to potatoes is not easily understood. It seems to arise from a defect in the seed, and its immediate cause to be an unequal action of the vessels in different parts of the leaf.

The *ergot* demands particular attention, as it is the cause of such dreadful ravages, producing mortification and palsy in whole families, and sometimes districts, when the inhabitants are obliged to feed on ergotized corn. It consists of a total, sometimes only a partial, change in the grain itself, which loses its form, is bent, often appearing at one extremity like a tail. It arises from too great humidity of the soil, which affords an opportunity for some small animals to burrow in the

seed, and to destroy it. Thuillier considers the disease as owing to a mushroom, a species of *clavaria*; but whether it be an animal or a cryptogamous plant, its chemical nature is animal, since it affords ammonia. It has been lately supposed to consist only in an expansion of one extremity of the seed. The cause of *caries* is unknown: the corn is cleaned from it by washing. When the husks are attacked, and the whole ear appear dry and brown, it is called by the French *charbon*. The *rust* is chiefly on the stalks, and, as sir J. Banks has very properly shown, depends on a plant of the mushroom tribe.

Sterility in plants is often occasioned by excess of vigour in the branches and leaves: it is checked by every cause of weakness. In the human race we have equally remarked that the largest families are not those of the healthiest and strongest parents; and that in almost every case of extraordinary fertility, as triplets, the health of the husband was infirm.

Diseases of the whole plant are *chlorosis*, or *etiolation*, when the leaves grow white, and the plant loses its taste and smell; *plethora*, or the excess of vigour, which occasions sterility; *jaundice*, in which the leaves grow yellow, often from too frequent affusions of water during a hot sunshine, from a barren soil, more frequently from insects at the root; *anasarca*, from very wet seasons, when the plants, though green and apparently vigorous, lose their taste, and are either barren or the seeds germinate in the pericardium; the *frost*, from excessive cold, from which, if not long continued and violent, so as to destroy the organization, the plant sometimes recovers, or, if cut off near the root, the latter throws out new shoots. Succulent, plethoric, or anasarcous plants are soonest injured, and most certainly destroyed. If these are expected to bear cold, the water should be gradually withdrawn before the severe season commences. When late shoots come out, which will not apparently bear the cold of the winter, the leaves should be taken off to prevent absorption.

Plants are divided into ANNUALS, BIENNIALS, ALIMENTARY, AQUATIC, CRYPTOGAMIC; ECONOMICAL; ETIOLATED; FAT OR SUCCULENT; CLIMBING; HYBRID; HYGROMETIC; LEGUMINOUS; WOODY; MEDICINAL; ODORIFEROUS; VARIEGATED; PARASITIC; TINCTORIAL; and POISONOUS. We may add a few remarks on each.

Annuals and biennials are sufficiently known: they are opposed to *vivacious* or *perennial* plants, which are those which continue for more than two years. The annuals of our hot-houses are often perennial in their native soils, where the heat is considerable; and, on the contrary, biennials often become perennial, though annuals never become biennial. The marks of this quality, in botanical authors, are derived from a fanciful analogy to the sun and planets. As the course of the sun is completed in one year, its symbol ☉ is applied to annuals. As Mars employs two years in its revolution, its symbol ♂ is the mark of biennials; while that of Jupiter ♃ designates perennial plants.

Alimentary plants, in which we include the *cerealia*, are those employed, in every country, for the food of man. Were we to confine it to those which contain nourishment, to be extracted by art, the catalogue would be immense; for the greatest number of vegetables is supposed to contain a starch. If the *cassada* had not, for instance, for time immemorial, been

extracted, in Africa, from the species of *jatropha*, it might have been accounted a poisonous plant; and those who tried only the leaves of the potatoe would have never thought of eating its root.

Aquatic plants include those of rivers and of the sea. The river plants are only used as manure; those of the sea as manure, and for the production of soda. Some cannot live out of water, as the *nymphæa*, the water lentil, &c.; others delight only in moist places, as the willow, the iris, various reeds, &c. The willow will not live in water. Some French agriculturists have examined with care the different marshy plants, to ascertain those of which cattle are fond. They will not touch the *butomus umbellatus*, the reeds, the *colchicum*, the various species of *carex*, and *sium*: they are not fond of the *eupatorium*; but eat greedily the *spiræa ulmaria*, the *salicaria*, the *arundo vulgaris*, *epilobium*, and *thalicttrum*. It is recommended, therefore, to destroy the former and cultivate the latter. As their seeds are small, they should be mixed with powdered gypsum, to add to their weight, and to distribute them more regularly.

The *cryptogamic* plants are, the ferns, lichens, and mushrooms, which have been sufficiently considered.

The *œconomic* plants contain not only the alimentary, but those employed, in any way, for the service of mankind, except the practice of medicine. The Dictionary of Kerner, published in 1790, in German, contains a description, a history, and figure, of every plant, employed for this purpose. As it is scarcely our object, we shall not, as we intended, make any extracts from this work. The *œconomic* plants are generally called by the French *plantes usuelles*.

Etiolated plants are those whose leaves are whitened and elongated by disease, or excluding the light. This change is designedly produced to lessen the acrimony of some esculent plants, as the endive, celery, &c. The last experiments which we recollect, professedly on the subject, are those of Meese, in the *Journal de Physique*, 1778. It has been asserted, in the same work, that a moist heat, independent of light, will produce the effect; but though, as we have seen, the green colour is often destroyed, the leaves do not become white, except the access of light is prevented.

The *fat* or *juicy* plants are collected by Jussieu in four orders or families, the *portulacææ*, the *ficoids*, the *succulentæ*, and *cactoides*. They are soon distinguished by their thick and fleshy leaves, their moderate height, and their perpetual verdure, often by their spines. They are natives of a hot climate, and carry in their leaves a resource against continued drought. For this reason they are soon destroyed by cold. Each leaf contains a bud, and becomes, when it drops, a perfect plant. If torn off for this purpose, the extremity must be dried before it is planted.

Climbing plants are those which, by means of their bractææ, raise and support themselves against any object: they are opposed to the *volubiles*, or creeping plants, by the latter extending themselves horizontally.

Hybrid plants are produced from the pollen of a different species. They are mules of the vegetable creation, but, unlike mules, produce fertile seeds. In succeeding years, however, the seeds lose their fertility, and the new species is usually lost. See Koelruter in the *Petersburgh Transactions* for 1782 and 1786.

Hygrometric plants are objects of singular curiosity.

The two most curious are the *calendula pluvialis* and the *sonchus sibiricus*. The flower of the *calendula*, in good weather, opens about six in the morning, and closes at four in the afternoon; but if rain is to come on during the day, *unless in storms*, it does not open. When the latter closes during the night, it will be fine weather the following day: if it continues open, rain may be expected. The *carlina vulgaris*, which grows in dry mountainous spots, has similar properties. Its flower, when open, remains dry with the stalk, leaves, and calyx, till the following year; but in moist, cloudy weather the calyx closes, and resumes its horizontal position in a dry season. In a warm chamber the calyx never closes.

Leguminous plants are sufficiently known: the common pea is an example. They are all esculent to some animals; but few are employed in our diet.

Woody plants, as opposed to herbaceous, are those whose stalks have some firmness; while the stalks of the latter never attain the firmness of wood, however soft. They are all perennial, but the converse is not true; for many perennials are not ligneous.

Medicinal plants are those employed in the cure of diseases: but there are none exclusively such; for even the most insipid plant may be useful as a demulcent or a gentle laxative. See *MINERALIA in initio* and *MATERIA MEDICA*.

Odoriferous and *variegated* plants are sufficiently known. In the leaves it is produced by weakening the plant; in the flowers, by a peculiar conduct, which the horticulturist knows, but will seldom explain. The duration is, however, temporary: the beautiful variegations of the tulip, for instance, do not appear in early youth, and in the same ground soon vanish. In the fruit it is more than an accidental variety.

The *parasitic* plants sometimes root on the tree that sustains them, sometimes in the ground, and attach themselves to the tree. The *cuscuta*, the *viscus quercinus*, the *hypocystis*, the greater number of lichens and mosses are of this class.

The *tinctorial* plants are the indigo, the carthamus, the reseda, the isatis, and some others. For the *poisonous* plants, see *VENENUM*.

See Du Hamel *Physique des Arbres*, Ludwig *Institutiones Regni Vegetabilis*; Linnæi *Philosophia Botanica*; Senebier *Physiologie Vegetale*; Mirbel *Traité d'Anatomie et de Physiologie Vegetale*; Hunter's *Georgical Essays*, six volumes; Linnæan *Transactions*, Passim; Knight in the *Philosophical Transactions*, 1803, 1804, 1805, 1806; Darwin's *Botanic Garden* and *Phytologia*; Bonnet sur l'Usage des Feuilles; Des Fontaines *Memoires de l'Institut*; Senebier *Memoires Physico-chymiques*; Geoponica sive de re Rustica; Plenck *Physiologia et Pathologia Vegetabilium*; Ingenhouz, and Priestley.

Since this article was sent to the press, we have received Dr. Smith's elegant and scientific Introduction to Botany, including the Physiology of Vegetables, but too late to enable us to avail ourselves of his remarks.

PLANTA MIRABILIS DISTILLATORIA. See BANDURA.

PLANTA ZEYLANICA. See MENTHA PALUSTRIS.

PLANTA'GO, (from *planta*, from the shape of the leaves). PLANTAIN, *centinervia*, *polyneuron*, is a small perennial plant, common in fields, or by road sides; the leaves lie on the ground, have naked unbranched stalks,

bearing on the top a spike of small, imperfect, four-leaved flowers, followed by little capsules, which, opening horizontally, shed numerous crooked seeds.

PLANTA'GO LATIFO'LIA, *septinervia*, *heptapleuron*, *arnoglossum*. BROAD LEAVED COMMON GREATER PLANTAIN, WAY BREAD, LAMB'S TONGUE, *plantago major* Lin. Sp. Pl. 163, hath oval leaves, seven ribs, prominent on the lower side, running from end to end.

PLANTA'GO MI'NOR, *angustifolia quinquenervia*, *bipinnella*, *pentaneuron*, *pentapleurum*. RIB WORT, the GREATER NARROW LEAVED PLANTAIN. *Plantago lanceolata* Lin. Sp. Pl. 164, β . It hath oblong five ribbed leaves, and short thick spikes.

The leaves of each are ranked among vulneraries, and are mildly astringent; but unnoticed in the present practice. The leaves are applied to fresh wounds and cutaneous sores; and they have been given in consumptions, and profluvia. In spitting of blood the roots have been recommended by Bergius; and from three to six drachms have been given daily in the intermissions of vernal tertians. Two ounces of the expressed juice, or the same quantity of a strong infusion, may be given for a dose. In agues it should be doubled, and taken at the commencement of the fit. C. Aurelianus, according to Pliny, described the virtues of the plantago, in a separate treatise, with all the enthusiasm of a discoverer.

PLANTA'GO CORONOPUS, Lin. Sp. Pl. 166.

PLANTA'GO PSYLLIUM, Lin. Sp. Pl. 167.

PLANTA'RES, (from *planta*, the sole of the foot). See POPLITEUS.

PLANTA'RES VE'NÆ. The tibialis posterior, having descended to the sole of the foot, forms these veins, by dividing into several transverse arches, which communicate with one another and with the saphena, sending ramifications to the toes.

PLANTA'RIS ARTE'RIA EXTE'RNA, one of the divisions of the posterior tibial artery, passes on the concave side of the os calcis, obliquely under the sole of the foot, to the basis of the fifth metatarsal bone, and from thence it runs in a kind of arch toward the great toe, communicating there with the tibialis anterior, which perforates the interosseous muscles. The convex side of this arch supplies both sides of the last three toes, and the outside of the second toe, forming small communicating arches at the end, and sometimes at the middle of each toe, as in the hand. The concave side of the arch furnishes the neighbouring parts.

PLANTA'RIS ARTE'RIA INTE'RNA. A division of the posterior tibial artery, having reached beyond the middle of the sole of the foot, is divided into two, one of which goes to the great toe, communicating with the branch of the tibialis anterior; the other is distributed to the first phalanges of the other toes, communicating with the ramifications from the arch already mentioned.

PLANTA'RIS MU'SCULUS, the muscle whose tendon covers the sole of the foot, is also called *tibialis gracilis*. It rises thin and fleshy from the outer condyle of the os femoris, near its extremity, passes downward between the gastrocnemius and the soleus, is united by a cellular membrane to the tendo Achillis, and inserted into the inside of the posterior part of the os calcis, below the tendo Achillis. Winslow thinks that it is attached to the capsular ligament, and that it serves to keep it from being hurt by the motions of the joint. Dr.

Hunter suspects that it hath some action with which we are not acquainted, seeing it is always distinct; but it is occasionally wanting on both sides.

PLA'NTULA MARILA'NDICA, (a dim. of *planta*). See GENSING.

PLA'NUM, (from *πλανος*, flat). See METATARSUS.

PLA'NUM OS. See ETHMOIDES OS.

PLASTER OF PARIS; gypsum, was employed by Mr. Home in ulcers, to produce an artificial scab, but without success. It is the same as selenite, and occasionally an ingredient in MINERAL WATERS, q. v.

PLA'STICUS, PLASTIC, (from *πλασσω*, to form). An active power in nature, in the opinion of some philosophers endued with a faculty of forming; the refuge of those who wish to exclude the interposition of a Creator.

PLA'TA, (from *πλατυς*, broad). See SCAPULA.

PLA'TANUS, (from its broad leaves). The PLANE TREE. *Platanus orientalis* Lin. Sp. Pl. 1417. The leaves are large and lancinated; the flower amentaceous, formed in a globular figure, containing numerous stamina. The fruit, which is produced at a distance from the flower, is spherical; the seeds numerous, long, and apiculated, intermixed with much down. The leaves are said to cool and repel. See Raii Historia.

PLATES. Since the art of engraving has been more carefully cultivated, or at least that branch of it which represents the objects of nature, the recluse student has had many resources which he could not otherwise obtain. The anatomist can now convey the rare appearances which he has only once seen, the morbid changes, which may not again recur, and give a general, though not always an adequate and satisfactory, representation of the different parts of the human body. The natural historian can convey the discriminating form of the animal which he describes, and the plant recommended either as medicinal or salutary, as subservient to the luxuries or the advantages of mankind; the mineralogist, though with less precision, the shape of the crystal, or the general appearance of the fossil or ore. This happy art is coeval with the invention of printing; for printing was first the impression of letters, conveyed by fixed wooden blocks, on which the characters were engraved; in fact the first printed pages were wooden plates. A specimen of a work of this kind was first published by a physician, Dr. Hartlieb, in small folio, 1448. *Die Kunst Cyromantia-hatt, zu deutsch gemacht*. The earliest medical work, however, which was published from moveable types, is said to have been the *Ruralia Commoda* of Petrus de Crescentia, printed by Schlusser, in 1471: but we observe an edition of Petrus de Apono published at Venice in the same year.

The first plates were apparently botanical, published in the *Ortus Sanitatis*. The editio princeps of this work, without date or place, seems, from evident marks, to have been published at Moguntium by Schoffer of Gernzheim, one of the inventors of the art of printing. The next work of this kind was the *Herbarius*, executed at Padua in 1485, with similar rude representations of plants.

The first representations of animals, not of common ones, but collected and described with scientific accuracy, appeared in a *Dialogus Creaturarum*, by Alexander Anglicus, at Gonda, in 1480; and it was followed in 1482 by Magenberger's "Book of Nature," published at

Ausberg, and by Meydenbach's *Tractatus, de Animalibus, &c.* This last work merits particular notice, as in it was the first representation of the human skeleton.

The first distinct anatomical plates are attributed to Hundt of Magdeburg, whose *Anthropologia* was published in 1501; but the diligence of professor Blumenback has discovered plates of the viscera in the *Fassculus Medicinæ* of Ketham, which appeared at Venice in the preceding year. They were followed, seventeen years afterwards, by the plates of Hack, which, however, were only published at Strasburg in 1519. In this interval, however, Marcus Antonius de la Torre dissected bodies with care, and Leonardo da Vinci drew the forms with red chalk, laying in the bones, nerves, and vessels, with ink. These plates were never published, but are, at present, in the king's library, and Dr. Hunter speaks, with enthusiasm, of their elegance and their accuracy; though in this respect they are by no means uniform. Their era is not known, but Leonardo died about the close of the fifth century. Berengarius, about the middle of the following century, was himself an anatomist and artist; but the triumph of anatomy was the publication of the works of Vesalius, the drawings of which were executed by Titian.

Plates of mineral substances are not common. The first attempts are little more than mathematical diagrams of the general forms, or of the crystallizations; and the first attempt to give a proper display of hard bodies was, we believe, the *Conchology* of George Geve, a painter at Hamburg, in 1755; but this was soon eclipsed by the splendid *Recueil des Coquillages*, published by Regenfus under the patronage of the king of Denmark in 1758. We mention the latter, as besides the shape and relief of the shells, which are admirably delineated, we can almost distinguish their texture and hardness. Many other delineations of fossils may be noticed, but indifferently executed; and the first successful attempt was the delineation of the wood-tin, in M. Klaproth's tract, on the Fossils of Cornwall. In Jacquin's *Collectanea* we find some beautiful and correct representations of fossils; but the chief work was Mr. Rashleigh's specimens of British minerals, selected from his cabinet of Menabilly, published in 1787. They are elegantly and accurately represented; but a Supplement was executed in a very inferior manner. In some late German works we have observed similar attempts, and in the *Annales du Museum National* are some coloured plates of peculiar beauty and accuracy, particularly of the urinary calculi. Mr. Sowerby's delineation of minerals also merits considerable commendation, though by no means so highly finished as the works alluded to.

The originals of the plates in this work, and the reasons for their selection, we shall notice in a separate article at the end. We shall now shortly point out the best plates in the different branches of medicine.

ANATOMY. In osteology we have the plates of Cheselden and Le Sue, which leave us scarcely any thing to wish; and in myology those of Cooper or Bidloc and Albinus. Of the brain, the plates of Vicq. d'Ayzer are without a rival, and of the arteries of the neck, with their relative situation to the muscles, the plates of Haller give ample information. We long wanted an adequate and correct representation of the contents of the thorax and abdomen in their relative situations;

but the defect is supplied by the representations of Sandifort. The uterine system is fully illustrated by Hunter; the lymphatics by Mascagni; the nerves and arteries, in general, by C. Bell; the ligaments by Caldan; the eye by Zinn and Soemering; the ear by Du Verney and Saunders.

The changes produced by diseases are delineated in Dr. Baillie's elegant fasciculi, in the *Thesaurus* of Ruysch; and in the *Pathologia* of Haller, assisted by the numerous periodical works of the present era.

In medical botany we have the magnificent work of Plenck, and one of equal utility, though of less extent, by Dr. Woodville, assisted by various, well executed, plates in the *Linnæan Transactions*, *Annales du Museum National*, and the *Illustrations de La Marck*. The animals which afford medicinal substances are figured in Sonnini's edition of Buffon; the birds in Dr. Latham's *System*, or the *Planches Illuminées* of Buffon; the insects in the works of Olivier or La Treille, and the *Babula Naturæ* of Swammerdam. Of the minerals used in medicine we have no adequate representation.

PLATINA. (See *CHEMIA*.) It is employed in making the nicest chemical vessels, as it is with difficulty oxydated, and scarcely acted on by any menstruum. It is so ductile that it may be drawn to a very fine wire, which powerfully rests the action of heat and cold, either in elongating or contracting. It is with difficulty fused, though when purified its liquefaction is more easy. It is purified by adding to a solution of platina, in nitro-muriatic acid, potash sufficient to produce some precipitation. The remaining precipitation is effected by sulphat of potash, and the precipitate must be washed till the water no longer changes colour by adding prussiat of potash. It is then to be fused with about one and a half of its weight of soda. We have admitted its preparations with some hesitation among the *emetica nauseosa*.

PLATYOPHTHALMON, (from *πλατυς*, and *ὀφθαλμος*, the eye,) an antimonial fucus used to enlarge in appearance the eye.

PLATY'SMA, (from *πλατυς*.) A flat and broad piece of cloth, of plaster, or of metal.

PLATY'SMA MYO'IDES, (from *πλατυς*, and *μυς*, a muscle,) *quadratus genæ; detrahens quadratus; tetragonus; subcutaneus; depressor maxillæ inferioris; cutaneus musculus*, rises from the skin insensibly below the claviculæ, and is inserted into the basis of the lower jaw: it then runs up and joins the *triangularis*, and is inserted into the angle of the mouth and the skin of the cheek. It depresses the lower jaw.

PLE'CTANÆ, (from *πλεκω*, to fold). See *CORNUA UTERI*.

PLE'CTRUM, (from *πληττω*, to strike). See *TEMPORUM OSSA, UVULA, and LINGUA*.

PLETHO'RA, (from *πλεθος* plenitude). A plethora, strictly speaking, is an excess of blood; but we have already noticed the various distinctions of plethora. (See *MORBI FLUIDORUM*.) A sanguine plethora is a predisposing cause of fever, inflammation, apoplexy, or rupture of the blood vessels, if accompanied with inflammatory diathesis; but in a phlegmatic habit it is the cause of debility and languor.

There are few states of the system in which irritability is so considerable and troublesome; and it is of consequence to ascertain the existence of plethora,

since the exhibition of tonics, which are apparently indicated, greatly increases the whole train of symptoms. In such cases, a rupture of a blood vessel, if not in the head or lungs, is the most salutary event. A plethora is, in such cases, ascertained by the habits of life, the age, the sex, and temperament. It occurs chiefly in the luxurious female, whose pampered appetite prepares a superabundance of blood, whose distensible vessels yield with little resistance, and whose secretions, from inactivity, are slow and inconsiderable. The lax habits which, in weak resistance, approach the female, in similar situations equally suffer, and the phlegmatic temperaments are also overwhelmed by a load of fluids. It is the disease chiefly of youth, or from the period of 25 to 40.

The pulse, in such cases, gives but an imperfect idea of the cause. It is often apparently weak; but when pressed with firmness the current of blood is not checked. If, observes Mr. Bromfield, the artery be covered with four fingers, firmly pressed, and then the three upper fingers removed, we shall find the blood rush with some violence against the lowest which remains. In many instances, however, even this criterion fails, and we must judge from the external circumstances above enumerated.

To relieve it, when ascertained, is a task of no less difficulty. Bleeding, sometimes attended with a little temporary relief, is occasionally followed by fainting; and after a little time the former fulness, and the debility, with the irritability, are increased. Evacuations by stool, and a feebler diet, occasion faintness, and exercise is attended with intolerable fatigue. No other plans will, however, succeed, and each must be used in such a gradual, guarded manner, as to prevent uneasiness. At first a meal may be lessened, soon afterwards abridged. A feebler diet, feebler in its alimentary powers, must be slowly substituted; and the exercise, at first, in a carriage may be supplied by the tax cart, and afterwards by the horse, while the walk in a garden may be extended to an adjoining field. After the vessels have been in part emptied in this way, tonics or the cold bath may be safely used. Even when attended with phlogistic diathesis, bleeding must be only employed when apparently indispensable, and the force of the arterial system lessened by cooling purgatives, refrigerants, low diet, and active exercise.

The serous plethora is the disease of the aged, the weak, or the cachectic. It terminates in anasarca, in hydrothorax, or apoplexy. In these cases the serous, excrementitious discharges should be increased, particularly by urine and stools; the expectoration, if not sufficient, kept up; and the strength supported by a nutritious diet and wine.

See Vater *Dissertatio Causæ et Effectus Plethoræ*; Crellius *Sanguinis Jacturam frequentem, Plethoram sustentare*; Ludwig *de Plethoræ differentiis*; Fischer *de Plethora multorum morborum causa*.

PLE'URA, (from *πλευρά*, the side,) *hydropneumonias*. A membrane with which the breast is lined, and which, reflected, covers the lungs and diaphragm, as the peritonæum covers the intestines, the doubling on each side forming the mediastinum, which is close near the sternum, and more distant below. In the duplicature above, the thymus is placed. The use of the pleura is to give the contained viscera a smooth surface, and to

confine an halitus secreted by the extremities of the arteries: the mediastinum keeps the heart more fixed in the centre of the body, and prevents wounds of one side the thorax from affecting the other. The pleura is of a firm texture, with many blood vessels and nerves interspersed; subject to inflammation and abscess. See PLEURITIS and ABSCESSUS.

PLEURITICA. A PAIN IN THE SIDE.

PLEURITIS, (from *πλευρά*.) A PLEURISY OR INFLAMMATION OF THE PLEURA.

Three kinds of pleurisies are described; the true or inflammatory, the false and the spasmodic or flatulent. In Dr. Cullen's system it is a species of pneumonia, and he defines it a pleuritic pneumonia, attended with a hard pulse; a pungent pain, for the most part, of the side, increased particularly in inspiration; a difficulty in lying down on the side affected; a very painful cough, dry in the beginning, afterwards moist, and often bloody. He distinguishes four varieties. 1. *Pleuritides idiopathice simplices*. 2. *Pleuritides complicatæ*. 3. *Pleuritides symptomaticæ*. 4. *Pleuritides falsæ*.

The true pleurisy is an inflammation of the pleura, with pain and fever, in its strictest sense on that side of the membrane which lines the ribs, though frequently communicated to the portion of the membrane contiguous, which covers the lungs.

The pulse is remarkably hard, vibrating, and strong; but the pleurisy is principally known to be present by the pain in the side, with a high fever, a difficulty of breathing, and a short cough. The pain is usually just above the short ribs, increased by inspiration, and less on expiration; the breathing is consequently difficult, and the inspirations are short. The cough is short, suppressed, and in true pleurisy dry; but a mucus is sometimes spit up from the lungs, at first thin, but gradually puriform and bloody. When we have reason to think that the inflammation has extended to the lungs, and the disease has become, in the language of pathologists, the pleuro-peripneumonia.

The existence, indeed, of a pleurisy without some degree of peripneumony has, however, been doubted by Bonetus, and many of the ablest practitioners. The descriptions of almost every author combine apparently the symptoms of each, and it is by no means an easy, perhaps a possible, task to separate them. We shall add, therefore, the distinctions which have, we think, occurred to us at the bed side.

Pleurisy differs from peripneumony by the pulse being stronger and harder, the pain more acute, the inspirations shorter, and more apparently spasmodic. The face is seldom flushed; the head lies low without increasing the dyspnœa; the cough is short and quick, without any expectoration. We think also that pleurisy does not commonly leave the side to affect the biliary system, though we have suspected its translation to the pericardium. Because there is a bastard peripneumony, authors have supposed that there is a bastard pleurisy; but, in their descriptions, we see only the rheumatic affection of the muscles of the thorax.

The distinction between the pleurisy and the inflammation of the mediastinum, or of the diaphragm, is sufficiently easy from the seat of the pain; and, in the latter case, from the painful constriction, around, on breathing. Rheumatism of the muscles undoubtedly assumes at times every genuine mark of pleurisy; but

the distinction is of little importance, as the remedies are the same. Rheumatism, however, often shifts its seat to the joints, and the fever is sometimes diminished by general remedies, without any relief of the topical pain. In almost every instance also, in rheumatism, the part is sore to the touch.

We find some traces in authors of a putrid pleurisy. We cannot indeed deny the existence of such a disease; but from its general nature we think it improbable. Putrid fevers often attack with topical pains; and if these should be in the side, those practitioners who are fond of multiplying diseases may readily suppose that they have discovered a new one. To this error we must probably attribute the observation, that bleeding is sometimes injurious in pleurisy.

Pleurisy terminates, like other inflammations, in effusion, suppuration, and gangrene. The first is the most common; the last is peculiarly rare. Suppuration is most commonly the effect of that inflammation which arises from external violence; and in every instance, if we carefully attend, a fluctuation may be felt between the ribs, and the matter evacuated by a puncture or even a caustic. If the abscess bursts internally, an empyema is the consequence; so that, if symptoms of suppuration come on, the part affected should be examined with care, to solicit by poultices, or by a caustic, the evacuation of the matter through the skin. Suppuration is known to have come on by the cessation of pain, with the usual symptoms of shivering, throbbing, &c.

The causes of pleurisy are those of internal inflammation in general, viz. cold when the body is heated, particularly when partially applied. External blows and injuries undoubtedly bring it on, but a disease from these can scarcely be considered as true pleurisy, except when attended with general fever; and numerous stimulating bodies accidentally swallowed are supposed to bring on inflammation of this membrane. These causes do not, however, vary the regulations necessary for the relief of the disease.

The bad symptoms enumerated by authors are those of debility, with a livid colour in the countenance, breathing shorter though with less pain; in short those which show that a gangrene has taken place. When the pain remits, and shivers come on, we know that a suppuration is advancing; but in this case we can only attend, as we have said, with care, and solicit the pus to the surface. When this is perceived, a blister, an issue, or a caustic, will contribute to assist the external discharge. The mode we have found most effectual is, to cut between the ribs, somewhat below the point, till we form an issue, nearly through the intercostal muscles, large enough to hold a horse bean. This, covered with the blister ointment, excites a discharge in a day or two, and the matter soon passes through the wound, which, after some time, heals readily. If there be no scrofulous taint in the constitution we have never found any difficulty in completing the cure, though the case is sometimes tedious: country air, a milk diet, anodynes, and tonics, greatly contribute to the salutary event.

When we speak of the cure of pleurisy, we must be understood as meaning to treat of the pure disease, unconnected with inflammation of the lungs, an event which indeed seldom occurs; but as it sometimes happens, it is necessary to consider it separately. At the

end we shall state those circumstances of the coincidence of the two diseases which must modify our conduct.

Bleeding, in pleurisy, is so obvious a remedy, that it has been common in every age; and the measure of the evacuation required is such that, when excessive bleeding is recommended, so great as in pleurisy is mentioned as the standard. The disease was apparently more common and more violent in former ages than at present; for even the *Botallistæ*, as they are called, the followers of Botallus, are not reprehended as employing bleeding in too great a degree. The medical world were for more than eight hundred years divided in the dispute, whether the blood should be drawn from the arm of the side affected or the opposite one; and the authority, not of a college but of an emperor (Charles IX.) was called on to decide it. This singular determination, which was to quiet the minds of physicians, was prevented by an unfortunate accident; for the emperor died of a pleurisy, in consequence of being bled on the wrong side, and his successor was too much engaged in his political views to assume the office of a medical dictator. The curiosity of a subject, now almost forgotten, has led us to look into it, and our enquiries have not only been a source of some amusement but of advantage to ourselves. We shall add a short abstract of the whole.

The ancient authors, down to the era of Actuarius, where we limited the term, seem to have employed bleeding as the only remedy, even without adding the assistance of purgatives; and the blood was, in almost every instance, directed to be drawn from the arm of the side affected. The Arabians, on the contrary, seduced apparently by the Galenic doctrines of revulsion, directed the blood to be taken from the opposite side, sometimes from the vena saphæna; and they applied, for similar reasons, the cupping glasses to the legs. Yet when the violence of the disease was quieted, they certainly admitted of bleeding from the side affected. Subsequent to the revival of learning in Europe, the recommendations of practitioners have varied, but, in general, they have followed Hippocrates.

We think we perceive one circumstance which rendered the Arabian practice to be less effectual. They bled frequently, and in small quantities; for it is expressly observed, that much blood must not be taken from the opposite side, lest there should be none left to supply its place, and, of course, no revulsion could follow. The reason for bleeding in the vena saphæna, in cases where suppressed menstruation or hæmorrhoidal discharge was supposed to be the cause, originated in the idea that this evacuation would prevent the morbid matter from rising upwards. Mercurialis and Cæsalpinus have endeavoured to reconcile the opposite opinions of these different sects, but it is unnecessary to enlarge on their reasons, which are futile and unsatisfactory; nor could better arguments be drawn respecting the latter's ignorance of the circulation of the blood than from this part of his works. It may be worth remarking, that, in these authors, *è directo et æt igitur*, mean on the same side.

A circumstance suggested by Vesalius during this controversy merits some notice. In every pleurisy, whether on the right or left side, he contended that blood should be taken from the right basilic vein

Since the arteries on both sides of the ribs, except the third superior, pour their blood into the azygos, and this vein inclines to the right, it is more readily, he thinks, emptied by opening a vein in the right arm; but when the upper ribs are affected, the blood, he observes, should be taken from the left, because these vessels are connected with the left intercostal. It is singular how much this idea caught the fancy of many cotemporary and succeeding physicians, especially when the valves of the intercostal were discovered. Ematus, Salceus, Fallopius, and many others, modified, opposed, or confirmed the opinion of Vesalius, which we now know to have little real foundation.

In the course of this enquiry we have found much reason to conclude that many of the reputed pleurisies were really rheumatic affections, since the pain was felt at the origin and insertion of the muscles of the thorax; an error, however, of little consequence. We have found also several traces of a putrid pleurisy, though not described with sufficient accuracy to enable us to judge whether it was really inflammation of the pleura with a putrid fever, a severe typhus with flying pains, or a putrid peripneumony. Wierus seems to describe the last, since it attended a malignant catarrh; Gesner the second kind, since it was relieved by a gentle diaphoresis. The obscure account of Cardon seems rather to refer to mediastina or carditis. But it is time to return more directly to the subject.

We now know that *bleeding* is chiefly useful by its general depletion, and its diminishing the tone of the arterial system. In violent cases of pleurisy it is therefore useful to take off a large quantity of blood from a large orifice, and, in general, to bleed in a horizontal posture, that fainting may not interrupt the discharge. Less than eighteen or twenty ounces in a robust young man should not be taken at the first operation; and if the pain or the hardness of the pulse be not lessened, nearly as much may be drawn within the next eighteen hours. It frequently happens that it must be again repeated. Incredible are the quantities sometimes taken, with only a slight relief for a very few hours; and these very large evacuations are in strong inflammatory habits essentially necessary. Topical bleedings, with leeches or cupping glasses, are also necessary, if the pulse grows soft without any considerable diminution of the pain; but while the pulse continues hard and strong, the general bleeding must not be remitted.

Blisters are also indispensable remedies; but they should not be employed early, nor until it is found that topical bleeding will be no longer necessary. They may be placed on the part where the leeches have bit with safety; but on the wounds with the scarificator they have been applied more cautiously, lest the absorption of the cantharides should produce inflammation of the bladder. After a short time, however, a little swelling comes on in the lips of the wounds, and then they may be employed with little disadvantage. Such, however, is the violence and the rapidity of the complaint, that there is often little room for hesitation or delay.

Purgatives are spoken of by authors in terms so vague that it is not easy to ascertain their real advantage. We have not seen them produce any striking good effect; and we should suspect that they were not

remedies well adapted to this disease. To avoid irritation from the intestinal canal is always necessary.

Diaphoretics have not been employed, we suspect, with sufficient attention; and, from the analogy of this inflammation to rheumatism, as well as the little danger to be apprehended from checking expectoration, the powder of Dover, with probably camphor and nitre, may be useful.

If the *seneka* root is highly useful in this disease, as has been alleged, the advantages must arise from its united powers of an emetic, a purgative, and a diaphoretic: but emetics alone are not essentially useful; and as the *seneka* has gradually lost its credit, it is probably by no means so highly advantageous as has been supposed.

In this simple view of the cure of pleurisy it is evident that we do not include any degree of inflammation of the lungs themselves, or even of their investing membrane. In peripneumony, though bleeding is useful, and often necessary, we can neither evacuate so largely nor so repeatedly as in pleurisy, for the truly salutary discharge is by expectoration; and if the strength is too far reduced, the sputum is prevented. We may repeat that the fulness and redness of the face often distinguishes peripneumony. If this be observed; if the patient cannot breathe but in nearly an upright posture; if the cough is constant and harsh, with a slight frothy, glairy, or bloody expectoration; we may conclude that the membrane of the lungs, or the substance of the organ itself, is affected; and while we lessen the general inflammation by bleeding, we must cautiously diminish also that of the bronchial glands, and endeavour to bring on a salutary expectoration.

The bastard pleurisy is the disease, we suspect, often confounded with true pleurisy. It consists of a rheumatic inflammation of the intercostal muscles, often of the other muscles of the thorax or abdomen. The disease is distinguished by external soreness, and is relieved by bleeding and blistering. In this complaint the *seneka* is of no service.

See PERIPNEUMONIA; Sydenham's Works; Hoffmann's Med. Rat. Syst.; Fordyce's Elem. part ii.; Cullen's First Lines, vol. i. p. 311; Triller de Pleuritide.

PLEURITIS HEPATICA. A variety of pleurisy, complicated with an inflammation of the liver. See HEPATITIS and PERIPNEUMONIA.

PLEURITIS SPURIA. See RHEUMATISMUS.

PLEURITIS SPLENICA. See SPLENIS INFLAMMATIO.

PLEURODYNE, (from *πλευρα*, and *αδυνη*, pain). Pains in the pleura. See RHEUMATISMUS.

PLEURODYNE FU'GAX. See CRAMPUS.

PLEURODYNE RHEUMATICA. See RHEUMATISMUS.

PLEURO-PNEUMONIA, (from *πλευρον*, and *πνευμονια*, an inflammation of the lungs). A pleurisy combined with peripneumony.

PLEURORTHOPNEA, (from *πλευρον*, *ορθος*, upright, and *πναιω*, to breathe). A pleurisy in which the patient cannot breathe without keeping his neck erect. Blanchard.

PLEUROSTHONOS, (from *πλευρον*, the side, and *τεινω*, to stretch). See TETANUS.

PLE'XUS, (from *plecto*, to weave together,) in anatomy, a net work, or a reticulated complication of vessels or nerves. See GANGLION.

PLE'XUS CARDIA'CUS, or PULMONA'RIS, is formed of the ramifications of both trunks of the eighth pair, and their mutual communications with the filaments of the intercostal or great sympathetic nerve. It is situated above the lungs, on the fore side of the bronchiæ, and distributes nerves to the pericardium, &c. See NERVI.

PLE'XUS CHOROI'DES, *plexus reticularis*, or *retiformis*. When the fornix is cut off, and removed, we see a vascular web, called the *plexus choroides*, with several eminences which it covers. The two first are called *corpora striata*, and the other *thalami nervorum optico-rum*. The first small eminences are united; the anterior are called *nates*, and the posterior *testes*. Le Dran explains the plexus choroides to be a folding of the carotid artery in the brain. See CEREBRUM.

PLE'XUS PAMPIMIFO'RMIS. See SPERMATICA CHORDA.

PLI'CA POLO'NICA, (from *plico*, to knit together). PLAITED HAIR. *Gehena helotis*, *kolto*, *rhophalosis*, the *trichoma* of Cullen, in the class *cachexiæ*, and order *impetiginæ*; a contagious disease, in which the hairs are thicker than usual, and so entangled, that it is impossible to extricate them. This disorder is endemic only in Poland and Lithuania, and consists of several blood vessels apparently running from the head into some of the hairs, which are greatly enlarged, elongated, and closely convoluted.

When the disease impends, porrigo, phthiriasis, profuse discharges of sweat from the head, often hæmicrania, violent pains in the neck, back, shoulders, loins, and the extremities, sometimes even resembling gout, are felt. In some instances, swellings, ulcers, and exostoses, not unlike syphilitic or scrofulous appearances precede; the sight is often dim, and the nails fall off. In other cases, palpitations of the heart, delirium, mania, fevers of different kinds and types, with tingling in the ears, and even deafness, are the precursors of plica. All these symptoms disappear in a single night, and the plica comes on. In females, the predisposition to the disease sometimes appears by a large flow of the menses, and a shooting pain under the sternum. When it does not attack at once, a few locks, on the hinder part of the head, appear matted, and inclining to the thickened state. The hairs on other parts of the body are said also to be occasionally affected.

The disease is attributed to salt or bituminous water; to air confined by forests, and occasionally keen by the blasts from the Carpathian mountains; to dirtiness, or neglect of combing; to viscid or more acrid food. In no other country, however, do similar causes induce the disease. From the history given, it is evidently a critical discharge, which no other can apparently supply; and if checked, the complaint will probably return. It is said, and appearances confirm the probability of the event, that fatal hæmorrhages have been the consequence of cutting off the hair; though other authors contend that this may be done with safety.

The disease is said to be contagious, by wearing the clothes, or using the bed linen of those affected: no stranger suffers from it, unless by the most immediate contact of one labouring under the disease, even though

he has lived long in Poland. The French army, lately in that country, is said to have experienced it; and from them some information may at a future period be drawn, which we shall take an opportunity to avail ourselves of.

The cure consists in discharging the miasma by the safest outlets. As the bulbs of the hair are the organs which nature points out for its evacuation, the discharge from thence should be assisted. Warm fomentations to the head are consequently commended; and the decoctions of lycopodium, in water or beer, are said to be peculiarly efficacious. Erndteli, by a curious error, mistakes the *branca ursina* for the *lycopodium*. The warmer diaphoretics, with camphor, assisted by blisters to the back of the neck, are said to be useful; but active purgatives, emetics, and sudorifics, have been found to exasperate the disease. Though cutting off the hair is injurious, yet the spontaneous separation of the matted locks is attended with no danger. (Sennertus; Acta Naturæ Curiosorum, iii. 102. Acta Vratislaviensia, xiv. 103). Sulphur has also been strongly recommended.

See Erndetelii Warsovia Illustrata, p. 153, &c.; Coxe's Travels; Primitiæ Physio Medicæ ab iis que in Polonia and extra eam Medicinam faciunt collectæ i. 168 and 188; Philosophical Transactions, No. 256, 417, 483; Commercium Norimbergense, 1733. Tabul. iv. Fig. 4; Miscellanea Naturæ Curiosorum, Dec. i. An. 6 and 7, p. 197; Hoffmann. Epist. ad Bontokoe de Plica Polonica Vicat Memoires sur la Plique Polonoise Lausanne, 1775.

PLICA'RIA, (from *plico*, to entangle; because its leaves are entangled together into one mass). See LYCOPODIUM.

PLICA'TIO. A violent shock and bending of a long bone without fracture.

PLI'NTHIUS LA'QUEUS, (from *πληθιος*). See CIRCUS QUADRUPLIX.

PLUMBA'GO, (from *plumbum*, lead). *Plumbago*; *fer carbure* Haüy, iv. 98. BLACK LEAD. It is used for pencils, and not a medicinal substance. See CHEMIA.

Plumbago in the vegetable kingdom, is leadwort, or French dittander, because its leaves are covered with lead coloured spots. *Lepidium dentillaria dictum*; *plumbago Europhæa* Lin. Sp. Pl. 215, is a plant whose root is fibrous, pungent, and perennial; the leaves alternate and entire; the calyx hairy; the flower monopetalous, placed on spikes. It resembles the parietaria, and may be a proper substitute for it.

PLU'MBUM, (from *plumba*, because its colour resembles that of a dove). LEAD. *Saturnus*, *aabam*, *abartamen*, *accib*, *allabor*, *alomba*, *alracas*, *capricornus*, *molybdos*. Greek writers often use the same name for lead and tin; and Latin translators interpret *κασιτερος* by each term.

Lead is of a bluish white colour, but easily loses its lustre, gradually contracting a dark tinge, and at last a whiter hue. When rubbed, it has a peculiar smell, though without taste, and tinges the fingers or paper of a blue colour. Its specific gravity is 11.35, and its hardness $5\frac{1}{2}$; but neither are increased by hammering, like other metals. It is very malleable, though but slightly ductile, and not very tenacious. It melts in a heat of about 590°, and at a higher degree the metal boils and evaporates. Its crystals, when slowly cooled,

seem to be polyhedra, with 32 sides, formed by six quadrangular prisms. Water does not dissolve lead, but facilitates its oxydation by the air, and the oxyd itself is not soluble. It combines with oxygen in different degrees, and the successive oxydations are of a grey, white or yellow, red or brown colour. Lead melted in an open vessel soon affords the grey oxyd, and, if this be scraped off as soon as formed, the whole of the metal may be converted into it; but its true colour is only obtained by a gentle heat, with a slight agitation. If this oxyd is exposed for a long time to a greater heat, it becomes yellow, and is then styled *massicot*. It is singular that the white lead, obtained by corroding plates of lead by the vapour of vinegar, or precipitating nitrat of lead by potash, contains the same proportion of oxygen as the massicot, viz. 0.07. The yellow oxyd, ground to a fine powder, exposed to heat and to *flame*, with constant agitation, is styled *minium*, or *red lead*, and contains 0.09 of oxygen. Nitric acid dissolves 185 parts of this oxyd, leaving 15 of a *deep brown powder*, or, when properly prepared, of a brilliant flea colour, containing 0.21 of oxygen. When heated, it becomes yellow, and vitrifies, emitting oxygen gas; inflames sulphur, when triturated with it, and is reduced by melting on burning coals. All the oxyds of lead vitrify easily, and, *in that state*, combine with all metals except gold, platina, and silver, so that it is employed in separating these from the baser kinds. The separation takes place in a cup, made of the earth of bones, called a *cupell*, through which the vitrified lead sinks, and is recovered again in brilliant reddish scales, called *LITHARGE*, q. v. Lead combines neither with carbon, hydrogen, nor azote; but readily with sulphur and phosphorus, and most of the metals, particularly gold, platina, silver, mercury, copper, and tin. It also admits of an union with oils, see *NUTRITUM* and *EMPLASTRUM*.

The acids unite in general with lead, but the salts have not been carefully examined. They are, in general, insoluble in water, without an excess of acid; but the solutions of those which are soluble are transparent. All have a sweetish and somewhat astringent taste; and the lead is precipitated by sulphurated hydrogen and the hydrosulphuret of potash, in a black, but by the gallic acid in a white, powder. A plate of zinc, in a solution of lead, is covered with the precipitate in its metallic state. All its oxyds do not combine with acids: the white, however, unites with every acid; the brown apparently with the greater number, but its combinations have not been sufficiently considered.

The union of lead with the mineral acids is not easy nor rapid; and the salts are not used in medicine. The phosphat, the fluat, the arseniat, the molybdat, and chromat of lead are equally strangers in the medical world. The carbonat of lead is formed by the union of the carbonic acid with its oxyd; most readily by precipitating the calx from the nitrat of lead, by carbonated alkalis. It occurs, native, in large quantities, and it is the state in which the lead appears, when a white powder is formed in leaden cisterns which contain water, at the surface where it is contiguous to the metal: it contains about 15 of acid and 85 of oxyd, and is wholly insoluble in water.

The acetous acid does not attack lead in close vessels, and only oxydates it when in contact with the acid

and the air; but the oxyd is immediately dissolved as it is formed. This is the sugar of lead, the extract of saturn, and Gowlard's extract, as at present prepared. It is usually in the form of small needlelike crystals, which are four sided prisms, terminated by dihedral summits, sparingly soluble in water, unless with an excess of acid; decomposed by heat, the sulphuric, phosphoric, muriatic, fluoric, oxalic, malic, and tartarous acids, which form a salt nearly insoluble in water. The *malat* of lead is, however, soluble in the acetous, and weak nitric acids. The *lactat* of lead is soluble in water; and the *sebat* soluble in water and the acetous acid. Neumann asserts, that the acetite of lead is susceptible of fermentation, and that in consequence of it a spirit is produced.

The oxyds of lead are employed in coarse earthen ware, as glazing, from their power of sinking into the body of the ware, consequently being less subject to scale. We know of no experiments made on this oxyd. We once kept vinegar on a dish of this kind for twenty-four hours, in summer, without being able to distinguish, by the nicest tests, any saturnine impregnation. Sand is often mixed with the calx of lead, which probably preserves the metal from the action of the acid.

Lead, taken in any quantity internally, is highly deleterious to every animal: externally it is sedative, discutient, perhaps astringent. It destroys irritability, probably sensibility, and is on this account highly useful in external inflammations, in bruises, and those irritable sores which are highly painful and distressing. Internally the preparations of lead lessen the irritability of the arterial system, relieve internal hæmorrhages and spasms. Its effects, however, on the intestinal canal prevent its free and unlimited use; for by destroying irritability it produces what is termed the dry colic, or the colic of Poitou, terminated by nervous spasms, convulsions, and death. From the period when sir George Baker discovered lead in the Devonshire cider every benevolent heart caught the alarm, and so numerous were the ways by which they supposed lead might be taken, that we could scarcely eat or drink from apprehension. It would fill several pages to detail all the terrors of authors; but we shall add a specimen of their observations, with some remarks.

The diseases in the bowels, followed by palsy, which attack smelters, and the various manufacturers in works where preparations of lead are employed, plumbers, painters, and printers, are known to arise from lead; and wines, or cider, when acid and rendered mellow by the saccharine quality of the metal, may undoubtedly be injurious. It is said that the leaden dishes in which apples are pressed in making cider, communicate to the liquor a saturnine impregnation, and the consequence cannot be denied; but it is comparatively rare. If the carbonat of lead was soluble in water, or a weak spirit, we could easily imagine that the oxyd formed in the dish of a pound might be carried into the vessel, and dissolved by the carbonic acid formed during fermentation: it remains, however, to be proved whether supercarbonated lead may not be soluble in cider. Yet this is very improbable, for cider colics are rare even in Devonshire, almost exclusively confined to those who drink the harsh cider made from unripe fruit; and we know that such cider will produce the Devonshire colic

when no lead is employed in the pounds. If a salt of lead is formed in the dishes, it must be a carbonate or a malat of lead. The carbonate is wholly insoluble in water, and the malat insoluble, except in the acetous acid. Such salts, meeting with the acid of a sour apple, may undoubtedly be dissolved in cider; and if such colics arise from lead, they are produced in this way; but the various coincidences which must take place to render the cause efficacious, will show that the effect must be rare, and it is truly so. It is asserted also, by many authors of credit, that saturnine applications to wounds have produced the most violent colics, and we cannot deny it, but must add, that, by some singular fatality, surgeons of the most extensive experience in a large hospital, and no inconsiderable circle of private practice, have never met with a single case of this kind. To the effects of lead on the bowels, these benevolent and timid practitioners have added cardialgia, vomiting, dyspepsia, pains in the limbs, resembling rheumatism, hæmoptysis, terminated by a suppuration of the lungs, a metastasis of morbid matter from the hands to the breasts, in females, palpitation, anxiety, fainting, convulsions, epilepsy, gangrene, atrophy, and death. It is singular that they have not added one effect which we have often seen, viz. bilious accumulations, in consequence of costiveness. In reality, colic pains, with such accumulations, obstinate costiveness and palsy of the hands, the latter preceded often by pains in the arms, and nervous debility, are the only symptoms of this poison.

Undoubtedly the vapours of lead from the smelting houses are injurious, not only to vegetable but animal life, within the reach of its noxious effluvia; but it requires a strong faith to believe that birds of almost every kind have died from drinking water out of a dish glazed with litharge. Dogs may undoubtedly lick up the oxyd of lead from dishes of that metal, where water has long stood, but they will scarcely lick it from clothes; nor will doves suffer from eating particles of lead, chickens from drinking milk from a leaden vessel, or birds from picking seal-wax. In the human body it is equally absurd to speak of the danger of leaden pumps, leaden cisterns, the tinning by which copper vessels are covered, which contains a portion of lead or of pewter. The oxyd produced, if such vessels contain water, we know to be insoluble, and in no instance are they, we believe, employed to hold vinegar, except the tinned copper vessels, which contain lead only in the solder, and so intimately combined with bismuth as not to be affected by the acid. Milk, suffered to become sour in leaden vessels, is, we suspect, a rare occurrence; and butter in such vessels rather grows rancid than acid. Sour milk is the acetous acid, and the solubility of a lactate in water does not apply to it: we have seen, also, that even the acetous acid, when the access of air is prevented, will not dissolve lead.

The distillation of spirits through leaden tubes, and even lining the chamber which receives the oil of vitriol, when sulphur is burnt, or the lead which the ores of the white vitriol may contain, we know, from the more correct chemistry of modern times, can produce no effect on the human body, as lead will not combine with either. The metal itself has been swallowed with impunity, nor can it meet with a menstruum in the stomach, which, without the access of atmospheric air,

can dissolve it. We once heard a medical gentleman assert, that the coagulated fat which swam on the gravy of roasted mutton, on a pewter dish, contained lead, and should be taken off; and Dr. Hardy, from misunderstanding a passage of Pliny, has gravely observed that boiling cabbage in a *tinned* vessel would dissolve the lead in it. Such are the absurdities detailed when all the terrors are alive.

It is undoubtedly necessary to guard against the poison of lead with more anxious care, as its noxious quality is not betrayed by the taste like that of copper; but the properties of its salts, and the relation of the metal to the different acids, which we have anxiously pointed out, will show the folly of supposing that it can be introduced into the system in the greater number of ways described. The mode of discovering it, pointed out by ancient authors, is equally ridiculous, viz. a whiteness and sweetness in the water. The oxyd is indeed insoluble; and if suspended may render water turbid, but its specific gravity will soon precipitate it. Sweetness it cannot impart, unless combined with the acetous acid, which either in wells or in the atmosphere it cannot meet with. The water which arises from the springs in the neighbourhood of Edinburgh, after rains, used to be white and sweetish, without the slightest suspicion of lead. The Bristol waters are soft, approaching to sweetness, without any such impregnation. The best tests of lead are, however, the hepar sulphuris; the hepar antimonii; or the hepar sulphuris arsenicale, dissolved either in water or spirit. They should be used soon after their preparation, or a portion of the sulphur is deposited; and the darker fluids, as wine, should be diluted previous to the experiment. If the liquor to be tried contain chalk, or tartar, the precipitate will afford an uncertain conclusion; and the colouring matter of wines, if such has been used, will often give the appearances supposed to arise from lead only. The *liquor probatorius fortior* of Hahneman is the most certain test, and we shall add the process for preparing it.

Two ounces of acid of tartar are to be dissolved in sixteen ounces of warm water, adding two drachms of calcareous liver of sulphur, very dry, and finely powdered. These must be shaken together in a bottle for ten minutes; and after half an hour the clear fluid decanted into another bottle, which contains about half an ounce of the acid of tartar. The whole must be shaken together, and, after standing one night, decanted into small bottles, to be very carefully stopped.

The means of relieving diseases which arise from the unsuspected introduction of lead properly belongs to the head of poisons; but since they sometimes happen from using it as a remedy, it will probably be more convenient to speak of it in this place.

In what manner the lead is dissolved which is handled only we cannot say. Its absorption is assisted by heat, and it is not injurious unless from constant employment, and then only in particular constitutions. Numerous are the printers, glaziers, and painters, who have never suffered from the saturnine colic, and there are in reality few who ever experience it. The state of the metal, when it colours the hands, is not known. It seems to be an imperfect oxydation, with which we are not acquainted, similar perhaps to that state of mercury when it assumes the appearance of a black powder.

Is it an union of the metal with the electric fluid? The means of preventing it are simple and obvious. When glaziers' lead is flatted in a mill it comes out warm, and this part of his business should be always performed in gloves: indeed these should be constantly worn in every part of his work which will admit of them. The printer cannot employ gloves; but if he feels any inconvenience, it will be a sufficient preservative to wash his hands with soap and water whenever he leaves his work for his meals, and perhaps to smear them slightly with oil when he begins. The painter should have water always at hand, and wash off immediately every atom of paint which accidentally falls on it. Each will find fat meat, particularly fat bacon, in a morning useful; and occasionally, if costive, a dose of castor oil, or two ounces of olive oil, may be taken. By these simple means we have preserved the health of many who have been constantly employed in either business, and experienced repeated attacks of a colic.

When symptoms of a saturnine colic, the first effect of lead, come on, oils, mucilages, diluents, and warm water impregnated with hepatic gas, are recommended; while stools are to be procured by cathartics, particularly castor oil. Without meaning to impeach the propriety of these directions, which are sanctioned by the first names in medicine, we would only contrast the empirical practice of the Devonshire farmer, which we have known to be successful, viz. equal parts of brandy and oil of turpentine. If indeed the irritability of an organ be destroyed, an active stimulus is apparently the best means of restoring it; and if restored, milder purgatives will more certainly succeed. We have never found the oleum ricini sufficiently powerful without the aid of large doses of calomel; though the most active purgatives which have been recommended are the oil, magnesia, the bitter purging salt, and soda phosphorata (see COLICA.) We forgot to mention, when speaking of the colica Pictorum (the colic of the Picts, as Dr. Wallis wisely translated it, who added that the Picts were subject to it,) that the abdomen is usually retracted; and we lately found this symptom an important one, in distinguishing the lead colic of a glazier from a common bilious one, during an highly bilious constitution.

Lead is now almost banished from the practice of medicine as an internal remedy, and the courage of Dr. Reynolds has been spoken of with warm commendation when he ventured to order a single grain of acetated lead. We know, from experience, that it is by no means the hazardous remedy which it is generally supposed; and have given five grains two or three times a day without any disadvantage, interposing only a dose of the oleum ricini every two or three days. It was formerly given in headaches in a much larger dose, and then certainly brought on the dry colic. We strongly suspect, however, that our apprehensions have precluded us from an active remedy, though we would not recommend its use, except under the immediate inspection of an experienced, attentive practitioner.

Lead in its metallic form is rarely used, except sometimes in probes to keep wounds or perforations from closing. The ancients, however, recommended laminae of lead to be applied to the loins in nocturnal pollutions, to discuss scrofulous glands, and scirrhi, threatening

cancer, as well as to give a support to weak joints, and to compress wounded arteries. Malouin (*Chimie Medicinale*, vol. ii.) and Fernellius mention the practice of some quacks who have given small scales of lead to cure leucorrhœa, hæmorrhages, syphilis, and even gout. Van Helmont recommended small bullets in ileus, a practice which Naudeau imitated with success. We shall, as in our former articles on metals, first speak of the more usual preparations, and then shortly notice the forgotten formulæ of ancient pharmacists.

CERUSSA, or WHITE LEAD; *dulcedo saturni, aboit, affidra, arsiora, blanca, effides, pnymmithion, psilothrum*, is, as we have said, the first degree of oxydation, and usually prepared by exposing plates to the fumes of wine or vinegar, assisted by the heat of a dunghill. It is used as a cosmetic, but destroys the colour and the smoothness of the skin, injures the teeth and the constitution. It is adulterated with chalk and lime, so that the flaky masses called *flake lead* should be chosen. The weight will discover the adulteration, or the muriatic acid dissolve what chalk it may contain. If this test be not satisfactory, the lead itself may be reduced by calcining four parts of ceruse with two of fixed alkali and one of charcoal dust, and its proportion will show the purity of the suspected oxyd. This preparation was used in school of the Asclepiadæ at Rhodes, and recommended by Dioscorides, externally to destroy slight excrescences, to heal wounds, ulcers, and excoriations, and to relieve pruritus. It has been also employed in erysipelas, in discharges from behind the ears, and to check the fetid perspiration of the feet; but in each case the most fatal effects are said to have followed.

Pulvis æcerussa compositus, collyrium siccum, pulvis cerussa, is prepared by adding to five ounces of cerussa one ounce and a half of sarcocolla, and half an ounce of tragacanth. (Ph. Lond. 1788.) An improvement of the white troches of Rhazes, and used in inflammations of the eyes.

Vinegar of litharge is made by digesting four ounces of litharge, in a pint of the strongest vinegar, in a sand heat for three days, shaking the mixture occasionally. It is not essentially different from a solution of cerussa acetata, though seldom pure, as the litharge generally contains a portion of copper. When this vinegar of lead is diluted with a large proportion of water, it relieves external inflammations from burns, bruises, &c.; itching and other uneasiness in cancerous ulcers; and, before Goulard recommended it, was used for bathing inflammations of scirrhus tumours to prevent their becoming cancerous.

The acetum lythargyri was also used as a secret remedy to stop bleedings, and cure scirrhus tumours. It is said even to have cured cancers, and to have prevented impending gangrenes.

MINIUM; RED LEAD; *acastum; alumboti*. The state of the lead in this form has been already explained. Its preparation is a distinct business, and its makers melt large quantities of lead at once upon the bottom of a reverberatory furnace built for the purpose, so that the flame acts upon a large surface of the metal, which is continually changed by raking it backward and forward until the fluidity of the lead is destroyed; the calyx is afterwards only occasionally turned. Red lead

is often adulterated with red oker, which is discovered by melting it as directed for discovering adulterations in white lead, omitting the alkali.

Saccharum saturni; cerussa acetata; sal, dulcor, mel et magisterium saturni. Take of ceruse, a pound; distilled vinegar, one gallon and a half; boil the ceruse with the vinegar until the latter is saturated; then filter through paper; and after proper evaporation set it aside to crystallize. (Pharm. Lond. 1788.) Repeat the evaporation and crystallization until no more crystals are formed. The ceruse should be finely powdered before the vinegar is added; and during the boiling it should be frequently stirred with a wooden spatula. The strong acid which remains after distilling vinegar is the most useful. If the heat is considerable, the acid will be dissipated before it combines with the lead. It will be sufficient that the vinegar be hot. When the solution is exhaled for crystallization, a small quantity of rectified spirit of wine may be added.

In all the intentions of the aqua lithargyri acetati, the sugar of lead may be used; and of all the preparations of lead for external use, cerussa acetata is perhaps superior to any, for we are much more certain of the strength of this preparation than of any other. The best mode of applying it is prescribed by Mr. Bell, in his Treatise on Ulcers, edit. 3. p. 43.

Whether this salt be employed in solution, with eight parts of water, as usually directed; or with oil of turpentine, which becomes red, styled by Crollius *bal-samum plumbi*; with olive oil of camomile and water, or other liniments, it is useful in every complaint for which the preparations of lead have been recommended. The various inflammations, even the erysipelatous ones, have been, it is said, relieved by this remedy, externally applied. What comes near to this external application is its use in inflammations of the throat; and in aphthæ, applied by means of a camel hair pencil; warmly recommended by Raulin and others, though not supported by more judicious practitioners. In gonorrhœa and leucorrhœa it is used as an injection when dissolved in water, sometimes with camphor; and after a little time with vitriolated zinc. Girtanner employs it, adding to each ounce of the solution thirty drops of the spiritus nitri dulcis, in which from three to eight grains of opium have been previously combined. In OPTHALMIA, q. v. its use it well known.

In swelled testicles it is a very advantageous application; and in scorbutic ulcers, combined with opium and the white of an egg. It is highly commended in cancers; in foul ulcers; in hæmorrhages; in hysterical attacks, applied on wet rags to the abdomen; in diarrhœas, added to clysters; and in excess of lust, applied to the pubes.

As an internal medicine it has been warmly commended, and as eagerly decried; nor need we stay to enumerate the authorities on either side, since the general opinion has decided on its danger. It has been generally used in hæmorrhages, and all increased evacuations; in hectic; in gonorrhœas: in night sweats; in intermittents; in internal inflammations; in furor uterinus; mania; melancholia; hypochondriasis; headach; dropsies; diseases of the spleen; and more lately in America in chorea hystera; epilepsies, &c. Various have been its combinations for these different complaints,

and various its doses, from a quarter of a grain to half a drachm. To detail them minutely would be useless, since we cannot recommend the imitation.

Extractum saturni, aqua lithargyri acetati, is prepared by gently boiling equal parts of litharge and vinegar for an hour and a quarter. If boiled longer after its separation from the mass, it is styled an *extract*. The London college call it *aqua lithargyri acetati*, and order two pounds four ounces of litharge to be mixed with one gallon of distilled vinegar, boiled to six pints, constantly stirring, then to be set aside; and after the fæces have subsided to be strained. Pharm. Lond. 1788.

Of this a cataplasm is made by adding ʒi. of the water to one pint of rain water, and a sufficient quantity of bread crumbs to form a poultice. It is applied in local inflammation; commended in cancerous and scrofulous cases; for improving the state of unhealthy sores; and in milk tumours of the breast. Of this acetated litharge the *cremor lithargyri acetati* is formed, by adding one drachm of the water of acetated litharge to one ounce of cream; of service in external ophthalmia, applied upon linen rags. It is powerfully sedative, and useful in burns or scalds from the great degree of cold attending its application.

Cerussæ injectio composita. R. Pulv. Ceruss. comp. ʒi. zinci vitriolati gr. vi. aq. rosæ ʒiv. m.; an useful injection in the inflammatory stages of gonorrhœa.

Cerussæ linimentum cum sapone. R. Solutionis saponis ʒij. aquæ lithargyri acetati ʒi. m.; a good application for diseased joints, and for bruises with deep seated inflammation.

Aqua saturni, is called by Goulard the *vegeto mineral water*. He makes it by dropping into a quart of pure water an hundred drops of the extract of saturn, adding four tea spoonfuls of brandy. This is his specific in external inflammations, particularly of the eye, for washing ulcers, cancers, scrofulous tumours, contusions, phlegmons, erysipelas, piles, chilblains, tetters, gangrenes, &c. A solution of the cerussa acetata will probably have the same effect.

Ceratum saponis was introduced into practice by Mr. Pott, and is made by boiling gently together a pound of litharge finely levigated; a gallon of vinegar; and eight ounces of soap, till all the moisture is evaporated. To this must be added a pound of yellow wax, and a pint of olive oil, previously mixed by melting, and the whole must be assiduously stirred from the beginning. It is a convenient and useful dressing for fractures and ulcers; and is nearly the same as Marshall's cerate, though we shall approach nearer to it in another preparation.

From the proofs of the fondness of the ancients for the preparations of lead already given, it will be expected that the ancient formulæ, particularly the external ones, will be numerous. We were indeed surprised at the extent of our list, but shall abridge our account so far as will be consistent with a sufficiently exact and comprehensive view of the subject; and for the sake of perspicuity shall divide those, not already noticed, into oxyds, salts, solutions, plasters, and ointments.

Oxyds. The *magisterium plumbi vel saturni* is the white calyx, precipitated from the saccharum by spirit of wine, more frequently by potash. When vitriolic acid is employed it forms a vitriolated lead; when the

muriatic, a muriated lead, then styled *lac plumbi*. Each is recommended in phthisis, in stomach complaints; even in iliac passion and scirrhus of the liver: but at present both are neglected.

Precipitatum saturni is only the lead precipitated from the extract by dilution. It is used as a cosmetic, particularly in the little eruptions on the eyelids.

Plumbum ustum is prepared by adding a sixth part of sulphur to the lead, and calcining them together. It contains consequently some portion of the vitriolic acid; is of a grey colour, and was used in the age of Dioscorides. The *plumbi cineres* which have often the same appellation, and are used in a saturnine plaster, are prepared by merely roasting lead, without any addition. The *scoriæ argenti* contain chiefly lead, and are used with the same intention as the other calces of this metal.

SALTS. *Extractum saturni* is only the vegeto-mineral water, deprived of all its fluid. The *spiritus saturni*, or as sometimes called, *oleum saturni*, is the vinegar expelled from acetated lead by the strongest force of fire. It first comes over in a thinner, afterwards in an oily, form; at first yellow, and next of a darker colour. It seems to possess only the virtues of a very strong vinegar. It was formerly recommended in lepra, scabies, lues, and melancholia; but has apparently no peculiar virtue. Crolius gave three drops of the oil, mixed with wine, in colic.

Nitrum saturninum is prepared by dissolving three parts of nitre with two of acetated lead, and crystallizing the solution. It seems to be an astringent; is recommended in hæmorrhages, and by Schroeder in asthma. There is apparently little reason to suspect any decomposition, and the salts seem to crystallize together. If a double elective attraction takes place, the result will be nitrat of lead and acetated postash. If the preparation is so highly astringent as its admirers represent, this may be the case.

SOLUTIONS. Acetated lead in a fluid form* occurs under different titles. The *acetum saturni*, in old pharmaceutical authors, has sometimes a small proportion of nitrous acid added; and, combined with a little of the camphorated spirit, has been recommended as a clyster in diarrhœa. The *acetum cerussæ*, and *acetum minii*, sometimes called *tinctura minii*, are similar preparations. The latter is ordered by Salchow in a dose of four drops, four times a day, in a case of gonorrhœa, while the vegeto-mineral water was constantly applied to the testicle, which at the same time was swollen.

The *extractum saturni* of Janin is made by evaporating the acetum lythargyri to the consistence of a paste. Two parts of this extract are then diluted with sixteen parts of warm water, and the whole kept in well stoppered phials. It is supposed to be superior to Goulard's extract in inflammations of the eyes; and when used, four drops of the extract, with three of camphorated spirit of wine, are added to an ounce of water.

Goulard's extract is also an inspissated vinegar of lead, again reduced to a fluid form by the affusion of water. It is only used in this state, except when the author seems to have applied it of a thicker consistence, approaching that of a plaster, to an inflamed tumour of the breast. The extract is employed in all cases where the acetated cerussa has been recommended; and when joined with one third of oil of turpentine, one half of axunge (of a hare), and one forty-eighth of petroleum,

has been applied with success to scrofulous swellings. Added to the extracts of hemlock, henbane, and opium, it is said to have relieved swelled testicles. Bell has recommended it in prolapsus of the iris, as well as in scrofulous, spongy, and torpid ulcers. An anonymous German author speaks of it in terms of commendation, when joined with soap, and applied to cancers; and with aromatics to tumours of the arm. In fomentations, with warm astringent decoctions, it is said to relieve incontinence of urine from a debility of the sphincters, phymosis, paraphymosis, ulcers of the penis, and bubos.

The vegeto-mineral water of Goulard is only the diluted extract, with a double quantity of spirit of wine, that is, double the quantity of the extract. It is recommended in almost every disease already mentioned, and many others, particularly in erysipelas from an external cause; burns of every kind; the bites of insects; gun shot wounds; prolapsus of the rectum; incarcerated hernia; venereal complaints; sinous ulcers; ozæna; fistula lachrymalis; and tumours either glandular or of the joints. Other authors confirm, in part, the various virtues of this fluid; and Salchow adds, that pains in the teeth are relieved by rinsing the mouth with a diluted solution of it, and even gouty pains alleviated. Goulard recommends from twelve to fifteen drops, diluted with a measure of water, in heat of urine, an involuntary discharge of semen, gonorrhœa benigna, and even dysentery.

The *lac virginis* is the same as the *lac plumbi*, formerly mentioned, viz. the acetum plumbi, from which the lead is precipitated by means of alum, or common salt. The *fisoricum Galeni*, whose use is known from its title, is a solution of lead with double its weight of chalcitis, a vitriolated iron, or an oxyd of iron, in vinegar. The *oleum saturni* is made by dissolving the saccharum saturni again in vinegar, crystallizing it, and suffering the crystals to deliquesce in the air. The *tinctura antiphysica* was not long ago in an Edinburgh dispensatory, but deservedly neglected. It is an useful astringent, but owes its virtue to the salt of iron, for the lead is almost completely precipitated.

PLASTERS. These are uncommonly numerous, for preparations of lead have been added to plasters of almost every kind, since the time of Dioscorides. A list of the titles only would be unsatisfactory, and to describe the formulæ would be tedious, for near eighty different plasters have been enumerated. We shall omit them also for another reason. In the form of a plaster the lead is so intimately involved with the wax and oil, that it scarcely exerts its peculiar powers; and by far the greater number owe their utility to the other ingredients.

THE OINTMENTS, including the CERATS, exceed forty, but we shall only enumerate a few of the most important. The *unguentum è cerussa acetata*, the *nutritum*, and the *ceratum saponis*, have been already noticed.

The *unguentum ad ambusta* of Juncken contains cerussa, camphor, powder of olibanum, and oil of roses, with the white of an egg; but that of Jurine is more neat and effectual. A drachm of litharge is dissolved in an ounce of olive oil, to which is added an ounce of wax, and a scruple of opium. In lax, spongy ulcers, the proportion of litharge is increased; and in case of violent pains that of opium is larger. The *unguentum apostolorum* of the Wirtemberg pharmacopœia contains turpentine, with a numerous host of resins and

gum resins of a tendency opposite to that of lead. Bar-bette's *unguentum ad cancrum ulceratum* is rather an astringent preparation than a saturnine. The union of the lapis calaminaris with lead is not uncommon; and the *unguentum à lapide calaminario* of the Swedish, the *desiccativum rubrum* of the new dispensatory, *unguentum de tutia* of Juncken, *unguentum fuscum* of Wurtzius, and *griseum* of Juncken; are of this kind. The *unguentum hæmorrhoidale noricum*, as well as that of *Wedelius*, each contain camphor added to the calces of lead; and in the former is also a proportion of opium. The *unguentum à minio camphoratum* of the Wirtemburgh dispensatory is a similar formula, but containing a larger proportion of lead in different forms; very nearly resembling *Marshall's cerate*. The *unguentum mundificans* of Stahl is made by amalgamating lead with quicksilver in equal parts, to which is added the terra tripolitana, and the unguentum album camphoratum. The *unguentum ad ophthalmiam siccam* of Senertus contains litharge, camphor, and aloes: it is applied on the eyelids, chiefly in ophthalmia tarsi. Numerous are the *unguenta ad scabiem* which contain lead. In that of the Wirtemburgh dispensatory we find also styrax, oil of laurel, and mercurius precipitatus albus; in that of Schroeder, turpentine, common salt, and sulphur; in Juncken's turpentine, styrax, common salt, and juice of lemons.

The *cerats*, as the name implies, are of a greater consistence than the ointments, and for the reasons before assigned probably less useful. The *ceratum à minio*, however, of the Wirtemburgh pharmacopœia, contains camphor; and is said to be highly useful in burns, in inflammations, and in the troublesome suppurations which sometimes arise from blisters. The *ceratum saturninum* of Goulard contains one part of his extract, four parts of yellow wax, and four parts of expressed oil. If a portion of the zincum ustum be added it is said to be more efficacious, and the most fetid ulcers to have been cured by it; taking internally small doses of muriated mercury, or drinking freely of an infusion of malt. Cerated linen spread with a plaster composed of extract of lead, camphor, and wax, are said to be useful in rheumatic and gouty pains; as well as in tumours of the head, from external violence, buboes, and chilblains.

From the very extensive list of saturnine applications employed from the time of Galen to the present moment a fair inference may be drawn, that the external application of lead is not injurious to the constitution in general. Dr. Percival, Stoll, and some others, contend, that it has been occasionally so; and Tode, with a long list of authors on the opposite side, with the consent of the experience of more than 2000 years, declare their innocence. When we add the reflections already suggested, that, even applied to the stomach and bowels, it is less deleterious than has been generally supposed, perhaps imaginary terrors respecting its application will cease.

We may now enlarge a little more fully on its action. All the metals, we have said, are tonics, though we have reluctantly excepted lead. Yet when we consider the various tonics which we employ, we shall find room for suspecting them to contain a narcotic quality. The Portland powder, which was long continued, showed a strong narcotic power; and all bitters, if not occasionally remitted, seem to impair the tone they

were intended to restore. May not then tonics act chiefly by repressing irritability; for though irritability originates in weakness, its continuance leads to its exhaustion? If lead then checks irritability, it may be considered as possessing, in one view, a tonic power; and of course not to differ from the other metals. If then, as we have said, iron is a tonic possessing an inflammatory stimulus, lead, on the other hand, may be such, combining also a power purely sedative. The discussion we must, however, resume, vide TONICA.

Can then its tonic power be obtained without its sedative? or can its sedative effects be procured without endangering the destruction of irritability in the intestinal canal? These are questions which we dare not answer fully, lest we should lead to dangerous, unwarrantable experiments. In the course, however, of this enquiry we have been led, from occasional facts recorded or incidentally mentioned, to think that the combination of mercury, perhaps of iron, may counteract its sedative power; and, from our own experience, we know the interposition of oily medicines will probably preserve the intestinal canal from injury. The stimulus of many spices are confined to the alimentary canal only; and these interposed may perhaps prevent injury from lead. Such reflections may lead to a cautious trial; for a medicine so active, and which, with proper management, might prove so salutary, should not be neglected from imaginary apprehensions, or resigned till it clearly appears that no corrector can be discovered.

See Numann's Chemistry; Cullen's and Lewis's Materia Medica; Goulard's Treatise on the Effects and Various Preparations of Lead; Aitken's Observations on the External Use of Preparations of Lead; Bell on Ulcers, edit. 3. p. 36; London Medical Transactions, vol. i. p. 257.

PLU'MBUM NIGRUM. BLACK LEAD; *fabrilis nigrica; ochra nigra; wadt*. It hath none of the properties of common lead, except that of colouring in drawing lines. It is not now used in medicine, though formerly reckoned drying and repellent. Strictly speaking, in modern mineralogical language, it is phosphorated lead; but PLUMBAGO, q. v. is really meant.

PLU'MBUM CANDIDUM. See STANNUM.

PLU'MBUM CINEREUM. See BISMUTHUM.

PLU'MBUM RUBRUM. See ADROP and PLUMBUM.

PLUMME'RI PILULÆ. PLUMMER'S PILLS. Levigate calomel, and the precipitated sulphur of antimony, of each two drachms, together; add three drachms of the gum, and one drachm of the resin of guaiacum; mix them well, and make them into a mass, with the balsam capivi.

These pills, Dr. Plummer, in the Edinburgh Medical Essays, recommends in spots, pimples, and flushing in the face, virulent gonorrhœa, sciatica, rheumatism, lues venerea, ulcers with pains and swellings in the feet, scrofulous disorders, &c. The combination is undoubtedly an useful one; but too long continued triture renders the calomel less active. The ingredients should be rubbed slightly together; and we have sometimes directed the calomel to be beat in after the mass was made. Indeed their uses are the same as those of the ÆTHIOPICÆ PILULÆ; q. v.

PLU'MULA. A LITTLE FEATHER; (a dim. of *pluma*, a feather). See CORCULUM.

PNE'UMA, (from *πνέω*, to breathe). SPIRIT, AIR,

VAPOUR, or the BREATH. (See ANHELATIO.) It is also the appellation of a water called *scythiscus latex*.

PNEUMATICA. When the existence of an air, peculiarly pure, adapted to preserve life and flame for a much longer period than the atmospheric, was discovered, it was at once supposed that the universal medicine, so long sought, was found; and the sanguine expectations of physicians were still farther raised, when it was shown that it combined with the blood in respiration, giving it a more brilliant hue. Oxygen gas was consequently soon employed in various cases, particularly in hectics; but it was generally injurious, and appeared to increase the florid complexion, and the feverish heats, with all their distressing consequences. In fact it was soon found that this portion of the atmosphere, though necessary to support life, required to be lowered in its powers to prevent its too great stimulus; and we have at last discovered that the azote, the supposed injurious part of our atmosphere, contributes to some important functions, already hinted at, viz. the animalization of the nourishment taken in.

Yet the prospect was too fascinating to be relinquished, and the rapid discovery of various other gases kept expectation alive, and fed with delusive hopes the anxious expectations of the sufferers, and their sympathizing friends. We fear that the injudicious eagerness of some practitioners has contributed to render the disappointment still more painful, and the interested selfishness of others has prevented the discovery of the truth, by withholding the different facts necessary for its development. From the present state of our knowledge, little can be expected in medicine from the employment of factitious airs. We shall, however, shortly notice what experience has fairly shown, and point out those cases where expectations may still be fairly entertained.

The *oxygen gas* is highly stimulant, and, when frequently breathed, increases the irritability of the arterial system, often its tone. In still larger quantities it exhausts irritability, and acts like all stimuli in excess. Yet perhaps it has not been sufficiently tried in combination with air of a lower quality, particularly with carbonic acid gas, or in cases where the irritability of the system is too much diminished, as in chlorosis, scurvy, the cutaneous diseases of old age, in scrofula, &c. In some of these diseases the oxygenated salts appear to be useful medicines; and somewhat may be expected from breathing oxygenous gas, since dry elevated situations are often adapted to such complaints. Oxygen gas should be diluted with perhaps twenty times its quantity of common air, even in cases of diminished irritability, and with twice as much in others.

Carbonic acid gas has not been found efficacious in complaints for which pneumatic medicine has been employed, we mean in phthisis; nor has the air in the neighbourhood of lime kilns appeared particularly salutary, where this gas is copiously mixed with the air of the atmosphere. In other forms it has been found useful. From fermenting poultices it has acted apparently as a powerful antiseptic; thrown on foul ulcers, and occasionally on cancers, it seems to correct the fœtor and amend the appearance of the discharge; and similar effects have followed from washing them with water impregnated with this gas. Internally, in the form of yeast, it is said to correct putrid acrimony in the bowels.

The effects of the super-carbonated mineral waters in strengthening the stomach, and correcting symptoms of dyspepsia, have been frequently noticed.

The *hydrocarbonate* is prepared by decomposing water by means of hot charcoal. Its immediate effects are to produce vertigo, and it should be diluted previous to its exhibition, by about thirty times its quantity of common air. It renders a strong pulse more weak; but if the pulse be previously weak from disease, it will after some time render it slower and firmer, should its effects be salutary. It is said to be useful in hectics; but has not, we suspect, been tried in other complaints. It appears to be in general sedative, and occasionally narcotic; nor are its effects in hectics very different from those of digitalis. We are sorry to be obliged to add that we have never found it peculiarly advantageous.

Hydrogenous gas. The inflammable air of former authors, has had no fair trial as a medicine. Air of a lower temperature, and near marshes, where this peculiar gas appears to reside, is found useful sometimes in hectics, occasionally in asthmas. It has not probably been used in medicine, because it could not be breathed with safety, unless combined with oxygen; and in that state would be subject to explode. We do not recollect this union having been mentioned but by one author, who, speaking of the want of medical enterprise, observed, that if by the electrical spark such explosions were produced within the body, he knew "not what would be the consequence." In this opinion we cordially acquiesce.

Azotic gas. The mephitic air has been considered as so inimical to life, that we believe it has not been tried; but this gas, with a small proportion of oxygen, forms the *nitrous oxide*, which is said to act as a most pleasing stimulant, whose effects arise almost to intoxication without any subsequent languor. This air has not, however, been the subject of any experiments as a medicinal substance, so far as our information extends.

On the whole, perhaps, physicians were too much elated by the first discovery and the prospects it held out, and too soon disappointed by want of success. Much still remains in this department of medicine for a cautious trial. Yet we fear expectation may be again frustrated; for hitherto we have gained little by pneumatic medicine. It may be useful to add that Mr. Watt has contrived convenient portable apparatuses for these purposes, and has added suitable directions for using the different gases. See **AER**.

See Cavallo, on Factitious Air; Dr. Beddoes' Works; and Dr. Thornton's Communications on Pneumatic Medicine, in the Medical and Physical Journal, passim.

PNEUMATOCE'LE, (from *πνευμα*, wind, and *κηλη*, a tumour,) *hernia flatulenta* and *ventosa*; *pneumatosis*. A FLATULENT HERNIA, or WINDY RUPTURE, contains wind only in the herniary sac; but it is very rare. In some putrid fevers, in the small pox, and gangrenes, some parts of the skin frequently crackle like parchment under the finger; and in a very corrupted state of the fluids pneumatocele may be formed. Mr. Bell observes that the term is sometimes confined to a distention of the scrotum by a collection of air. This hath been described by ancient writers as frequent; but all the tumours they describe as containing air were watery or true hernias. That species of hernia to which young children are liable is commonly termed a wind

rupture, as well as the collections of water in the scrotum of new born infants. In wounds of the lungs, air is sometimes extravasated into the surrounding cellular substance, passing into the scrotum, and over the whole body; and in highly putrid diseases air may be separated from the blood, so as to distend the cellular substance of the scrotum, as well as of other parts; but a real pneumatocele has never, probably, existed as a mere local affection of the scrotum. In the case of air diffused into the cellular substance, in consequence of a wound of the lungs, small punctures with the point of a lancet are found to be sufficient for evacuating it. But whenever the disease is induced by such a degree of putrescency as will separate air from the blood, a plentiful use of antiseptics and corroborants is indicated; but the disease will scarcely yield to them.

Mr. Pott positively asserts that there is no tumour of this kind, and in this situation, in a living animal: it is indeed particularly described by many writers, both ancient and modern; but the complaint is either a true intestinal hernia, or a species of hydrocele, frequently a tumour produced by a small quantity of fluid remaining in the lower part of the tunica vaginalis, after its communication above with the cavity of the belly is closed; and a true, but a small, intestinal hernia.

Some late writers mistake the encysted hydrocele of the tunica communis, which connects the spermatic vessels for the wind rupture; though it differs from the wind rupture in its situation: but if the encysted hydrocele of the tunica communis is accompanied with an hydrocele of the tunica vaginalis, or with a true hernia, the case is with difficulty ascertained.

See Bell's System of Surgery, vol. i. p. 496; Parey's Works, vii. 16, 17; Pott's Chirurgical Works, quarto edit.; Cullen's First Lines, vol. iv.; Morgagni de Sedibus, &c. xliii. 35.

PNEUMATO'SIS, (from *πνεύματω*, to inflate,) is considered as a genus of disease including complaints which arise from air in any cavity. It contains the *pneumatoxis spontanea*, which arises without any evident cause, but usually from the separation of air in consequence of putrefaction; the *p. traumatica*, from a wound in the lungs, which suffers the air to escape into every part of the cellular substance; *p. venenata*, from poisons (see **VENENUM**); and *p. hysterica*, when the air is confined in the stomach and intestines. See **EMPHYSEMA**, **PNEUMATOCELE**, and **GASTRODYNIA**.

PNEUMATO'MPHALOS, (from *πνεύμα*, and *ομφαλος*, the navel). See **HERNIA UMBILICALIS**.

PNEUMO'NIA, (from *πνεύμων*, the lungs). An inflammation of the lungs, or its containing membranes. Dr. Cullen places this disease among the *phlegmasiæ*; defining it a febrile affection, attended with pain in some part of the breast, difficulty of breathing, and cough. The species are,

PNEUMO'NIA PERIPNEUMONIA. See **PERIPNEUMONIA**.

PNEUMO'NIA PLEURITIS. See **PLEURITIS**.

PNEUMO'NICA, (from the same). A sense of weight, or a load on the chest.

PODA'GRA, (from *πῦς*, a foot, and *αἴμα*, pain). See **ARTHRITIS**.

PO'DEX, (*à pedendo*, from breaking wind). The **FUNDAMENT**. See **ANUS** and **PRURIGO PODICIS**.

PODOPHY'LLUM PELTA'TUM, (from *πῦς*, a

foot, and *φυλλον*, a leaf, from its shape). See **ANAPODOPHYLLUM**.

PODOTHE'CA, (from *πῶς*, and *τιθημι*, pono). See **CHIROTHECA**.

POEGE'REBA. See **CORTEX POGEREBE**.

PO'HUN WATERS. See **SPAÆ AQUÆ**.

POINCIA'NA, **FLOWER FENCE**, *poinciana bijuga* Lin. Sp. Pl. 544; *frutex flavoninus*; *crista flavonis*; *acacia orbis American*, &c. grows in the east and West Indies: its seed pods, infused with galls, afford the best black ink; but no part of the plant is medicinal. See **Raii Historia**.

POLE'NTA, (from *pollen*, flower). See **ALPHITON**.

PO'LGAHA. See **PALMA COCCIFERA**.

PO'LIUM, (*πολιος*, white, from its white capillaments). *Teucrium* Lin. The two following have been noted in medicine.

PO'LIUM MONTA'NUM LUTE'UM, **SMALL UPRIGHT POLEY MOUNTAIN**; *teucrium polium* Lin. Sp. Pl. 792, α, is a small plant, with square stalks, oblong woolly leaves set in pairs, and labiated flowers.

PO'LIUM CRE'TICUM, *rosmarinum stæchadis facie*; *teucrium frutescens*; *t. creticum* Lin. Sp. Pl. 788; **TREE GERMANDER**; **POLEY OF CANDIA**. The leaves are set on short pedicles, not indented; the flowers stand in loose clusters, each on separate foot stalks.

The leaves and tops of each have a moderately strong aromatic smell, and disagreeable bitter taste. Distilled with water, they yield a small quantity of yellow essential oil; and the extract is very bitter. The leaves and tops are said to be corroborant, aperient, and antispasmodic. See **Lewis's Materia Medica**.

PO'LLEX, **THUMB**; *quod vi polleat*, because in power and strength it is superior to the other fingers. See **DIGITUS**.

PO'LLEX PE'DIS. **THE GREAT TOE**.

POLLINI'CIO. See **CONDIO**.

POLYADE'LPHIA, (from *πολυς*, many, and *αδελφει*, brother). The name of the eighteenth class in the Linnæan system; comprehending those plants which bear hermaphrodite flowers, with three or more sets of united stamens.

POLYA'NDRIA, (from *πολυς*, and *ανηρ*, a husband). The name of the thirteenth class of the Linnæan system, comprehending those plants which bear hermaphrodite flowers, with many stamens, from twenty to a thousand, growing single on the receptacle. The number of the stamens distinguishes this from the first eleven classes; their situation on the receptacle separates it from the twelfth class, *icosandria*; and their simplicity avoids all confusion with the sixteenth and eighteenth classes, *monadelphia* and *polyadelphia*.

POLYCHRE'STUS, (from *πολυς*, much, and *χρηστος*, useful). An epithet of several medicines, assigned to them for their extensive utility.

POLYCHRE'STUM, (from *πολυς*, and *χρηστος*, useful). See **GUAIACUM**.

POLYCHRE'STUM SAL. **SALT OF MANY VIRTUES**. See **NITRUM**.

POLYDI'PSIA, (from *πολυς*, and *διψα*, thirst). See **SITIS**.

POLYGA'LA, (*πολυς*, and *γαλα*, milk, from the quantity of its milky juice), *ambarvalis flos*; *amarella*; *polygala lutea* Lin. Sp. Pl. 990, **COMMON BLUE MILK-WORT**, is a small perennial plant, with the leaves

alternate, uncut, and those on the upper parts of the stalk larger than those on the lower: the flowers are irregular, tubulous, tripetalous, labiated, set in loose spikes on the tops, the cup composed of five leaves, the two larger of which continue after the flower hath fallen, and embrace, like wings, a flat bicellular seed vessel. The stalks of this common sort are procumbent; the lower leaves are roundish, the upper oblong, narrow, or pointed; the flowers are blue, purplish, or red; sometimes white, with a kind of fringed appendix on the lower lip; the roots are slender and hard. It grows wild in dry pastures, and flowers in July. The roots are similar in taste to the seneka, and said to have, in a less degree, the same effect in pleurisy.

POLYGA'LA SE'NEGA, and MARILA'NDICA. See SENEGA.

POLYGA'LA I'NDICA MI'NOR. See COLINIL.

POLYGA'LA VERA, *polygala major massiliotica*; *colutea caule genistæ fungoso*; *polygala vulgaris* Lin. Sp. Pl. 986, α. MILK-VETCH, used in infusion for increasing the milk.

POLYGA'LA AMARA, Lin. Sp. Pl. 987, is a narcotic bitter, and, like many others of this class, has been employed in phthisis pulmonalis, but with the usual success.

POLYGA'MIA, (from *πολυς*, and *γαμος*, *nuptiæ*). The twenty-third class in the Linnæan system, comprehending those plants which bear hermaphrodite flowers, together with male or female flowers, or both. This term, applied to a single flower, regards the intercommunication of its flosculi, as in the first, second, third, and fourth orders of the class *syngenesia*.

POLYGA'MIA FRUSTRA'NEA, (from *frusta*, to no purpose). The third order in the class *syngenesia*, comprehending such of the compound flowers as have perfect florets in the disk, producing seed, but imperfect ones in the ray, which are barren.

POLYGA'MIA SUPER'FLUA. The second order in the class *syngenesia*, in which the florets of the disk are hermaphrodite, and fertile; those of the ray, though female only, fertile.

POLYGONA'TUM, (*πολυς*, and *γων*, a joint; from its numerous knots or joints.) *Sigillum Solomonis*; *convallaria polygonatum*, Lin. Sp. Pl. 451, is a plant with unbranched stalks, oval, narrow leaves, ribbed like those of plantain, generally all on one side; on the other side hang oblong monopetalous white flowers, two or more together, on long pedicles, followed each by a black berry; the root, the part used, is white, thick, fleshy, with several joints, and some flat circular depressions, supposed to resemble the stamp of a seal. It is perennial, grows in woods, and flowers in May. The roots are said to be astringent, incrassant, and corroborant; if bruised and applied as a poultice, it dissipates the black colour from contusions. See Raii Hist.

POLY'GONUM, (from the same). KNOT GRASS; *calligonum*, *centinodia*, *carcinethron*, *corrigiola*; *polygonum aviculare* Lin. Sp. Pl. 519. The root is creeping and fibrous; the stalk and branches full of joints; the stalks recline towards the earth, are smooth, finely channelled, slender, and branched, full of knots or joints, from which grow long, oval, sharp pointed leaves. The root is cooling, astringent, and hath been used against internal hæmorrhages; externally against inflammations. See Raii Historia.

POLY'GONUM BISTORTA. See BISTORTA.

POLY'GONUM PERSICARIA. See PERSICARIA.

POLY'GONUM MINUS. See HERNIARIA.

POLYGY'NIA, (from *πολυς*, many, and *γυνή*, a woman). A class of plants, in whose fructification there are many pistils, the female organs of generation.

POLYMERI'SMA, (from *πολυς*, and *μερος*, a member). Supernumerary limbs or parts.

POLYMO'RPHOS, (from *πολυς*, and *μορφη*, a shape).

MULTIFORM. See SPHENOIDES OS.

POLYNEU'RON, (from *πολυς*, and *νευρον*, a string). See PLANTAGO.

POLYO'STEON, (from *πολυς*, and *οστέον*, a bone). The METATARSUS, which consists of many bones.

POLYPE'TALUS, (from *πολυς*, and *πέταλον*, a flower leaf). MANY LEAVED. See PETALA.

POLYPHA'RMACOS, (*πολυς*, and *φαρμακον*, a medicine; from its various uses). See POLYCHRESTOS.

POLYPHY'LLUS, (from *πολυς*, and *φυλλον*, a leaf). Having many leaves.

POLY'PODES, (from *πολυς*, and *πους*, a foot). See ASELLI.

POLYPO'DIUM, (from the same; on account of its numerous ramifications resembling a polypus. POLYPODY. *Polypodium vulgare* Lin. Sp. Pl. 1544, α, is a fern with long leaves issuing from the root, divided on both sides, down to the rib, into a number of oblong segments, broadest at the base; it hath no stalk or manifest flower; the seeds are a fine dust, lying on the backs of the leaves, in roundish specks, disposed in rows parallel to the rib; the roots are long and slender, of a reddish brown colour on the outside, greenish within, full of small tubercles, supposed to resemble the feet of an insect. It is an evergreen, grows in the clefts of old walls, rocks, and decayed trees. That produced on the oak is usually preferred, though not superior to the other sorts. It yields its virtue both to water and spirit; but the spirituous tincture is the sweetest, though the spirituous extract is only astringent. The leaves have a weak, ungrateful smell, a nauseous sweet taste, a roughness, and a slight acrimony. Its virtues are those of the fern; but it has been lately given in mania, though with little success, and is frequently used in the catarrhs of old people, as, like the fern, it unites a slight astringency with its demulcent qualities. The ancients supposed it to be a purgative, and peculiarly fitted to discharge pituita. They therefore depended on it in cases of melancholia.

POLYPO'DIUM TE'NERUM MI'NUS, *filix querna repens*, *polypodium dryopteris* Lin. Sp. Pl. 1555, OAK FERN; grows in marshy places. If the root is bruised, and applied to the skin, while sweating, it is said to take off the hair.

POLYPO'DIUM FI'LIX FEMI'NEA. See FILIX FEMINEA.

POLYPO'DIUM ANGUSTIFO'LIUM, *lonchitis aspera*, *filix foliis polypodii*; *polypodium lonchitis* Lin. Sp. Pl. 1548. ROUGH SPLEENWORT, grows in rough, uncultivated places. The root is aperient and diuretic.

POLYPO'DIUM FI'LIX MAS. See FILIX MAS.

PO'LYPUS, (from *πολυς*, and *πους*, foot,) *multipes*, MANY FEET. Under this title animals the most dissimilar are arranged; but at present we confine ourselves to the first class of the molluscæ, the coriaceous. (See MOLLUSCA.) Their characters are, a projecting head, a

fleshy body, covered with a coriaceous sac, or case, breathing by branchiæ, sexes separate, generally inhabitants of the sea, but sometimes found in rivers. The name conveys an erroneous idea, for the animal swims, and what have been styled feet are rather tentacula, or arms; and indeed very powerful ones, if, as we are told by Pliny, Ælian, and Aldrovandus, they can draw down and sink the tallest vessels. They are carnivorous, and falsely said to devour, from want of food, their own arms. Polypi are, however, chiefly remarkable as the connecting link between the animal and vegetable kingdoms, since, like plants, they are propagated by cuttings; and, as the cause of the greatest revolutions of the globe, we allude to the formation of new islands and continents, by some species of these minute animals which inhabit and produce corals.

It is not generally known that polypi were luxuries at Greece and Rome, considered also as highly nutritious and aphrodisiac. Machon's Epigram on Philoxenes is quoted by Athenæus. The poet is supposed to be dying of an indigestion, from eating almost a whole polypus, and having bequeathed his poetry, &c. concludes,

*Ut omnia mea abiens hinc auferam
Date mihi quicquid relictum est polypi.*

In the French imitation the fish is the sturgeon, and in the English, the jowl (of salmon). The jest was too good to be lost.

The Romans were particular in fattening it, and nice in their management. It discharged spontaneously sea water, so that no salt must be added; the flavour was contaminated by a knife, so that it must be cut with a reed. Polypi, it is said, are still salted in Dalmatia and Illyria, from whence they are brought to Venice, and the Greek priests dry them for their fast days. The ancients thought them carminative, as well as that they increased the secretion of semen. Ætius recommended them to those who were weak in the palestra. Diphilus and Paulus Ægineta observed, that they were highly nutritious and provocative. Galen gives a similar account. It is said also that the polypus was an ancient hieroglyphic. With its arms closed it represented caution and prudence; when extended, openness and dissipation.

When applied to the human body, the term implies coagulations and concretions of blood. The true polypus is only such a concretion of blood as consists of a whitish, fibrous, and pretty compact substance, formed from the gluten and fibrin, and differs widely from grumous or coagulated blood, which is called the *bastard polypus*. In Dr. Cullen's Nosology it is a synonym of *sarcoma*.

Polypi are seated in the sinuses of the brain, the ventricles of the heart, the jugular veins, the veins of the uterus, and in any large artery or vein, usually formed in the dying moments, though sometimes during life, from a sudden stagnation of the blood, in consequence of terror or surprise. Those which are the subjects of operation are seated in the nose, uterus, and vagina, and are instances of *sarcoma*.

Other causes are said to be large draughts of cold water suddenly drunk after being heated with exercise, a too free use of acids and of spirituous liquors, long continued grief, apoplexy, epilepsy, hysteric fits, or spasmodic asthma.

The signs of a polypus in the heart or larger vessels are, palpitation of the heart, often excited by a slight cause, as commotions of the mind, flatulent aliment, or costiveness; an unequal intermitting pulse, often accompanied with fainting, difficulty of breathing, or a fixed pain about the heart.

The palpitation of the heart, and the anxiety which so often attend, are caused by mental emotions, flatulent diet, costiveness, &c. which, by disturbing the equable circulation of the blood, hurries it towards the heart, and this muscle, from the obstructing body, cannot properly contract. The inequality and intermission of the pulse are owing to the same cause; for when a regularly contracting muscle is impeded in its action, spasmodic exertions are the usual consequence. Polypi happen more frequently in the right auricle and ventricle than in the left, and oftener in the veins than in the arteries; on account of the weaker contractile force and slower circulation. If from any temporary stoppage of the blood a very small part of the gluten concretes, it soon forms a nucleus for additional coagulation.

Polypi, by intercepting the circulation, are often the causes of sudden death; for a more violent and continued intermission is not soon followed by action, even in a healthy organ; but where such morbid obstruction exists, it is not surprising if the heart contracts no more. They also hasten some other diseases to a fatal termination, as peripneumonies, pleurisies, asthmas, catarrhs, consumptions, &c.

As it is impossible to dissolve them, we should be anxious to prevent their increase, and to avoid all violent mental emotions; every cause of increased circulation; to keep the bowels loose, and avoid, by the lightest diet, the stimulus of indigestion.

PO'LYPUS NA'RRIUM, UTERI, &c. *noli me tangere*. The sarcoma, often added, with little accuracy, as a synonym, is generally hard, not hanging by slender roots, but fixed on a large, immoveable basis.

The polypus of the nose is an excrescence whose branches spread among the laminæ of the os ethmoides, and the whole cavity of one or both nostrils. (See BUCCACRATON.) They spread on the laminæ spongiosæ, nearly as the hyatids on the surface of the liver, and proceed from any part of the nostrils, or those sinuses of the cranium lined with the same membrane.

Polypi occur in many organs besides the nose, as in the uterus, the throat, and the rectum. They differ from the former, as they are not merely masses of concremented gluten, but seem to possess independent life, though sometimes supposed to be the enlarged glands of the Schneiderian membrane. This opinion is, however, counteracted by their appearance in other parts, where there are no mucous glands, as in the uterus. No cause can be assigned for the disease. It sometimes appears constitutional, and occasionally hereditary; and is not the consequence of scrofula or lues. The pain is inconsiderable, except when the parts are distended by their increasing size. Hard polypi sometimes suppurate, and form malignant ulcers, which discharge a fetid sanies, but seem not to become truly cancerous. Those tending to such ulcers are usually of a livid hue, and are frequently painful.

Different polypi, and the same at different times,

appear of different sizes and consistencies: their elongation is sometimes very rapid; at others they are stationary for some years. The soft polypi in the nose contract from the constant access of air, but the hard ones are not affected. Each kind is plentifully supplied with blood vessels. The increase may be sometimes prevented by astringent applications, as a solution of alum, or a decoction of oak bark; by alcohol and vinegar. Mercury generally aggravates the complaint, and caustics are of little service, though they sometimes appear to lessen the softer polypi, and destroy small remaining portions.

When a polypus appears soft, and of a pale colour, without pain, it is in the most proper state to extract, and the operation best succeeds, as it has rarely more than one attachment, which is very small. This must be brought away with the polypus, and is easily effected if the forceps can reach or approach near to it. If hard, and apparently scirrhus, it has generally a broad basis, and cannot be extracted. The attachment of the former kind is usually in the anterior parts of the nose; but of the latter in the posterior and higher regions. That kind which is involved with the foramina of the ethmoid bone cannot be extracted. Wherever the polypus appears, it must be extracted anteriorly, for few can bear the introduction of the forceps up behind the uvula.

Mr. Sharp directs the following method of performing the operation: "Introduce a pair of forceps, with a slit at their extremities, for the better hold, an inch and a half up the nostril, to secure the polypus as near the roots as may be; then twist them a little from one side to the other, and continue this action while you pull gradually downwards; if it breaks, repeat the extraction as long as any remains, unless it is attended with a violent hæmorrhage, which is an accident that sometimes happens, and rarely fails, if the polypus is become scirrhus: this hæmorrhage is soon abated by the contraction of the vessels, or the application of lint dipped in some styptic." It may be known that the polypus is removed, 1st, by the sight; 2dly, by the voice; and, 3dly, by the freedom of respiration through the nose. In introducing the forceps, it is difficult to avoid the ossa spongiosa; but for this purpose, the beak of the forceps must be kept as near as possible to the os palati. When the operator draws away the polypus, he may generally bring it away whole, if he draws and moves it very gently. If any part remain, the lunar caustic will destroy it. The ligature, when it can be applied, is often more successful than the forceps.

See Poterius, Rulandus, Wedelius, Celsus, Ægineta, Albucasis, Sennertus, Glendorp, Malpighius, Hoffmann, Levret, Le Dran, Sharp, and Heister. On the use of caustics, Loeffler Beytrage zur Wundarzneykunst, who recommends butter of antimony, and the same work on the extirpation of polypi. For the use of the ligature, Hasselberg Commentatio Chirurgica. See also Bell's Surgery, vol. iv. p. 90; London Medical Transactions, vol. i. p. 407; London Medical Journal, vol. vi. p. 252; Pott's Works, 4to.; White's Surgery, p. 253.

POLYSA'RCIA, (from *πολυς*, and *σαρξ*, *flesh*). *Obesitas; corfulentia; steatitis* Vogel. Dr. Cullen places this disease among the *intumescencia*; and de-

scribes it, a troublesome pinguedinous enlargement of the body.

The cellular membrane of the body is supposed to be distinguished from the adipose by some peculiar structure, which adapts it for retaining the particles of oil secreted from the blood; but no such difference has been demonstrated, unless perhaps in the size of the cells. It appears, however, from the disease before us, that the fact may be collected in every part of the cellular substance, and that the great distinction arises from the greater or less motion to which the parts are subject. Thus the fat, in stall fed oxen, will be accumulated even in the interstices of the muscles in large quantities, while, in the hare, where the loins are considerably exercised, it is rarely found even around the kidneys, or in any other part. Fat is often accumulated in the omentum; but in the fœtus the cells of this membrane contain only a gelatinous fluid, and fat is freely deposited under the skin. The latter certainly depends on the inconsiderable motion of the fœtus; the former is not easily explained. (See *ADIPS*.) The cause which occasions the accumulation of this oily matter has not been ascertained. The disease is, however, often constitutional.

Fat people are in general dull and inactive, subject to pains in the head and difficulty of breathing, apoplexies and palsies; sleep long and heavily, but are proverbially cheerful and good humoured. As it contains an acid, it has been supposed that the disease is owing to an excess of oxygen; but it more commonly occurs in low close situations to those who use little exercise, to butchers, cooks, brewers, and those who drink beer imperfectly fermented.

Its best remedy is exercise, but fat people are usually inactive. If, however, a firm resolution can induce the fat person to abridge his meals and his sleep, and use steady, constant exercise, he may soon lessen his bulk. This, however, should be done with moderation, or he will otherwise injure his constitution. Cyder drinkers are seldom fat, so that he should adopt that beverage.

The fat person should not only abridge the quantity of his food but lower its quality. Dr. Cheyne, by a milk and vegetable diet, reduced his bulk considerably; and a miller is said, in one of the medical collections, to have produced the same effect by similar means. Soap, the acetum scillæ, and common vinegar, have been recommended for the same purpose; but they are seldom effectual till they have destroyed, in a great degree, the digestive powers. Fernelius recommends diuretics; Zacutus Lusitanus, leeches and scarifications; Borellus, chewing tobacco. Other authors recommend coffee, purgatives, and blisters; but the only advantageous plan is that already explained.

See Cælius Aurelianus, Chron. lib. v. c. 11; Cullen's First Lines, vol. i.

POLYTRI'CHUM, (from *πολυς*, and *τριχ*, *hair*). MAIDEN HAIR; so called from its resemblance to hair. See *ADIANTHUM*.

POLYU'RICA, *ISCHURIA*, (from *πολυς*, and *ουρον*, *urine*). See *ISCHURIA*.

PO'MA AURA'NTIA. The ORANGE. See *AURANTIA HISPANICA*.

PO'MA SINE'NSIA. CHINA ORANGE. See *AURANTIA SINENSIA*.

POMA'CEUM, (from *pomum*, an *apple*). **CYDER**, *cidra*, is the juice pressed from apples, and fermented. The more austere cyders are the strongest, and keep longest. Cyder is an useful drink in scorbutic and melancholic habits; nor does it intoxicate so soon as wine, since it contains a large proportion of mucilage. It passes off freely in perspiration, and is often slightly laxative. Moderately used, cyder is more salutary than wine; and whey prepared with it is a much more agreeable drink for patients in fevers than that made with wine.

POMA'MBRA, (from *pomum*, an *apple*, and *ambra*, *amber*). **APPLES OF AMBER** are composed of odoriferous powders, to which oils are added, and these powders are made into balls, with wax, mucilage of gum arabic, &c. E. g. take of mace and cinnamon, of each two drachms; musk, civet, and gum arabic, of each one drachm; gum tragacanth, two drachms. Mix and make into balls. They are used only as perfumes.

POMA'TICÆ. See **COCHLEÆ**.

POMA'TUM, (from *pomum*). It was formerly made with lard, suet, and a species of *apples* called pome-waters; but at present it is only lard beat up into a light curd, with the addition of a little rose water, or essence of lemons.

PO'MPHOLYX, (*πομφολυξ*, from *πομφος*, a *bladder*). A bubble excited in a viscid fluid by air, and from thence the name of a cuticular disease, in the fourth order of Dr. Willan's system, styled the water blebs, resembling the urticaria. The name also of the matter found adhering to the covers of crucibles, in the form of a light downy, whitish powder, which sublimes from the lapis calaminaris in making brass, sometimes called *nihil album*, *white tutty*, or *calamitis*.

PO'MUM, (from *πομα*, *drink*, because a pleasant drink is made of apples). See **MALUM**. An **APPLE**; an appellation of *staphyloma*; and in botany any fleshy vessel containing many seeds: all such plants are termed pomiferous. **ANAPODOPHYLLUM** is called *pomum maiale*, and **MOMORDICA**, *pomum mirabile Hierosolymitanum*. See also **BACCA**.

PO'MUM ADA'MI. A name for the lemon *fructu aurantii*; also for the protuberance in the fore part of the neck formed by the thyroid cartilage. (See **ASPERA ARTERIA**.) This protuberance is thought to receive its name from a whimsical supposition, that part of the forbidden apple, which Adam eat, stuck in the throat.

PO'NDERA, (from *pendo*, to *weigh*). A **WEIGHT**. The varieties of weights and measures have greatly embarrassed the student, and retarded the progress of science; and, while we condemn French innovations, we should be at least certain that no Augæan stable required the active exertions of a reformer. We wanted, however, a *fixed* more than an *accurate* standard; and was the general idea of a given weight the same, what it really was would be of little importance. In our situation, however, we must look both to our predecessors and the present generation, and as we have strenuously urged the perusal of the Greek authors, we must endeavour to explain their language.

The grains among the Greeks was the twentieth part of a scruple, as in our present system, and the drachms and ounces had the same relations as at this

time. The *siliqua*, *κερατιον*, was one half of an *obolus*, and one quarter of a scruple. The *aureus* of the Arabians, and the *denarius* of the Romans, were equal to about a drachm and one seventh, nearly nine grains. Seven denarii, therefore, make an ounce. The *sextula* is equal to four scruples, the *duella* double of the *sextula*, equal to eight, and the *siliculus* equal to two drachms. The *oxybathon* of Galen was equal to an ounce. The *rescuncia* an ounce and a half, or the eighth part of a pound, was equal in weight to the *faba Alexandrina*; the *sextans*, one sixth of a pound to two ounces; the *quadrans* and *triens*, the fourth and third part of a pound respectively. The *semis* is well known to be half; the *septunx* equal to seven ounces; *bes* or *bessis*, bis triens, eight ounces; *dodrans*, *dextans*, and *deunx*, nine, ten, and eleven ounces respectively. The *as*, vel *assis*, is the pound.

The *pound* weight among the ancients had three different values. The *zygostatic*, or *civil weight*, like our *avoirdupois*, was equal to sixteen ounces, called the *μνα*, or *mina medica*; 2. the *Athenian*, *Egyptian*, or *Alexandrian* pound, according to Galen, was equal to a hundred drachms, twelve ounces and a half; 3. the *medical pound*, as at this time, consisted of twelve ounces.

The old French weights and measures differed from ours; but in their eagerness to make science all their own, the philosophers of that nation reformed their old system. It must be admitted that they have laboured their new division with no common care, and have employed the most scientific accuracy in determining the principle on which they rest. This is the quadrant, or quarter of the earth's circumference, or the distance from the equator to the pole, determined by the length of a pendulum vibrating seconds; and their mean measure the **METRE**, the ten millionth part of this quadrant, is estimated at 3 feet 11.3 lines, nearly, 39.37 English inches. The subdivisions and the increments of the metre are in a decimal computation.

Metre	=	39.37	Decametre	=	393.7
Decimetre	=	3.93	Hecatometre	=	3937.0
Centimetre	=	0.39	Chiliometre	=	39370.2
Millimetre	=	0.03	Myriometre	=	393702.2

The toise is equal to 76.734 inches English, and 576 French grains to 472.5 English.

In Long Measure the

	Yards	Feet	Inches
Decametre	=	10	2 9.7
Hecatometre	=	109	1 1
Chyliometre, 4 furlongs	=	213	1 10.2
Myriometre, 6 miles 1 furlong	=	156	0 6

Eight chiliometres are nearly equal to five miles.

Measures of capacity we have already mentioned. We may add, however, that the litre is nearly equal to $2\frac{1}{8}$ wine pints; fourteen decilitres nearly equal to three wine pints; a chilolitre, one tun, 12.75 wine gallons.

The weights are determined by the increments and decrements of the gramme, which we find differently estimated. Its true English value is 15.44 grains English, and the progress is as follows:

Gramme	=	15.44	Decagramme	=	154.44
Decigramme	=	1.54	Hecagramme	=	1544.4
Centigramme	=	0.15	Chiliogramme	=	15444.02
Milligramme	=	0.015	Myriogramme	=	154440.23

A decagramme is 6 pennyweights 10.44 grains, troy; $\frac{2}{3}$ iss. 4.44 grains apothecaries' weight, or 5.65 drachms, avoirdupois.

A hecagramme is 3 ounces $8\frac{1}{2}$ drachms, av.

A chiliogramme 2 pounds 3 ounces 5 drachms, av.

A myriogramme 22 pounds 1.15 ounces, av.

100 myriogrammes 1 tun, minus 33 pounds nearly.

We shall add an easy approximation of the French weights to the English, applicable to medicine, from Swediaur's Pharmacopœia.

Centigramme	=	$\frac{1}{2}$ grain.
Decigramme	=	2 grs.
Gramme	=	20 grs.
$1\frac{1}{2}$ Decagramme	=	$\frac{1}{2}$ ounce.
$\frac{3}{4}$ Decagrammes	=	1 ounce.
Hectogramme	=	3 ounces.
$\frac{4}{5}$ Hectogrammes	=	1 pound, troy.
$\frac{5}{6}$ Hectogrammes	=	1 pound, av.
Killogramme	=	2 pounds, av.
Myriogramme	=	20 pounds, av.

See Journal de Physique, vol. xlviii. p. 460, and vol. xlix. p. 98 and 161.

To return, however, to our own weights, the medical or troy pound is less than the avoirdupois, but the ounce and the drachm are greater. The troy pound contains 5760 grains, the avoirdupois 7000 grains. The troy ounce contains 480 grains, the avoirdupois only $437\frac{1}{2}$ grains. The troy drachm contains 60, the avoirdupois rather more than 27.

The pound and the pint are called *libra* by the Latins; but there is not any known liquor of which a pint in measure answers to a pound in weight. A pint of rectified spirit of wine exceeds a pound weight by half an ounce.

PONS VARO'LII, (from its similarity to *pons*, a bridge,) *Corpus annulare, processus annularis*. Varolius, an Italian anatomist, gave this name to an arch in the cerebellum, which he first discovered. See MEDULLA OBLONGATA.

PO'NTICA VI'NA. ACID, FECULENT, and TARTAROUS WINES.

PO'NTICUM MEL. A poisonous honey.

PO'PLES, (*quod post plicetur*, bent backwards in supplication). The HAM, *ignye, ignys*; the hinder part of the articulation of the knee, or joint of the knee.

POPLITE'A ARTE'RIA, (from *poples*). The arteria cruralis, in passing the ham, is called *poplitea*, and is then covered only by the integuments. It ends by dividing into the tibialis anterior and posterior. Surprising as it may appear, it is a fact, that though the artery in the middle of the thigh may be tied with impunity, and the blood be distributed as usual to the leg and foot, yet the popliteal artery in the ham never can. An aneurism in this artery seldom lasts long enough to cause a caries in the adjacent bones. When it happens, a cure may be effected by taking up the femoral artery. (See ANEURISM.) The artery in this part, when di-

lated, will increase, press on the lymphatics, and induce œdema and mortification of the limb, if the femoral artery is not taken up, or the limb amputated in proper time.

POPLITE'A VE'NA. The crural vein takes this name just above the ham, and at the lower part of the musculus popliteus it divides into the tibialis anterior, tibialis posterior, and peronæa. See CRURALIS VENA.

POPLI'TEUS, (from *poples*). The name of the sciatic nerve when it reaches the ham; it divides into two branches, which spread over the whole leg, called *plantares*.

POPLITE'US MU'SCULUS, (from *poples*, the ham,) *subpopliteus*, from the place of its situation. This muscle rises tendinous from the external condyle of the femur, within the capsular ligament; passes tendinous under the ham inwards; plays upon the head of the tibia, and is inserted into its superior and inner part, serving to turn the toes inwards.

POPULA'GO, (from *populus*, from its leaves resembling those of the poplar). See CALENDULA PALUSTRIS.

POPULA'RIS, (from *populus*, the people). See ENDEMIUS; EPIDEMIUS.

PO'PULUS, (from the multitude of its shoots). The POPLAR, *ægeiros*.

PO'PULUS ALBA, Lin. Sp. Pl. 1463. WHITE POPLAR, *albata*; *farfurus*, grows in moist places; and a decoction of its bark is given to relieve strangury and sciatica.

PO'PULUS NI'GRA, Lin. Sp. Pl. 1464. The BLACK POPLAR, is a tall tree, with dark green, rhomboidal, acuminate leaves, producing imperfect flowers in catkins. The female flowers are followed by membranous pods, containing a number of seeds winged with down. It is indigenous in watery places, and of quick growth. The young buds of the leaves are made into an ointment; and they abound with a yellow unctuous odorous juice, which they readily impart to rectified spirit of wine. The tincture yields a fragrant resin, resembling storax. See Raii Historia.

PO'PULUS TRE'MULA, Lin. Sp. Pl. 1464. The ASP, or ASPIN TREE, grows in woods and marshy places; resembling the *fi. nigra*.

PO'RCUS, (*quasi spurcus, filthy*). HOG; when wild, *aper*; in Greek, *ὄς*, and *χοίρος*; in Latin, *sus* and *scrofa*. Pork is not easy of digestion, and considered by Sanctorius and others to have the strongest tendency to retard perspiration; consequently it has been considered as unwholesome. The Jews, who were generally affected with lepra, were perhaps on this account forbidden to eat it.

As this animal is generally extremely fat, it is considered as highly nutritious to such constitutions as can digest it easily; nor is it, as has been supposed, indigestible when in its younger state. When salted in the form of ham or bacon it is less easily assimilated; but its stimulus renders it in small quantities sometimes acceptable to weak stomachs.

The name *porcus*, and *porcellus*, is given to some fish, particularly the dolphin, because they are said to root up the earth, like swine, with their snouts. *Porcus* also, from the Greek word *χοίρος*, is a name for the *fudendum muliebre*.

PO'RI, (from *πύρον*, to pass through). The pores of

the skin are described by Lewenhoeck as so small, that one grain of sand will cover one hundred and twenty-five thousand: but this was apparently an optical deception; for no future observer has discovered them. The extremities of the exhalents undoubtedly open under the cuticle; but their orifices are not visible.

PORRI'GO, (*à porrigendo*). See **PITYRIASIS** and **FURFURIOSI**.

PO'RRUM, (from *πρῦρον*, to burn, because of its hot taste. **COMMON LEEK**, is similar to garlick, but weaker. It is carminative, and diuretic. The juice of leeks has sometimes succeeded in dropsy, when other medicines have failed.

PO'RRUS. See **SARCOMA**.

PO'RTÆ VENA, vel **PORTARUM VE'NA**, (from *porta*, door, or entrance). The splenic, mesenteric, and mesocolic veins, uniting at the root of the mesentery, form the vena portæ, *janitrix*, or *ramalis vena*. It may be considered as two veins joined at their trunks, one of which is ramified in the liver, the other in the viscera of the belly: the former may be called *hepatica superior*, or *minor*; the latter *ventralis inferior*, or *major*. The trunk of the vena portæ hepatica is called its *sinus*, from which five principal branches are divided and spread through the whole substance of the liver, ending apparently in thick, villous folliculi. In these the bile is secreted, and collected by as many vessels of another kind, whose apertures are called *pori biliarii*, which again unite in one common trunk, *ductus hepaticus*. The vena portæ ventralis is situated under the lower or concave side of the liver, between the middle and right extremity of that sinus; from thence it runs down from right to left under the trunk of the hepatic artery, bending behind the beginning of the duodenum, and under the head of the pancreas; its length exceeds three inches. At the head of the pancreas it divides into the meseraica major and minor, and the splenica. See Winslow's Anatomy.

PORTAI'GUILLE. See **ACUTENACULUM**.

PO'RTIO DU'RA, **MOLLIS**. See **NERVI**, and **NERVUS AUDITORIUS**.

PORTLAND POWDER. A medicine celebrated for the cure of gout, and at one time highly fashionable, from the relief which a duke of Portland was supposed to have derived from it. This powder was composed of equal parts of germander, ground pine, gentian, and centaury, and a drachm of these powders, well mixed, was to be taken in a glass of wine and water, broth, or tea, every morning fasting, and nothing was to be taken for an hour and half afterwards. This course must be continued for three months; three-fourths of a drachm taken for three months longer; then half a drachm for six months. After the first year half a drachm may be taken every other day only for one year longer. It is recommended also in rheumatism, if not habitual. This is an old remedy, traced by Dr. Clephane from Galen down to almost our own times; but he remarks, that the ancients were cautious in employing it, pointing out the danger of its inducing dropsy, pleurisy, and peripneumony, from its constant use, and from its great danger in particular, if the gout has become habitual. Modern

experience has confirmed these cautions, and the medicine is now neglected. See Clephane in the Medical Observations and Inquiries, vol. i. Vide **ARTHRITIS**.

PORTORA'RIVUM, (the door or entrance into the intestines). The **DUODENUM** or the **PYLORUS**.

PORTULA'CA, (from *porto*, to bring, and *lac*, milk, because it is supposed to increase its secretion,) *andrachne*; *allium Gallicum*, *portulaca oleracea* Lin. Sp. Pl. 638. **PURPLE OF GARDEN PURSLANE**, a culinary plant; but the seeds and leaves are supposed to be cooling, antiscorbutic, and moderately astringent.

PORTULACA MARITIMA. See **HALIMUS**.

PO'RUS BILIA'RIVUS, (from *πορος*, a passage.) The beginning bile duct. See **JECUR**, and **PORTÆ VENA**.

PO'RUS O'PTICUS. The point of the retina where the optic nerve enters, which is insensible.

PO'RUS RETICULA'TUS. See **ESCHARA**.

PO'SCA. Vinegar and water mixed.

POSOLOGIA. (See **DOSIS**.) The doses of medicines are chiefly learnt from experience; but some guide is necessary for the young practitioner, and for this reason we shall subjoin a posological table, rather as a general guide than one to be implicitly trusted in every case. The minuter regulations of the dose may be more readily understood from the remarks in the particular article, or under the disease for which it is prescribed. For many reasons, though we shall give the highest and the lowest doses, the latter will be rather beneath than above the standard.

Doses distinguish, we have said, medicines from poisons; and, on the other hand, aliment from remedies. Minute attention is, however, requisite in many cases, since it is not improbable that the specific action of remedies depends on their doses. Our experience with mineral waters shows that some medicines, in a small and minutely divided quantity, are more effectual than in larger doses, and in a more concentrated state. We cannot imitate in any other way the tonic effects of iron, or the laxative powers of neutral salts in proportions so small; and it is highly probable that if we ever find the exhibition of factitious airs highly beneficial, it will be in much smaller quantities than have been hitherto exhibited. Injudicious, particularly young, eager, practitioners having once learnt that a remedy has a peculiar power, think that power will be necessarily augmented with the dose; and if they are capable of distinguishing, a faculty not quite so general as may be reasonably supposed, they soon perceive their error. Camphor, for instance, in a dose of five or six grains is a mild sedative, and often a diaphoretic, in fevers; in a dose of twenty grains it frequently produces nausea, increases the heat, and proves highly injurious. Opium in too large doses prevents instead of promoting sleep, and acts rather as a stimulus on the bowels than a narcotic. The laudanum purgans of an old pharmacopœia owes its laxative virtue rather to the dose than the addition which it receives, calculated chiefly to prevent its being rejected by vomiting. In fact, every medicine beyond its proper dose is usually the source of considerable inconvenience, promoting generally increased or irregular action.

TABULA POSOLOGICA.

SIMPLICIA.				<i>Dos minim. maxima.</i>		<i>Dos minim. maxima.</i>					
Absinthium	-	-	-	gr. x.	3ss.	Chælidonium	-	-	-	3i.	3ss.
Abrotanum	-	-	-	3i.	3i.	Chamædrys	-	-	-	3i.	3i.
Acetum	-	-	-	3ij.	3ss.	Chamæpitys	-	-	-	3i.	3i.
Acidum vitriolicum	-	-	-	gtt. xv.	xxv.	Chamemæli flores	-	-	-	gr. x.	3ss.
Aconiti extractum	-	-	-	gr. ss.	gr. ij.	Chinæ radix (decoct.)	-	-	-	3ij.	3vi.
Acetosæ succus	-	-	-	3ss.	3ij.	Cicutæ folia arida & semen	-	-	-	gr. i.	v.
Acorus radix	-	-	-	gr. v.	gr. xv.	— succus inspissatus	-	-	-	gr. v.	xv.
Ærugo	-	-	-	gr. ½	gr. ss.	Cinara succus	-	-	-	3ss.	3i.
Aloe succotrina	-	-	-	gr. iij.	gr. xv.	Cinnabar nativum	-	-	-	gr. x.	3i.
Althææ radix	-	-	-	3ss.	3ss.	Cinnamomi cortex	-	-	-	gr. v.	3i.
Alium	-	-	-	gr. xv.	3ss.	Citri cortex	-	-	-	3i.	3ss.
Alumen	-	-	-	gr. v.	3i.	Coccinellæ	-	-	-	gr. xv.	3ss.
Ammoniacum	-	-	-	gr. x.	3i.	Colchicum	-	-	-	gr. i.	gr. v.
Anethi semen	-	-	-	3i.	3i.	Colocyntis	-	-	-	gr. iv.	3ss.
Anisi semen	-	-	-	3i.	3i.	Columbæ radix	-	-	-	gr. x.	3ij.
Angusturæ cortex	-	-	-	3ss.	3i.	Contrayervæ radix	-	-	-	3i.	3i.
Antimonium præparatum	-	-	-	gr. x.	3ss.	Coriandri semina	-	-	-	3i.	3i.
Arabicum gummi	-	-	-	3i.	3ij.	Cornu cervi	-	-	-	gr. xv.	3ss.
Aristolochia tenuis	-	-	-	3i.	3i.	Cortex Peruvianus	-	-	-	3i.	3i.
Arnica	-	-	-	3i.	3ij.	Cotula fœtida	-	-	-	gr. v.	gr. xv.
Arsenicum	-	-	-	gr. ⅓	½	Cremor tartari	-	-	-	3i.	3ij.
Arum	-	-	-	gr. x.	3ss.	Creta	-	-	-	3i.	3i.
Artemisia	-	-	-	3i.	3ij.	Crocus	-	-	-	gr. v.	gr. xxv.
Asarum	-	-	-	gr. ij.	gr. v.	Cubebæ	-	-	-	gr. v.	gr. xv.
Asafœtida	-	-	-	gr. x.	3ss.	Cumini semen	-	-	-	gr. x.	3ss.
Aurantiorum cortex	-	-	-	3i.	3ij.	Cuprum ammoniacale	-	-	-	gr. ss.	gr. iij.
— folia	-	-	-	3ss.	3i.	— vitriolatum	-	-	-	gr. i.	gr. v.
— succus	-	-	-	3ss.	3ij.	Curcuma	-	-	-	3i.	3i.
Bardanæ radix	-	-	-	3i.	3i.	Cuscuta	-	-	-	gr. x.	3ij.
Balsamum canadense	-	-	-	gtt. xx.	xl.	Cydoniorum semina	-	-	-	3ss.	3i.
— copaibæ	-	-	-	xv.	xxx.	Daucus creticus & sylvestris	-	-	-	3i.	3ss.
— gileadense	-	-	-	xv.	xl.	Dictamnus albus & creticus	-	-	-	3i.	3i.
— Peruvianum	-	-	-	v.	xx.	Digitalis folia arida	-	-	-	gr. i.	gr. v.
— tolutanum	-	-	-	xx.	l.	Dolichos setæ	-	-	-	gr. v.	gr. x.
Benzoin gum	-	-	-	gr. x.	xx.	Ebuli cortex & semina	-	-	-	3i.	3ij.
Bistortæ radix	-	-	-	gr. xv.	3i.	Elaterium	-	-	-	gr. ss.	gr. iij.
Borax	-	-	-	gr. x.	3ss.	Enula campestris	-	-	-	gr. xv.	3ij.
Cajeput oleum	-	-	-	gtt. iij.	xii.	Eruca	-	-	-	gr. xv.	3ss.
Camphora	-	-	-	gr. v.	3i.	Eryngium	-	-	-	3i.	3i.
Canella	-	-	-	gr. vi.	xii.	Erysimi semen & radix	-	-	-	3i.	3i.
Cancrorum chelæ vel oculi	-	-	-	3i.	3i.	Eupatorium (succus recens.)	-	-	-	3ss.	3iij.
Cantharides	-	-	-	gr. ss.	ij.	Eupatorii extractum	-	-	-	3i.	3ss.
Cardamines flores	-	-	-	3i.	3i.	Ferrum	-	-	-	gr. x.	gr. xxv.
Cardamomi minoris semen	-	-	-	gr. vi.	3i.	Filix mas. radix	-	-	-	3i.	3i.
Carduus benedictus	-	-	-	gr. xv.	3i.	Fœniculi dulcis semina	-	-	-	3i.	3ij.
Carui semen	-	-	-	3i.	3i.	Fuligo ligni	-	-	-	3ss.	3i.
Caryophylli aromatici	-	-	-	gr. iij.	3ss.	Fumaria	-	-	-	3ss.	3i.
Cascarilla	-	-	-	gr. x.	xxx.	Galanga	-	-	-	gr. x.	3ss.
Casia fistularis	-	-	-	3ss.	3ij.	Galbanum	-	-	-	gr. x.	3i.
— lignea	-	-	-	3i.	3i.	Gallæ	-	-	-	gr. x.	3i.
Castoreum	-	-	-	gr. v.	3i.	Gutta gamba	-	-	-	gr. ij.	gr. vi.
Centaurii minoris summitates	-	-	-	3i.	3i.	Genista (in decocto)	-	-	-	3i.	3iij.
Cepa	-	-	-	3i.	3i.	Genistæ semen	-	-	-	gr. i.	gr. iij.
Cera alba	-	-	-	3i.	3ss.	Gentianæ radix	-	-	-	gr. xv.	3ss.
Cerussa acetata	-	-	-	gr. i.	vi.						

		<i>Dos minim.</i>	<i>maxima.</i>			<i>Dos minim.</i>	<i>maxima</i>
Geoffrœæ radix	- - -	gr. v.	gr. xv.	Oleum ricini	- - -	3ij.	3i.
Ginseng	- - -	gr. xv.	3ss.	— terebinthinæ	- - -	gtt. x.	gtt. xxv.
Glycerrhizæ radix	- - -	3ss.	3ii.	Olibanum	- - -	gr. x.	3i.
Granati cortex	- - -	3i.	3ss.	Opium	- - -	gr. i.	gr. iij.
Gratiola	- - -	gr. x.	3i.	Opoponax	- - -	gr. xv.	3ss.
Guaiacum gummi	- - -	gr. x.	3ss.	Origanum in infuso	- - -	ad libitum.	
				Ostrearum testæ	- - -	gr. x.	3ss.
Hæmatites	- - -	gr. x.	3ss.				
Hedera terrestris (in infuso)	- - -	3ij.	3iv.	Pareira brava	- - -	3i.	3i.
Helleborus albus	- - -	gr. vi.	gr. xv.	Petroleum	- - -	gtt. x.	gtt. xxx.
Helleborus niger	- - -	gr. v.	x.	Pimpinella saxifraga	- - -	3i.	3ij.
Hordeum (in decocto)	- - -	3ij.	3vi.	Pimenta	- - -	gr. v.	gr. xv.
Hyoscyami folia arida & semen	- - -	gr. i.	gr. iij.	Piper indicum	- - -	gr. v.	gr. xv.
Hypericum. flores	- - -	gr. v.	gr. x.	— nigrum & album	- - -	gr. vi.	3i.
				Pistacæ nuces	- - -		
Jalapæ radix	- - -	gr. xv.	3ij.	Pix liquida in infuso	- - -	3iv.	3vi.
Ipecacuanha	- - -	gr. x.	3ss.	Pulsatillæ extractum	- - -	gr. v.	3i.
Iris florida. succus	- - -	3ss.	3ss.				
Juniperi baccæ	- - -	gr. x.	3ij.	Quercus cortex	- - -	3i.	3i.
Juglans. cortex	- - -	3i.	3ij.				
				Radix Indica Lopeziana	- - -	3ss.	3ij.
Kino. gummi	- - -	gr. x.	3i.	Raphani rusticani radix	- - -	3i.	3ij.
				Rhabarbarum	- - -	gr. xv.	3i.
Labdanum. gummi	- - -	gr. xv.	3ss.	Rhaponticum	- - -	3ss.	3i.
Lapathum acutum & aquaticum. suc-	- - -	3ij.	3iv.	Rhamni radix	- - -	3i.	3ij.
cus	- - -			Rhododendron	- - -	gr. v.	gr. x.
Lavendulæ flores	- - -	3i.	3i.	Ricini semen	- - -	gr. ij.	gr. iij.
Laureola fœmina (mezereon) in de-	- - -	3ij.	3iv.	Rosa rubra. petala	- - -	3i.	3ij.
cocto	- - -			Rosmarini flores	- - -	gr. x.	3ij.
Laurus vulgaris. oleum	- - -	gtt. i.	ij.	Rubia tinctorum	- - -	3i.	3ij.
Lichen islandicus (in decocto)	- - -	3ij.	3vi.	Rutæ folia	- - -	3ss.	3i.
Lignum campechense. Extractum	- - -	gr. x.	3ss.				
Lilium album	- - -	3i.	3i.	Sabinæ folia	- - -	gr. xv.	3ij.
Limoniorum succus	- - -	3ij.	3ss.	Sagapenum	- - -	gr. x.	3i.
— cortex	- - -	gr. x.	gr. xxv.	Sal ammoniacum crudum	- - -	3i.	3ss.
Lini semen (in infuso)	- - -	3ij.	3vi.	— cornu cervi	- - -	gr. v.	gr. xv.
Linum catharticum folia	- - -	3i.	3i.	— marinus	- - -	3ij.	3ij.
Lobeliæ radix (in decoct.) libra una quotidie	- - -			Salix cortex	- - -	3ss.	3ij.
				Salvia in infuso	- - -	ad libitum.	
Macis	- - -	gr. x.	3ss.	Sambuci baccarum succus	- - -	3ij.	3ss.
Magnesia	- - -	gr. x.	3ss.	Sanguis draconis	- - -	gr. x.	3ij.
Majorana (in infuso)	- - -	3ij.	3vi.	Sapo	- - -	3i.	3ss.
Malva (in decocto)	- - -	ad libitum.		Santalum rubrum	- - -	coloris ergo	
Manna	- - -	3ss.	3ij.	— album & citrinum	- - -	ad libitum.	
Mastich	- - -	gr. x.	3ss.	Santonici summitates	- - -	3ss.	3ii.
Matricaria	- - -	3i.	3ij.	Sarsæ radix	- - -	3i.	3i.
Mechoacanna	- - -	3i.	3ij.	Saxifragæ lignum (in decoct)	- - -	3ij.	3vi.
Mel	- - -	3ij.	3ss.	Scammonium	- - -	gr. v.	gr. xv.
Melissa (in infuso)	- - -	ad libitum.		Scilla recens	- - -	gr. v.	3ss.
Mentha viridis & piperita	- - -			— exciccata	- - -	gr. i.	gr. v.
Mezereon; vide Laureola	- - -			Scordium	- - -	3ss.	3i.
Millefolium	- - -	3i.	3ij.	Senæ folia	- - -	3i.	3i.
Millepedæ	- - -	3i.	3ij.	Seneka. radix	- - -	3i.	3i.
Moschus	- - -	gr. v.	3i.	Serpentariæ radix	- - -	3ss.	3ss.
Myrrha	- - -	gr. x.	3ss.	Serpyllum in decocto	- - -	ad libitum.	
				Simaruba. cortex	- - -	gr. x.	3ss.
Nasturtium succus	- - -	3i.	3ij.	Sinapi. semen	- - -	3i.	3ss.
Nicotiana (in infuso)	- - -	3ss.	3ij.	Sium. succus	- - -	3ij. quotidie.	
Nitrum	- - -	gr. v.	3i.	Solanum dulcamara, in decocto	- - -	3ss.	3ij.
Nux moschata	- - -	gr. v.	gr. xv.	Spermaceti	- - -	3i.	3ij.
Nymphæa alba. in decocto	- - -	ad libitum.		Stannum	- - -	gr. x.	3ij.
				Stæchas	- - -		
Oleum olivarum	- - -	3i.	3ij.	Stramonium	- - -	gr. i.	ij.
				Styrax	- - -	3ss.	3ss.

Dos minim. maxima.

Succinum	-	-	-	-	℥i.	℥i.
Sulphur	-	-	-	-	℥i.	℥ij.
Tamarindus	-	-	-	-	℥ss.	℥ii.
Tanacetum	-	-	-	-	℥ij.	℥ss.
Taraxaci succus	-	-	-	-	℥i.	℥iiij.
Terebinthina chia	-	-	-	-	℥i.	℥i.
Terra japonica	-	-	-	-	℥i.	℥ss.
Thus	-	-	-	-	℥ss.	℥ss.
Thymus in infuso	-	-	-	-	ad libitum.	
Tormentillæ radix	-	-	-	-	℥i.	℥ss.
Trichomanes in infuso	-	-	-	-	ad libitum.	
Trifolium palustre in decocto	-	-	-	-	℥ij.	℥iv.
Tussilaginis folia. in decocto	-	-	-	-	ad libitum.	

Ulmī cortex interior in decoct. quotidie. libra una.
 Uva ursi - - - - - ℥i. ℥ss.

Valeriana sylvestris - - - - - ℥i. ℥i.
 Vitriolum album gr. i. pro emetico gr. v.—x.
 ——— cœruleum. See Cuprum vitriolatam.
 ——— viride - - - - - gr. v. gr. x.

Winteranus cortex - - - - - gr. x. ℥i.

Zedoaria - - - - - gr. x. ℥i.
 Zincum ustum - - - - - gr. i. gr. v.
 Zinziber - - - - - gr. v. gr. xv.

PRÆPARATA.

Acetum scillæ	-	-	-	-	gtt. xx.	gtt. xxx.
—— colchicum	-	-	-	-	gtt. xx.	xxx.
Æther vitriolicus velnitrosus	-	-	-	-	gtt. xx.	xl.
Aqua calcis	-	-	-	-	libra una	quotidie.
Aqua ammoniæ	-	-	-	-	gtt. xxv.	lx.
—— puræ	-	-	-	-	gtt. viii.	xvi.
—— acetatæ	-	-	-	-	℥ij.	℥vi.
Aquæ simplices	-	-	-	-	℥i.	℥iiij.
—— spirituosæ	-	-	-	-	℥i.	℥iiij.

Coagulum aluminosum libra una quotidie.

Confectio aromatica	-	-	-	-	℥ss.	℥ij.
Confectio opiata	-	-	-	-	gr. v.	gr. xxv.
Conservæ	-	-	-	-	℥i.	℥i.
Conserva ari	-	-	-	-	℥i.	℥ij.
—— scillæ	-	-	-	-	gr. xv.	℥ss.

Decoctum commune pro clystere	-	-	-	-	℥iv.	℥ss.
—— pectorale	-	-	-	-	ad libitum.	
Decoctum cinconæ	-	-	-	-	℥ss.	℥iiij.
—— cornu cervi	-	-	-	-	℥i	℥ij. quotidie.
—— hellebori albi	-	-	-	-	℥i.	℥ij.
—— sarsaparillæ	-	-	-	-	℥ss.	quotidie.
—— compositum	-	-	-	-	℥i.	quotidie.
—— ulmi	-	-	-	-	℥i.	quotide.

Electarium casiæ	-	-	-	-	℥i.	℥i.
—— senæ olim lenitivum	-	-	-	-	℥ij.	℥vi.
—— è scammonio	-	-	-	-	℥i.	℥ij.
Elixir aloes	-	-	-	-	gtt. xx.	lxxx.
—— vitriolicum acidum	-	-	-	-	gtt. x.	xl.
Essentia limonum	-	-	-	-	gtt. i.	gtt. v.
Extractum aconiti	-	-	-	-	gr. i.	v.
—— cacuminis genistæ	-	-	-	-	gr. x.	xxv.

Dos minim. maxima.

Extractum cicutæ	-	-	-	-	gr. v.	xv.
—— cinconæ	-	-	-	-	℥i.	℥ij.
—— corticis elentheriæ	-	-	-	-	℥i.	℥ss.
—— colocynthidis compositum	-	-	-	-	gr. iij.	xv.
—— gentianæ	-	-	-	-	℥i.	℥ss.
—— glycerrhizæ	-	-	-	-	ad libitum.	
—— hellepori nigri	-	-	-	-	gr. v.	℥i.
—— hæmatoxyli	-	-	-	-	gr. xv.	℥ss.
—— hyoscyami	-	-	-	-	gr. i.	vi.
—— jalapii	-	-	-	-	gr. v.	xv.
—— papaveris albi	-	-	-	-	gr. v.	xv.
—— rutæ	-	-	-	-	gr. x.	℥i.
—— sabinæ	-	-	-	-	gr. x.	℥i.

Infusum gentianæ compositum	-	-	-	-	℥i.	℥ij.
—— senæ	-	-	-	-	℥ij.	℥iiij.
—— senæ tartarizatum	-	-	-	-	℥ss.	℥ss.
—— rosæ	-	-	-	-	℥ss.	℥iiij.

Julepum è camphora	-	-	-	-	℥ss.	℥ij.
—— creta	-	-	-	-	℥ss.	℥iiij.

Lac ammoniacum - - - - - ℥i. ℥iiij.

Mel acetatum	-	-	-	-	ad libitum.	
Mel rosæ	-	-	-	-	ad libitum.	
—— scillæ	-	-	-	-	℥ss.	℥i.
Mercurius dulcis sublimatus	-	-	-	-	gr. i.	x.
—— muriatus	-	-	-	-	gr. ¼	gr. ij.
—— vitriolatus	-	-	-	-	gr. ij.	gr. x.

Oleum amygdalæ	-	-	-	-	℥i.	℥ij.
—— lini	-	-	-	-	℥i.	℥ij.
—— jecoris aselli	-	-	-	-	℥i.	℥ij.
—— ricini	-	-	-	-	℥iiij.	℥ij.
—— anisi	-	-	-	-	gtt. v.	gtt. xx.
—— carui	-	-	-	-	gtt. iij.	gtt. vi.
—— cinnamomi	-	-	-	-	gtt. i.	gtt. iij.
—— juniperi	-	-	-	-	gtt. x.	gtt. xxv.
—— lavendulæ	-	-	-	-	gtt. ij.	gtt. vi.
—— menthæ piperitidis	-	-	-	-	gtt. v.	gtt. xv.
—— origani	-	-	-	-	gtt. v.	gtt. x.
—— pulegii	-	-	-	-	gtt. vi.	gtt. xii.
—— roris marini	-	-	-	-	gtt. iij.	gtt. viii.
—— sassafræ	-	-	-	-	gtt. vi.	gtt. xii.
—— terebinthinæ	-	-	-	-	gtt. x.	gtt. xxx.
Oxymel colchici	-	-	-	-	℥ii.	℥i.
—— scillitici	-	-	-	-	℥i.	℥ij.

Pillulæ aromaticæ	-	-	-	-	gr. xv.	℥ss.
—— aloes compositæ	-	-	-	-	gr. vii.	℥i.
—— aloes cum myrrha	-	-	-	-	gr. xv.	gr. xxv.
—— galbani compositæ	-	-	-	-	℥ss.	℥i.
—— hydrargyri	-	-	-	-	gr. v.	gr. xv.
—— opii	-	-	-	-	gr. iv.	x.
—— scillæ	-	-	-	-	gr. x.	℥i.
Pulvis aloes cum canella	-	-	-	-	gr. v.	gr. x.
—— guaiaco	-	-	-	-	gr. viii.	xv.
—— ferro	-	-	-	-	gr. x.	℥i.
—— aromaticus	-	-	-	-	gr. x.	gr. xxv.
—— asari compositus	-	-	-	-	gr. v.	viii.
—— cretæ compositus	-	-	-	-	gr. x.	xxv.
—— cum opio	-	-	-	-	gr. v.	gr. xv.
—— chelærum cancri c.	-	-	-	-	gr. x.	℥i.

	<i>Dos minim.</i>	<i>maxima.</i>		<i>Dos minim.</i>	<i>maxima.</i>
Pulvis contrayervæ c.	gr. x.	3ss.	Tinctura aloes	3i.	3iss.
— ipecacuanhæ c.	gr. x.	3ss.	— c.	3ij.	3vi.
— myrrhæ c.	3i.	3i.	— assæ fœtidæ	3i.	3ij.
— opiatas	gr. x.	3i.	— aurantii corticis	3ij.	3vi.
— scammonii c.	gr. v.	xii.	— balsami peruviani	gtt. xx.	xxxv.
— cum aloë	gr. v.	3i.	— balsami tolutani	3ij.	3ss.
— calomel	gr. v.	xv.	— cantharidis	gtt. xv.	xxx.
— senæ c.	3ss.	3i.	— cardamomi	3ij.	3ss.
— tragacanthæ c.	gr. xv.	3ss.	— composita	3i.	3ij.
Sal catharticus glauveri	3ij.	3iss.	— cascarillæ	3ij.	3ss.
— amarus	3ij.	3iss.	— castorei	3ij.	3ss.
— cornu cervi	gr. v.	xv.	— catechu	3ij.	3ss.
— diureticus	3i.	3ij.	— chinconæ	3ij.	3ss.
— martis	gr. v.	gr. xv.	— ammoniata	3i.	3ij.
— succini	gr. viii.	3ss.	— composita	3ij.	3vi.
— tartari (kali vel soda)	gr. vi.	3i.	— cinnamomi	3ij.	3vi.
Spiritus ammoniæ compositus	gtt. x.	xxx.	— composita	3ij.	3ss.
— succinatus	gtt. viii.	xxv.	— columbæ	3ij.	3vi.
— fœtidus	gtt. xx.	xl.	— ferri ammoniacalis	gtt. xv.	xxx.
— anisi c.	3ss.	3ij.	— muriati	gtt. xx.	xl.
— carui c.	3ss.	3ij.	— gallbani	3ij.	3ss.
— cinnamomi	—	—	— gentianæ c.	3ij.	3ss.
— juniperi	—	—	— guaiaci	3ij.	3vi.
— lavendulæ	gtt. xx.	lx.	— hellebori nigri	3i.	3ij.
— c.	gtt. xv.	xl.	— jalapii	3ij.	3ss.
— menthæ piperitidis	3ss.	3ij.	— myrrhæ	3ij.	3ss.
— sativæ	—	—	— opii	gtt. xx.	xl.
— nuclei fructus myristicæ	3ij.	3vi.	— camphorata	3ij.	3vi.
— pimento	3ij.	3ss.	— rhabarbari	3ij.	3vi.
— pulegii	3ij.	3vi.	— c.	3ss.	3ij.
— raphani c.	3ij.	3vi.	— sabinæ c.	gtt. x.	gtt. xxx.
— rorismarini	gtt. xxx.	3ij.	— scillæ	gtt. xx.	xl.
Stannum. pulvis	gr. xv.	3ij.	— senæ	3vi.	3iss.
Succus graminis	3i.	3ij.	— serpentariæ	3i.	3ij.
Succi scorbutici	3i.	3ij.	— valerianæ	3ij.	3ss.
Sulphur auratum antimonii	gr. un.	gr. iij.	— ammoniata	3ss.	3ij.
Syrupus papaveris albi	3i.	3ij.	— zinziberis	3i.	3ij.
— erratici	3ij.	3ij.	Vinum aloes	3vi.	3ij.
— rosarum solutivus	3ij.	3ij.	— antimonii	gtt. xx.	xl.
— scilliticus	3i.	3i.	— antimonii tartarizat.	gtt. xv.	xl.
— spinæ cervinæ	3ij.	3iss.	— ferri	3i.	3ss.
— tolutanus	3ij.	3ij.	— ipecacuanhæ	3i.	3iss.
Tartarum emeticum	gr. 4.	gr. v.	— rhabarbari	3ss.	3ij.

In this estimate of the doses of medicines, we cannot expect to meet the sentiments of every practitioner, nor perhaps always to be minutely and accurately correct. As we have already remarked, this table is intended rather as hints to conduct the practitioner in his own observations than as a guide to be blindly followed; for many are the varieties which will result from age and sex; from temperament and idiosyncrasy. They are, indeed, so numerous that we engaged in the task with hesitation and reluctance; nor are we certain that we may not have done more injury by assisting empiricism than service to the younger practitioner.

In the table of preparations we have followed the London pharmacopœia almost exclusively; not that we confine to it exclusive excellence, for both the Dublin and Edinburgh pharmacopœias merit peculiar attention. We soon found, however, that to include these would not only extend the catalogue beyond its proper limits, but by names similar, yet different, by formulæ vary-

ing often rather in appearance than in their nature, we should require endless explanations to guard against confusion. We gave up the attempt the more readily, as in Dr. Duncan's very valuable dispensatory they may be readily compared. In the tables annexed to that work we find a comparative view of the doses of the more important medicines, according to each dispensatory, with which we shall conclude the present article.

Tables, showing the proportion of antimony, opium, and quicksilver, contained in some compound medicines.

Tartrate of antimony.—Wine of tartrate of antimony contains two grains of tartrate of antimony, or tartar-emetic, in the ounce. Ed.

Opium.—Opiate confection contains one grain of opium in thirty six grains. Lond.

Opiate or thebaic electuary contains in each drachm about a grain and a half of opium. Edin.

Electuary of catechu, or japonic confection, contains

in each ounce about two grains and a half of opium; for one grain of opium is contained in one hundred and ninety-three grains. Ed.

Compound powder of chalk with opium contains one grain of opium in about forty-three grains. Lond.

Compound powder of ipecacuan contains one grain of opium in ten grains. Lond.

Powder of ipecacuan and opium contains six grains of opium in each drachm, or one grain in ten. Ed.

Opiate powder contains one grain of opium in ten. Lond.

Pills of opium contain one grain of opium in five. Lond.

Opiate or thebaic pills contain six grains of opium in each drachm, or five grains contains half a grain of opium. Ed.

Tincture of opium or liquid laudanum is made with two scruples of opium in each ounce of the liquid, or with five grains in each drachm. But a drachm of the tincture appears, by evaporation, to contain about three grains and a half of opium. Ed.

Ammoniated tincture of opium, or paregoric elixir, is made with about eight grains in each ounce of the liquid, or with about one grain in the drachm. Ed.

Tincture of soap and opium, formerly called opiate liniment, anodyne balsam, is made with one scruple of opium in each ounce of the liquid. Ed.

Troches of liquorice with opium contain about one grain of opium in each drachm. Ed.

Quicksilver.—Quicksilver pills contain five grains of quicksilver in each drachm. Each pill contains one grain of quicksilver. Ed.

Quicksilver pills contain four grains of quicksilver in twelve grains. Lond.

Quicksilver ointment contains twelve grains of quicksilver in each drachm; made with double quicksilver, each drachm contains twenty-four grains. Ed.

Stronger quicksilver ointment contains one drachm of quicksilver in two drachms. Lond.

Weaker quicksilver ointment contains one drachm of quicksilver in six drachms.

Quicksilver plaster contains about sixteen grains of quicksilver in each drachm. Ed.

Plaster of litharge with quicksilver contains about one ounce of quicksilver in five ounces. Lond.

Plaster of ammoniac with quicksilver contains about one ounce of quicksilver in five ounces. Lond.

Powder of scammony with calomel contains one grain of calomel in four grains. Lond.

Ointment of nitrated quicksilver contains twelve grains of nitrated quicksilver in one drachm. Lond.

Stronger ointment of nitrat of quicksilver contains in each drachm four grains of quicksilver, and eight of nitrous acid. Ed.

Milder ointment of nitrat of quicksilver contains in each scruple half a grain of quicksilver, and one grain of nitrous acid. Ed.

Ointment of white calx of quicksilver contains in each drachm about four grains and a half of the calx. Lond.

OR,

One grain of tartrate of antimony is contained in

Wine of tartrate of antimony. Ed. - grs. 240

Wine of antimoniated tartar. Dub. - - 120

Wine of tartarized antimony. Lond. - - 120

Wine of antimony. Lond. - - uncertain.

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One grain of precipitated sulphuret of antimony is contained in

Compound pills of antimony. Dub. grs. 2.7

One grain of opium is contained in

Opiate confection. Lond. - - grs. 36

Opiate electuary. Ed. - - 43

Electuary of catechu. Ed. - - 193

Compound electuary of catechu. Dub. - 199

Troches of liquorice with opium. Ed. - 75

Compound troches of liquorice. Dub. - 60

Pills of opium. Lond. - - 5

Opiate pills. Ed. - - 10

Opiate powder. Lond. - - 10

Compound powder of chalk with opium. Lond. 43

Compound powder of ipecacuan. Lond. Dub. 10

Powder of ipecacuan and opium. Ed. - 10

Tincture of opium. Ed. Lond. Dub. - 12

Camphorated tincture of opium. Lond. 244

Ditto ditto Dub. 196

Ammoniated tincture of opium. Ed. - 68

Tincture of soap and opium. Ed. - 31.5

One grain of quicksilver is contained in

Quicksilver pills. Lond. - - grs. 3

Ditto Dub. - - 2.5

Ditto Ed. - - 4

Stronger quicksilver ointment. Lond. Dub. 2

Weaker quicksilver ointment. Lond. Dub. 6

Quicksilver ointment. Ed. - - 5

Quicksilver plaster. Ed. - - 5.5

Litharge plaster with quicksilver. Lond. 5

Ammoniac plaster with quicksilver. Lond. 5

One grain of calomel is contained in

Powder of scammony with calomel. Lond. grs. 4

Compound antimonial pills. Dub. - - 2.7

One grain of the grey oxyd of quicksilver is contained in

Ointment of the grey oxyd of quicksilver. Ed. grs. 4

One grain of the red oxyd of quicksilver is contained in

Ointment of red oxyd of quicksilver. Ed. grs. 9

One grain of submuriat of quicksilver and ammonia is contained in

Ointment of white calx of quicksilver. Lond. grs. 13

One grain of nitrat of mercury is contained in

Stronger ointment of nitrat of mercury. Ed. grs. 5

Ointment of nitrated quicksilver. Lond. Dub. 5

Milder ointment of nitrat of quicksilver. Ed. 13

In many instances these proportions are only to be considered as approximations to the truth, as they are calculated from the quantities of the ingredients taken to form the preparation, not from the quantities which exist in it after it is formed. The nitrat of mercury, for example, in the different ointments into which it enters, is estimated as equal to the whole quantity of mercury and nitrous acid employed to form it, although, from the very nature of the preparation, it cannot be so much. In the solutions of opium, the opium is estimated as equal to the whole quantity employed, although not above two-thirds of it be dissolved. Lastly, no allowance is made for the loss by evaporation; and hence, notwithstanding the difference by calculation, the Edinburgh troches of liquorice with opium contain probably as much opium as those of Dublin; for the former, being made with syrup, will lose more in drying than the latter, which are made with the extract of liquorice.

E c

POSSE'TUM. Posset. Milk curdled with wine, treacle, or cider, by foreigners reckoned peculiar to the English. The serum of a posset, called *posset drink* differs from the whey of milk by the addition of the fluid employed to curdle it.

POSTBRACHIA'LE, (from *post*, after, and *brachium*, the arm). See **METACARPUS**.

POSTE'RIOR ANNULARIS; an external interosseous muscle of the hand, which draws the ring finger inwards.

POSTE'RIOR INDICUS; a similar muscle, which extends the fore finger and draws it outward.

POSTE'RIOR MEDII, extends the middle finger and draws it outward.

POSTE'RIOR MU'SCULUS AU'RIS. See **ABDUCTOR AURIS**.

POS'THE, (*quasi*, *πρὸς*, from *πρὸ*, to place before). See **PRÆPUTIUM**.

POSTPOSITIO, (from *post*, and *pono*, to place). When the paroxysm of a fever comes on later than is expected, the paroxysm is said to be postponed; when it begins sooner, to be anticipated.

POTA'SSA. We have, in the articles **ALKALI** and **CHEMIA**, q. v. given every information apparently necessary on this subject; yet, as in some cases the kali is required to be peculiarly pure, we mean chiefly when employed as a re-agent in detecting poisonous impregnations, it may be, perhaps, useful to describe shortly the methods of preparing it without any remaining impurity. Two have been employed; and we shall first mention that of Bouillon la Grange, from the *Annales de Chymie*.

To water, heated nearly to boiling, some highly caustic lime must be added, which will bring on ebullition; and, when slaked, an equal quantity of potash of commerce. The water must be in such a quantity as will bring the whole to a thick liquid. In boxes, whose bottom is covered with well washed river sand, and then with a stratum of finer sand, on a cloth sprinkled with wood ashes, this mixture must be cautiously poured, and covered very gently with water, which, passing through the cloth and sand, is conveyed into vessels by a hole in the bottom of the box. The fluid in the vessels must be guarded from atmospheric air, and water added till its saline taste begins to grow weak. The superfluous fluid must be carried off by a quick ebullition, and any impurity will then separate. To obtain it perfectly pure, it must be evaporated to dryness, and dissolved in alcohol, which takes up the pure potash only, leaving whatever salt contains any carbonic acid.

Lowitz advises the lixivium of potash, freed from the carbonic acid in the usual manner, to be evaporated to a thin pellicle. After cooling, the foreign salt is to be separated, and the evaporation continued in an iron pot, during which the carbonate of potash rises in a pellicle, which must be constantly separated. When no more pellicles are formed, and it ceases to boil, it must be taken from the fire and suffered to cool, continually stirring it till cold. It must then be dissolved in double the quantity of cold water, the solution filtered, and evaporated in a glass retort till it begins to deposit regular crystals. After the formation of a sufficient quantity of these, the brown fluid must be decanted, and the drained crystals redissolved in the same quantity of water. The decanted fluid, become clear by subsiding,

must be again decanted, and crystallized. These operations are repeated till the crystals afford, with the least quantity of water, solutions perfectly limpid.

We know that alkalis are, in general, the product of fire; but in many cases they exist formally in the plant, though often united with an acid in the form of a neutral. Recent discoveries, however, which we shall soon notice (see **SAL** and **SODA**), have lately opened an ample field for speculation. See **CLAVELLATI CERNERES**.

POTENTI'LLA RE'PTANS, (*à potentia*, from its efficacy). See **QUINQUEFOLIUM**.

POTE'RIUM, a cup, (from the shape of its flower). See **PIMPINELLA**.

POTIO, (from *potō*, to drink). A **POTION**: a liquid form of medicine, to be taken at once, a term usually confined to laxatives.

POUPA'RTII LIGAME'NTUM. See **FALLOPII LIGAMENTUM**.

PRÆCIPITA'NTIA, (from *præcipito*, to cast down). Medicines which moderate the motion and heat of the blood, by *precipitating*, as was supposed, its acid.

PRÆCIPITA'TIO. **PRECIPITATION**; the separation of substances dissolved in a fluid, by the addition of a third body, by the abstraction of caloric, or of the quantity of the menstruum. The first is, however, strictly speaking, true chemical precipitation, and it takes place when the added substance combines with the menstruum, rendering it no longer able to hold the first in solution; or where the third body unites with that in solution, forming a substance no longer soluble. The substance separated is called the *precipitate*, if it sink, *cream*, if it swim. Some caution is necessary in these experiments, for in some cases the precipitate is again soluble; but this depends on chemical affinities and the minuter doctrines of chemistry. See **CHEMIA**.

When the matter to be precipitated falls to the bottom of the vessel, the fluid is poured off, or filtered, and what remains behind is to be dried like levigated powders.

PRÆCO'CIA, (from their early ripening). See **ARMENIACA MALA**.

PRÆCO'RDIA, (*præ*, and *cor*, the heart,) a general appellation of the bowels, generally of the contents of the chest. Fernelius, lib. iv. de Febribus, comprehends under this term the region above the stomach, the diaphragm, the liver and biliary ducts, the pancreas, the stomach, particularly its upper orifice. This name has been also given to the metatarsus.

PRÆPARA'NTIA MEDICAME'NTA are medicines supposed to prepare the morbid humours for separation, and their consequent discharge.

PRÆPARA'NTIA VA'SA are the vessels of the spermatic cord, in which it was supposed that the seed was prepared. See **SPERMATICA CHORDA**.

PRÆPARA'TA VE'NA. See **FRONTALIS VENA**.

PRÆPU'TIUM, (from *præputō*, to lope off before). The **PREPUCE** or **FORESKIN**, *epigogion*, *posthe*. When this is wanting the person is called *leipodermos*, when lost, *lipodermos*. See **PENIS**.

PRÆSA'GIA, (from *præ*, before, and *sagio*, to perceive). **PRESAGES**. Fred. Hoffman observes, that three things are requisite to a right presage, viz. 1st, That from due observation we be able to trace and investigate the origin and causes of disorders in order to

oppose them in the beginning by proper remedies, or give salutary directions. 2dly, That we accurately know the various natures of diseases, and their differences in different constitutions, that we may be better able to give medicines which shall remove them. 3d, That we be able to form a right judgment of the operation of medicines, and the event of disorders. See PROGNOSTICA.

PRESENTA'TIO, (from *præsentō*, to offer). In midwifery it is the manner in which a child offers itself in its passage into the world; and the different presentations are denominated according to that part of the child which is perceived at the mouth of the womb, when a woman begins to be in labour.

In preternatural presentations the membranes protrude, for the most part, in a lengthened form; and when the pain declines, no part of the child can be perceived, but the membranes only, as in the beginning of labour; after some time, from the quantity of water, the membranes have a round form; but they have not the usual effect of dilating the os tincæ. If the head presents, it is distinguished by bringing the finger round so as to take in a large portion of it; we then feel an uniform hard substance, and often discover a suture. When a shoulder or a hip presents, they have not that uniform hard feel which is observed when the head offers. If the back presents, the vertebræ are felt; if the belly, the funis umbilicalis discovers it. The breast presenting is known by feeling the ribs; the breech by the private parts, and the discharge of the meconium at each pain; the hand, or foot, by the absence or presence of the heel. See PARTURITIO.

PRA'NDIUM, (from *prandeo*, to dine). *Ariston. DINNER.*

PRA'SIUM A'LBUM, (from *πρᾶσις*, a square border). See MARRUBIUM ALBUM.

PREGNANCY. When, from the previous connection, the fœtus is animated, (see GENERATIO,) it soon escapes into the uterus, if the Fallopian tubes are not obstructed. Its minuteness at that period prevents us from determining with precision the time of its passage; but as it is probably conveyed to the tube at the moment of animation, since an extraordinary action is required to raise the fimbriæ, it probably is not long delayed in its progress. Every part of the uterus is apparently adapted for its attachment, since, wherever the placenta is fixed, we there find its maternal part; the cotyledons of ruminant animals. The early appearances are those only of a slight inflammation, the constant concomitant of increased action, or of evolution, with usually a small proportion of mucus; and, for some time it is only a small body, covered apparently with a light down. See FÆTUS.

The mother for a time feels no alteration, and, indeed, so slight are often the early symptoms, that a woman sometimes does not know that she has conceived till she feels the motion of the child. More frequently, however, symptoms of general irritability and peculiar sensibility come on early. The fancies are singular, the appetite capricious, the features sharp, the complexion pale, but clear; till about six weeks after impregnation, a sickness of the stomach comes on, chiefly in the morning, and most commonly on rising from bed. After the stomach has been freely discharged, some women are frequently easy and cheerful through the

whole day; but many suffer from constant sickness for four months; some during the whole period. We have known women who have never been able to eat or drink without the bason near, in which it was constantly returned, seemingly unaltered in appearance and quantity, and have yet borne healthy children. In most instances, however, the sickness is confined to the first four or five months, though the capricious appetite frequently continues during the whole time.

In the early period, the abdomen is said to be somewhat flatter than usual: it is at least not fuller; but between the fourth and fifth month the uterus rises above the pubes, like a round ball, occasionally on the right or left of the symphysis, and gradually extends, till at the ninth month it reaches the scrobiculus cordis, protruding in its progress the navel.

At a very early period, often within the first two or three weeks, the breasts grow fuller, and pricking pains are felt in them; the areola round the nipple extends, and is brown, often verging to a blackish hue, which continues to enlarge till the moment of delivery. About the fifth or sixth month, sometimes earlier, a little whitish serum can be pressed from them, which at last approaches more nearly the appearance of milk. The catamenia, as is well known, are very commonly suppressed during pregnancy; but in some women they flow with their usual regularity through the whole period of gestation. In delicate females, who use little exercise, it is not uncommon to have one discharge regular in time, but not in quantity or duration, after impregnation; and this slight appearance will recur at irregular intervals during the whole time. If not attended with pain, or flowing copiously, we have never found it dangerous or threatening abortion.

The most unequivocal symptom occurs nearly between the fourth and fifth month, styled the *quickening*, when the motion of the child is first perceived. This sometimes induces a little faintness, which soon passes away; but the commencement is occasionally so slight as to be unobserved. It first resembles a flatulency; and flatus has sometimes deceived even the most experienced matrons; but it soon becomes more distinct, with a somewhat more rapid motion, resembling the fluttering of a bird; and at last it affords so strong a resistance as to raise the clothes, and be obvious to the eye at some distance. The period of quickening is pretty accurately about the twentieth week, and will generally correct any erroneous reckoning from the disappearance of the menses.

These symptoms arise from the peculiar state of the uterus, with which the stomach, the mammæ, and the appetite sympathize. The final cause of the vomiting it is not easy to assign. We have considered it, in another place, as useful to guard against plethora in the earlier months; and it is certain, that the children of those women who have been scarcely free from vomiting, have not been extenuated, or apparently deprived of their proper nourishment.

To determine whether impregnation has taken place requires often very minute attention; and the most experienced practitioners are occasionally deceived. If a young married woman wishes for children, she will catch at every probable appearance, and magnify every accidental symptom. It is necessary to watch the changes already detailed, and to pursue them in their

progress. We have mentioned the principal circumstances in different articles, particularly under ASCITES; and *suspected pregnancy*, in the article MEDICINA FORENSIS. After three or four months the situation may be more clearly ascertained by the touch; and in the sixth or seventh month pretty certainly determined. We shall shortly describe the successive changes in the cervix uteri and os tinæ during pregnancy, to enable the younger practitioner to determine the question by this means; and we shall copy the very comprehensive and judicious description of Dr. Hamilton, in his "Outlines of Midwifery."

"For the first three months the os tinæ feels smooth and even, and its orifice is nearly as small as in the unimpregnated state. When any difference can be perceived, it consists in the increased length of the projecting tubercle of the uterus, and the shortening of the vagina, from the descent of the fundus uteri through the pelvis. This change in the position of the uterus, by which the projecting tubercle appears to be lengthened, and the vagina proportionally shortened, chiefly happens from the third to the fifth month. From this period the cervix begins to stretch, and be distended, first in the upper part; and then the os tinæ begins also to suffer considerable changes in its figure and appearance. The tubercle shortens, and the orifice expands; but during the whole term of gestation the mouth of the uterus is strongly sealed up with a ropy mucus, which lines it and the cervix, and begins to be discharged on the approach of labour. In the last weeks, when the cervix uteri is completely distended, the uterine orifice begins to form an elliptical tube instead of a fissure; and sometimes, especially when the parietes of the abdomen are relaxed by repeated pregnancies, disappears entirely, and is without the reach of the finger in touching. Hence the os uteri is not placed in the direction of the axis of the womb, as has been generally supposed."

To this we can only add, that about the fifth or sixth months, the weight of the uterus is sensible on raising it by pressure on the os tinæ or cervix, and that in the later months the distended cervix is so thin that the head of the child, when it presents, can be often felt through it.

THE DISEASES OF EARLY PREGNANCY are numerous and troublesome, arising chiefly from the excess of irritability just mentioned, and the plethora, which usually occurs in the early months. We must consider them in an inverted order.

Plethora. The diseases arising from plethora are, chiefly, *flushing of the face, fulness, pain of the loins, load in the head, vertigo, and drowsiness.* The women whose stomachs are most irritable suffer less from these complaints; but, when they come on, they require particular attention. It has been usual to direct small bleedings, and such pregnant women bear with ease, and even advantage. Yet the habit is soon established, and they become necessary in future pregnancies, when the plethora is less common. We have endeavoured, therefore, to avoid them, and we think we have succeeded by cool, free air, by gentle laxatives, and a moderately cooling diet; above all, by perfect rest and tranquillity both of mind and body. The swelling and pains of the breasts arise in part from this cause. They should not be confined by ligatures and lacing; nor must it be forgotten, that, in the present apparently free and easy

costume of the ancient Grecians, they suffer as much by pressure from the sides and below as they formerly did by the iron stays. Every thing must now project forward, but it is not on this account a more easy dress when the breasts are swollen.

The greater number of diseases arises, however, from *irritability*; and among these we may reckon the distressing *stomach complaints*. The morning sickness is one of the most painful feelings attendant on this state; and it is one of these which medicine most commonly fails in relieving. A cup of camomile or peppermint tea, taken on first waking, and suffering the patient to lie still for an hour, will sometimes alleviate the distressing sickness; but should it recur during the day, these means will scarcely succeed any farther. Slight emetics will occasionally relieve, but as often fail. Magnesia and columbo root, sometimes with the kali purum, sometimes with the ammonia pura, occasionally with the aromatic tincture, or a slight proportion of the tinctura opii, will be for a time useful; but the sickness will not wholly yield till the uterus begins to rise above the pelvis and freely expand. Dr. Vaughan, in the London Medical Journal, employed nourishing clysters, with anodyne liniments, to the pit of the stomach. We have already observed, that the intention of nature in exciting vomiting seems to be the prevention of plethora, which is often far more dangerous than the increased action of the stomach. If this be true, it will prevent the introduction of nutriment: and the apparent anxiety of nature in every instance to preserve life, particularly in the reproduction of the species, would lead us to be cautious of interfering in an object where her own plans are usually so beneficial. We may alleviate troublesome symptoms, but should not strongly interfere. It is peculiarly rare, we believe it has scarcely ever happened without the suspicion of some fixed organic complaint, that a woman has sunk or miscarried from inanition.

Cardialgia and diarrhæa are troublesome symptoms, but not dangerous. They are generally relieved by magnesia, the compound powder of chalk, with occasionally a few drops of the aqua ammoniæ puræ, sometimes with the tincture of opium. They arise from irregularity in the digestive process, in consequence of the increased irritability of the stomach, and disappear usually about the fourth month. They are increased by acsents rather than by acids, for vinegar can be often taken with less inconvenience than pastry.

Faintings and hysteric affections are the consequences of peculiar irritability of the system. Low spirits are among the early symptoms, and almost every pregnant woman thinks her state a fatal one; but while such is her language, her conduct contradicts it, and indeed, in the intervals of sickness and pain, the spirits of a pregnant woman are often free and cheerful. Despondency is only in her words. The common hysteric remedies, keeping the bowels free, above all a little variety of scene, and the cheerful conversation of a sensible woman, who has already passed the same ordeal repeatedly with success, will lessen every unpleasant symptom of this kind.

THE DISEASES OF ADVANCED PREGNANCY are often more serious. They arise from the pressure or the change of position of the gravid uterus; and though often only inconvenient, are sometimes dangerous.

The diseases which arise from pressure are various,

swellings of the veins of the leg, œdema of the lower extremities, &c. costiveness, piles, and dyspnœa. These are relieved by the common remedies; but while the cause remains cannot be cured. In weak habits the œdema sometimes arises to general dropsy, which continues after parturition.

More serious diseases from the pressure of the uterus are various spasmodic complaints, rising from slight cramps in the legs to violent *epileptic paroxysms*. The immediate causes are irritation from the pressure on the sacro sciatic nerves, communicated to the brain when the convulsions are more general. Sometimes they seem to arise from the motion of the fœtus, and are more common in a first pregnancy than at any future one. The slight spasms are alleviated by opium; but the epileptic fits are highly dangerous, and in a large proportion of cases are fatal. We have already mentioned this disease, vide *CONVULSIONS*; but must now more fully enlarge on it.

Puerperal convulsions are sometimes relieved by copious bleedings; but the event often leads us to regret the loss of that strength which the patient is thus deprived of. They seldom occur with any violence till about the seventh month; but, in general, attack near the full period. It is first necessary to empty the rectum by an active clyster, which will also, in many cases, bring on labour. The next step is to give a large dose of opium, and inject also no inconsiderable one into the rectum. Forty drops of the tincture of opium may be given, and repeated every hour, or oftener if the fits are violent; and at least two drachms should be given in a clyster. If the fits produce any tendency to labour, the relaxation occasioned by the opium will produce some yielding in the os tincæ; and when it is open, though very slightly, labour may be expedited by introducing the finger, and enlarging it, till we can rupture the membranes. In general, during a pain, the convulsions remit, which is a strong argument in favour of expediting the labour. If the os tincæ does not yield, some practitioners have attempted its dilatation by force; a practice by no means to be recommended, though we have not seen it followed, as has been predicted, by inflammation of the uterus. In general it is safer to give large doses of opium till the relaxation which it occasions, joined with the debility naturally produced by the repetition of the paroxysms, brings on labour. We must be cautious, however, not to carry our expectations of labour coming on too far, as the woman may die undelivered, a circumstance peculiarly dreaded by females; and, in emergencies, the forcible dilatation of the os tincæ, however dangerous, is the safer alternative. By this plan more than half of those entrusted to our care have recovered, while the usual calculations of the successful cases offer a considerably less proportion. Before the seventh month, however, we must trust to the opiates and the operations of nature.

Other plans have been recommended. Dr. Denman advises dashing cold water in the face; Dr. Hamilton the digitalis; and other practitioners large doses of camphor given by the mouth and by clysters. The former we have found useless; the digitalis we have not had an opportunity of trying; and we should apprehend that there was not sufficient time for its operation, unless the dose was hurried on with a rapidity

that would be dangerous. The camphor, recommended in the *Memoires de Medicine*, we have tried; but in each case it brought on an alarming stupor, which has prevented us from repeating it, though given in a far less dose than was recommended.

Sometimes the convulsions follow delivery, and generally arise from fright or from terror. This is hardly a part of the present subject, but it is so closely connected that we could not avoid mentioning it, and it will not detain us, since the usual remedies just mentioned will relieve the complaint, if it admit of relief.

In general these convulsions are not so frequently fatal as those which precede labour, though always dangerous.

Ischuria and frequent micturition are complaints which depend partly on pressure, and in part on irritation. Either is an inconvenience which may be alleviated by a slight opiate; but frequent inclination to make water produces considerable irritation, if not gratified; and the pregnant woman should avoid crowded rooms, long journeys, and every situation where this desire cannot be quickly indulged. Should the bladder be greatly distended, the urine will be permanently retained, and the worst consequences follow, particularly the retroversion of the uterus, which, but for this connection, should have been noticed more early.

Retroversion of the uterus usually occurs about the latter end of the third month, when the womb, if prevented by distention of the urinary bladder, or violent fatigue, from rising above the pelvis, falls backward between the vagina and rectum, pulling the os tincæ backward and upward. Obstinate costiveness has been accused of producing this change in the situation of the womb, but will more probably prevent it, for the posterior part of the pelvis must be spacious and empty to admit of the uterus falling backwards. In this case a tumour is felt in the perinæum, bearing down like a child's head, with forcing pains, tenesmus, a retention of the stools and urine. The finger passed into the vagina is soon stopped without reaching the os tincæ; and in the rectum a round hard tumour may be felt. In this situation the uterus enlarges, and increases all the symptoms. The forcing pains are violent; the retention of the urine and fœces obstinate; the load and oppression are communicated to the brain; and coma, or delirium, with fever, come on, often accompanied by convulsions.

The reduction of the tumour affords the only prospect of relief. We must endeavour then, for this purpose, to evacuate the bladder and rectum; but the weight of the uterus draws back the meatus urinarius, and the bulk prevents the passage of clysters or fœces. A finger introduced into the vagina, and another into the rectum, will assist the reduction, while the patient on her hands and knees, bent forward, contributes by her posture to facilitate the return of the uterus. Perhaps if laying on her back, with her nates raised to half a right angle, the reduction might be still more easy. Dr. Cheston, we find, in the second volume of the *Medical Communications*, succeeded in a case of this kind, by puncturing the bladder at the pubes; and a more desperate proposal has been made to puncture the uterus through the rectum to procure abortion. The attempt is, however, truly absurd, for the puncture of the uterus would not restore the situation of the womb;

and if abortion could thus be procured, the fœtus must pass through the wound.

The caprices of pregnant women are numerous and troublesome. They are not wholly fanciful, for the most firm and sensible women, who conceal them, acknowledge the pain and difficulty they feel by the effort. On the contrary, they increase by indulgence, and often become injurious. In speaking of the peculiarities of the Fœtus, q. v., we showed, at some length, that a change in its structure or appearance from any mental affection of the mother was highly improbable; but to deny any reasonable gratification often produces uneasiness and irritation both of mind and body, with loss of sleep, and an increase of the hysteric symptoms. A man will also commiserate the state to which the most lovely and tender part of the creation is thus reduced, and be led by every kindness and attention to alleviate it. Yet the same affection will set limits to indulgence; for the craving truly grows by what it feeds on, and at last may require impossibilities. The refusal will then be doubly distressing. To grant every reasonable request, to soothe, to persuade, and to expostulate, when these requests verge to what is fanciful, what is not easily practicable, or what may become injurious, will gradually place these fancies more under the controul of reason, and the months in which their influence is strongest will gradually pass away. It is singular, however, that the most eccentric caprices of appetite are rarely injurious; and the most unlimited indulgence is often borne not only with impunity but with advantage. Even the heartburn is not increased by large quantities of fruit, if eagerly longed for; and the rest is often calm and refreshing after food apparently the most indigestible. May not then these apparently capricious fancies be often the dictates of nature, the cravings of somewhat salutary to the constitutions by means of which we are ignorant?

PREHE'NSIO, (from *prehendo*, to take by surprise). See CATALEPSIS.

PRE'MNON. See OCLUS.

PREPARATIONS, (from *preparo*), a term applied often to compound medicines, but more commonly, at present, confined to those parts of the human body which are artificially preserved from the usual changes in consequence of putrefaction, or prepared to display their structure.

Preparations are either wet or dry. Dry preparations should be always finished with expedition that the natural colour may be preserved, and great care should be taken that they are not soiled by dust or handling. The fat should be carefully removed; and the preparation may be slightly washed over by some colourless aqua kali puri, and again with water, to dissolve what may remain. If the part is not very thin, this may be repeated; but in general it injures the texture of the preparation, and such subjects should be chosen as have least fat. Objects preserved in this way should be dried in the shade, with a free current of air; but when the danger of putrefaction is considerable, artificial heat, in a degree not to melt the injection which is previously thrown into the vessels. If they are distended with air, small apertures should be made to prevent the rarefied air from bursting them. Dry membranes may be extended by pins on a flat board, with a paper slightly

oiled beneath to prevent their sticking. Hollow substances are best preserved on stands under glass bells. In drying, fly blows and insects may be kept off by washing the preparation with a solution of hydrargyrus muriatus, in alcohol, in the proportion of a drachm to six ounces.

Preparations are sometimes distended, for drying, with wool, cotton, hair, quicksilver, tallow, or plaster of Paris, besides air. The last, however, is preferable, as more uniform; but is apt to escape by minute foramina, which are with difficulty closed. Where the parietes are thick, as dropsical ovaries, uteri, or aneurisms, hair, or wool very slightly oiled, are necessary. Plaster of Paris is chiefly used where the distending substance is suffered to remain, where tortuous canals prevent the use of hair or wool, or where the membrane is so thin as to require an equable distention. Thin injected preparations are also conveniently displayed on plaster. The penis and the internal organs of generation, as well as the lymphatics, are most conveniently filled with quicksilver; the heart with tallow, which may be melted and drained off with a heat less than will melt the injection of the coronaries. The lungs are preserved dry, in small portions, by distending the air vessels with quicksilver; in large portions, by filling them with oil of turpentine. When dry, each fluid may be discharged by an even, longitudinal section.

Dry preparations are varnished to preserve them from mould, to prevent their destruction by insects, and to increase their transparency. The white spirit varnish of the shops is well adapted for large masses; but is too friable when applied on thin membranes. For the latter purpose the oil varnish of the shops is preferable. It is necessary to separate every particle of fat or grease; and in using the spirit varnish to dry the preparation carefully. Externally both are properly laid on with a brush, and repeated coats are applied. In hollow preparations the varnish is poured in and shaken around; in corroded ones poured on them.

Another kind of dry preparation is styled *corroded*, since, after injection, the substance of the containing vessels is destroyed by immersing the whole in a fluid containing three parts of muriatic acid and one of water. From about three to six weeks is necessary for the corrosion. It is then to be placed in a basin; and at first a gentle, afterwards a stronger stream of fresh water is allowed to pass through it. The little adhering pulp in the smaller interstices may be washed away, by directing a current of water through a small syringe to the part. The preparation must then be dried; and should be carefully suspended by a tape, as a cord will probably cut through the wax. If the vessels are not large enough to admit of its being suspended safely, it must be placed on cotton, over which a woollen cloth is spread. It must be supported on a stand, by means of plaster poured into the cavity, in which the trunk rests.

Wet preparations are preserved in spirits; and the peculiar art which raised the credit of Ruysch so high seems to be in part lost. Cotemporary authors speak with rapture of the pellucidity of his fluids, and the brilliancy of his injections. A little boy was so artificially preserved that the Czar Peter, it is said, ran and kissed it. Albinus succeeded well, though less

happily than Ruysch. Yet attentive anatomists have remarked, that the parts preserved in his glasses were peculiarly minute. Various fluids have been tried, but with little success; and we must now explain the methods of the most experienced dissectors.

When a part is to be preserved in spirits, it should be previously macerated in water, continually changing it, to prevent putrefaction, till it passes off pellucid. Every particle of fat and cellular membrane should then be separated, the hollow parts and cavities distended with hair; and the ducts, or more important blood vessels, pointed out by the introduction of bristles, quills, or bougies. If then put into alcohol, it will soon acquire firmness enough to admit of the removal of the stuffing.

Every object does not require spirits of the same strength. Those which are thick and massy require pure alcohol: those which are less so, proof spirit; and the membranous objects, one part of spirit, and two of water. The spirits and water should be previously mixed and filtered. Immersing some preparations in pure colourless oil of turpentine gives them transparency, and shows the internal organization and arrangement of the blood vessels very perfectly; but is adapted only to those which are to be dried. At first the spirits should be frequently changed.

Dr. Monro adds a proportion of vitriolic or nitrous acid to the spirit; and this mixture neither changes the colour nor consistence of the parts, except they contain mucus or serum. The brain of a young child, the crystalline and vitreous humours of the eye, become so firm in this fluid as to admit of handling. The serum and the semen are coagulated in it; and the red injection is rendered more conspicuous. For the more tender albuminous parts, two drachms of spirit of nitre must be added to a pound of spirit of wine. For other parts twenty or thirty drops are sufficient; and this fluid, it is said, comes very near the spirit employed by Ruysch.

To secure preparations and prevent the evaporation of the spirit requires many minute contrivances, scarcely within our scope to develop. The best method is to have the top of the glass accurately ground and polished, on which a piece of plate glass of the same size is to be laid. On the edge of the vessel a drop or two of gum water is placed, and the piece of plate glass laid gently on. The gum water will then, by capillary attraction, run round the rim, closing the little interstices which the polisher may have left. A piece of tin foil should then be moulded over the cover and the edge of the jar, and the whole secured by a wet bladder reaching below the tin foil, covered by a leather closely tied to the neck of the jar, well varnished, especially round the cord. The glass should be thick and free from any irregularities, so as to magnify the preparation without any distortion. With every precaution, however, spirit gradually evaporates. The best way of suspending light bodies is by a floating glass globe; larger ones by a stick fixed across, for a thread continued to the edge of the jar conducts the spirit, and assists evaporation.

PRE'SBYTÆ, (from *πρεσβυς*, old). See AMBLYOPIA, and OCULUS.

PRESERVATI'VA A'QUA, (from *preservo*, to prevent). See ANTIVENEREALIS AQUA.

PRESU'RA, (from *πρεθω*, to inflame). Inflammation of the ends of the fingers from cold; the *phlogosis erythema* of Cullen.

PRIAPÆ'IA. See NICOTIANA MINOR.

PRIAPI'SMUS, (from *Priapus*, the heathen god). A PRIAPISM; an erection of the penis without any lascivious idea or inclination, with violent pain, is a spasmodic contraction of the *erectores penis*, wholly unconnected with the state of fullness of the *vesiculæ seminales*; and the disease of advanced life. Priapismus affords a striking instance of spasm arising from debility. Camphor and opium at night, with bark and warm aromatics in the day time, are the best remedies; but we can in general only palliate: the disease is seldom removed. See IMPOTENTIA.

PRIMÆ VI'Æ. The FIRST PASSAGES; that is, the stomach and duodenum.

PRIMU'LA VE'RIS, (from *primus*). See PARALYSIS.

PRIMU'LA ODORATA. See AURICULA URSI.

PRINCEPS ALEXIPHARMICO'RUM. See ANGELICA.

PRINCI'PIA, (from *princeps*). The PRINCIPLES OF ELEMENTS. In science it is the appellation of rudiments, or of those leading propositions on which the whole depends; thus, to mark the extremes of the scales, we have the *principia philosophiæ*, and *principia medicinæ*.

In analysis, the principles of bodies are those ultimate results beyond which we cannot proceed. According, therefore, to the progress of science, we have rested at different points, returning lately, with Aristotle, to earth, air, fire, and water. Yet air and water are certainly not elements, for water can be decomposed; and when we speak of air, we know it to be a compound, though we are unacquainted with its different bases. In fact, the only elements we can now recognize are earth and fire: yet of the common principle of the different earths we are still ignorant. Principles and elements are, therefore, words which ought to be effaced from chemical nomenclature; or, at least, they ought not to be used but as an expression denoting the last term of our analytical results; and it is always in this sense that the true philosopher uses the word.

PRIOR ANNULARIS INDICIS and MEDII. Interosseous muscles of the hand, moving these respective fingers.

PRIVATI'VI, (from *privo*). PRIVATIONS, OR DEFECT OF POWERS; synonymous with *dysæsthesiæ* and *dysorexiæ* in Cullen's Nosology.

PROBE, (from *probo*, to try). A surgical instrument, employed in examining the condition of a wound; the direction of a sinus; or the state of a bone. It is usually of silver, rounded at one end, and triangularly sharp at the other.

PRO'BOLE, (from *προβαλλω*, to project). See APOPHYSIS.

PRO'BANG. A flexible piece of whalebone, with sponge fixed to the end. See DEGLUTITIO.

PROCA'RDION, (from *προ*, before and *καρδιον*, the stomach). The PIT OF THE STOMACH.

PROCATA'CTICA CAU'SA. The PROCAT-ARCTIC CAUSES, (from *προκαταρχομαι*, to precede). The pre-existent cause. See CAUSA.

PROCE'SSUS. A PROCESS (from *procedo*, to start out). In chemistry, the operation in which a new substance is produced.

In anatomy, it is a protuberance or eminence of a bone. If the process projects in a roundish ball it is called *caput*, and the narrow part *cervix*; when oblong, and unequally rounded, a *condyle*; when rough and unequal, a *tuberosity*. Processes which terminate in a sharp point are denominated *coronoid*; those which form a longitudinal ridge, *spina*, sometimes *crista*; the *labia* are each side of a broad spine; and brims of cavities are named *supercilia*. The use of processes is to assist motion, by allowing a greater surface for the origin, larger attachment, and more advantageous direction of muscles. See *APOPHYSIS*, and *EPIPHYSIS*.

PROCE'SSUS CILIA'RIS. See CILIARE LIGAMENTUM.

PROCE'SSUS MAMILLA'RES. See OLFACTORII NERVI.

PROCE'SSUS VERMIFORMIS. An appendage to the cæcum, resembling a worm, terminating in a point. Its use is unknown. See *APPENDICULA VERMIFORMIS*.

PROCIDE'NTIA, (from *procido*, to fall down). See *PROLAPSUS*.

PROCIDE'NTIA A'NI; *prolapsus*, and *exitus ani*, *exania*; the FALLING DOWN OF THE FUNDAMENT, is a relaxation of the sphincter, admitting the inversion of the internal villous coat of the intestine, with a proportional tumour.

The causes are, weakness, aggravated by costiveness, piles, diarrhoeas, or tenesmus. It is induced also by every cause of violent forcing, as hard labour, or a stone in the bladder; and every cause of paralysis in the levatores and sphincter ani. Hoffman attributes it to a relaxation of the ligaments of the intestines. Infants are the most frequent subjects of this disorder, in consequence of debility.

The tumour, which is of a fleshy colour, sometimes wrinkled, at others smooth and shining, accompanied with an uneasiness, and an ineffectual desire to go to stool, sufficiently distinguishes the complaint, which is sometimes mistaken for the piles. A ligature hath been applied about the prolapsed anus, in order to extirpate the supposed hæmorrhoid.

When costiveness, a stone in the bladder, or labour, occasion this complaint, the cure is sometimes effected: when a diarrhoea follows it is more difficult; if the hæmorrhoids supervene we rarely succeed.

If the disease, as sometimes happens, should proceed from acrid matter, the cause is distinguished by a sharp, pungent pain after every motion, and the relief is effected sometimes by chalk and mucilages; by mucilaginous clysters retained by opium; more frequently by equal parts of wax and soap, with a small proportion of the Theban extract. If the tenesmus is violent, the mucilaginous clysters, with a large proportion of opium, will be necessary, and the latter should be in a solid form. Should it proceed from costiveness, the mildest laxatives, particularly the castor oil, will be most useful. Rhubarb and aloes are highly injurious, and recommended only by indiscriminating empirics.

If the prolapsed intestine be swelled, then cold astringent applications are necessary, and by supporting the tumour with the palm of one hand, the fingers of the other will gradually replace the fallen intestine. We must, however, not violently persevere, but act only

during the relaxation of the spincter. After the reduction the part may be suspended by the T bandage.

When the prolapsed intestine is contracted by the sphincter ani, and cannot readily be returned, Mr. Pott advises bleeding, opium, fomentations, and an anodyne and emollient poultice to the part, to procure the necessary relaxation for the reduction. If extirpation proves necessary, it is best performed by ligature, for the hæmorrhage which would follow excision must be highly dangerous. If the prolapsus is large, a strong needle, double threaded, may be passed through the intestine, tied above on one side, and below on the other. If the prolapsus is small, a double ligature should be passed round its whole diameter; and in both cases be left to drop off. The pain is allayed by poultices, opium, &c. The sphincter afterwards performs its office.

If a gangrene affects the intestinal fold, the discoloured part, slightly scarified, should be repeatedly fomented with warm brandy, applying in the intervals the cataplasma à cumino.

When the prolapsed part cannot be easily retained in grown people, Cheselden recommends taking away a piece of the prolapsed gut lengthways, for, after the cicatrix is formed, it will never descend; a practice which Pott disapproves.

See Gooch's Cases and Remarks; Pott's Works; Turner's, Wiseman's and Heister's Surgery; Bell's Surgery, vol. ii. p. 268; White's Surgery, p. 380.

PROCIDE'NTIA O'CULI. See MALUM.

PROCIDE'NTIA U'TERI, *metroptosis*, *ecytoma*, *hysteroptosis*. Different degrees of this disorder are: 1. *Relaxatio*; A BEARING DOWN OF THE WOMB; when the womb descends down to the middle of the vagina; 2. *Procidencia*, when it descends to the labia; 3. *Prolapsus*, when it falls through the labia pudendi. *INVERSIO*, and *RETROVERSIO*, q. v. are different complaints. See also *PREGNANCY*.

The lesser degrees of this complaint are discovered by the touch, the greater by the eye. If the woman stands upright, a finger introduced into the vagina will discover the disease; and if the os tincæ be felt, the case is distinguished from a descent of the vagina, though the distinction is sometimes difficult. If the disease happens during pregnancy, the weight pressing down renders walking difficult and painful; micturition difficult; costiveness; and a numbness in the legs and thighs.

The pain is usually felt near the insertion of the broad ligaments, though these do not seem to support the womb; and the cause seems rather to be a relaxation of the vagina, which really supports it.

Girls are sometimes the subjects of this disease; but it most frequently happens to women who have experienced repeated hard labours; who have exerted themselves too soon after delivery; and are of a weak relaxed habit.

Leucorrhœa consequently predisposes to this disease, and it often arises from straining, lifting heavy weights, and whatever produces a strong action of the abdominal viscera.

If neglected, the disease becomes painful, obstinate, and inconvenient; sometimes inflammation, ulcers, or a cancer, are said to be the consequences.

It is necessary, therefore, for women to guard, with

great care, against the first feelings of the complaint, and to indulge themselves with rest, as well as to brace the constitution by tonics, cold bathing, and astringent injections. The bowels should be kept free, and every active exertion avoided. If the water be suppressed by the descent of the uterus, the tumour must be replaced, and the patient laid in bed, with her head lower than the trunk; and in making water the tumour may be supported. Should this plan fail, the catheter must be introduced. The prolapsed uterus sometimes ulcerates, from the access, it is said, of the air, or the acrimony of the urine, but in reality from the strangulation of the upper part; and the uterus should be replaced without attending to this circumstance.

In general the cure is only palliative, and consists of replacing the womb, rest, and introducing a pessary into the vagina, to prevent the uterus from falling lower. This sometimes produces a radical cure, and the relaxed parts recover their tone. In lesser degrees of this disorder, the usual confinement in bed during the next lying-in hath effected a cure; and when it occurs in early pregnancy, it disappears when the womb has enlarged so much as to rest on the pubes. A pessary should be introduced as soon as convenient after delivery, and worn for some time after the woman walks abroad. A round pessary is preferable; and it should be so large as to occasion some uneasiness in passing it, since it will otherwise be apt to fall down. See PESSARIUM.

If a lacerated perinæum is the cause, a cushion may be placed with its convex side to the os externum, and secured by the T bandage; and if the prolapsus hath been neglected, and a swelling with inflammation has come on, bleeding, cooling laxatives, fomentations, and poultices, are necessary: if a mortification appear, the bark with astringent ones. A pessary must be applied as soon as the patient can bear it. Whenever a gangrene or a cancer appear, reduction increases the symptoms, or produces, new and fatal ones; but if there are ulcers, the part should be restored with all convenient speed, without waiting for their healing.

When the uterus not only descends, but is turned inside outward, it is styled *inversio uteri*. This only happens immediately after delivery, when the os tincæ is nearly as large as the fundus; and the funis is forcibly pulled to bring away the placenta. Whatever be the cause, the womb must immediately be restored, or the consequence will soon be fatal; for its orifice will contract, and prevent the necessary relief. After emptying the bladder, lay the patient on her back with her hips raised, and with the hand restore the inversion and gently return the uterus, retaining it till a contraction takes place, and afterwards supporting it as in case of prolapsus.

Dr. Leak advises, after the parts are reduced, the frequent use of the following astringent injection. R Aluminis et vitrioli, alb. āā ʒ i. aq. bullient. ꝑ i. solve et cola. At the same time we must endeavour to strengthen the whole system by nourishing diet, chalybeate waters, and the bark. If no internal disease forbid, the cold bath will give great relief.

Should the descent of the tumour prevent the patient from walking, a fine sponge wrung out of alum water may be dried in a compressed state, cut into any convenient form, and introduced as high as possible. It

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will act by its astringency, and by its pressure in a gentle and uniform manner; and during the use of this application the astringent injection may be used twice a day; and the sponge tent should be made gradually smaller as the vagina contracts.

In the Edinburgh Medical Commentaries, vol. ii. p. 43, we are told that a woman of singular fortitude, about fifty years of age, was much afflicted with prolapsus uteri. After trying many remedies in vain, she at length cut into the substance of the uterus with a common kitchen knife. A considerable hæmorrhage ensued; but the uterus gradually contracted, and she had no return of the prolapsus, nor any bad symptom. Having boasted of her success, many women in the neighbourhood afflicted with the same complaint applied for her assistance, and, by a similar operation, were effectually cured.

In the prolapsus vaginæ the same method of cure is still more strongly recommended; and this peculiar case has suggested the idea that scarifications may be sometimes useful.

See Ruysch's Observations, N° 1, 7, 9, 10. and Saviard. London Medical Observations and Inquiries, vol. iii. p. 1. vol. iv. p. 388—400; Medical Museum, vol. i. p. 227—230; Heister's Surgery; Hamilton's Midwifery, edit. 5; Edinburgh Medical Commentaries, vol. ii. p. 43; London Medical Journal, vol. vi. p. 387; White's Surgery, p. 460; Leak's Medical Instructions, edit. 5.

PROCIDENTIA U'VULÆ. See HYPOSTAPHYLE.

PROCIDENTIA VAGINÆ; *colpoptosis*. The degrees of this disease are different; but when the whole vagina or a part appears through the pudendum, it may be called a *prolapsus*; when it descends to the labia a *procidentia*; and when not so far a *relaxatio*. Widemanus relates a case of this kind which had all the appearance of a prolapsus uteri, but not properly distinguished until it was too late to afford any relief; but generally the disease is known by observing the os tincæ, which distinguishes the prolapsed womb from all other cases of descent, and from the *inversio*, which only happens after labour. When the whole vagina is prolapsed it appears like crude bloody flesh; and if it swells violently, attended with inflammation, a sphacelus will soon come on; but if the swelling be slight, without inflammation, the tumour will neither be troublesome nor dangerous. This disorder should be distinguished from a tumour, a fungus, a sarcoma, &c. of the vagina.

The part may be restored with the fingers, and the patient should rest in bed for some days, using an injection of warm vinegar and water; red wine and water; or a solution of cerussa acetata. In most cases the first object seems to be ablution, then reduction, and afterwards corroborants, such as the bark, vitriolic acid, cold bathing, and avoiding all violent exercise. If these fail, the T bandage must be worn.

See Heister's Surgery; Hamilton's Midwifery, edit. 2. p. 247; Edinburgh Medical Commentaries, vol. ii. p. 46.

PROCIDENTIA VE'SICÆ URINARIÆ. The inversion of the uterus never happens without carrying the bladder with it into the perinæum, together forming a tumour. The bladder in this position is no longer exposed to the pressure of the abdominal muscles, and not having force enough in this posture to contract, the

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patient is compelled to squeeze the bladder with her hands, or between her thighs. The catheter if introduced must not be thrust inward, but downward, the fundus of the bladder being below the meatus urinarius. See London Medical Observations and Inquiries, vol. iii. p. 1.

PROCO'NDYLUS, (from *πρῶ*, *before*, and *κονδυλος*, *finger*). The first joint of each finger next the metacarpus, ante internodium.

PROCTA'LGIA, PROCTI'TIS, (from *πρωκτος*, *anus*, and *αλγος*, *pain*,) *clunesia, cyssotis*. INFLAMMATION OF THE ANUS. A variety of the phlogosis in Dr. Cullen's system. It is discovered by a hot and acutely painful tumour at the anus, irritated by pressure, obstinate costiveness, and fever. The causes are, riding; violent blows; acrid applications; piles, &c. The disease yields with difficulty, often terminates in abscess, and is sometimes succeeded by fistula. See INFLAMMATIO, ABSCESSUS IN ANO, and FISTULA IN ANO.

PROCTOLEUCORRHŒ'A, (from *πρωκτος*, *anus*, *λευκος*, *white*, and *ρῆω*, *to flow*). A white mucous discharge from the anus.

PROCTORRHŒ'A. A yellowish or sanious discharge from the rectum, accompanied with heat and itching about the anus. Whether, however, the discharge is white, yellow, or streaked with blood, the disease is the same, and consists of increased mucous discharge from the rectum, either from cold or irritation. It scarcely differs, except in its seat, from CÆLIACA, q. v.

PROCU'MBENS, (from *procumbo*, *to lie flat*). Botanically applied to a trailing plant.

PRODU'CTIO, (from *produco*, *to bring forth*). See APOPHYSIS.

PRODRO'MI. See ETESIE.

PRŒ'BIA, PRŒ'BRA. See AMULETA.

PROEGU'MENE, (from *προηγιομαι*, *antecedo*). A PRECEDENT CAUSE; by the Latins called *antecedens*. See CAUSA.

PROFLU'VIA, (from *profluo*, *to run down*). The fifth order of the first class of Dr. Cullen's Nosology. A pyrexia, with increased excretion, not naturally bloody; under which he includes two genera, *catarrhus* and *dysenteria*, as the only instances of febrile profluvia.

PROFLU'VIUM. A FLUX of any kind.

PROFLU'VIUM URI'NÆ. See DIABETES.

PROFU'NDA BRA'CHII VE'NA, vel **PROFU'NDA SUPE'RIOR**, (from its deep situation,) a branch from the basilica, sent off from it below the neck of the os humeri, and near the hollow of the axilla: it runs along the side of the brachial artery, and spreads in the adjacent muscles.

PROFU'NDUS MU'SCULUS MA'NUS. See FLEXOR INTERNODII, TERTII DIGITORUM MANUS.

PROFU'SIO, (from *profundo*, *to pour out*). PASSIVE HÆMORRHAGE. A genus in the class *locales*, and order *apoceneses* of Cullen, who defines it a flux of blood, and distinguishes it from active hæmorrhages, as not febrile, but occurring from wounds, leeches, &c.

PROGERMINUS ABSCE'SSUS. An abscess arising from a viscid and almost corrupted phlegm.

PROGLO'SSIS, (from *πρῶ*, *before*, and *γλωσσα*, *the tongue*). See LINGUA.

PROGNOSIS, (from *πρῶ*, *before*, and *γινωσκω*, *to know*), the foretelling of what may happen to the patient,

either with respect to a future, or the progress or termination of a present, disease.

The prognostic of an impending disease may be drawn from the appearances, the mode of living, the changes in habits or situations, and the critical periods of life. If a person, from a healthy state, becomes sallow, weak, with loss of appetite and spirits, or with disturbed sleep, we may easily suppose that some disease threatens. If these appearances come on slowly, with a slight yellowness of countenance, obstructions in the primæ viæ or the liver have probably taken place; if more rapidly, with slight shiverings occasionally, a fever impends. A regular evening exacerbation, with cough, portends a hectic; a more violent shiver, with considerable heat, a continued fever, a deep redness in the face, with inflammation in the eyes, plainly point out accumulations in the head, and chiefly venous ones; but these often arise from diseases impeding a free circulation through the lungs, so that the state of these organs must be considered in forming the prognosis. They often exist together, and aggravate each other. Violent fixed pains in the head, recurring at irregular intervals, and usually excited by every cause of increased circulation, generally show that some fixed obstruction prevents the free course of the blood through the organ; and this is followed by convulsions, sometimes insanity, and frequently a sudden termination of life. A fulness in the stomach and abdomen are certain signs of accumulation, and it depends on the comparison of the other symptoms, whether it be water, infarcted viscera, accumulated contents, or merely flatus, and the prognostic must be regulated by comparing the symptoms of each disease. If a slight pain in the back be increased by stooping, and moving forward either leg, an affection of the psoas muscle may be apprehended; and if the pain is in the hip bone, shooting out at the knee, with a dragging of the leg on that side, some injury has taken place in the hip joint.

The *mode of life* will often lead us to form some prognostic of an impending disorder. Late hours cannot be borne with impunity, except by a very few, and their principal effect is to induce obstructions in the chylopoietic or other abdominal viscera. If connected with drinking spirituous liquors, the effect is usually felt in the liver. The sedentary student has reason to apprehend biliary accumulations, with costiveness, and a train of hypochondriac symptoms; but activity, however great, if sleep be allowed, leads to no complaint. Nature will not be deprived of her rights with impunity; nor can any one detract from his hours of sleep, in any considerable degree, without detracting, at least in a certain proportion, from the period of this life. Excess in eating or in drinking will equally lead us to foretel diseases of the stomach, often of the head, connected with the stomach; but retributive justice is frequently seen to punish the former error with the greatest severity, in the feelings of the patient, by loss of appetite. Almost every situation is apparently consistent with health, if free air be admitted; but its deficiency leads to a variety of diseases from debility, which may be easily foreseen, and can only be avoided by a change. Such creatures of habit, however, are mankind, that this chief assistant to health, free open air, can be dispensed with, often with impunity. The diseases of artificers are scarcely parts of the present subject; nor indeed have we found an appropriate portion of our work for their consideration.

The different parts of the enquiry are, however, scattered in various articles, under the appropriate complaints.

Changes of habits and situations are frequently the source of different diseases, which we can often prognosticate, and sometimes guard against. Abstemiousness, suddenly adopted after free living, and the contrary, are sources of disease, the former chiefly of complaints arising from insufficient stimulus, the latter from too great excitement. A sedentary, after an active life, is often attended with languor, low spirits, and visceral accumulations; the contrary, at first with languor and fatigue, soon followed by increased tone and vigour. The pure air of mountainous regions is a too active stimulus to lungs accustomed to the exhalations of marshes; and, on the contrary, a low situation, after a more elevated one is often followed by intermittents, cachexy, and dropsy.

The *critical periods* of life merit attention also in our prognostics of various diseases. We have thought that PITHUISIS, q. v. was connected with a slower evolution of the body in its progressive stages; and we know that if scrofulous affections do not yield in the first, or, at most, in the second septenary, there is little prospect of a cure. The same may be said of epileptic paroxysms, and of chorea, though to the latter there are many exceptions. The critical period of the female life is that of the cessation rather than appearance of the catamenia, for unless hectic symptoms come on, the discharge, though at the distance of many years, becomes regular. The period of cessation, if not preceded by free, often copious, discharges of the menses, prognosticates a less healthy old age. If lancinating pains in the bottom of the abdomen attend; if the countenance is dark, and the discharge blackish; a local disease in the uterus may be suspected. The German authors are equally gloomy prophets respecting the appearance of the hæmorrhoidal flux in men, but in this country there is little room for such apprehensions.

Such is the outline of what might form a useful work on the prognostics of impending diseases, of which we have had hitherto no example. We must next consider the *prognostics of death or health from the symptoms of diseases which are present*. This part of our work also, in a general and scientific view, has scarcely been attempted.

Prognostics in diseases are usually drawn from the vital, animal, or natural actions. The vital actions which give the best information, are the states of the circulation and the respiration. The first is chiefly known by the pulse, and on this subject we must, in part, anticipate what we shall soon explain. A pulse which strikes the finger with firmness, and is with difficulty compressed, shows a strong action of the artery, and a general firmness of the whole system, in which we should suspect little danger, except from excess of excitement. Yet its counterfeit, a throbbing pulse, which strikes the finger with apparent but not real firmness, will sometimes mislead. The latter has not the same firm continued resistance; it strikes sharply, but not strongly, and the relaxation is as rapid as the impulse is transitory. When there is internal irritation the throbbing pulse will continue often to the last, showing, in every succeeding moment, its peculiar character more strongly; but in the commencement of fevers it often so

nearly resembles the strong pulse as to deceive. A small pulse may be mistaken for a weak one, unless by a practitioner of experience; but the lightness of its strokes depends on the small size, sometimes the depth of the artery. In general, the strong, slow pulse is favourable, except in affections of the head, or occasionally after narcotic poisons. In these cases it is often extremely slow, and shows that the irritability of the heart is diminished.

A large and small pulse refer rather to the contents than the strength of the artery. The former, connected with fulness, shows also a weaker tone of the solids; the small pulse can scarcely be distinguished from a weak one: neither are favourable. Each shows want of energy; nor is this increased by a combination with plethora. What is styled a hard pulse combines fulness with considerable strength. The artery strikes the finger as a large firm cord, and this occurs only in the most violent inflammations, where evacuations can be borne with great ease.

A quick and slow pulse are referrible to their numbers in a given time; but in some cases, as mentioned above, the stroke is rapid, and the intervals long, which is called a *pulsus celer*; when the stroke is long and the intervals short, it may be called, by way of distinction, a retarded pulse. Each are marks of a weakened circulation, particularly the former, which shows the contraction to be in part spasmodic.

The number of the pulse is not perhaps of so much consequence as the young physician imagines, who keeps his stop watch with anxiety in his hand; for it not only varies in different constitutions, but is excited to an inconceivable rapidity in hysteric patients, by the slightest circumstances, without portending danger. In general, the physician should feel the pulse on his departure, as well as in coming. A natural pulse is from about 60 to 80, more strictly from 65 to 75. If a pulse is at 55 or 50, there is reason to apprehend some compression on the brain. If, in the early stages of fever, it rises to 120 in a female not peculiarly irritable, it portends considerable danger, either from debility or irritation. If, at any stage, it exceeds 120, or considerably exceeds it, except for a very short time, we have the greatest foundation for apprehension. A very quick pulse in complaints where the circulation is not usually much affected, is a symptom highly dangerous. In fevers, the pulse, if above 96, generally exceeds 100, and there is seldom any medium between 108 and 120.

The only other distinction, relating to the prognosis, is the regular and intermitting pulse. The last is a dangerous symptom, unless it be habitual: a circumstance not uncommon. In such constitutions, the usual intermission, on the access of fever, often disappears, and the first symptom of amendment is the return of the intermission, which, at the end of a long fever, may appear alarming, if not connected with other favourable symptoms.

The state of the circulation is also known by the appearance of the complexion. A sallowness and a want of transparency shows that the blood is not carried to the extreme vessels; and even when the cheeks are flushed, if the skin round the lips and nose is of an opaque, sallow whiteness, the conclusion will be the same, and the strength of the constitution is considerably impaired. The appearance of the eyes is equally indicatory of strength and weakness, as already explained

see OCLUS), and the character of the features is preserved in proportion to the remaining strength (see FEBRIS and PHYSIOGNOMIA). Each appearance depends on the state of the circulation.

Respiration is a vital action connected with the state of circulation, and of the greatest importance as a prognostic. We mean not to allude to the state of this function in disorders of the chest, where it is necessarily disturbed, but to speak of it as a symptom in more general diseases. A free unincumbered respiration is usually a favourable sign; but from the due performance of this function there are many deviations. In point of strength it differs in increased and diminished motion, styled strong and weak. The first is occasionally full and deep, the latter slight and insufficient. If the accessory organs are called into action, it is styled short and suffocating. In point of celerity it is quick or slow; of regularity, synchronous or intermittent; of sound, stertorous, stridulous, or rattling.

Respiration *slow, full, and deep*, shows the strength and all the vital organs to be unimpaired, and in every situation is highly favourable. The *weak, slight, and insufficient* respiration is, in general, a mark of weakness; the *suffocating*, of obstruction; the *quick*, of considerable irritation, exciting rapid expiration. The *stertorous* shows insensibility, from compression on the brain; the *stridulous*, inflammation of the trachea; the *rattling*, accumulations of phlegm often unconquerable; and the *intermittent* attends the last efforts of expiring life. In health, about three or three and a half pulsations of an artery take place in the interval of each inspiration; but this, like the number of the pulse, is subject to many variations.

The animal actions from which we may draw prognostics are, the senses, muscular action, and sleep. When the internal and external senses are uninjured in acute diseases, the prognostic is favourable; for in chronic complaints, unless in the last moments, they are seldom affected. Violent delirium is a symptom of active inflammation in the brain, and is dangerous only so far as it shows a violently acute disorder. The wandering delirium in fevers of a low kind is also a symptom of no great danger, unless it comes on early, and in a degree disproportioned to the state of fever. In other complaints it will excite serious apprehensions, and shows that the inequality of excitement depends on debility. If it persist after the cessation of the fever, unless evidently in consequence of debility, there is reason to suspect an organic injury in the brain, and more so if violent delirium has occurred in the early part of the complaint. The injury is generally an abscess, whose most common seat is the basis of the brain. Sometimes, however, a general fulness of the vessels only can be discovered. Delirium, arising from want of sleep, is said not to be dangerous; but the want of sleep itself is generally owing to a languid inflammation of the brain. General restlessness is a symptom of the same kind, from the same source.

Of the external senses, and their organs, the eye affords the most particular symptoms by which the event may be foretold. We have already spoke of its dimness, glare, and glassiness, when explaining the structure of the organ. Besides these, a fixed look, without an object, is a symptom highly dangerous. The sensation of black spots, which induces the patient to pick the

clothes, as if he could remove them, is attributed to a partial insensibility in different portions of the retina. In fact, however, it rather depends on the immobility of the eye. We have remarked that, from the spot where the optic nerve enters, no sensation is conveyed; but, from the rapid motions of the eye, this is not perceived in health, and is only obvious when the eye is fixed. It is certainly, however, a highly dangerous symptom, though by no means a desperate one, as it has been represented. A dimness of sight, particularly in fevers, is highly dangerous; and double vision shows an irregular, perhaps a spasmodic action of the muscles, which is truly alarming. It is in general an early symptom of hydrocephalus. Each is sometimes temporary, and ushers in the attack of hysteric or epileptic paroxysms. When the eye lids fall, and can scarcely be elevated by the exertion of the will, it shows considerable weakness, and when the patient sleeps without closing them, great insensibility. The latter symptom is, however, often owing to an irregular contraction of the muscles of the eyes; for in such cases the pupil is drawn up under the lid. The symptom is not, however, on this account less alarming. The clear natural appearance of the eye is a favourable symptom; but too great brilliancy, or too quick motions of this organ, show approaching delirium. A severe fixed look is a similar symptom. The appearance of the eye lids sometimes points out a weak state of the system, particularly when there is a blackness in the lower lid towards the inner canthus.

A noise in the ears in fevers is said to be a sign of approaching delirium, though frequently a symptom of weakness only, and often occurs from this cause in weak and old people. If this noise occurs in the beginning of fevers, it is said to foretel a violent and a tedious disease. Hearing peculiarly acute is often a precursor of delirium, and, without fever, is the effect of strong excitement in the brain. The author of this article, when he has sat at his literary labours for some hours undisturbed, has distinguished words at a distance where others could scarcely hear a sound, and has found his pulse often below 60, sometimes even at 50. Dimness of hearing, in cases where the head is not peculiarly affected, is dangerous; in fevers it is said to be a favourable symptom. It certainly is not unfavourable.

The distinction of *taste* in fevers is generally lost, though it is a favourable symptom, if it is in some degree retained. A nauseous taste in the mouth is generally a symptom of putrid matter in the stomach, very often of bile, and the latter is generally more conspicuous by a slimy, putrid taste far back in the throat.

A lassitude, a disinclination to *motion*, and a weakness when compelled to exertion, show, we have said, impending disease; and when in a peculiarly considerable degree on the attack of fevers, it is a symptom of a highly asthenic complaint. It arises from the want of sensorial energy, and is sometimes in so great a degree as to produce a *fainting*, which is always a very dangerous occurrence. If attended with a considerable wandering, the danger is greater.

It is a favourable sign if in the beginning of a fever the patient can sit erect with his head elevated. In the progress the head requires support; the erect posture is painful, and must be changed for a recumbent one; turning in bed next becomes difficult; lying on the sides requires some effort; so that he is after some time

confined to his back, and at last he cannot support his situation in bed, but gradually sinks down. The more early the appearance of these progressive symptoms, the greater is the danger; and if the last occur so early in a fever as the eighth day, the case will be almost desperate. If the patient can support himself in bed, and occasionally turn on his side, about the twelfth day, circumstances are favourable. In chronic complaints the debility is considerable, and observes, in some measure, a similar progress, though not equally regular; but in these the patient sinks not from debility only, but from organic disease. In many diseases the patient can move and assist himself to the last moment. Spasms and convulsions, as marks of debility, are highly dangerous; but they seldom occur in fevers, without some suspicion of irritation combined. In infants, whose habits are more mobile, they are not equally dangerous, though generally alarming.

Sleep, if calm and refreshing, is always a favourable symptom; but if interrupted, broken by terror, excited by dreadful images in dreams; if, instead of tranquil rest, the patient starts, catches, talks in a hurried manner, though not conscious of terror, it is unfavourable. The nature of the dreams furnishes also a prognostic. To fall from heights, to be immersed in a gulf, or in the sea, are images of more dire portent than others apparently not less terrible. On the other hand, dreams, though frequent, if not terrible, are not unfavourable. As a religious mania is more dangerous and obstinate than any other kind, so these dreams, where the imagination is haunted by the fears of an offended God, and eternal punishment, are those of the most dangerous kind, because the reason, when awake, is less able to combat with the unreal image. *Deep sleep* is itself a disease, and shows considerable oppression on the brain: yet, at the period of a crisis, if attended with a soft pulse, moderately slow, and a soft, moist skin, it is salutary. After a crisis the deepest long continued sleep is not dangerous, if not attended with stertor, or with a pulse preternaturally slow.

The *natural actions* which furnish prognostics are digestion and its consequences, and the various excretions. In fever the *appetite* is at once destroyed; nor is it a favourable sign, in an acute disease, that it should remain or return too soon. In fact, the appetite does not always keep pace with the digestive powers, and the stomach craves, or is allured, while the digestion is still imperfect. In general, appetite, in acute diseases, should be distrusted, and gratified sparingly. In chronic ones it is sometimes unimpaired and ravenous, and may be indulged with little danger, but seldom with advantage. While it continues, the friends are gratified, and expectation is alive, but an attention to the effects will destroy the delusion. If it does not add to the load, and to the disease, it does not strengthen. In obstructions of the mesentery, sometimes of the liver, it continues unimpaired, and its gratification is attended with no injury. In hectic, where it sometimes continues, food of every kind is followed by oppression and sleepiness. In the former case it is only not injurious.

Thirst is one of those indications which we can apparently gratify with the least injury. As a prognostic it shows dryness of the mouth, acrimony in the stomach, perhaps in the whole system, and is generally the con-

sequence of excessive effusion from the exhalent arteries into the cavities, or cellular substance. In each case it is an unpleasant symptom; because its gratification will not always relieve the cause; for watery fluids alone are immediately thrown off by the excretories; and when, from increased exhalation, the fluids swallowed add often imperfectly to the secretion, and sometimes more certainly to the exhalation. It seems only useful when acrid saburrae exist in the stomach. We know not that it is, in other instances, highly injurious; though certainly not beneficial. *Deglutition*, unless in organic diseases of the oesophagus, is easy or difficult, in proportion as the appetite is good or bad. In hysterical cases it is also opposed often by wind, and in hiccup by the convulsion: in each case, however, the circumstances will correct the prognostic.

The appearance of the tongue is closely connected with the sense of thirst, and is of considerable importance as a prognostic. Many persons, however, have a tongue constantly white; but, in general, whiteness of its surface is a sign of fever. If white and dry, it shows the fever to be more considerable; but each appearance begins at the root, proceeds gradually forward in a triangular form, the apex of which is at the tip. This triangle gradually extends till it reaches the sides, and it recedes in the same progression. In the progress of a fever it becomes in the same order brown, a darker brown, and even black; and these colours are usually seen when the tongue is dry and hard. While the edges continue clean, and of their natural speckled appearance, there is little danger; and indeed fevers have terminated favourably, though the tongue has been, for many days, dark, dry, and even black. In one or two epidemics we have found the tongue swell and become black, without being dry, though the fever has terminated favourably. The tongue sometimes, in the course of a fever, becomes suddenly clean, and of a shining red. This, in general, shows that the fever will be of some continuance. No separation of the fur is, however, salutary, that does not leave the tongue of its natural hue, and the papillae distinct. We have thought that when the tongue has assumed this shining red colour, it has portended aphthous eruptions in the throat, for these sometimes follow, and their appearance is known by small mucous spots on the shining surface. These, however, are not dangerous, except in fevers highly putrid. The tongue sometimes cleans slowly in elderly and debilitated constitutions; and, independent of fever, in such habits the tongue is often black at the back part. Neither is a white tongue always a sign of fevers; since, in the greater number of people, anxiety of mind, and even a restless night, will produce this change.

A sense of heat in the upper orifice of the stomach shows either acrimony chiefly acid, sometimes oily; occasionally an extraordinary sensibility of the cardia. In each case we can draw neither a favourable nor an unfavourable prognostic; for it is a symptom chiefly of indigestion. A heavy load in the stomach is an unfavourable symptom, unless it arise from indigestible food, since it shows either an accumulation of viscid mucus, or a want of energy in the organ. When the irritability of the stomach is exhausted by excessive stimuli, the effect is a heavy load.

Vomiting is the connecting symptom between affec-

tions of the digestive organs, and those of the secretory ones. When violent and incessant, without previous accumulations of bile, it is an unfavourable symptom, as it generally arises from irritation on the brain. Even when from bile it is distressing, for the act of vomiting emulges the biliary duct, and the inverted motion of the duodenum carries the bilious fluid back into the stomach, thus furnishing new fuel for the flame. In general, therefore, it should be steadily checked, after the contents of the stomach have been evacuated. In exhausted constitutions, either in consequence of age or free living, particularly from excess of spirituous liquors, a black flaky matter is discharged sometimes from the stomach; a symptom of the most dangerous kind, which may be palliated, but the patient seldom wholly recovers.

A frequent *diarrhæa*, independent of mucous inflammation, is dangerous, as it shows considerable debility, and a difficulty of retaining the food so long as is necessary for its assimilation. If the discharge be chylous, it is more unfavourable, as the digestive process is evidently imperfect. If mucous, with straining and tenesmus, the danger is not so great, as it then generally arises from irregular action of the lower part of the intestine; if fetid and sanious, there will be great reason to apprehend a malignant ulcer; if with lancinating pains, a cancer. Too little action of the bowels is highly inconvenient, particularly in pregnant women, but seldom, in other circumstances, dangerous, except from organic obstruction, or palsy of the moving fibres. The former is rare, and the latter not common except in old persons and in exhausted constitutions.

The other excretions, which have attracted attention as prognostics, are, the *perspiration*, the *sputum*, and the *urine*. The former was considered as the truly salutary discharge, but the want of those distinctions which we endeavoured to establish in the article *DIAPHORETICA*, q. v. seems to have occasioned the greatest inconveniences. Sweat was excited, while the diaphoe was only salutary. It is now generally acknowledged, that the salutary perspiration is not attended with heat, is not clammy to the touch, is generally diffused, without any load, uneasiness, or anxiety. The sweat of an opposite kind does not relieve, but debilitate. Cold, clammy sweats arise from a total relaxation of the exhalents, and are, in general, the preludes of death. In some constitutions, perspiration is almost wholly absent; and this is one of the idiosyncracies often within the limits of health. In fevers, however, which attack constitutions of a different kind, a dry, harsh skin is an unfavourable symptom.

The *sputum* is chiefly examined as a prognostic in hectic and peripneumony. In each we have already noticed it; but we may now add, that all *mucous discharges* which are salutary consist of a bland, apparently equable, fluid, capable of being extended in strings, and containing, when examined in a microscope, minute globules.

The prognostics from the *urine* have filled volumes, which modern practitioners have ungraciously neglected, indeed, we suspect, with good reason. Yet a work of this kind must contain not only what is useful, but often what may appear ridiculous, if it has formed a part of the science; for it is our duty to delineate what it has been, and what it is.

The urine claimed the particular attention of practitioners, because they considered it as denoting the degree of concoction, and they often neglected, in their anxiety to mark this change, the varieties which arise from sex, temperament, and the time of discharging it. A very simple precaution was omitted. The morning urine was selected; but, if none had been discharged in the night, not only that which was *secreted* during the remission, but that also separated during the exacerbation, was mixed. If, in the progress of a fever, the urine be carefully examined, with these precautions, it will be at once seen how little dependence can be placed on the usual observations. As in the intermittent pulse, there is also an anomaly in the urine of some constitutions. The urine of many persons in health deposits little or no sediment; but in fevers the sediment appears copious, and often red. The returning health, in these cases, is marked by urine remarkably clear.

Urine must be examined only after it has been made for some time, and it should be poured into glasses while yet warm. A portion of the urine, made every time, should be reserved, and the time it is discharged, as well as the quantity, should be noted. The glasses should be kept in air moderately cold. With such precautions, some useful lessons may, perhaps, be drawn from its appearance.

The quantity of urine varies in different persons, and, in the same, at different periods. From this no conclusion can be drawn; and the greatest apparent deficiency, unless other cachectic symptoms, and a tendency to accumulation appear in the different cavities, is not dangerous. In general, where it is remarkably deficient, it is at other times equally redundant; and this chiefly occurs in hysterical constitutions. The excess is also at no time dangerous, unless the quality of the urine is changed, since it only depends on irregular action of the renal vessels. The natural urine is of a yellowish colour. When of a deep dark red, its quantity is small, and either fever, or dropsical effusions, are the cause. To this, however, there are exceptions. When the urine is in small quantity its colour is necessarily high; and at the conclusion of a gouty paroxysm, as well as of a paroxysm of an intermittent, it throws down a brick coloured sediment, styled *lateritious*. When highly red, without depositing any sediment, in the language of the Galenists, it shows the greatest crudity and great difficulty of concoction; in other words, a violent and probably a long fever. When floculi, instead of a light cloud, are seen in it, or an oily pellicle appears on the surface, we have thought it showed a weakness of the habit, and have been accustomed to expect little energy in the constitution to shake off the complaint. We know not, however, that observation will fully support this opinion. The progress of the cloud in the urine, in cases of fever, is regular. It is at first suspended at the top, gradually falls, though for a day or two often stationary near the middle of the glass, and at last reaches the bottom. It falls to the bottom often some days before it is accompanied by any sediment; but when a white or reddish sediment also falls down, the crisis is nearly complete. We sometimes find, in the middle of a fever, a sudden fall of a reddish sediment, which is transitory; for the urine again becomes clear, so that the prognosis from the urine must be corrected by appearance of amendment in other respects, and by the critical day of

the fever. The urine is sometimes turbid, if not at the moment of discharging it, very soon afterwards; and this, according to the authors of prognostics, is said to show an insidious disease. If, at an early period of the fever, ("in the days of crudity,") and no deposition takes place, it seems to portend a violent degree of fever and great debility.

Frothy urine, or which long retains the air bubbles, is said to show a tedious disease, or a slow consuming fever. In fact, it is owing to a separation of gluten or albuminous matter, and often occurs after severe fevers. It is sometimes found, as well as a pellicle on the surface, in scorbutic cases, and is occasionally iridescent. In bilious fevers, and in jaundice, the urine is sometimes yellow, occasionally black or green. The yellow urine is not, in general, an object of apprehension; but, when green or black, it is supposed to show a highly putrid state. Green urine, however, is generally bilious, with an excess of the urea, and its colour may be restored by adding an alkali. The black is more dangerous, but, unless highly fetid, we have often seen it without its being followed by a fatal event. Fetid urine in violent fevers is undoubtedly dangerous; but, in other circumstances, it often occurs without danger.

In chronic diseases, red urine, depositing a copious, red, scaly, or branny sediment, is a mark of considerable debility. It occurs in dropsy, in scurvy, and phthisis; and the most unfavourable prognostic must be drawn from its appearance. A mucous and viscid sediment is usually alarming from the apprehensions which it excites of abscess in the bladder. Mucus is, however, light and equable, wholly free from fætor; and arises, as we have seen in many instances, from an inflammation of the mucous membrane; see CATARRHUS VESICÆ. It arises also from any irritation of the neck of the bladder; sometimes from irritation from the rectum or prostate; and it is a frequent symptom of gravel and calculus.

The nature of the *alvine discharge* is of considerable importance. In acute diseases the discharge is often estimated by the number of motions rather than their appearance; and we have been told that there has been a free discharge from the bowels when the stools have not had the slightest feculence. The physician should therefore always examine them with attention. Liquid, frothy, watery motions, with little colour or smell, show, in general, a tedious fever; for in every fever there seems to be an obstinate retention of the fæces, and motions of this kind show that the spasm is peculiarly violent. When the stools, in the beginning, are highly fetid and bilious, it has been accounted a dangerous symptom; but if the discharge be free and copious, they are rather favourable. Calomel will, through the whole course of a fever, often bring off such motions, either by its superior power on the biliary secretion, or from some change which its irritation occasions: we have sometimes suspected the latter cause, and at least have not found it an essentially necessary cathartic to produce the salutary evacuations. Small black, pitch-like motions are always dangerous, and show equal weakness in the alimentary canal and the biliary system. On the contrary, the appearance of scybala, brought off with little straining or colic, is favourable. Fetid motions, in fevers, are common; and,

unless combined with other unfavourable symptoms, by no means dangerous.

In hectics, highly liquid and offensive motions are peculiarly dangerous, as they show a metastasis of purulent matter; nor can they be checked without danger. In jaundice, a change in the usual whiteness of the stools is a favourable symptom; but when they have continued of a dark colour, with little change, from the beginning of the complaint, which sometimes unaccountably happens, we are deprived of this source of our prognostic. In other chronic diseases we find little certain foundation of prognosis from their appearance.

See the *Prænotiones* of Hippocrates (including the prognostics and *proretica*), with the Commentaries of Heurnius, Mercurialis, Montani, Trincavellius, Duretus, Cardanus, Brendel, and a Fonseca; Galen de *Præcognitione et Præsagium*, vol. v.; Rhazes de *Prognosticis*; Gaubii *Pathologia*; Vater de *Præsagiis Vitæ et Morbis*; Prosper Alpinus de *Præsagienda Vita et Morte*; Vogel *Prænotionum Pensum*; Juncker *Monita circa Prognosis* et de *Cauta Prognosi*; Ludwig *Institutiones Medicæ*; Welther in Eyerel's Collection; Baglivi *Opuscula*; Horstius de *Signis Prognosticis*. Dr. Moffat has translated the *Prognostics* of Hippocrates into English.

PRO'HIBENS, (from *prohibeo*, to forbid). See ANTEDEIXIS.

PROJE'CTIO, (from *projicio*, to cast forth). PROJECTION, in chemistry, is the casting any substance to be calcined into a crucible, by a spoonful or a small quantity at a time; sometimes an addition of a small quantity of a substance to a greater quantity of a metal, in order to meliorate the latter. See Wilson's Chemistry.

PROJECTU'RA, (from the same). See APOPHYSIS.

PROLA'BIUM, (*pro*, before, *labium*, the lip; *περοχίλα*, from the corresponding Greek words). The RED PART OF THE LIPS. Under the epidermis in this part, called *epithelium*, is a collection of fine, long, villous papillæ, closely connected together, covered not only by the epidermis, but by that pellicle which covers the glandular membrane of the cavity of the mouth: this villous substance is of exquisite sensibility.

PROLA'PSUS, (from *prolabor*, to slip down). *Procidencia*, *delapsio*, *exania*, *proptoma*, PROPTOSIS, q. v. A disease in the class *locales* and order *ectopiæ* of Cullen. A prolapsus is the displacing of a soft part, so that it is generally obvious to the sight; or a tumour arising from such displacements, as in the bearing down of the rectum, or an intestinal hernia. See PROCIDENTIA.

PRONA'TIO, (from *pronus*, upside down). PRONATION. When spoken of the hand it is when the thumb is turned towards the body, and the palm of the hand is downwards.

PRONA'TOR RA'DII QUADRATUS, *transversus*; a muscle which rises tendinous from the inner part of the ulna, and is inserted into the inner part of the radius. One end of it is fixed to the lower part of the ulna, and the other to the concave side of the lower extremity of the radius, to which it passes in a transverse direction.

PRONA'TOR TE'RES, or RADII TE'RES, *obliquus*, rises from the internal inferior part of the os humeri, and tendinous from the coronoid process of the ulna. The

median nerve passes between these two portions. It is inserted into a line at the anterior convex edge of the radius about the middle of the bone.

PROPHY'LACE, PROPHYLA'XIS, (from *πρῶ*, before, and *φυλάσσω*, to preserve,) *diaphylacticos, diastostica*, the method of preserving health, and averting diseases. See **HYGIEINE** and **CONTAGIO**.

PRO'POLIS, (from *πρῶ*, before, and *πολις*, the family,) *ceranthemus*. **BEE GLUE, or BEE BREAD**, is a wax like kind of glue, found in the entrance of bee hives, formerly used as an emollient, but in the present practice neglected.

PROPRIETA'TIS ELI'XIR, *elixir aloes*, and *tinctura aloes, composita*. See **ALOE**.

PROPRIETA'TIS ELI'XIR VITRIO'LICUM. See **ALOE**.

PROPTO'MA, (from *προπίπτω*, to fall out). A less degree of **PROLAPSUS**, q. v. generally applied to laxations of the upper lip, *mammæ*, or *scrotum*.

PROPTO'SIS, (from the same,) synonymous with *procidencia*. When the eye is so enlarged as to project beyond the eye lids, it sometimes bursts; and the disease is called *oculus elephantinus, bovinus*, and *bulbus*.

In the Medical Communications, vol. i. p. 409, &c. are the following remarks on the mode of cure of hydrophthalmia, or proptosis:

The cure of the disease by seton is to be adopted only where the vision is entirely lost, as the intent of the operation is merely to remedy the inconveniences occasioned by the increased bulk of the eye. These inconveniences are, frequent pain, inflammation of the diseased eye, head ach, restlessness, difficulty of closing the eye lids, a constant effusion of tears down the cheek, and a great deformity from the bulk of the tumour. The other eye is often liable to inflammation, and the patient commonly incapable of reading, &c.

In the following operation, the surgeon and his patient should be seated in the same manner as for extracting the cataract. The seton needle being armed with six threads of white sewing silk, is to be passed from the external angle, about a quarter of an inch from the edge of the cornea, through the posterior chamber of the eye, and brought out at the same distance from the inner edge of the cornea. The pain arising from using the speculum oculi in this operation seems to overbalance the advantage gained by its fixing the eye. The threads, when fastened, must not be drawn tight, lest they should cut through the cornea before the cure is completed.

The external applications should be of the sedative kind, as the saturnine water of Goulard, applied warm. A degree of inflammation and fever come on soon after the operation, but readily give way to a cooling regimen, bleeding, and gentle laxatives. A swelling of the eye lids, and a thickening of the coats of the eye, also follow the operation; but these commonly begin to subside about the eighth or ninth day, when some of the threads may be taken out; and the swelling gradually sinking within the orbit, the patient finds a comfortable alleviation of the most painful symptoms.

For a month after the operation some of the threads may be kept in, which, after the first inflammation is removed, do not occasion much irritation. See *London Medical Journal*, vol. i. p. 346.

PRO'RA, (from *πρῶρα*, the prow of a vessel). See **OCCIPUT**.

PRO'RÆ SUTU'RA. See **LAMBDOIDES**.

PROSARTHRO'SIS, (from *πρῶς*, to, and *ἄρθρον*, to articulate). See **ARTICULATIO**.

PROSTA'TA, (from *προσταμαι*, to be adjacent to; because it stands near the bladder). The **PROSTATE GLAND**; *corpus glandulosum, adenoides*. The prostate is situated at the neck of the bladder, shaped like a heart, and about the size of a walnut; the basis lying towards the bladder, on the rectum, and the apex towards the urethra: the lower surface is the largest, and the upper ones are both flat. The membranous part of the urethra runs through it, and apparently divides it into two lobes, from whence it has sometimes a plural termination. The vasa deferentia pass also through its substance. It is a spongy body, and in each lobe there are several folliculi, which open into the urethra at its commencement. That part of the urethra between the apex of the gland and its bulb passes through a ligament at the back part of the symphysis pubis. This ligament is, of course, between the apex of the prostate and the bulb of the urethra, and this portion has been styled the *neck of the urethra*, while the part between the body of the bladder and the prostate is distinguished as the *neck of the bladder*. When the prostate gland is inflamed from a suppressed gonorrhœa, every means should be used to restore the discharge; for if this inflammation terminates in suppuration, whether the abscess break into the urethra, bladder, intestine rectum, or perinæum, it will always be attended with disagreeable consequences. The symptoms of an inflammation or swelling of this gland are known from the pain and difficulty of making water; and if we should be doubtful whence they proceed, the finger in the rectum will clearly teach us. If a suppuration has already taken place, mercury internally and externally will be necessary, with occasional laxatives. Blisters must be repeatedly applied to the perinæum, and hemlock given in large doses. If a total suppression of urine is feared from the bulk, suppuration will prevent worse mischiefs. A scirrhus, however, in this part is often untractable, though, with Girtanner, we employ the burnt sponge and hemlock, or, with Hunter, keep up a constant discharge by a blister. Michaelis in Richter's *Bibliotheca Chirurgica*, vi. b. 157, 185.

PROTORRU'TOS, (from *πρῶτος*, *primus*, and *ῥίω*, *fluo*). See **CAPNELÆUM**.

PROTUBERA'NTIA, (from *protubero*, to bud forth). See **APOPHYSIS**.

PRU'NA, (from *πρῦνον*, the sloe bush, plum tree). A name for *carbunculus à perurendo*, from its burning pain. Prunes are distinguished by epithets joined with it, viz.

PRU'NA DOMESTICA, *Gallica parva sativa*. **COMMON or FRENCH PRUNES**, the **LITTLE, BLACK, DAMASK PLUM**; *prunus domestica* Lin. Sp. Pl. 680.

This species is without spines, and covered with a smooth bark, of a dark brown colour: a native of Britain: it flowers in April and May.

Our garden plums, when ripe, and taken moderately, are pleasant, but unwholesome and indigestible: unripe, they produce colic, diarrhœa, or cholera. They are cooling and laxative, particularly the French prunes

imported from Marseilles; though, by drying, their laxative power is diminished. In costive habits they are given boiled with senna, or other purgatives, and are ingredients in the electarium à sennâ.

PRU'NA BRIGNOLENSIA, *prunello*, or BRIGNOLE PLUM; *pruna domestica*, var. α , from Brignole in Provence. It is of a reddish yellow colour, and of a very grateful, sweet, subacid taste.

PRU'NA DAMASCE'NA, the DAMASK PRUNE, DAMSONS; *damascena pruna nostrata*, *pruna domestica*, var. β . This species is generally supplied by the common prune, which it resembles in its general qualities. The prunelloes quench thirst more effectually than the others; and the French plums are most laxative.

PRUNE'LLA, (from *pruna*, a burn; because it heals burns). See BRUNELLA and BUGULA.

PRUNE'LLA. See PRUNA BRIGNOLENSIA.

PRU'NUS BRASILIENSIS. See ACAJA.

PRU'NUS PRUNI'FERA. See NUX VIRGINIANA.

PRU'NUS SPINO'SA, SYLVE'STRIS, *spinosa domestica agriococcimela*. The BLACK THORN, or SLOE BUSH, *prunus spinosa* Lin. Sp. Pl. 681, is a prickly bush, very common in hedges, producing an austere fruit, smaller than an ordinary cherry, and too harsh to be eaten before the frosts have softened them. The juice expressed before they are ripe, or affected by the frost, inspissated by a gentle heat, is called *acacia Germanica*, and generally sold for the *acacia Egyptiaca*. It differs, however, in being harder, heavier, darker coloured, of a sharper taste, and giving out its astringency to alcohol, while the Egyptian acacia is scarcely at all soluble in spirit. This fruit is an agreeable and useful astringent.

A conserve is made of the sloes by steeping them in hot water, taking care that they do not burst: and when they are soft enough to pulp, they are pressed through a hair sieve, and to one part of the pulp three parts of lump sugar must be added. (Pharm. Lond. 1788.) Sloes have been recommended in diarrhœas, hæmorrhages, in tumefactions of the tonsils and uvulæ, as gargles. Dr. Cullen considers the sloe as the most powerful of the fructus acerbi, and has often found it an agreeable and useful astringent. The conserve possesses these properties. The flowers with their calyces are moderately purgative, and, for this purpose, an ounce infused in a sufficient quantity of water, or rather whey, was found to be an useful and pleasant laxative. The powdered bark, in doses of a drachm, is said to cure agues. The dry tender leaves are considered as a good substitute for tea. See ACACIA GERMANICA.

PRU'NUS LAUROCE'RASUS. See LAUROCERASUS.

PRURI'GO, PRURI'TUS, (from *prurio*, to itch). A VIOLENT ITCHING. This is established by Dr. Willan as a genus of disease wholly independent of those contagious pustules styled the itch, and it is one of the most distressing complaints with which mankind is afflicted.

Dr. Willan makes the prurigo the third genus of his first order of cutaneous eruptions; an itching of the skin, accompanied with an eruption of papulæ, the colour of which scarcely exceeds that of the adjoining cuticle. This he denominates prurigo, and as it is not characterized during its first stages by an eruption of pustules, it is classed among the papulous diseases of the skin. He divides it into three species; *prurigo mitis*, *formicans*, and *senilis*, adding the local affections of the same

nature. The first species, *p. mitis*, is known by soft and smooth elevations of the cuticle, somewhat larger than the papulæ of the lichen, retaining the usual colour of the skin, seldom appearing red, or much inflamed, except from violent friction. They are attended with an almost incessant itching, particularly on undressing, and for some hours after going to bed. When by rubbing or scratching, the tops of the papulæ are removed, a clear fluid oozes from them, and gradually concretes into thin dark coloured scabs. The itching does not, however, abate; and, from the constant unavoidable friction, inflamed pustules resembling PHLYZACIA, q. v. are sometimes produced. These, when they appear early in the complaint, must be considered as incidental, not as proper to the complaint. This disease originates without any previous indisposition, generally in the spring, or the beginning of summer; affecting chiefly young persons, producing irritation, and preventing the freedom of perspiration. The eruption extends to the arms, breast, back, and thighs; and is troublesome rather than dangerous.

Itching, however, when in a greater degree, and in some other parts, is a disease highly distressing. It is scarcely, or only for a short time, removed by scratching; and at last this remedy fails, in consequence of the wounds which the nails inflict. It has been supposed that pain and itching are incompatible sensations, but those who suffer severely from the third species express their complaints so warmly, that perhaps the opinion holds only when the prurigo is in a less degree. Itching is sometimes connected with acrimony discharged by the exhalant arteries, but more certainly with diminished perspiration, though in general both causes are united; for acrimony freely discharged, or obstructed perspiration, independent of acrimony, seldom produces the complaint. The various causes assigned seem to support this idea. Valisnieri attributes it to gout; Riedlin to repelled evacuations; other authors to scurvy, to ulcers improperly healed, and to worms. We commonly attribute the itching of the nose of children to the irritation of the latter. In the first species, the acrimony is apparently inconsiderable, and is easily eliminated by the free use of soap and water; but when more pungent, it not only by its action on the nerves of the cutis excites the sensation of itching, but raises, with the distended exhalant artery, the minuter nerve which accompanies it in the minute papulæ, which distinguishes the complaint. These, when wounded, exhale a fluid, which adds to the distress by extending its source.

PRURI'GO FORMI'CANS, (from *formica*, an ant,) so called from the sensation on the skin resembling the creeping of an ant. In this disease the papulæ are sometimes larger, sometimes more obscure, than in the *prurigo mitis*; but always attended with a continual and almost intolerable itching. They are diffused over the whole body, except the face, feet, and palms of the hands; and appear in greatest number about the neck, loins, and thighs; parts subjected to tight ligatures. Besides the sensation of small insects creeping on the skin, it sometimes resembles the stinging of ants, sometimes of hot needles piercing in different places. When warm, these sensations are more violent; and when any part of the skin is strongly rubbed, it becomes red, and large tubercles or wheals are produced, which subside when the irritation ceases. If the cuticle is

abraded by scratching, the surface of the body is spotted with small thin scabs; and this is frequently the only obvious appearance, for the papulæ are often indistinct from their minuteness. Where they are of a large size, headach, sickness, and pain of the stomach, precede their eruption, returning if the eruption is suddenly repelled. Though not obviously connected with a pain of the stomach, the prurigo formicans is generally attended with a cachectic state; and elderly persons of a sallow complexion, who labour under obstructions in the viscera, are most liable to it: the same conclusion may be drawn from its causes, which are grief, watching, fatigue, and poor diet. This disease usually affects adults, commencing at all seasons of the year indifferently; and its duration is from four months to two or three years, with short intermissions: want of cleanliness, certain modes of diet, living much upon fish, and other animal food in the summer season; drinking freely of wine, and other spirits, powerfully aggravate the complaint. In general those affected with it have a harsh dry skin; and as from the predisposing causes the acrimony may be more considerable, so from this state of the surface its discharge will be more difficult. The prurigo formicans has been supposed contagious; but there are some reasons which seem to prove the contrary. It is in general a disease of the habit, and is not communicated to those whose connection is most intimate, nor does it ever terminate in a contagious pustular disease. Various remedies for this complaint have been tried without success. It is necessary to restore by appropriate medicines the general health; and, after this, the natron preparatum of the London Dispensatory, sometimes alone, sometimes combined with sulphur, joined with the infusion of sassafras, or the tops of juniper, freely drunk; or the aqua kali, with the addition of a small portion of tinctura opii, have gradually alleviated the disagreeable symptoms, and conquered the complaint in a month or six weeks. With respect to external applications, it is necessary to keep the skin free from sordes, by frequent washing with warm water; but, should this fail, the medicated baths are recommended, particularly those prepared with alkalinized sulphur; sea bathing has been successful in some cases. On the head of diet it is only necessary to observe, that in general it is requisite to live upon light, soft, and easily digestible food; to avoid all heating and stimulating substances, particularly white wines and spirituous liquors. Whey, milk and water, asses' milk, and goats' milk, constitute a part of the proper regimen.

All the variety of remedies usually prescribed, viz. mercury and antimony, whether separate or combined; oleum vitrioli, purgatives, neutral salts, and sulphur, have failed. Externally, mercurial and sulphureous ointments, decoction of white hellebore, lime water, solutions of white vitriol, and corrosive sublimate, have been equally ineffectual.

PRURIGO SENILIS is, as the name imports, an affection of old age. In this species the patients are tormented with a violent and universal itching; the papulæ are for the most part large, though not inflamed; and sometimes the whole surface has a shining appearance, is irregular, or granulated, without an eruption of distinct papulæ. Scurf, or scales, succeed, which prove an additional cause of irritation from their

repeated separation and renewal; and when, by scratching, the cuticle is abraded, a mingled sensation of itching and smarting rises at times beyond all human sufferance. This disease does not differ greatly in its symptoms and external appearance from the foregoing species, but has still been thought to merit a distinct consideration from its peculiar inveteracy. From the dry condensed state of the skin and cuticle, with the additional acrimony of the fluids, which takes place in old age, this species of prurigo is perhaps aggravated, and becomes more permanent. The melancholic and mixed temperaments are most subject to this complaint, and it appears to be connected with a languid state of the circulation, and weak digestion. If the disease should be in a high degree, during life there is little comfort to be expected. A warm bath is the only application which allays the itching and irritation, though in general its effects are temporary. Greater advantage is experienced from baths of warm sea water, or of the sulphureous waters of Harrowgate; the latter of which should be administered internally at the same time; and, indeed, these waters appear to be the best remedy for the complaint with which we are at present acquainted. Cold brandy, used as a wash, is sometimes successful. On the skin and linen of a patient labouring under this disease, Dr. Willan observed a number of small insects of the genus *pulex*; and remarks, that neither the patient's wife nor any of the family were similarly affected, nor could any of the insects be found upon them. Indeed, the influence of insects in every case of prurigo is not improbable. In this case a strong solution of the hydrargyrus muriatus was the most efficacious remedy, though it was not a radical cure, for the complaint returned within three weeks; but by the same application the patient was enabled to live comfortably. Decoctions of tobacco and of the coccus Indicus were also useful. The disposition of the skin in the prurigo senilis is favourable to the production of pediculi humani, body lice; which are bred abundantly among the inhabitants of jails, sordid dwellings, workhouses, &c. &c. and are the offspring of filthiness; but, notwithstanding the most strict attention to regimen and cleanliness in this disease, they arise and multiply so rapidly that, from their perpetual irritation, the patient endures extreme distress; but these pediculi are only found on the skin, or on the linen, not under the cuticle, as some authors have represented.

PRURIGO PODICIS is occasioned by ascarides, hæmorrhoidal tumours, and other obvious causes, and cured by the removal of the complaints from whence it originates; but in persons engaged in sedentary occupations, it probably arises, independent of the foregoing causes, from a morbid state of secretion in these parts, founded perhaps on a decay of strength. At times, it appears to be a salutary deposition of matter, which, in a different direction, might have produced a more fatal disease. Women, who are sometimes affected with this complaint, in autumn or winter, about the cessation of the catamenia, have frequently also an itching eruption of papulæ on the neck, breasts, and back; a swelling and inflammation of one or both ears; and a discharge of matter from behind them, as well as from the meatus auditorius. Vinegar is more advantageous than any other lotion for allaying the itching; but the relief is not permanent. The unguentum hydrargyri

nitratī is the next in advantage; but warm or cold water, lime water, or saturnine applications, have little effect. Plummer's pill has been found beneficial; and in weak relaxed habits Peruvian bark and chalybeates expedite the cure. When a symptom of lues, an ichorous discharge, and an excoriation of contiguous surfaces, is the consequence of its neglect. The parts affected are covered with a sebaceous matter, but the ulcerations are superficial. A mercurial course requires the addition in this case of saturnine washes and ointments. A light cooling diet should be adhered to; great moderation in the use of wine, and a total abstinence from spirituous liquors. According to Dr. Lettsom in the Medical Memoirs of the London Society, vol. iii. it may be considered as frequently preventive of other diseases; as various long indispositions; a disorder of the chest, attended with a weak and intermitting pulse; vertigo, attended with strong symptoms of an approaching apoplexy; were relieved by its appearance: at the same time it may be observed, that the repulsion of the acting cause, in some cases, may be succeeded by fatal consequences; as was the case of a patient, much relieved from great debility, occasioned by frequent fits of the gout, from the appearance of prurigo podicis, who, in order to lessen the troublesome itching, applied a strong saturnine solution for a few days, and suddenly expired in his chair.

PRURI'GO PRÆPUTII is owing to an altered state of the secretion on the glans penis and inner surface of the prepuce. Keeping the parts clean by the use of warm water, or soap and water, will alleviate the complaint; and should the secreted fluid be too copious, the excess may be restrained by lotions made with the aqua lythargyri, or by applying the unguentum cerussæ acetatæ.

PRURI'GO URETHRÆ occurs in females of all ages, without any appearance of organic affection. It probably arises from a morbid state of the neck of the bladder; particularly in instances attended with pain and difficulty in making water. The use of bougies in these cases has proved successful; a remedy recommended by the late Dr. Hunter. In men it is sometimes produced by small broken hairs fixed in the entrance of the urethra, which occasion an itching, or slight stinging, particularly in walking. The removal of the hairs effects the cure.

PRURI'GO PUBIS is extremely troublesome, as papulæ, which arise on the pubes, become painfully sore if their tops are removed by scratching. These papulæ are occasioned by neglect of cleanliness, but more commonly by a species of pediculus, named MORPIO, q. v. A strong mercurial ointment, sometimes with the unguentum cerussæ acetatæ, is the best remedy.

See Willan on Cutaneous Diseases, part i.; Hafnereffer Nosodochium; Mercurialis and Lorry de Morbis Cutaneis, Valisneri Opera; Riedlin, Lin. Med. 1700.

PRURI'GO PUDENDI. See PUDENDUM MULIEBRE.

PRU'SSIAS. PRUSSIAT. Salts formed by the union of the Prussic acid, or the colouring matter of Prussian blue, with different bases. They are not used in medicine.

PRU'SSIC ACID. (See CHEMIA.) It may probably become an object of importance in the hydrology of our

fluids, as it has been occasionally discovered in them, and is found in the bitter almond, laurel leaves, and the narcotic bitters of this tribe.

PSALLOIDES. The inner surface of the fornix, which appears as if stringed like a dulcimer, from ψαλλος, a stringed instrument, and εἶδος, likeness. See CEREBRUM.

PSALTERIUM, (Latin, a harp,) lyra, the medullary substance that unites the posterior crura of the fornix of the brain, resembling in its striæ the strings of a harp.

PSELLISMUS, and PSELLO'TIS, (from ψιλλίζω, to stammer). STAMMERING, or a faulty articulation. Dr. Cullen places this local disease in the order *dyscinesia*, defining it a defect in pronouncing words. The species are, 1. *Psellismus hæsitans; battarismus; ischnophonia*, when there is difficulty to pronounce the first syllable or word. 2. *P. ringens; blæsitæ; traulotis; and rottacismus*, when there is a fault in pronouncing the letter R, which is always aspirated, and as if doubled. 3. *P. lallans; lambdacismus*; when the letter L is sounded improperly, or in the place of the letter R. 4. *P. emolliens; traulotes*; when the harsh letters are expressed too soft, as the letter S is too frequently sounded. 5. *P. balbutiens; aranula*; when from a large tongue the labial letters are too much heard, and are often sounded instead of others. 6. *P. acheilos; mogilalia*; when the labial letters are difficultly if at all sounded. 7. *P. lagesotomatus; cocatismus*; when, from a division in the palate, the guttural letters are not well pronounced. Neither complaint is ever the object of medical practice; pronouncing carefully, under the direction of a nice ear, is the only means of relief.

PSEU'DES, FALSE OR BASTARD. Hence is derived the word *pseudo*, with which many names begin.

PSEU'DO A'CORUS. See IRIS PALUSTRIS.

PSEU'DO A'STHMA. An asthma excited by an abscess, or a vomica in the lungs.

PSEU'DO BLE'PSIS, *phantasma, suffusio*. FALSE SIGHT; or seeing in imagination what does not exist, or existing things differently from the perceptions of others. Dr. Cullen places this disease in the order *dysæsthesia*, distinguishing two species. 1. *Pseudo blepsia imaginaria*. For a variety of this, see MARMARYGÆ. 2. *Pseudo blepsia mutans*; as when an existing object appears changed. See DIPLOPIA.

PSEU'DO BU'NIAS. See BARBAREA.

PSEU'DO BU'NIUM. See BUNIAS.

PSEU'DO CA'SSIA. See FOLIUM.

PSEU'DO CHI'NA. See CHINA OCCIDENTALIS, and SUPPOSITA.

PSEU'DO CORA'LLIUM. See CORALLIUM NIGRUM.

PSEU'DO CO'STUS. See PASTINACA OLUSATRA.

PSEU'DO DICTA'MNOS. BASTARD DITTANY, *gnaphalium, veterum marrubium pseudo dictamnus* Lin. Sp. Pl. 817, is a plant which resembles the horehound in its virtues, but is not used at present.

PSEU'DO HELLE'BORUS. See CALENDULA PALUSTRIS.

PSEU'DO I'RIS. See IRIS PALUSTRIS.

PSEU'DO LI'ENES. Some glands which Ruysch observed near the spleen.

PSEU'DO LO'TUS. See GUAJACANA.

PSEU'DO MELA'NTHIUM. See NIGELLASTRUM.

PSEU'DO MO'LA. See MOLA.

PSEU'DO NARCI'SSUS ANGLICUS. See NARCISSUS LUTEUS SYLVESTRIS.

PSEU'DO NA'RDUS. See LAVENDULA LATA and ANGUSTIFOLIA.

PSEU'DO PLA'TANUS. See ACER.

PSEU'DO PYRE'THRUM. See PTARMICA.

PSEU'DO SA'NTALUM. See BRASILIUM LIGNUM.

PSEU'DO SEL'NUM. See CAUCALIS.

PSEU'DO SE'NNA. See COLUTEA.

PSEU'DO SYCOMO'RUS. See AZEDARACH.

PSI'DA, or PSI'DIUM. See GUAIAYA.

PSILOTHRA, (from *ψιλω*, to denude). See DEPILATORIUM.

PSILOTHRUM, (from the same; because it was used in depilatories). See BRYONIA ALBA.

PSIMMY'THION, (from *ψια*, to smooth; because it was used in cosmetics). See PLUMBUM.

PSO'Æ, (from *ψοαι*, the loins,) *alopeces; nephrometræ; neurometeres*. The names of two pair of muscles in the loins.

PSO'AS; *lumbalis, lumbaris internus, psoas magnus*; a thick strong muscle placed obliquely on the sides of the vertebræ, running under Poupart's ligament to each thigh. It rises fleshy from the sides of the last vertebræ dorsi, and those of the upper vertebræ lumborum, and, from the upper surfaces of their transverse processes; and is joined under Poupart's ligament by the iliacus internus, which lies upon the concave part of the ilium, and takes its origin from the anterior edge of the bone. It runs down before the psoas, and makes one mass with it: together they run over the head of the bone, and pass upwards to be inserted, tendinous, into the little trochanter, and fleshy into the bone a little below that process. Between this tendon and the ischium is a large bursa mucosa; and at its origin it is slightly connected with the diaphragm and quadratus lumborum.

Its office is to bend the femur, by bringing it forwards, partly to rotate it, and to turn the toes out. The kidneys often press upon this muscle, and over it runs a nerve. Those, therefore, who have stones in the kidneys often feel a numbness in the thigh of that side.

PSO'AS, seu LUMBO'RUM, ABSCE'SSUS. Psoadic, or LUMBAR ABSCESS, has been considered as a species of ARTHROPOUSIS, q. v. and we have admitted it inadvertently among the synonyms. The seat, the nature of the complaint, and the remedies are, however, very different. It consists in an inflammation of the muscle itself, and consequent suppuration. Mr. Pott hastily transferred it to the lymphatic glands; because he found the vertebræ in the neighbourhood usually carious; and Mr. Justamond thinks the disease wholly owing to caries of the vertebræ.

Mr. Abernethy supposes that the cellular substance interposed between the peritonæum and the loins is the common seat of these abscesses, since this substance is in greater quantity at the sides, where it connects that membrane to the psoas and quadratus lumborum muscles, than in the middle, where it forms an attachment to the spine. Where this substance is most abundant, the abscesses are most frequently formed; and for this reason we find them usually limited to either side of the vertebræ, and seldom extending across them. If

matter was formed in the middle, opposite to the bodies of the vertebræ, its gravity and the want of resistance would, however, determine the descent to either side. As the peritonæum would readily yield to the protrusion of the matter collected behind it, from the separation of the cellular substance connecting it to the vertebræ, it is improbable that a caries of the bones should be the consequence of an ordinary lumbar abscess. Dr. Hunter observes, that matter is sometimes lodged in this part at the crisis of a fever, and he hath seen instances of matter proceeding from the liver into this situation, after making its way through the peritonæum. As the muscle with the cellular substance and integuments forms a thick mass, the matter seldom points outwardly on the back, but running down between the fibres, makes its way into the groin, thigh, ham, the inner condyle of the os femoris, &c. When on the right side, it may penetrate the colon which lies upon it, and thereby occasion a large discharge of matter by a stool, and possibly a fistulous sore. Of this possible event we have not seen or been able to discover a single instance in any author.

The disease invades insidiously; the pains are situated in the back, rather lower than the region of the kidneys, and usually so slight as to be mistaken for a rheumatic affection or a slight strain. It consequently proceeds with little check; for were it more early distinguished, the abscess might be often prevented by bleeding, purging, and the medicines proper for inflammations, aided by the necessary local applications. After the abscess is formed, the pain often increases, and the matter may be discharged into the cavity of the abdomen, where it would be soon fatal. It more usually, however, follows the course of the psoas muscle, and points externally a little lower than the inguinal glands, or it may pass down the thigh, dissecting the muscles, and forming sinuous abscesses. Sometimes, though rarely, the matter passes through the muscles of the back, and is discharged in the loins, or it may fall into the cavity of the back part of the pelvis. This abscess is, therefore, highly dangerous; since in the most fortunate circumstances it is so long in pointing out at the back, that the patient sinks under the early hectic, or from the subsequent discharge, and in the event of the other terminations the lengthened sinuses can scarcely ever be brought to heal. Usually, the first symptom that the patient feels in cases of the psoas abscess is not where the disease originates, but a pain in the lower part of the thigh of the side affected; he stands on his toes, and does not complain of the part for some time: but by attending to the circumstances from the beginning, and laying the person affected on his back, lifting up his thigh, then, between inspiration and expiration, carefully examining the part, a tumour may be often felt near or in the region where the disease originates. The leg of the affected side seems to be shorter than the other, but it is not so. In other cases the disease proceeds rapidly, sometimes very slowly; and at length appears in the groin, on the affected side; the muscles of the thigh become exceedingly emaciated, and the whole body wastes. When it proceeds thus far, the patient rarely, if ever, recovers; the symptomatic fever that generally attends closes the scene. In some cases the patient feels in an early period a slight pain in the back, so inconsiderable that he scarcely notices it; and when questioned

at a later period of the disease, often does not recollect it. If at this time he is desired to bend his body, and to raise either leg, turning out at the same time the toe, he feels a sharp pain in the middle of the back; and these symptoms occur previous to the formation of matter, ascertained by the symptoms just described. At this time there is no fever, nor any circumstance to discriminate the case: for a pain in the back, on stooping, is common; and perhaps the pain felt on turning out the toe is the only diagnostic.

This disease is often confounded with the abscess of the hip joint, yet they are very distinct and different in their origin, seat, and progress. The psoas abscess originates sometimes, perhaps, in the lymphatic glands near the receptaculum chyli, and the vertebræ in the neighbourhood are occasionally diseased and carious; in other instances in or about the loins, if not higher in the abdomen; but, in general, it seems to be a true inflammation of the psoas muscle, and the affection of the glands, as well as the caries, to be the consequences. We know that the matter may be long retained without any ill consequences, if the air is excluded, and this is the foundation of Mr. Abernethy's method of cure. The symptoms mentioned above continue for some time; but at length the disease appears externally; the limbs and the whole body waste. The hip joint abscess originates in the hip joint; when it attends, the leg of the affected side is shorter than the other; the pain begins in the part where the disease originates, and about the great trochanter. The most frequent situation of the psoas abscess is before or by the sides of the psoas muscles, from whence the fluid collected sometimes extends itself laterally, making its way between the three strata of abdominal muscles, and presents itself beneath Poupart's ligament, elevating the fascia of the thigh. If the patient be laid on his back, the tumour of a psoas abscess may be pressed into the cavity of the belly; but in an external one no alteration takes place, and if there be two lumbar abscesses, the compression of one will fill the other. A stone in the kidneys hath been taken for this disease; but in the former the pain is very acute, the stomach often affected with vomiting, and stony concretions, occasionally blood with the urine, have sometimes passed. See *ABSCCESSUS ISCHIATICUS*.

If an absorption take place before the abscess hath burst externally, the patient often dies; and if a fetid ichor is discharged, or the bones are affected, little or no hope remains. A symptomatic fever generally closes the scene; but in general the fever does not come on while the matter is confined, nor to any great degree for forty-eight hours after it is discharged: a circumstance probably owing to the admission of the air.

This disease, whilst in its inflammatory state, is generally neglected or mistaken, otherwise it might be easily cured, perhaps by bleeding. We recollect an anonymous communication, in which it was said that very copious and repeated bleedings were a certain cure, and farther information was promised, though never received. It was probably, therefore, one successful instance, exaggerated in the eagerness of youth, and of early confidence. It is not difficult to see why the early practice has been so unsuccessful. The inflammation is of that torpid kind which arises sometimes in the liver, sometimes from the brain in *CONCUSSION*, q. v. It proceeds without any alarming symptom, or exciting

any increased activity of the circulation, till it has already attained that degree which disposes to suppuration, often till suppuration has come on. From hence it has been styled strumous, lymphatic, caries of the bones, &c. while it is merely languid inflammation of a muscle constantly in action, constantly irritated. Dr. Fordyce observes, that this disorder should be treated in the same manner as inflammation of the liver, except for the situation, both in the state of inflammation and suppuration; but we know of no peculiar treatment of hepatitis, except blisters, purgatives, and calomel; neither of which succeed in the present disease. We have tried every variety of plan in vain. We have bled copiously; we have emptied the bowels freely; determined copiously to the surface by the sudorific powder of Dover, without being able to prevent the consequent suppuration. We have been told of the success of others; but when we have been able to ascertain the facts, we have found them common rheumatisms, or abscesses not deeply seated. We have seen persons recover; but there was reason to attribute it rather to the efforts of nature than the utility of medicine: and in general, keeping up the patient's strength sufficiently to enable him to undergo the discharge, by a nourishing diet and clear air, the bark, the dilute acid of vitriol, is the most promising plan; to which we would add absolute rest, and the occasional use of laxatives. Other practitioners, particularly Mr. Bell, advises evacuation as soon as the matter is formed, lest the bones should be injured. Dangerous as this complaint always is, and fatal as it is generally supposed, Mr. Abernethy has supplied some cases where success has attended his endeavours. He observes, that whilst the condensed cellular substance, which forms the cyst of an abscess, remains entire, it continues free from inflammation, and the contained pus is not altered; but whenever the abscess is opened, either by ulceration or the hand of the surgeon, a sudden and generally considerable inflammation extends itself over the whole cyst, followed by a copious discharge of pus, frequently fetid. If, however, he adds, when we evacuate fluids from cavities, we immediately close the aperture, we prevent the inflammation which would otherwise ensue. If, also, the matter of an abscess is discharged, its cavity becomes much diminished by the contraction of the cyst: a contraction greater in a chronic lumbar abscess than in those of a more inflammatory nature. These considerations led him to evacuate the fluids in part, and immediately close the aperture, repeating, after some time, the operation. The practice founded on these principles seems to have answered the intention, and it is pursued on the following plan. The pus is discharged by introducing a lancet through the integuments, then passing it obliquely, for a small distance, between the skin and the fascia, and by depressing the point of the lancet there puncturing the cyst. The matter should be drawn off in an uninterrupted current, if possible, and the abscess completely evacuated. The aperture should then be immediately and exactly closed, by dressing the orifice with lint, and bringing the edges into close contact with sticking plaster. In aid of this plan, Mr. Abernethy gives vomits of vitriolated zinc and copper, passes gentle electrical shocks through the abscess, and keeps up the action of the external vessels by rubbing the surface with a solution of tartarized antimony. The second discharge of the pus has generally

been postponed for a fortnight; but if the cavity soon fills again, and the newly healed punctures are irritated by the pressure of the contained fluid, there is an absolute necessity for evacuating the contents of the abscess at an earlier period. In this second operation, he is less anxious about the obliquity of this aperture, as coagula are found in the matter, which it is necessary to discharge; and he generally delays it till the tumour is so large that on opening it there is no danger of injuring the vessels below. He sometimes thought an injection of opium useful. In this mode the matter is to be evacuated from time to time, until the abscess becomes so superficial as to be treated in the method common on such occasions.

Elements of the Practice of Physic, part ii. by G. Fordyce; Cheston's Pathological Inquiries; Abernethy on Lumbar Abscess; De Haen Ratio Medendi, pars iv.; Penciz Acta et Observationes Medicinales; Medical Observations and Inquiries, v. 193.

PSOAS PA'RVUS. A little psoas is found on the anterior part of the great, where it exists. It arises fleshy from the upper vertebrae of the loins laterally; is inserted, by a long, flat, thin tendon, into that part of the os pubis where it joins the ilium. From this tendon many fibres are sent off to form a thin fascia, which covers part of the psoas magnus, and iliacus internus, gradually losing itself on the fore part of the thigh. Its use is to assist the recti abdominis in drawing the os pubis upwards, as in raising ourselves from a decumbent posture.

PSO'PHOS, ($\psi\phi\phi\varsigma$, *crepitus*). Crackling or rattling of the bones.

PSORA, ($\psi\omega\pi\alpha$, Greek primitive). In Dr. Cullen's system this disease is strangely referred to the order *dyalyses*, and we need not, after this, be told that "in the arrangement of local diseases he has been somewhat careless." The itch is now known to be a local complaint, and to be cured only by local remedies. We find, however, in many authors of credit, striking accounts of the danger of repelling it, which induce us to think that the nature of the eruption has been mistaken; or it may have continued so long that the derivation to the skin has become habitual. The disease first appears in little white vesicles, which itch violently, particularly when the heat of the bed determines more powerfully to the surface. By scratching, these vesicles inflame, and assume a peculiar redness, which distinguishes the complaint. Such, however, is the variety of papulous eruptions, that it is often mistaken, and we know no language sufficiently precise to point out the real complaint. The experienced eye will alone decide, and the most experienced practitioners have, at times, been mistaken.

The disease usually first appears about the wrists, and between the fingers; then on the arms, legs, and thighs, particularly under the knee, but never in the face or head. It is sometimes attended with a scurfy, scaly eruption, and is then called the *dry itch*. A kind of itch, called *deftigo*, is said to roughen the skin; but this is a different disease. We need not add, that the itch is contagious; but it is, by no means, highly so; and merely touching the hands, or even handling any thing after an infected person, will not convey it. A very moderate share of attention will prevent it spreading through a family, otherwise cleanly and delicate.

After the psora is imperfectly cured, an eruption sometimes comes out, in little white pustules, not larger than the size of the head of a large pin, filled with a white puriform serum. This may be called the *secondary itch*. It does not itch violently, and is not contagious.

The itch has been said to be chronic; critical; returning on the climacterics; endemic; epidemical; returning monthly, particularly during the increase of the moon: but these are apparently fancies or errors. The German authors adduce numerous instances of the fatal, or at least injurious, consequences of its suppression; and among our own countrymen, Dr. Bissett and sir William Fordyce have related some instances of the same kind. Hundertmark advises a recent infection to restore it, when suppressed; and we have been informed that, in some private receptacles of lunatics, it has been designedly conveyed to increase the circulation in the extreme vessels.

The causes of psora, adduced by authors, are numerous and ridiculous; among the rest are the fancies of the mother and matrimony. When an acarus was found in the pustules, it was generally believed to be the cause of the complaint; but even at first this source was violently combated: and we apprehend that some microscopical authors of credit have lately sought for the insect, without success. It is, however, highly probable that this is the cause; though, if it be so, we cannot easily account for the spasms, convulsions, &c. said to arise from its suppression, nor for the change of its appearance, when imperfectly cured. The question is of little importance, since its remedies are so well known.

The cure by sulphur is certain; but this is often inconvenient, and it is necessary to find less obnoxious remedies. The root of the white hellebore is often highly useful, and a solution of muriated mercury will frequently cure it. The tar ointment, with kali, or alum, and a small proportion of sulphur, is said to be quickly effectual; and this is nearly the application employed by those who profess to cure it in a few hours and really succeed. We have seen an inveterate itch cured, within twenty-four hours, by similar means, for the professed time of six or eight hours, is to be understood as the period of the application only.

A very effectual ointment is that recommended by sir John Pringle, consisting of four parts of axunge, two of flowers of sulphur, and one of the root of white hellebore, or of sal ammoniac. A very elegant and effectual wash is the following. A drachm of muriated quicksilver dissolved in half a pint of water, adding two drachms of crude sal ammoniac and half an ounce of nitre. An ounce of the powder of white hellebore may also be boiled in a pint and a half of water; and to a pint of the strained liquor two ounces of spirit of wine, and two drachms of alum, may be added. The same medicines are sometimes formed into an ointment, and each is effectual. The solution of muriated quicksilver cannot be discovered by the most intimate acquaintance, and scarcely in any instance fails. The hands are washed with it night and morning, and a little applied with a clean sponge, by degrees, to the other pustules. It is safer to use it gradually, and precipitation is unnecessary, as, after a day or two, there is little danger of infection.

About the year 1762, Buchner published his dissertation, at Halle, on the internal use of oil of vitriol in

some species of itch; and Dr. Gahn, in the Edinburgh Commentaries, about ten years afterwards, introduced this remedy to the English practitioners. Stoll, in his Lectures, and Smith in the first volume of the Medical Communications, also spoke of its efficacy; but the origin of the practice is in Salas, in his Anatomie Vitrioli, who used vitriolated salts joined with the ointment of tobacco. Dr. Percival ingeniously conjectured that it became sulphur in the blood; but sulphur internally is of little use, and though Faber recommends the spirit of vitriol externally, it has been seldom employed.

The other remedies which have been employed are numerous. A decoction of arsenic with sulphur is recommended in the Memoires de Chirurgie; hemlock (Storck, Quarin, and Locker); bitter almonds (Zacutus Lusitanus); alum, kali, sea water (Russell); antimony (Brisbane); cold and warm bathing; the ashes of the soles of old shoes (Bartholine); ants (Kircher); diuretics (Link, in the Edinburgh Commentaries); tobacco; opium (Rulandus); plumbago joined with oil, and used externally (Memoires de Médecine); a bath of a decoction of oak leaves; human and cow's excrement variously prepared; with many others, doubling at least the number of those mentioned. In turning over some old authors with this view, we were greatly struck with the numerous and high commendation of Jasser's ointment, and at last discovered its nature. It consists of white vitriol, bay berries, and oil. We may add, that Vogel, in a dissertation published at Gottingen, has suggested some doubts of the safety of sulphureous applications, but with little reason.

The dry itch is not affected by external medicines, and is only relieved by mercurials, with the Lisbon diet drink, &c. It is, in fact, a species of PSORIASIS, q. v. The secondary itch, which we have not found described in any author is cured by internal medicines of a similar kind. It is by no means an obstinate complaint.

After this full account of the opinions and practice of authors, ancient as well as modern, any particular references are unnecessary. Indeed, had we found any full account of the disease, and its remedies, this article would not have been so extensive.

PSORIA'SIS. This term has been limited to the species which affects the scrotum, rendering it unusually hard; but Dr. Willan has extended its use, and under his auspices we shall now describe it.

The disease which Dr. Willan has established under this denomination is confounded by ancient authors, under the title of psora; but it consists in scales, and is neither a papulous nor a pustular eruption, so that it is, with strict propriety, separated. The term occurs in the ancient Greek authors, and is confined to scales in different parts, either at the corners of the eyes, or in the scrotum; and a similar change was supposed to take place in the bladder, when the urine deposited a branny sediment. It is defined by Willan, a rough and scaly state of the cuticle, sometimes continuous, sometimes in separate patches of different sizes; but of an irregular figure, generally accompanied with fissures of the skin. We have considered it as a variety of lepra; for as it recurs at different periods, and is attended with some general complaints, it may form a link between lepra and pellagra. It is more strictly the dry itch, which, in compliance with authors, we have mentioned under the last article. The varieties described by Dr. Willan

are the *psoriasis guttata, diffusa, gyrata, palmaria, labialis, infantilis, and inveterata*.

PSORIA'SIS GUTTATA consists of small, distinct, irregular patches of laminated scales, in a form sometimes angular, at others in serpentine processes, distinguished from lepra by the form; for in the latter the patches are usually circular, or approaching to a circle. The scale is thin, easily detached, leaving a red, shining surface on the skin. They appear on almost every part of the body; but in the face are seldom covered with scales. In children it is preceded frequently by a slight general disorder, and then spreads over the body in two or three days. In adults it commences in the extremities, and proceeds gradually to the other parts, chiefly in the spring, succeeding violent pains in the head, stomach, and limbs. The patches disappear often in summer, leaving the skin of a dark red, sometimes of a livid, colour. A similar eruption attends lues; but these patches are more nearly circular, and their colour darker. They are scarcely elevated above the skin till the scales appear, and the circumference is often higher than the centre. The syphilitic eruption appears chiefly on the forehead and breast; on the inside of the fore arm and thighs. It is singular that the scales often disappear, while the principal disease remains; but after using mercury they soon drop off. In the negro the eruption is whitish; and the skin below, when the scales drop off, is unusually black, slowly recovering its natural hue.

Psoriasis diffusa spreads into large, irregular, reddish, rough, chappy patches, with scales interspersed. It usually commences with numerous minute asperities of the cuticle, scarcely visible, though easily distinguished by the touch. On these small distinct scales are formed, adhering by a dark central point, while the edges appear white and detached. After a few weeks the intervening cuticle becomes rough and chappy, raised and wrinkled, the lines of the skin sinking in deep furrows. Sometimes a large portion of the skin assumes the appearance described, without any papulæ preceding; and at other times the patches are at first separate, not unlike those of the former species. The lichen simplex, after frequent returns, often assumes the appearance of this disease.

The cheeks, the chin, upper eye lids, and the corners of the eyes, the temples, the external ear, the neck and fleshy parts of the lower extremities, and the fore arm, are chiefly subject to this eruption. The fingers are nearly surrounded by loose scales; the nails crack and exfoliate superficially. In general, it affects the different parts successively, sometimes returning to its first situation. This disease is attended with a burning heat, and a troublesome itching, especially at night, and has little disposition to form crusts like lepra. The chaps on the skin are sore; and when the scales are removed, the parts below are red, smooth, shining, and elevated. The deep furrows of the cuticle are also covered with a slight scalliness. When the surface is excoriated, it discharges a thin lymph, mixed with some drops of blood, and concretes into a thin dry scab, succeeded by a white scalliness, spreading in different directions. When, from a well directed plan of cure, the scabs are removed, the cuticle is at first thin and shrivelled, but soon recovers its former texture.

The *P. DIFFUSA* is often preceded by want of appetite, head ach, pain, and sickness of the stomach, cramp,

coldness of the extremities, with universal languor and debility. These symptoms gradually disappear; but they precede every return of the complaint. Its continuance is usually from one to four months, sometimes longer; but in such cases there is an exacerbation about the usual periods of its return. When it disappears in the summer, the returns differ greatly in their degree and violence. Sometimes it is a single patch only.

The *baker's itch* is of this kind, extending on the back of the hand from the knuckles to the wrist. The fissures of the skin are most numerous near the joints: they are often highly inflamed, and painful, but no discharge proceeds from them. The back of the hand is swollen; and, when the disease has advanced, is reddish and glossy. The furrows of the cuticle are filled with slight scales. This variety usually disappears about Midsummer, and returns in the cold weather, or about the beginning of the year: nor is it constant; for, after having once appeared, it is often absent for three or four years; and when the business is discontinued, it does not soon disappear. The occupation is, therefore, only an exciting cause; and it depends on the hygro-metrical affinity of flour, which absorbs moisture rapidly. The *grocer's itch* is of a different kind, and strictly a pustular disease.

The *washerwoman's itch* arises probably from the soap dissolving the oily matter, which softens the skin. It generally appears on the hands and arms; rarely, except from predisposition, on the face and neck. It forms scales, separating in large circular flakes, sometimes quadrangular. Syphilitic psoriasis seldom assumes this form, except from the coalescence of the patches of the former species.

PSORIA'SIS GYRATA appears in stripes approaching a spiral form, sometimes resembling earth worms; the deepened furrows of the cuticle giving the annulated appearance. Slight scales are separated from the surface, but no incrustations are formed. These serpentine patches are often singularly uniform on each side; and a smaller degree of the complaint, affecting young women and children, is often confounded with that form of herpes styled the ring worm.

This eruption has also its exacerbations or returns, and approaches the *p. diffusa* by irregular patches on the face and extremities, while the rings occupy the trunk. It continues frequently for months before it desquamates, and is usually preceded by headach, pains in the limbs, debility, and emaciation. Lues sometimes assumes this form; and when the scales separate, the skin below is of the dark colour usual in syphilitic eruptions; sometimes the rings suppurate, leaving a centre of sound skin.

PSORIA'SIS PALMARIA begins by a scaly patch, and at last occupies the whole palm, extending in a slighter degree to the inside of the fingers and the wrist. The surface is rough, the colour brown or black, and the cuticular furrows deep, divided at the bottom longitudinally, so as to bleed on extending the fingers. A sensation of heat and stiffness attends this disease, and it is usually most distressing in winter and spring. Sometimes it disappears, or occasionally remits only in summer. It is the disease of shoemakers, braziers, tinmen, and silversmiths, usually attributed by the last to the vitriolated salts or mineral acids, and by shoemakers to

the wax. It sometimes comes on after delivery, occasionally alternates with paroxysms of gout, and chiefly affects debilitated constitutions. It sometimes attacks the soles of the feet and the prepuce, occasioning phimosis, sometimes requiring circumcision. It is also a symptom of lues; but the venereal patches are distinct, white, and elevated, nearly of the consistence of a soft corn. The fissures usually discharge an offensive fluid; but when this disease affects the soles no discharge takes place. The fingers and toes are never affected in the syphilitic form of the *p. palmaria*.

PSORIA'SIS LABIALIS. This form of psoriasis affects the prolabium; the scales are large, and their edges loose, while the centre is fixed. The new cuticle formed under the scales soon becomes dry and shrivelled, cracks and exfoliates, giving way to another layer of the same kind. It is of consequence to distinguish this variety from the chaps produced by frost; and it may be known by its occurring at different seasons, though often aggravated by frost. The under lip is most frequently affected; and those who have full lips are chiefly subject to the complaint.

PSORIA'SIS SCROTALIS resembles the other varieties, and differs only in its seat.

PSORIA'SIS INFANTILIS affects children from the age of two months to two years. The general appearances are those of the *p. diffusa*; but it is sometimes succeeded by inflamed pustules, which suppurate, and often accompanied by scabs in the internal nostrils, which occasion snuffling. When the eye lids are affected, the eye brows and eye lashes fall off. The scaly patches are interspersed with smooth, shining elevations of the cuticle, a little flattened at the top, having a roundish base: they are sometimes reddish; but often retain their usual colour. When the eruption appears on the nates, it occasionally suppurates, and resembles a venereal tubercle. In general this variety resembles the scaly patches which occur as a secondary symptom of syphilis, and is only distinguished by the concurrence of other symptoms of the latter disorder, assisted by the circumstances which afford suspicion.

PSORIA'SIS INVETERATA. The same disease in a more violent degree, often covers the whole body, except a part of the face sometimes the palms of the hands and soles of the feet. The skin is so stiff as to impede motion; and the scales are constantly separating, so as to occasion a most troublesome itching. The nails of the fingers and toes become convex, fall off, and are succeeded by others of the same form. The joints of the thumb and fingers are sometimes enlarged, and contracted or bent back. Painful excoriations are produced by the ligatures of the clothing, or the attrition of contiguous surfaces. Sometimes the excoriations are extensive, a thin lymph is for a time discharged, and the cuticle which succeeds is dry and horny, separating from time to time in large pieces. It sometimes attacks young persons, but it is then less violent. The *p. diffusa* and prurigo senilis sometimes degenerate into this complaint.

The psoriasis is often hereditary, but never infectious. It most commonly attacks those who are neither of a sanguine nor a melancholic temperament, but who show marks of each: the weak and irritable are most liable to it, and women rather than men. It is always apparently connected with some disorder in the

constitution, often with gout and rheumatism. When not thrown out, as in cases where it is hereditary, we have found the persons die young of anomalous diseases, styled hectic, though often a very different complaint; and Dr. Falconer has found convulsions, constant vomiting, with loss of strength wholly irrecoverable, from the repulsion of the eruptions.

The causes assigned have been errors of diet, particularly eating dried and salted meats, crustaceous fish, pork; or, on the other hand, acids, wines, and fruits, and the unseasonable use of the cold bath. The only distinct cause, however, that can be assigned is cold, applied either externally or internally, while the body is heated. In general, it affects those who are subject to frequent alternations of heat and cold; but this cause is probably only an exciting one. The seminum of the disease is apparently in the constitution.

Dr. Willis recommended bleeding, cathartics, and alteratives, as acidulous chalybeate waters, &c.; the expressed juices of several plants; whey, either alone or impregnated with the juices of succory, fumitory, and sharp pointed dock; decoction of the woods; preparations of iron, and mercury.

Dr. Willan observes, that he has never seen a case in which bleeding or purging could be properly applied; and we own that these remedies are so distant, in our opinion, from the nature of the disease, that we have never thought of using them, even when psoriasis affected the eyes. The numerous antiscorbutics are too "weak ministers" to be relied on.

Guaiacum wood, willow, sarsa, elm bark, sassafras, juniper tops, burdock, mezereon, and the dock roots in decoction, are useful auxiliaries; and the dock, with the sarsa and mezereon, when long continued, has often greatly relieved the complaint. It is seldom radically cured. When the disease is strikingly connected with debility, the chalybeate waters are often useful in restoring tone; but the chief benefit is derived from the sulphureous springs. Every sulphureous water seems to have been useful, in proportion to the strength of the impregnation. Mercurials, in Dr. Willan's hands, have not succeeded. We think that, with the mezereon and dock root, we have been more fortunate. We mean not to say that the patient has been secure from a relapse; for that perhaps would not be a fortunate termination; but the return has been protracted, and the disease in its recurrence rendered milder.

The three first species, after an emetic and a purgative of calomel, are relieved, according to Dr. Willan, by the fixed alkali, assisted by a light moderate diet, frequently washing with tepid water, abstinence from fruits, acids, as well as fermented liquors. If more violent, the free use of antimonials, the warm bath, with repeated friction, and the sulphureous mineral waters, are necessary. "The decoctions of elm bark, sarsaparilla, dulcamara, &c. have also their share of utility." When mezereon has been successful, it is said to soften the whole patch, or to heal it from the circumference towards the centre. When removed by other means, the salutary change chiefly occurs in the centre.

The *psoriasis inveterata* sometimes affects the shin bone, producing an ulcer not deep, but with an uneven basis, and a red, thin, smooth edge, liable to bleed from slight impressions. This ulcer itches violently, and discharges a glairy fluid, heals slowly, or soon breaks

out again. It is often healed by applying ointment composed of an ounce of calaminaris cerate, with a scruple of the unguentum hydrargyri nitrati. Should the skin afterwards remain dry and brittle, the leg should be held over the steam of warm water, and oiled silk be worn round the leg. The latter directions are highly proper also in the *ps. palmaria*.

The mildest, softest applications are only useful in the *ps. labialis*. In the *ps. scrotalis*, besides frequent bathing and a constant attention to cleanliness, attrition should be prevented by an ointment composed of three parts of unguentum ceræ, and one of the unguentum hydrargyri nitrati.

The *ps. infantilis* is relieved by antimonials and warm bathing. When considerable excoriations take place, they should be defended by the common sedative applications.

We have thus followed Dr. Willan, with only occasionally interposing some slight remarks. We shall add, however, shortly, the result of our experience. In general, we have found mercurials in small doses, long continued, highly serviceable in this disease; and the best form has been Van Swieten's solution of muriated mercury. In slighter cases, the pills of Plummer, especially if made, as formerly suggested, by adding the calomel after the rest of the mass was formed, have completed at least a temporary cure. This has been greatly assisted by decoctions of guaiacum with mezereon; of sarsa with mezereon, or of the water dock alone; of either a pint should be drunk daily, and every other morning a dose of the magnesia vitriolata, or any other neutral, be interposed. The diet is to be almost exclusively confined to milk and vegetables. In some instances the muriated lime has been successful; and the oxygenated salts, when the disease attacks elderly persons, are often useful. We have not found the mineral acids peculiarly efficacious, though the nitric has appeared sometimes salutary.

Relapses have been prevented by the same diet, interposing the salt, or salt water, every other day, with the utmost attention to bathing, and frequently washing the parts formerly affected with warm water. We mean not to represent the use of the mercurials with the decoctions just mentioned as infallible, for they often fail; but we think this plan has been more useful than any other which has been suggested.

PSORICA, (from $\psi\omega\alpha$, the itch). Medicines for the itch.

PSOROPHTHA'LMIA, (from $\psi\omega\alpha$, and $\sigma\phi\theta\alpha\lambda\mu\iota\alpha$, an inflammation of the eye). An itch or scurf of the eye lids, particularly in their edges, which renders them sore, and sometimes scabby. It is often a symptom of scrofula, and is at times joined with an herpetic eruption; whence the distinction of the two species *ps. crustosa* and *herpetica*. See TRACHOMA and OPHTHALMIA TARSII.

PSUCHAGO'GICA, (from $\psi\upsilon\chi\eta$, mind, and $\alpha\gamma\omega$, to move). Medicines which recal life in an apoplexy or syncope.

PSUCHROLU'SIA, (from $\psi\upsilon\chi\pi\sigma$, frigidus and, $\lambda\alpha\upsilon$, lavo). BATHING IN COLD WATER.

PSYCHO'TRIA EME'TICA, vel HERBA'CEA. See IPECACUANHA.

PSYDRA'CIA, ($\psi\upsilon\delta\rho\alpha\kappa\iota\varsigma$, pustula). Small tubercles on the head which resemble pustules, and corrode

the skin. Trallian describes them as small watery pustules, which, when seated on the head, are called *psydracium*. Dr. Willan assigns this name to minute pustules, irregularly circumscribed, producing but a slight elevation of the cuticle, and terminating in a laminated scab. Many of these usually appear together, and become confluent. When mature, they sometimes contain pus; but, in general, in the earlier stages, after breaking, they discharge a thin watery fluid.

PSY'LLIUM, (from ψύλλος, a flea; supposed to destroy fleas). **FLEA WORT**, *fulicaris herba crystallina*; *cynomoia*, *plantago psyllium* Lin. Sp. Pl. 167. It grows wild in the warmer parts of Europe, and is raised in our gardens. The seeds which have formerly been brought from the south of France are small, smooth, slippery, of a shining brown colour, of an oblong flattish figure, supposed to resemble a flea, whence the name of the plant, and perhaps its supposed virtues.

A drachm of the seeds renders a pint of water moderately mucilaginous and gently laxative: they have been used as demulcents. See Raii Historia; Lewis's Materia Medica.

PTA'RMICA, (from πταίω, to sneeze, because it provokes sneezing,) *pseudo pyrethrum*, *dracunculus fratensis draco sylvestris*, *sternutatoria*, **SNEEZE WORT**, **BASTARD PELLITORY**, *achillea ptarmica* of Lin. Sp. Pl. 1266, is a plant with long, narrow, serrated leaves, and radiated discous flowers, set in umbels on the tops of the branches. It is perennial, grows in moist shady grounds, and flowers in June, &c. throughout the summer. The roots have the hot pungent taste of pyrethrum, with which they agree in their pharmaceutic and medical properties. See Lewis's Materia Medica.

PTE'RI'S, (from its resemblance to πτερον, a wing). See **FILIX**.

PTE'RNA, (πτερυγα, the bone of the heel). See **OS CALCANEUM**.

PTEROCA'RPUS. *Santolinus*. See **SANTALUM RUBRUM**.

PTERY'GION, **PTERY'GIUM**, (from πτερυξ, a wing). A FILM ON THE EYE, called a WEB. (See **ALBUGO**, **UNGUIS**, and **OPHTHALMIA**, p. 309.) There are four varieties of this disease, viz. the *f. ungula*, thin, transparent, and cineritious, apparently growing from the semilunar membrane; *f. crassum*; *f. annus*, thick, and of a red colour, stretching over the cornea; *f. malignum*, dark and painful, supposed to be cancerous; *f. pingue*, a soft, fatty substance, without pain, near the external angle of the eye. Extirpation is the most certain means of relieving those species which are troublesome; but Richter recommends bringing on a discharge by means of nitrated mercury. (*Observationes Chirurgicæ*, fas. iii. No. 1.) See Richter *Commentar. Nov. Gottingen*, vol. viii. In Celsus, lib. vi. cap. 19, it means a disorder of the nails, resembling a caruncle, accompanied with great pain. To these a mixture of alum and honey, in equal parts, is applied.

PTERYGO'DES, (from the same). An appellation of those whose chests are narrow and flat, so that their scapulæ are prominent, like wings. Hippocrates.

PTERYGOIDE'US EXTE'RNUS, vel **MI'NOR**, (from the same,) *alare externum*, because they rise from the wing like processes of the os sphenoides, first described by Fallopius. They rise also from the neighbouring parts of the os sphenoides, and are inserted

into the neck of the condyle of the lower jaw, and into the cartilage of the condyle, which is hollowed, to move upon the tuberosity of the os temporis. The part not concealed by the pterygoideus internus is covered by a membranous expansion, originating from the inner edge of the glenoid cavity of the lower jaw, immediately before the styloid process of the temporal bone.

PTERYGOIDE'US INTE'RNUS, vel **MA'JOR**, rises from the cavity between the lamella of the processus pterygoideus, and is inserted into the inside of the angle of the lower jaw. It lies on the inside of the lower jaw, almost as the masseter does on the outside, being of the same figure, but smaller and narrower. When these muscles act together, they move the lower jaw horizontally forwards; when singly, forward, and to the opposite side.

PTERYGOIDE'US PROCESSUS, (from πτερυξ, a wing, and εἶδος, form,) *aliformis*. See **SPHENOIDES OS**.

PTERYGO-PALATI'NUS. See **SPHENO-PTERYGOPALATINUS**.

PTE'RYGO-PHARYNGÆ'I, (from πτερυξ, and φαρυγξ,) the name of the *cephalo-pharyngæus*. In the edge of the internal alæ of the apophyses pterygoideæ these muscles rise, then run backward, and are inserted into the linea alba of the pharynx. See **PHARYNX**.

PTE'RYGO-STAPHYLI'NUS SUPE'RIOR, (from πτερυξ, and σταφυλή). The external portions of the sphenosalphingostaphylini.

PTE'RYGO-STAPHYLI'NI INFE'RIORES. These muscles are very small, and inserted at one extremity into the uncus pterygoideus, and by the other into the septum, near the uvula.

PTILO'SIS, (from πτελος, bald). A person who hath lost his eye lashes. A baldness of the eye lashes, from a callous thickening of the edges of the eye lids, so that it is a complication of a madarosis and lippitudo.

PTI'SANA, (from πτεσσα, to decorticate, or bruise). *Ptisan*, barley deprived of its hulls by pounding, which was formerly effected, after macerating it in water, by drying. It was ground into meal, made into balls, by first boiling and then drying it to a due consistence.

Ptisan was also made of other kinds of grain; and the name of the grain was added, *cafe hoc ptisinarium oryzae*. Hor.

These balls, or ptisans, were boiled in from ten to fifteen times their quantity of water, until the meal swelled: then they added a little vinegar, sometimes oil or animal fat, and aniseeds, occasionally salt. The ptisan thus boiled and strained is called the cream of ptisan. When not strained, it is called entire ptisan; when diluted, gruel, or juice of ptisan. Hippocrates styles it *adipson*, because it cures thirst.

PTO'SES. Tumours caused by protrusion; *phalangosis trichia*.

PTO'SIS, (from πτεω, to fall,) is a descent of the upper eye lid, from a palsy of the muscles which elevate it, or inflammatory or erysipelatous tumours which depress it. It is the *blepharoptosis genuina* of Sauvages: in the London Medical Journal, iv. 340, a case is described, where a complaint of this sort returned at irregular intervals. Smoking tobacco always induced it, and putting on a pair of spectacles not only carried it off, but prevented its return. After cleaning the primæ viæ, asafoetida and valerian were given, and a blister applied

to the forehead, near his eye brows. This treatment completely succeeded. In another case the disease was occasioned by an injury done to the levator palpebræ superioris, so that the patient was unable to raise that portion of the eye lid. The disease was cured by dividing the lacerated fibres with a knife. In a third instance the complaint was purely spasmodic. The patient was a young woman twenty years of age, who was subject to occasional spasms, not only of her eye lids, but of the other muscles of her face. In this case the affection yielded to musk and small doses of emetic tartar. We have twice seen it, without being able to attribute it to any particular cause, and it yielded to the common stimuli, applied externally.

PRO'SIS IRIDIS. A protrusion of the iris through a wound of the cornea, sometimes, in weak states, independent of a wound, of which we once saw an instance. It appears in the form of a blackish tubercle, and the laminae of the cornea rise around it in an external bur. When long continued, it is attached to the edges, and becomes callous.

PTYALIS'MUS, (from πτυαλιζω, *to spit*). A frequent and copious discharge of saliva, generally arising from mercury. (See SALIVATIO.) Dr. Cullen defines it a flux of saliva, adding, that, if ever idiopathic, it is from relaxation. When originating from mercury, it is continued from relaxation, and may then be considered as a separate disease. It is very obstinate, and yields only to time, and to tonics used internally, or astringent gargles. Sometimes blisters behind the ears seem to be useful. A singular case of a troublesome ptyalism being cured by chewing dry bread, and swallowing it, is related in the London Medical Transactions, vol. ii. p. 34. Nineteen symptomatic species are enumerated.

PU'BA. See CASSADA.

PUBERTAS, (from *pubes*). The period of puberty is that in which the genital organs of each sex begin to evolve, and assume that organized structure which fits them for their respective functions. It is a period of great delicacy, and sometimes danger, though boys suffer much less than females. As in all other considerable changes, before the balance of the circulation is fairly established, there is considerable irritability, and all nervous diseases are increased: some, particularly chorea, often at this time appear. The period commences in boys at about thirteen, and in girls at eleven; but is scarcely completed in two years. Instances of peculiar precocity in this respect appear in the collections of wonders; and the accounts of Boset, in the Journal des Savans, and of Geoffroy in the forty-third volume of the Philosophical Transactions, are scarcely more credible.

PU'BES, (from βυζων, *the groin*). The private parts, covered in the adult with hair. The down also upon plants.

PU'BIS INTERRO'SSEUM LIGAME'NTUM is a strong triangular ligament, fixed by two of its edges in the inferior branches of these bones, so far as their symphysis; the third and lowest edge is loose: this whole membrane, the middle of which is perforated, is stretched very tight between the two bones, and under their cartilaginous arch, to which it adheres very closely.

PU'BIS O'SSA, the **SHANK BONES** (*ephebæon; epischion; pecten; pubes, episcion*), are situated in the middle,

anterior, and internal part of the os innominatum. On their superior part is a ridge, which runs on a continued line with another of the os ilium, distinguishing the cavity of the belly from that of the pelvis. Between the pubes and ischium is the foramen magnum ovale, in the recent subject filled up with a ligament. The symphysis of the os pubis is composed of two cartilages and one ligament; the two cartilages cover the surface of each bone, and the ligament is interposed. Hunter in the London Medical Observations and Inquiries, vol. ii. p. 333.

As a substitute for the Cæsarean operation, the section of the symphysis of the pubis has been recommended by the French accoucheurs, the advantages and inconveniences of which we have shortly noticed. We must add, however, their method of performing the operation, for those who differ in opinion from us may choose to imitate it. The instrument used on this occasion is a common dissecting knife, with a convex edge, a little blunt in the point, lest it should injure the bladder, and thin, that it may have a finer edge. The woman is placed on her back, at a height convenient to the accoucheur; the thighs somewhat opened, and the mons veneris shaved. A catheter is then introduced into the bladder. The inferior part of the integuments are drawn down, and the incision begun about two or three lines above the pubes. The first incision must not be carried farther than the middle of the symphysis. From this first incision little hæmorrhage will follow, and the cartilage will be fully exposed. By cutting in the middle of the symphysis, the suspensory ligament of the bladder will be partly divided, and in procuring the necessary separation it will be lacerated, which may occasion an incontinence of urine. There are cases in which this complaint can be attributed to no other cause than the laceration or relaxation of the ligament of that viscus, so that we must avoid cutting in the middle of the cartilage. If the division is made on either side, part of the suspensory ligament of the bladder will be preserved; and if the bone on that side be touched, a more speedy reunion will be effected; and the left pubes appearing after the section to recede more than the right, there will be a greater opening on that side. The neck of the bladder also, and the fundus uteri being rather more inclined to the right, lead us to choose the left side. Directing, therefore, the catheter to the right, the operator must cautiously divide the symphysis on the left side, when it is said the pubes recede, in a greater degree, as the thighs are more expanded. If the separation is very sudden and considerable, the interior ligaments will be distended too suddenly; it is, therefore, advisable to keep the thighs moderately open during the operation; and afterwards to widen them gradually, until the necessary separation is obtained.

After the operation, it is recommended to turn the child, and deliver it immediately, as every other method would increase irritation and inflammation. The integuments, which were greatly distended during pregnancy, now will subside, so as to cover the symphysis. A bladder must be fitted to the end of the catheter, in order that the patient may not stir when she wants to discharge her urine, and in case the bladder hath been injured, that the wounded part may heal without any additional irritation.

For the wound, nothing more is necessary than dry lint moistened with brandy, and discutient embrocations upon the posterior articulations of the pelvis. A bandage must be applied, to keep the parts in contact, to which there must be two tapes fastened, to be conveyed between the legs, and tied before. The mother should suckle the child for eight or ten days, and laxatives with tonics may then be directed according to circumstances, with a constant attention to keep the parts at rest.

The idea of this operation was suggested by an observation, most probably unfounded, that the bones of the pelvis are connected by a substance which, during the latter period of pregnancy, swells and softens, and that if cut through, the two fore parts of the pubes recede from each other to the distance of from two inches to two inches and a half, diverging proportionally forwards.

When the diameter of the brim of the pelvis, from the sacrum to the pubes, measures from two inches and a half to three inches and a quarter, this operation is recommended.

In a case recorded by Dr. Leake the space gained in the dead subject was considerable; but on more careful and exact inquiries neither the space gained nor the facility of the operation were found to counterbalance the inconveniences: the former was inconsiderable, and the operation is no longer attempted.

See Practical Observations on the Childbed Fever, by Dr. Leake, edit. 5. page 238—255. Comparatio inter Sectionem Cæsaream et Dissectionem Cartilaginis et Ligamentorum Pubis in Partu, &c. Auctore C. C. Siebold, M. D. London Medical Journal, vol. iv. p. 141. Bell's Surgery, vol. vi. p. 143. Walter De Dissectione Synchronoseos Ossium Pubis in Partu difficili.

PUBESCENTIA, (from *pubesco*, to bud forth). In botany, the arms of plants, by which they are defended from outward injuries.

PUDE'NDA, (from *pudor*, modesty,) the GENITALS; *aoidea*; *patrimonium*; *naturalia*. See GENERATIO.

PUDE'NDI ABSCE'SSUS. See ALÆ.

PUDE'NDI ARTE'RIA. See PUDICA ARTERIA.

PUDENDA'GRA, (from *pudendum*, and *αγρα*, *captura*), *cedma*. In this disorder there is a discharge of a purulent ichorous matter from the vagina, supposed to produce inflammatory symptoms in the penis, after cohabitation; the infection, however, is soon removed by bleeding, and some cooling laxatives. It is an affection of the vagina alone, in the beginning; the other parts afterwards suffer. The predisposing cause is a too rigid chastity, and the more immediate cause an indulgence of the venereal appetite, at times when the uterus is disordered. An excessive flux of the menses, and the fluor albus, aggravate the pudendagra, which is not properly confirmed until the uterine nerves, having entirely lost their sensibility, are no longer capable of distributing the menstrual flux. Excessive venery hastens the insensibility of the uterine nerves.

Such are the accounts of authors, who seem to have had no distinct ideas, and were consequently unable to communicate any. A disease of this kind we have never seen; and can distinguish, in these confused descriptions, only a leucorrhœa with a more acrid discharge in the intervals of too copious or too often repeated menstruation.

On dissecting those who have died whilst labouring under the pudendagra, it hath been observed that the parts leading to the uterus were particularly relaxed, and that the uterus itself was enlarged by scirrhus and other tumours.

PUDENDO'RUM CA'RIES. See CHANCRE.

PUDE'NDUM MULIE'BRE, *hortus*; *porcus*; *boubalios*; *byssus*; *caverna*; *amphicaustis gynæcomystax*. See GENERATIO.

The pudendum muliebre is subject to a complaint somewhat analogous to the prurigo scroti, bearing a similar name. (See PRURIGO.) It is situated in the labia pudendi, and entrance of the vagina; and often attended with the appearance of tension and fulness in those parts, and sometimes with inflamed itching, papulæ on the labia and mons veneris. From the strong and perpetual itching inconceivable distress arises; and venereal sensations take place, from the constant direction of the mind to the parts affected. Deep ulcerations seldom occur, but aphthæ on the labia and nymphæ are not uncommon. Women, after the fourth month of pregnancy, often suffer greatly by this disease; sometimes succeeded by extensive ulcerations, which have destroyed the nymphæ, and produced a fatal hectic; but this occurs very rarely. In general the complaint has some intervals or remissions; the aphthæ usually disappear soon after delivery at the full time, or a miscarriage. Saturnine lotions, saline solutions, lime water, vinegar, and oily emulsions, with fixed alkalis, a decoction of lintseed, with poppy heads, or tinctura opii, afford temporary relief; but half a scruple of corrosive sublimate, dissolved in half a pint of lime water, forms the most certain remedy, when applied daily; postponing its use if there are painful fissures of the skin, till they are relieved. See Willan on Cutaneous Diseases.

PUDE'NDUM VIRI'LE; *genitura*. See GENERATIO.

PU'DICA, vel PUDE'NDA ARTE'RIA, comes out between the pyriform muscle and the spine of the ischium; runs downwards between the two ligaments, the one of which comes from the tuberosity of the ischium to the sacrum, and the other from the spine of the ischium to the sacrum, on the inside of the tuberosity. In its progress it gives ramifications to the anus, the external hæmorrhoidal, and then goes to the crura penis.

PU'DICÆ EXTE'RNÆ ARTE'RIÆ. See CRURALES ARTERIÆ.

PU'DICÆ EXTE'RNÆ VENÆ. As the crural vein passes from under the ligamentum Fallopii, it sends out branches to the inguinal glands, the musculus pectineus, and the parts of generation; these are called *pudicæ externæ*, and they communicate with the *pudicæ internæ*.

PU'DICÆ INTE'RNÆ VENÆ. The veins that convey the blood from the parts of generation; branches from the venæ hypogastricæ.

PUERI'TIA, (from *puer*, a child). See ÆTAS.

PUERPERIUM, (from *puer*, a child, and *pario*, to bring forth). DELIVERY. Much care is usually necessary in these circumstances; for lying in women are liable to many disorders. Immediately after delivery, every thing wet should be removed, and dry warm linen in readiness for her use; supplying fresh

when necessary. It is generally necessary to keep the breasts warm, by means of flannel cloths, until the milk flows freely. The room should be supplied with free though not cold air; and during the first three or four days the diet should be thin, but not stimulating. The common allowance is caudle, oatmeal boiled in water until it is of the consistence of a thin jelly, and then rendered agreeable to the palate by the addition of a little sugar, sometimes ale; more generally wine is added, but if the stomach is subject to acidity, a little brandy is preferable. Rest must by every means be promoted; and, if required, opiates may be given for this purpose. Costiveness should be guarded against, though a diarrhoea at this time is not favourable. The child should be applied to the breast in about ten or twelve hours after its birth, if the mother intends to suckle it; for the sooner the secretion of milk can be promoted, the less danger will there be of a milk fever, or an abscess. See PARTURITIO, and the following article.

PUERPERA' LIS FE' BRIS, (from *puerpera*, a lying-in woman). The PUERPERAL OR CHILDBED FEVER. See PERITONITIS.

This peculiar fever has only been discriminated with accuracy within the last thirty years, and even at present is often confounded with various other complaints incident to the puerperal state. In order to distinguish it and to elucidate its pathology, we must enlarge a little on the changes which take place on delivery, and their consequences. This perhaps might have been comprised in the preceding article; but in this place we thought it might be more striking, as its consequences would be more immediately obvious.

In the last months of pregnancy the arterial system of the hypogastric region is contracted by the pressure of the uterus, while the return of blood by the veins is equally retarded. When the pressure is taken off, the flow of blood is, of course, increased, and it is freely poured out by the uterine arteries. Within the compass of a few hours, from twelve to thirty-six, or at most forty-eight, this discharge lessens; but it is compensated by an increased flow to the mammae, thus relieving the plethoric state of the hypogastric region which might otherwise ensue. We thus find two altered determinations, the first sudden and rapid, the other more slow; and we know that every change in the balance of the circulation is attended with a peculiar state of irritability. This state is a constant and striking attendant of childbed; and from it many of the symptoms arise, particularly that susceptibility of nervous impressions which is often so injurious. Independent of these, what are termed the after pains, the discharge of clots from a spasmodic contraction of the uterus is sometimes attended with rigor; but the first effect of the change of determination is often more decidedly febrile, and is termed the *weed*. After about thirty-six hours, often sooner, the next change of determination, that to the mammae, is also ushered in by shivering, accompanied by heat. These different feverish attacks have misled practitioners, and the true puerperal fever has been confounded with them, supposed to be the same, or a continuance of these accessions. It is now necessary to distinguish it.

The rigor of the true puerperal fever comes on more than forty-eight hours after delivery; in medical language, on the third day. If, however, the woman is delivered about four in the afternoon, the attack on six of

the third day is scarcely more than fifty hours, while, if the child was born at two in the morning, the interval is sixteen hours more. The third evening is, however, strictly critical, and whatever rigors occur at any other period are seldom dangerous. The rigor is also severe, attended with peculiar debility, and the hot fit with headach of no common kind, viz. a tension, as if a cord was forcibly bound round the forehead: at the same time there is a considerable tension, very generally great soreness of the abdomen. We can assert, with the fullest confidence that these symptoms are pathognomonic of the true puerperal fever. They may occur in different degrees, but they are always present. To these we may add, a sinking of the features, and a peculiarly vacant stare of the eyes: a symptom perhaps not equally constant, but rarely absent. The fever remits very strikingly in the morning, and returns at night: these remissions are discernible for the three or four first days.

The lochia are gradually suppressed, and the milk by degrees also disappears. The head is each succeeding day more affected, and delirium comes on early. There is little sleep; the pulse is rapid and weak, with thirst, load at the precordia, dry parched tongue, constant sighing, despair in the countenance, and often an inflammation in the eyes. The tongue is of a glossy red, and very dry; the skin also is hot and dry; cough, with pain of the breast and side often intervene, and the scene closes with a low muttering delirium, sometimes with convulsions; often the placid complacency which attends putrefaction.

The disease is at all times dangerous, and fatal perhaps in the greater proportion. If the lochia return; if the milk can be preserved; if the expression of the countenance is not greatly altered; if the head remains clear; and a gentle diaphoresis comes on, the patient generally escapes. The circumstances attending the delivery afford no favourable prospect. It comes after the happiest and easiest labour; and we have seen it after such a profluvium, as from its violence has endangered life, while in cases of the most difficult and painful, where the placenta has been long retained, and the lochia in small quantity, it has not appeared. This fever is also often epidemic; and its progress is so decidedly that of typhus with local inflammation, that we have not a doubt of considering it as a typhoid peritonitis: for this membrane has been generally found inflamed or suppurated, often covered with an albuminous effusion, which have induced the French physicians to style it *un depot lacteux*.

If it is, however, unconnected with the lochia, it is equally so with the milk: for if it be a milky deposition, its degree should be in proportion to the suppression of the milk, and to the period of this suppression; but neither is the case. The fever sometimes comes on with violence, while the milk is only diminished; and the secretion generally continues, except in the most dangerous cases, till the eighth, often till the tenth day, though diminishing gradually in quantity. The deposition also is not milky, but albuminous. Others, who attribute the fever to inflammation of the uterus, have not found on dissection this viscus essentially injured. It has shown no marks of inflammation or mortification; nor is there a more striking contradiction to this operation than the case just hinted at, that fever of this kind has come on after profuse floodings. The peritoneum, sometimes the omentum, is confessedly

inflamed, and often mortified. In explaining, therefore, the circumstances of this disease, these are the only changes that we can admit.

The fever, we have seen, is so strongly marked, that it cannot be explained on the idea of its being an accidental or a sporadic one. The *annus infestus* of Bartholine marks its epidemic tendency; and our own experience has proved that the larger proportion of cases has occurred at particular seasons. The fever then is an epidemic typhus, appearing only in this peculiar form, from the circumstances of the puerperal state.

If then we consider the situation, the peculiarly irritable state, of a puerperal woman, and compare it with what we have remarked respecting the altered balance of the circulation, as the essence of fever, we shall not be surprised at the affection of the brain; but this affection, though sometimes violent, for the delirium *ferox* is not uncommon, more often consists in unequal excitement, from a diminution of the active powers of the circulation, while every mark of accumulation remains. The consequence is, the languid inflammation, described as the consequence of concussion. The active energy of the circulation is more conspicuous in the hypogastric region. In the remarks on INFLAMMATION, q. v. p. 13, we endeavoured to show that a weakness in the affected vessels, joined with an increased *vis a tergo*, was the evident efficient cause; and that all the varieties of inflammation depended on the proportionate degrees of debility, and the impelling power. In the present disease, the vessels of the hypogastric region pressed on by the uterus, during gestation, and their active power thus confined, are necessarily debilitated; and when fever comes on, increasing the action of the larger arteries, inflammation must be the consequence. This disease cannot take place in the uterus itself, for there the vessels are not compressed, and they are completely emptied by the lochial discharge. In the neighbouring organs, however, the circumstances are different, and there inflammation comes on. If then the causes of typhus exist, and any accidental circumstances call them into action, the symptoms of puerperal fever will be the consequence; nor can we wonder at the fatality of the disease, when we reflect on the increased irritability of that state, the local debility of the vessels, and the general weakness from the discharges.

The period of the fever is uncertain. It sometimes extends to the twenty-first day; but where the delirium is violent, its termination is often more rapid. In general, when the lochial discharge has been considerable, we have thought that the disease has been more dangerous and more quickly fatal.

The treatment of puerperal fever in the hands of different practitioners has greatly differed; but, unfortunately, each has been equally unsuccessful; and, on the whole, we are almost tempted to think, that to guard against the most troublesome and dangerous symptoms will be the most salutary practice.

Bleeding, the first idea that occurred to the ancient physicians, was freely employed. It is not easy to reconcile this remedy to the nature of the disease, yet we have little doubt but that it was successful, and we can only explain it on those principles which have already assisted the explanation of the good effects of this remedy in plague and putrid fever. If practised early and copiously, it enables nature to resist the load, and restore

more effectually the balance of the circulation. Constitutions may, perhaps, at this time differ, or we may act less decisively: bleeding, however, does not at present succeed, nor can we advise this remedy. The puerperal state attracts general attention, and a failure in its attendant complaints, especially if the remedy is violent, or unusual, may be highly injurious to the practitioner. At all events, we think bleeding should be avoided, except in the young and plethoric; where the delirium is violent, and the determination to the head excessive.

Emetics are remedies of less doubtful powers, and so efficacious, that some years since, they were considered in France as specifics in this disease. We have little hesitation in saying from our own experience that they greatly mitigate the fever, nor, if given at the moment of the attack, should we disbelieve M. Doucet's assertion of their wholly checking it. If the emetic is given previous to the next evening exacerbation, the good effect is more doubtful, and previous to the third it is almost useless. From what we have said of the effects of this remedy, and the nature of the complaint, there must be little doubt of the source of its advantages.

Cathartics are remedies whose real value is scarcely ascertained. In general, they are commended; and authors have expressly remarked, that a purging is salutary. We shall not be accused of prejudice against their use; but beyond those gentle ones which keep the bowels soluble we have not found them advantageous. On the contrary, violent purging seems to have lessened the strength, without diminishing fever. It must be remembered also, that, in more active peritonitis, stools did not seem to be useful.

Gentle *diaphoretics* appear to be salutary; but on the one hand to force sweats by excessive heat, or to elicit diaphoresis by relaxing antimonials, seems equally injurious. The saline neutrals, camphor in moderate doses, with opium, if easily borne, are the most effectual remedies of this class.

Blisters are highly recommended, and certainly at times useful in diminishing the pain and tension of the abdomen. Applied also to the neck they relieve often the tension of the forehead, and bring on sleep; but their effects are seldom considerable or permanent.

As we have spoken slightly of the most active medicines, it may be expected that we are about to recommend a new and more effectual plan. In fact, however, we engaged in the practice of medicine at the time of the numerous publications on this subject, with all their various plans before us, and expected to subdue the fever with little difficulty. We found ourselves, however, disappointed; and that the younger practitioners may not experience similar disappointment, we shall state shortly the result of our experience.

The fever attacks, we have said, on the third evening, that is, the next evening but one after delivery. Attention ought, therefore, to be alive at that time, and every rigor at this critical season should be immediately met with an active emetic. Except miliary fever, attended with particular anxiety, sighing, &c. a disease now almost unknown, no fever occurs at this period, and miliary eruptions are not peculiar to it. Were they so it would be no contraindication of the emetic. After the emetic, light saline medicines, with an opiate, and on the following day, a laxative, will be necessary. The succeeding evening must be carefully watched, and on

the return of rigor, the emetic with the opiate again exhibited. What can be gained by medicine is by this time attained. The laxatives must be given to prevent irritation from the bowels, blisters applied to the abdomen to lessen inflammation, and to the neck to procure sleep. We gain nothing in the result but the diminution of symptoms; for the disease will run its course. Yet, though we cannot stop the disease, we may regulate its progress; and it is necessary to add some rules for this purpose. The degree of discharge from the bowels is regulated by the strength, the appearance of the stools, and the ease with which they are borne. If black and offensive, they should be numerous, while these appearances continue, and if not followed by faintness, we may be less anxious respecting their number. Should the pulse at the same time become slower and softer we may persevere. Such, however, is seldom the case. The stools are dark, but they appear to debilitate; the pulse often becomes more contracted, the affection of the head, the wandering delirium, increased. These circumstances have often held our hands, even while the stools have been dark.

The blisters require little regulation, and the diaphoresis, if kept up by mild, warm liquids, by camphor, and moderate doses of opium only, will proceed in a salutary degree.

Tonics, particularly bark and the acid of vitriol, have been given early, and in large quantities, but, in our hands, with little advantage. Others seem to have been more successful, and we would with pleasure join in their commendation, did experience warrant us.

In fact, then, as already hinted after the emetics, we have been able to do little by medicine, except, as in other fevers, to conduct the disease more easily and safely to its termination; and, indeed, the advantages derived from medicine in this respect seem less striking in the present complaint than in the greater number of fevers. In this respect it resembles the pure nervous fever, with which it is very nearly allied in all its symptoms and its progress. The most perfect tranquillity, free cool air, the most soothing manners, the most gentle medicines, have appeared most effectual. A diet mild, diluting, and gently diaphoretic, evacuations the least irritating, medicines the most soothing, have appeared the most useful; and camphor with opium, occasionally with the anodyne liquor of Hoffman, the most salutary. Wine is seldom required, except in the last stages of debility. Let us most earnestly deprecate any violent interference; for even the most promising plans, if attended with irritation, have been injurious.

See Denman's and Hamilton's Midwifery; Manning on Female Diseases; White, Hulme, Clarke, and Leake on the Puerperal Fever; Doucet Nouvelles Recherches sur la Fievre Puerperale; Millar on the Diseases of Great Britain; Rapport sur un Memoire contenant la Methode de M. Doucet dans le Traitement de Fievre Puerperal; Zahner Observationes Medico-practicæ de Febre Puerperarum; Stoll Ratio Medendi, ii. 68; Edinburgh Medical Commentaries, v. vii. ix.; Memoires de la Societ   Royale de M  decine, vii.; Bang in act societatis Medic   Hafniensis, i. For the dissections of those who have died in this complaint, see Bang ut supra; Hulme; Meckell in Epistola ad Hallerum; Walter de Morbis Periton  i; Hufeland's Annals; Stoll

Ratio Medendi, vii. 148; Selle N. Beitrage, i. 48; De la Roche Recherches sur la Nature, &c. de la Fievre Puerperale.

PUGI'LLUS, (from *pugnus*, the fist). A PUGIL, or PINCH; *dragmis*, the eighth part of a handful, or as much as can be taken up by the thumb and two fingers.

PULE'GIUM VULGA'RE, *pulegium regale*, and *latifolium*; *glechon*; PUDDING GRASS, COMMON PENNYROYAL, *mentha pulegium* Lin. Sp. Pl. 807, hath oval obtuse leaves, and trailing stalks, which strike root at the joints. It grows wild on moist commons, and flowers in June.

All the mints, particularly pennyroyals, are warm and pungent; but the latter are more acrid, less agreeable both in smell and taste, less proper than mint in nausea, but more efficacious as warm carminatives in hysteric cases. This species is the strongest, though the least ungrateful, and has been considered useful in the chin-cough, as an antispasmodic and emmenagogue, but in each respect its powers are inconsiderable. Cullen's Materia Medica. Haller, however, who was not a practical physician, recommends an infusion of the herb, with steel, in white wine, for promoting uterine evacuation, and speaks of it as infallible.

The active principle of the pennyroyals is their essential oil, which is more valuable than that of mint. It comes over at the beginning of the distillation with water, and rises in a great proportion with spirit of wine: it tastes and smells strongly of the plant; and may be given from grt. i. to v.

The London college directs a simple water and a spirit to be distilled from pennyroyal, from a pound of which they make a gallon of each, besides the essential oil, which they ordered to be procured by distillation. An infusion of it is equal, however, if not superior; and the whole virtue of the herb may be extracted, either by water or by spirit. See Lewis's Materia Medica.

PULICA'RIA, (from *pulex*, a flea). See CONYZA MINOR, &c.

PULICA'RIS HE'RBA. See PSYLLIUM.

PULICA'RIS MORBUS. See PETECHIA.

PULMONA'RIA, (from *pulmo*, the lungs; from its utility in affections of the lungs). *Musculus pulmonarius*; *hieracium Alpinum*; *lichen pulmonarius* Lin. Sp. Pl. 1612.

PULMONA'RIA MACULO'SA; *pulmonaria symphytum maculosum*; SAGE OF JERUSALEM; JERUSALEM COWSLIP; SPOTTED LUNGWORT; *pulmonaria officinalis* Lin. Sp. Pl. 194, is a hairy scabrous plant, with leaves of a dark brownish green colour on the upper side, and spotted for the most part with white. Underneath it is of a pale green; and the lower leaves are oval, set on broad pedicles, those on the stalks narrower, long pointed, set alternately without pedicles; the flowers monopetalous, of a purple or blue colour, and sometimes white, followed each by four seeds inclosed in the cup. It is perennial, grows wild in many parts of Europe, and flowers in April or May; resembling in virtue the *adiantum nigrum*.

PULMONA'RIS ARTE'RIA. See PULMONES.

PULMONA'RI   VE'N  . See PULMONES.

PULMO'NES, (Plin. πνευμον, Attice, πλευμον). The LUNGS are two spongy bodies, reddish in children, greyish in adults, and bluish in the aged, divided into two principal lobes, hyperchoryphoses, and inclosed in two

distinct bags, formed of the pleura, so that the right and left lobes have not the least communication. The pleura covers the lungs by passing over and round them, as the peritoneum covers the intestines; and the same membrane is reflected, covering the ribs internally. An inner lamella of the pleura passes into their substance; a circumstance discovered in infants. On the right side, the lobe is divided into three lesser ones, a superior, an anterior, and an inferior; the latter lying upon the diaphragm. On the left side are two lobes, only divided by a fissure. The space between the lungs is filled up by the heart below; by the thymus and trachea above; behind by the œsophagus and spine. Their shape corresponds to that of the thorax.

The whole mass of the lungs is composed of air and blood vessels, lymphatics, nerves, and cellular membranes.

The air vessels are very small branches continued from the windpipe, with which, in a sound state, they have a free communication, and at every inspiration are filled with air. See BRONCHIA.

In the minute ramifications the cartilages of the trachea disappear; but the mucous membrane is continued. When in this minute subdivision the tubes have attained their smallest size, each is widened at its extremity into a follicle, which are usually collected in bundles, styled *lobuli*. The cells of each lobule communicate freely; but the different lobules seem to have little communication. The lobules are divided by cellular substance, so that in the lungs there are two distinct sets of cells, which are affected in different diseases. In the catarrhus suffocativus, for instance, the follicles are filled; in the hydrothorax, the surrounding cells of the cellular membrane. The cells on the surface appear to be circular; but internally, perhaps, also, externally, when confined by the thorax, they are angular.

The blood vessels are the pulmonary, and the bronchial arteries and veins. The pulmonary artery rises from the right ventricle, runs upwards to the left of the aorta, dividing on the curvature into two branches, which lie before that of the trachea; the right branch is longer than the left, for the same reason as the trachea is so. When passing into the lungs, it divides into two or three branches; after it has divided into very small branches, they do not anastomose, like the small branches of the aorta, but they join again, and form veins, which uniting, go to the left auricle of the heart, commonly in four or five trunks. The lungs are tied down to the vertebræ by a broad ligamentous band, continued from the division of the arteries into the diaphragm. The large vessels run in the large interstices, and in the small parts the branches still run on in the interstices of smaller lobuli, and are connected by a cellular membrane, as in the other part of the body: at last the arterial ramifications terminate in a fine net work, upon the cells, called *rete Malpighi*, where it is supposed that the blood undergoes some alteration, as there it is nearly contiguous to the air, a very thin membrane being only interposed. From this net work the veins begin, and carry the blood back. In the minute subdivisions the pulmonary artery and vein are corrugated during expiration, and elongated on inspiration, so that the circulation is only free during the latter; and the blood is then exposed most carefully to

the air. The pulmonary artery receives and returns the whole mass of blood which circulates through the lungs before it passes to the rest of the body, probably that the injurious parts of this fluid should be carried off by respiration. The bronchial arteries are destined to the nourishment of the lungs; and the lymphatic vessels are distributed on their surface to convey the lymph back to the mass of blood. The nerves are very small, chiefly from the eighth pair. The cellular membrane fills up the intermediate spaces between the vessels. See BRONCHIALES ARTERIÆ. For the use of the lungs, see RESPIRATIO.

The substance of the lungs is more vascular than any other part, and a greater quantity of blood passes through them in a given time. The aspera arteria, minutely ramifying through every part of the substance, terminating in air vesicles, is peculiar to them, and by respiration they are kept in a perpetual motion. When the lungs are diseased, their motion is not only increased by the respiration being quickened, but they often suffer violent concussions by means of coughing; but, notwithstanding these concussions, wounds in the lungs often heal readily, and inflammations, except when vomicae are present, seem scarcely more obstinate than in any other part.

Numerous are the instances in which the lungs have been wounded by a small sword, and even by balls, from which the patients have happily recovered. Bierling mentions one, in which one hundred and twenty ounces of blood were lost; and a German author describes a case, in which a ball, passing through each lobe, did not prove fatal. In one instance the right lobe was wholly exposed, and in several a part of the lung was cut off. Abscesses also in the lungs, when not from vomicae, heal easily; though calculi, which are confined to the bronchial glands, are usually forerunners of hectic.

The adhesion of the lungs to the pleura, which we have mentioned as a common effect of peripneumony, or pleurisy, often occurs without producing any difficulty of breathing. Rivinus, Haller, and De Haen, have recorded numerous instances of the little injury which has resulted from the concretion; and one lung has been almost completely destroyed, without any considerable inconvenience. Gangrene of the lungs we have mentioned among the consequences of peripneumony, and we perceive it recorded by Malpighi among the consequences of a putrid epidemic which occurred at Pisa in 1648. A dissolution of the lungs is mentioned by Fontanus; and a considerable change in their texture, in the *Memoires de Médecine*, from Haller. In the same collection we find a remarkable case of their being found in a dry state.

A spasmodic stricture in the lungs has been mentioned as a cause of asthma; but we do not find in any part of their structure those contractile fibres which may become the subject of such disease. It has been referred to the cellular texture, which has been supposed irritable; but which we have rather been inclined to consider as an inorganic substance. It is probable, however, that the extreme ramifications of the lungs may be muscular, since gases, vapours, the powder of different substances dispersed in the air, will, in many instances, suddenly bring on spasm; and if we do not

allow them muscularity, we must admit of their being very acutely sensible, and to sympathize with the diaphragm and intercostal muscles. The smallness of the nerves sent to the lungs is the principal argument against either supposition.

De la Mettries' account of a rheumatic affection of the lungs cured by a gangrene of the foot coming on, is a singular and not very credible history. Rheumatism of this part is almost exclusively confined to the muscles of the thorax.

Foreign bodies, inhaled with the atmospheric air, have been found in them, sometimes more solid substances, passing accidentally into the trachea. The great causes of mischief in these organs are, however, the vomicae, chiefly found at the root of the lungs, which we have sufficiently noticed under the article PHTHISIS, q. v.

PULMONIA, (from *pulmo*, the lungs). See PERIPNEUMONIA.

PULPA, (*qua pulte mistura vesebatur*). PULP; the soft part of the fruit which surrounds the seeds or kernel. It is separated by pressing through a sieve, after suffering the juices to separate spontaneously; or extracting them either by the addition of boiling water, or by boiling them in water. They are evaporated, when too fluid, in a salt water bath.

PULPEZIA. See APOPLEXIA.

PULSATILLA *Nigricans* Storck, Ph. Edinb. *Anemone pratensis* Lin. Sp. Pl. 760: it resembles the pulsatilla vulgaris, or pasque flower; but is less, and of a darker hue: it is a native of the south of Germany, and the neighbouring countries. All the anemones have a considerable degree of acrimony, but this seems to possess the largest share. The whole plant, when chewed, impresses the tongue with a sharp, burning, durable taste; but the root is mildest. Water carries over its virtues in distillation: and the remaining extract is also considerably active. From numerous trials, Storck celebrates the efficacy of this plant in various chronic diseases of the eye; in venereal nodes and nocturnal pains; in foul ulcers with caries; in serpigo; and suppressed menses. He relates instances of its curing blindness of many years continuance, by dissipating and dissolving films and obscurities of the cornea. In these cases, its good effects were first indicated by considerable pain excited in the eye. The sensible operation of the medicine was nausea and vomiting, particularly when the distilled water was used; an increased flow of urine, and sometimes colic with looseness. Many German physicians have tried the effect of this remedy in diseases of the eyes with success; but Schmucker, Bergius, and Richter, found it inefficacious in these complaints, though the doses were increased beyond what Storck himself directed.

As this plant is acrid, Dr. Cullen thinks it may be active; and from the singular matter resembling camphor, which its distilled water contains, that it may have peculiar powers and virtues. The too eager commendations of Storck have excited suspicion: but Dr. Cullen recommends the trial of it in amaurosis; as the disease may depend upon different causes, some of which may yield to remedies, though others do not. Cullen's *Materia Medica*.

The dose of the distilled water to adults is about half an ounce twice or three times a day; of the extract,

reduced to powder, with the addition of sugar, five or six grains. The Edinburgh college had adopted the distilled water of pulsatilla, but has now changed it for the extract. See Lewis's *Materia Medica*, edit. 3.

PULSATIO, (from *pulso*, to beat). This can scarcely be called a disease; but it is often a symptom, and frequently a source of alarm. Any person, if thin, will often, on lying on his back, perceive a pulsation somewhat below the pit of the stomach, and, if low spirited or hysteric, will be alarmed by this unexpected sensation. It is, however, owing to the falling back of the intestines, which brings the pulsation of the aorta under the fingers. This is the case in ninety-nine of one hundred cases, and is particularly noticed in the second volume of Haller's *Bibliotheca Practica* from Columbus. We must not conceal, however, that Bonetus has recorded it as occurring from a compression of the aorta, below, and Severinus and Bonetus from an aneurism of the cœliaca. Weisborn has described a case in which it occurred from the aorta being pressed from its place. A similar cause must have occasioned the sensation of pulsation on the right side. A pulsation of the veins is recorded by Homberg in the *History of the Academy of Sciences*, 1764, apparently from increased action of the arterial system.

PULSUS, (from *pulso*, to beat; also *phlebopælie*). The PULSE is well known to consist in the reciprocal contraction and dilatation of the heart and arteries, by the former of which the blood is propelled through every part of the body.

It may be easily supposed that the pulse could not be understood, or employed as a source of prognostic, while the circulation was unknown. Hippocrates therefore slightly mentions it; and Herophilus is said to have been the first who considered the pulse with some accuracy. In the time of Celsus the pulse was frequently consulted, though he calls it *res fallacissima*. Galen, however, wrote most voluminously and laboriously upon this subject; an epitome of which may be seen in Prosper Alpinus de *Præsagienda Vita et Morte*. Boerhaave, in his *Institutes*, collects all that the ancients knew concerning the pulse in a short compass, which is well explained by his commentator, Haller. Long experience, however, has rather confirmed than contradicted the opinion of Celsus, for notwithstanding the multiplicity of pulses, which have been enumerated, they often mislead, unless the practitioner is accustomed to their examination.

In feeling the pulse no little attention is required. They should be examined at coming into the room and on leaving it. The presence of the physician sometimes quickens it; and the recollection of the complaints, or the talking only, will have the same effect. The artery should be first felt gently, and if any doubt arises whether the pulse is weak, it should be compressed strongly by three fingers, and the two uppermost slowly raised. If the pulse is strong, and seemingly weak only from oppression, the blood, rapidly returning, will strike fully the finger below. If really weak, it gradually recovers its former force. It is necessary in estimating the strength or weakness of the pulse to consider the state of obesity in the patient, and the size of the artery. A fat person has naturally a weak pulse; but it beats also to a disadvantage beneath a layer of fat. This circumstance should be attended to in our estimate. The size of the

artery we can often estimate, for we can feel, in thin persons, two-thirds of its circumference, and errors can scarcely arise from this source.

The great object of enquiry respecting the pulse is, their frequency or slowness. In this respect, sexes, temperaments, idiosyncracies, and ages, differ. The pulse in women is quicker than in men; in the sanguine than in the melancholic temperament; in youth than in age. If the pulse in men varies from sixty to eighty, in women its range is usually from seventy-five to eighty-five. In a sanguine temperament a natural pulse is often eighty; and in a melancholic one frequently under sixty. Idiosyncracies can be reduced to no standard; but we suspect that the supposed varieties, if not referrible to age or temperament, often arise from disease. Dr. Heberden, who examined the pulse with accuracy in this respect, observes that the pulse of a healthy infant, on the day of its birth, while asleep, is from one hundred and thirty to one hundred and forty. The mean rate, during the first month, is one hundred and twenty; and it is rarely under one hundred and eight. During the first year, its range is from one hundred and eight to one hundred and twenty; during the second from ninety to one hundred; the third from ninety to one hundred and eight. It varies little till the seventh year, when it is about seventy-five; and in the following year scarcely exceeds seventy. These numbers are subject to great variety. The pulse are quickened at different times of the day (see *DIÆTA*); after a full meal; after exercise or any agitation. They are also quicker when standing than sitting, and in the latter posture than when lying down.

The pulse may be counted with some degree of accuracy till it reaches one hundred and forty strokes in a minute, perhaps, by strict attention, to one hundred and seventy. Beyond, all is rude conjecture, and the number is of little importance; for even in a child one hundred and forty strokes in a minute indicate extreme danger. We can admit that De Haen (*Ratio Medendi*, xii. 83.) could observe one hundred and sixty strokes in that small period; but scarcely allow that Wendt (*De Pulsus Mutatione insigni Erlang*, 1778) could have distinguished two hundred and forty-three.

A constant pulse of ninety in a minute, rising occasionally to one hundred and eight, shows a considerable irritation in the system, and is not without danger. We once saw, however, in a fever, a pulse constantly exceeding one hundred and forty; and three months after recovery it seldom sunk below one hundred and twenty; though after about two years it resumed the usual standard. In general, however, to exceed one hundred and twenty is a symptom highly dangerous, whatever may be the other appearances.

Pathologists have occasionally described a more frequent contraction in a particular artery; but except in the irregular oscillations, as they are styled, of the capillaries, this scarcely in any instance takes place. Gaubius asks, "An topica (pulsus frequentia,) datur in singulari systematis arteriosi parte?" Answering, "Dabitur si vera febris particularis."

A pulse from rest, and avoiding all stimuli, may be unusually slow, and, as we have said, (see *PROGNOSTICA*), even down to fifty in a minute. In diseases, however, this degree is highly dangerous; and should stupor also attend, it shows a degree of compression on

the brain which will probably soon end fatally. Within a few hours, we observed it, after an apoplectic stroke, under forty. Hyoscyamus and digitalis often render the pulse remarkably slow by lessening irritability. Causes of debility only increase its quickness, for the heart contracts from the increased irritability before it is full; and the ventricle, in consequence of weakness, is seldom wholly emptied. In Sarccone's account of the epidemics of Naples, the slowness of the pulse arose from insensibility. Cheyne remarks, in his *English Malady*, that colonel Townshend had attained so great power over his pulse as to stop it almost entirely; and we remember hearing a celebrated professor in a neighbouring university declare, in his youth, that he had a similar power in a less degree. He described the means by which he effected it, to be recalling some melancholy images, and yielding to gloomy reflections. His recovery, as may be expected, was attended with excessive anxiety. The pulse wholly stopping is not always a fatal symptom, though if it continues any time it is desperate. In a case recorded in the Breslaw collection, it failed eight days before death; and in one in the *Commercium Norimbergense*, five. Morgagni has recorded a similar occurrence from a dropsy of the pericardium. On the contrary, the pulse sometimes remains firm and good even a few hours before death, particularly when life is extinguished by causes which have no effect on the circulation. Even in a case of suffocation, from a suddenly supervening stricture in the upper part of the trachea, the pulse was not affected five minutes before death.

When the number of strokes continues the same, the pulse may be strong and hard, or quick (*celer*), and apparently weak. A strong, firm, pulse is consistent with high health; for the heart contracts only when full, and then acts with vigour. But the strongest pulse has some degree of softness if healthy. If it strikes the finger like a tense cord, it shows a tendency to disease, distinguished by the appellation of *diathesis phlogistica*, consisting in morbidly increased tone of the arterial system. If, with this hardness, it is increased in frequency, inflammatory fever is present.

It has been doubted whether the *pulsus celer* can be distinguished from the *pulsus frequens*. By the former term, which, for distinction, we shall style the *smart* pulse, is meant, that in which the systole is completed in a less time than the diastole. The rival professors at Halle, Stahl and Hoffman, differed in this point; but there is little doubt that such a distinction exists. It is not, however, obvious, but in a pulse of moderate quickness, and we should greatly doubt if it could be ascertained, when the number was above ninety; for that would require a distinction of the differences in the division of $\frac{1}{180}$ th part of a minute. Yet this we think, a delicate finger can ascertain. The cause of this more rapid contraction is the presence of a stimulus; but if it occurs chiefly in putrid fevers, in mortification, in hectics, and in all cases where a stimulus is combined with debility, as Haller contends, it will imply a spasmodic contraction of the artery, when the ventricle is not yet full. We think that our own observation confirms this idea. The *pulsus rarus* can undoubtedly be distinguished from the *pulsus tardus*. The latter we have already mentioned. The *thin* pulse is when the artery does not strike the finger as if it was full, when

the dilatation is slow and apparently incomplete. In this case the artery seems to hang on the finger; for as it is filled in slow succession the stroke is longer continued. This kind of pulse often attends asthmatic cases, and an enlargement of some portion of the heart, or the larger vessels.

The *intermitting pulse* is usually referred, though with little reason, to this head. It certainly is a symptom of considerable debility, and diminished irritability; for the heart, when less irritable, is excited only from over distention: and when at the same time weak, cannot, by one effort, remove the load of blood. It occurs too in the most dangerous pulmonic cases, when there are organic affections; and, according to Solano, presages a diarrhoea. This alarming view of the subject requires, however, some alleviation. An intermitting pulse is with many persons natural, and seldom absent, but when irritation takes place in the system, particularly febrile irritation. In many instances it is owing to fulness of the stomach and bowels, and often arises from agitation of mind. In fact, it is frequently only the irregular action of mobile habits; and in the greater number of cases, where no serious indisposition at the same time occurs, of little importance.

The *rebounding pulse* is nearly of a similar nature. This very certainly arises from obstruction. Lancisi observed it as a symptom of aneurism of the aorta, and we have more than once seen it in hydrothorax, and ossifications of the valves of the heart. It consists in two, sometimes three, rapid pulsations, with a long interval. The Latin name *dicrotus*, implies only two rebounds, so that we have preserved the English term; but some later authors have distinguished the three rebounds by the term *coturnizans pulsus*.

We remember a singular effect of the digitalis on this kind of pulse. After it had been for some time continued, the second and third rebound grew weaker, and in the course of a single night disappeared, reducing the number of pulsations from one hundred and fifty to fifty in a minute, without the smallest change in any function, or in the nature or violence of the disease. Solano considers the *pulsus dicrotus* as a presage of impending hæmorrhage from the nose: and a story is recorded of Galen, on observing it, calling for a basin, which was scarcely brought before the blood gushed out with violence. If, however, he had no other marks, he might call for the basin ten thousand times before his prognostic would be again fulfilled.

The *inciduus pulse* is when a stronger stroke succeeds a weak one, and a third, still stronger, the second, as in a swelling sea the waves are successively more violent. A pulse of this kind has never occurred to us; but Solano considers it, if soft, as presaging a sweat; if hard, a jaundice.

Bordeu has been more minute in his distinctions, though he has added little but words to the observations of former pathologists. He distinguishes pulses into critical, and not critical. The former as soft, *dilated*, and free; the latter harsh, small, and contracted. These are subdivided from the nature of the disease and other circumstances. If the disease is in the upper part of the body, and the critical evacuation is to be expected from above, the *pulsus dicrotus* occurs, which he styles *pulsus superior*. If the complaint is in the breast, and the discharge is expected from that part, the pulse will

be soft, flowing, and equable: if in the throat, somewhat harder and quicker, approaching the "cephalic pulse," which is still more hard, quick, and strong; truly a rebounding pulse. The *pulsus inferior* has unequal intervals, and is not seldom an intermittent one, joined with subsultus. It will portend vomiting, if at the same time hard and unequal; evacuations from the intestines, if more unequal, almost intermitting, and mixed with subsultus. A pulse presaging hæmorrhoids is rebounding, hard, frequent, and less unequal. The whole, however, is a superstructure raised on the foundation of Solano; but it is certainly, in a great degree, imaginary, and we find, from De Haen's Epistle to Haller, that Bordeu himself trusted little to it. The doctrine is at least inapplicable to the artificial cure of fevers by emetics and cathartics. It may be asked if this is an improvement? We can reply most certainly; for, instead of a treatise on fevers being, as was said of Hippocrates' epidemics, "a meditation on death," febrile complaints are seldom dangerous. A critical jaundice is a certain proof that the proper alvine discharges had been neglected.

Some other minute peculiarities of little importance have been noticed respecting the pulse; but we have sufficiently enlarged on that subject, farther perhaps than its application to more rational practice will warrant.

See Galeni Tractatus varii de Pulsu in Operum, vol. iv.; Massaria de Urinis et Pulsibus; Bellini de Urinis et Pulsibus; Solani Lapis Lydius Apollinis, folio, abridged and republished in 12mo. in 1737, and again at Vienna in 1753; De Haen Ratio Medendi, Pars ix. and xii.; Nihel on the Pulse; Hoffman Dissertatio de Pulsuum Natura et Praxi; Stahl de Differentia Pulsus Celeris et Frequentis; Floyer's Pulse Watch; Boerhaavii Institutiones cum Commentario Halleri.

PU'LVINAR, (from *fulvis*, dust, or chaff, with which they are filled). See EPITHEMA.

PULVINA'RIA. CUSHIONS, or PILLOWS, made with chaff, mixed with medical ingredients coarsely powdered. Those made with hops are said to be efficacious in producing rest; an apparently idle fancy, rendered famous from the rank of the patient on whom it was tried.

PU'LVIS, (from *pello*, to drive about, because it is easily agitated). A POWDER is composed only of such materials as may be reduced to this form, and kept in it without any loss of virtue, or which, from their levity, will not increase the bulk, or by their taste render the medicine nauseous. Bitters, fetids, acrid medicines, alkaline salts, and gums, are generally improper for keeping in this form. The dose of powders should not exceed ℥ ij; and if light, ℥ ss.

Compound powders were formerly called species.

PU'LVIS ALOE'TICUS. See HIERA PICRA.

PU'LVIS ANTILY'SSUS. See LICHEN CINEREUS.

PU'LVIS ANTIMONIALIS. See ANTIMONIUM.

PU'LVIS JACOBI. The POWDER OF DR. JAMES. An antimonial preparation, of which we found various prototypes in our enumeration of the older antimonials (see ANTIMONIUM). It was originally prepared by himself, but has since descended to the rank of a quack medicine; though, from the ingenuity of Dr. Pearson, we now approach very near it in the London Pharmacopœia.

It is supposed that, in the first preparations, calomel was added, and it has been said that Dr. James did not trust to it for the cure of fevers, but used it only as an evacuant previous to the use of the bark; and that he did not originally design to keep it a secret. It has, however, been anxiously employed since his time, and at one period the quantity exported was immense. This may probably continue.

The specification is worded with all the ambiguity of an ancient oracle, nor can it be prepared by the process described. Its succedaneum also, from many circumstances, is uncertain in its result. Dr. Pearson discovered that this celebrated powder consisted of the earth of bones, and the antimonial calx, forming a double compound, in the proportion of fifty-seven parts of the calx to forty-three parts of the earthy salt. It was doubtful, however, whether the ingredients of the earth of bones were not united with the antimony in an intimate chemical union, forming a triple compound. A little calx of iron appeared to be an accidental impregnation. The chemical state of the calx is, however, peculiar. About three-fourths may be dissolved in muriatic acid, and will afford the powder of algaroth. The remainder is insoluble in this acid, and is seemingly vitrified. If the bone ashes (phosphorated lime) are calcined in the above proportions, with the calx of antimony, and then exposed to a white heat, the result very nearly resembles James' powder. The uncertainty of the medicine apparently depends on the last part of the process. With the utmost care we have not been able to prepare it twice exactly alike.

In a medical view, James' powder is less active than its imitation. It affects the bowels and stomach very slightly, and passes off more readily by perspiration. In general, however, the difference is so inconsiderable, that we need scarcely regret the want of the real receipt of the inventor. We have thought that by uniting two grains of the pulvis opiatum with three of the antimonial powder, we imitated very nearly the effects of Dr. James' preparation. The opiate, however, certainly forms no part of the medicine sold. See Dr. Pearson in the Philosophical Transactions.

PU'LVIS FEBRI'FUGUS CRÆ'NIL. See ANTIMONII REGULUS MEDICINALIS.

PU'LVIS AD GUTTE'TAM. See GUTTETA.

PU'LVIS EPILE'PTICUS. See GUTTETA.

PU'LVIS REFRI'GERANS FALCK. See DYSURIA.

PU'MEX, (from *spuma*, froth; supposed to be the froth of some liquefied mineral,) *lapis bibulus*, *lapis scyrus*, PUMICE STONE, is found in volcanos, and hath been used as a dentifrice; but if frequently employed destroys the enamel. It is light and brittle, of a white or greyish colour, and generally contains mica. It is a volcanic product.

PU'NCTA LACHRYMA'LIA, (from *punctum*, a point,) are two small holes on the upper and lower eye lids, opposite each other, on their inner edge, near the internal angles, contiguous to a small eminence. They convey the tears into the lachrymal sac, and from thence into the nose.

PUNCTI'CU'LA. PUNCTICULA'RI'IS, vel PU'NCTULA, (dim of *punctum*, a point). See PETECHIE.

PU'NCTUM AU'REUM, PUNCTU'RA AU'REA. When a hernia of the intestines is reduced, an incision was made through the skin and membrana adiposa,

quite down to the upper part of the spermatic vessels; then a golden wire was fixed and twisted, so as to prevent the descent of any thing down the tunica vaginalis. Modern practice rejects this method.

PU'NCTUM SALIENS; the first rudiments of the heart in the formation of the fœtus. The point where a throbbing motion is first observed. See FÆTUS.

PUNCTU'RA. A SMALL WOUND. Synonymous with vulnus.

PU'NICA. See GRANATA MALA.

PU'NICA GRANA'TUM, &c. See BALAUSTINUM.

PUORRHŒ'A, (from *πυον*, pus, and *ῥεω*, to flow). A purulent discharge from the belly.

PUOTU'RIA, (from *πυον*, pus, and *ουρα*, mingo). A purulent discharge from the bladder. See URINA.

PUPILLA O'CULI. The PUPIL OF THE EYE, (*à pupa, quod intuentibus similitudo pupæ redditur*). The aperture of the iris, for the passage of the light to the retina: as the iris expands or contracts the pupil is larger or less. See OCULUS.

The pupil is sometimes closed, occasionally by the iris receding from the cornea, and has been opened by an operation, described by Pellier in his *Recueil de Memoires*. It is occasionally torn in the operation for the cataract, and sometimes displaced; but in either case without injury to the sight. Chandler remarks that its mobility is not always in proportion to the sensibility of the cornea. See Janin *Memoires*; Richter's *Essays*; Weissenborn de *Papilla nimis coarctata vel clausa*.

PUPILLA'RIS MEMBRA'NA, (from *pupilla*). *Vellum pupillæ*. In the fœtus of five, six, and seven months, a fine vascular membrane, with large arteries, passes across the part where the pupil is afterwards seen. See OCULUS.

PURGAMENTUM STELLA'RUM, (from *purgo*, to cleanse). See CÆLIFOLIUM.

PURGA'NTIA, (from the same). *Cathartica, cathartica, catoretica, catoterica, dejectoria, alviduca*. See CATHARTICA.

PURPURA A'LBA, and RU'BRA. See MILIARIS FEBRIS.

PURPURA A'LBA. A species of eruption to which plethoric men of a phlegmatic temperament are inclined.

PURPURA SCORBU'TICA; the *herpes* of Vogel; the *purpura* of Hoffman; the *serpigo* of other writers. Hoffman considers it as wholly scorbutic; but it is distinguished by the eruption of exanthemata of a very peculiar kind, sometimes accompanied with an acute and even a malignant fever; on other occasions without fever continuing for a greater length of time, and scarcely disturbing the functions. The small papillæ which appear on the surface are sometimes of a red, sometimes of a white, colour: in the former case, there are vesicles containing a fluid; but the latter consists of small knots, fixed deep in the skin, about the size and figure of millet seed, rough to the touch, and filled with a thick purulent matter. When the eruption first appears, it is attended with corrugation, roughness, and dryness of the skin; and none of the exanthemata so suddenly disappear and recur. This return of the eruption, as well as its first appearance, is in general attended with a sense of heat, of itching, or pricking in the part; and the pustules are chiefly observable on the neck, breast, back, and arms.

Patients, disposed to this disease, are advised to use

for their common drink either mineral water, or pure water with a mixture of wine, and to avoid malt liquors, as well as whatever produces costiveness. Exercise, change of air, tranquillity of mind, and amusement, are of great service in preventing it. High seasoned animal food, close rooms, and excessive heat, are said to be injurious; milk and whey serviceable. Cooling medicines, gentle diaphoretics, with moderate discharges from the bowels, are only necessary.

From respect to the authority of Hoffman, we have preserved, with some corrections and curtailments, the article of the former edition. Yet we cannot help remarking that the whole description is apparently confused and inaccurate, mixing two diseases of very different kinds. The former is a species of millaria, the latter a pustular complaint of a very different nature. See Hoffman's Works.

PU'RPURA URTICA'TA. See URTICARIA.

PURPURA'TE, (from *πυρρὺς*, purple, from the colour of the eruptions, vulgarly called the *purples*). See PETECHIÆ.

PURULENTIA, (from *pus*, *furis*). See SUPPURATIO.

PUS, (*πύον*, from *πύω*, putresco). PURULENT MATTER; that which appears on the surface of healing wounds, or on opening well digested abscesses. It is unctuous, yellowish, nearly of the consistence of fresh cream, without any particular smell, and of a mild taste, resembling that of chyle.

We shortly considered this subject under the article ABSCESSUS, q. v. chiefly to point out rather than discuss the different opinions, as it was peculiarly connected with suppuration. The nature of pus, however, is still involved in considerable obscurity, and we can only offer some approaches to a knowledge of it.

As in abscesses there is always a loss of substance, it was a natural conclusion that at least the cellular substance, perhaps the muscular fibres, were dissolved in purulent matter, and the surgeon removed it from wounds with anxious care. Granulations of new flesh, however, appeared under it; and if in the first period it was a solvent, in the second it contributed to reproduction. Riedlin supposed it to be pituita, that fancied humour which obeyed every hypothesis; but Pringle and Gaber led the way to inquiry, though they did not succeed, by supposing it to be serum inspissated by heat, and changed by fermentation, probably a beginning putrefaction. Dr. Hendy, in an inaugural dissertation, opposed this opinion. He found that pus was less liable to putrefaction than serum; that serum and lymph confined in wounds, producing good pus, did not assist or hinder its formation, but themselves became putrid; and if red blood were added, the putrefaction was more rapid and considerable. Previous to this period, De Haen had contended that pus was derived from the blood (*Ratio Medendi*, pars ii.); afterwards that it might be separated without either pain or fever (pars ix.); and at a subsequent period that an ulcer was not necessary for its production. We have seen the appearances which De Haen describes, but they are certainly equivocal. If by ulcer is meant a loss of substance, no ulcer existed, but the investing membrane was destroyed, and the surface was covered with an albuminous matter. In this state the question remained for some years; for though in this period there were numerous

publications on the subject, but little was added to the evidence.

Mr. Home, in his Dissertation on the Properties of Pus, observes, on the authority of Mr. J. Hunter, that the characteristic of pus is the appearance of globules swimming in it, but that these are not coeval with its first formation. It then resembles, in consistence, a jelly, but the globules are formed, while the gelatinous fluid lies on the surface of the sore, in a period of fifteen or twenty minutes. It differs from the blood in the nature and colour of the globules, for the purulent ones are not soluble in water; and the fluid in which they swim is coagulable by a solution of sal ammoniac, which does not coagulate serum. Mr. Hunter, in his peculiar unscientific language, informs us that the vessels assume the nature of a gland, as if they had an active power, and as if it had been demonstrated that a gland had a peculiar organization. The objection to this doctrine consists chiefly in this, that pus is formed where no glandular structure apparently exists: but we know not in what such a structure consists; and, as a change in the state of the vessels can wholly alter the nature of a secreted fluid, it is impossible to say that it may not equally produce one. In this case, suppose, for the sake of hypothesis, it be admitted that the fluid effused is gluten, it meets in the cellular membrane with an oily matter, from which its nature may be altered, or suppose that from a hydrocarbonate, which it finds there, oil is formed, the chemical affinities of the fluid will then be changed. These we mean no other than suppositions, merely to suggest enquiry. Yet we own that they are not the hasty effusions of the moment, but have some collateral support.

Mr. Home concluded from his experiments that pus contains substances similar to those of the blood; that it is in a recent state free from any tendency to putrefaction; that it is friendly and bland to the parts which produce it, though it may irritate neighbouring ones. Its appearances also vary according to those of the constitution, and are affected by irregularities, anxiety of mind, &c. It is readily absorbed; and, in Mr. Home's opinion, without injury to the constitution. The parts which afford it become extremely vascular, and it is formed sooner in proportion as the part approaches nearer a glandular structure: thus in the internal surfaces it is often formed in five hours; in the skin, which is very vascular, in twenty; and in common muscles in forty-eight hours. It is composed, as already remarked, of globules swimming in a fluid, and is thinner when first poured out than after stagnation. In almost every respect we thus find pus resembling secreted fluids; and we certainly find secretion take place where there are no follicles, or any appearances of a complicated structure.

That pus existed independent of inflammation, and was a secreted rather than a fermented fluid, was for a considerable time a favourite opinion on the continent, though we are unable to say whether it occurred previous to Mr. Hunter's offering this explanation, since it was promulgated in his lectures, at a period not specified. The same opinion, however, was entertained by Plenciz, by Murray, Schroeder, and others, as well as by De Haen, formerly quoted; nor does any doubt remain, we believe, of the truth of this doctrine. Mr. Home is correct also in his idea, that though bland to

the part which produces it, pus is an irritating fluid to other parts, agreeing in this, as in almost every other circumstance, with the different secreted fluids. When reabsorbed we have said that it produces hectic, though Mr. Home thinks it may be so without injury to the constitution. Our reasons have been already assigned. Pus, when absorbed in a considerable quantity, is discharged often by other secretory organs, acting in this respect like any other foreign matter in the system; nor does there appear any difference, except that it seems more suddenly absorbed, and often more rapidly determined to some particular gland than any other substance. The discharge from the skin is not indeed an immediate effect; but that it is owing to the purulent matter is highly probable, since, when the perspiration is checked, a diarrhoea comes on. The metastasis to the kidneys, and on some occasions to the abdomen, is often rapid.

The use of the purulent matter is obvious in open wounds, since it affords a bland, protecting fluid for the tender granulations. Its distinguishing appearances show a healthy state of the system in general, and of the vessels of the part; for, if these are diseased, the fluid is thin and acrid, by no means calculated to protect the young flesh. Mr. Hunter involved himself in difficulties in his enquiries into the final cause of this secretion, by supposing the fluid which produces pus existed previously in the constitution. Like all other secreted fluids it exists materially, but not formally: like the rest it is the blood altered by its passage through vessels of a particular structure or organization, and formed only in the emergencies which require it. Pus seems sometimes to act as an assimilating fluid. We draw a seton through a part, or apply a blister or an issue near it, when we wish to bring an indurated tumour to suppuration. Either the inflammation of the skin excites increased action in the tumour, or the pus, produced, assimilates the other fluids. Suppuration generally, in consequence, takes place, at first from the parietes of the containing sac, afterwards from the tumour.

When a purulent discharge takes place naturally, or artificially, it is often the inflammation rather than the purulent evacuation which is of service. In a critical abscess there is no reason to think that the morbid matter is there collected and confined, for in general the fever remits previous to its formation, but the balance of the circulation is not regularly restored. The fluids thrown with impetuosity on one part in consequence of the previous weakness of the vessels are impacted, and the organization of the part is destroyed. The adjacent vessels inflame and separate purulent matter, by which the substance of the abscess, now become a matter foreign to the constitution, is separated. See INFLAMMATIO.

We purposely refer to this article to mark its inconsistency with the present. The opinion there given was adopted early in our lives, but more careful reflection and more extensive examination have induced us to change it. We have no objection at any time to offer more matured sentiments, and feel a gratification in reflecting that we daily grow wiser.

The distinction between mucus and pus is difficult, but experience will often detect a difference, to which words are inapplicable. We have already noticed the more striking characteristics of each (see PHTHISIS);

but shall now add the common methods of distinguishing them.

Mucus detained in the lungs often resembles pus; but if pus be slightly agitated with water it is easily diffused, and after standing a few hours falls to the bottom of the vessel. But previous to its subsidence, if a fixed alkali be added, it is precipitated in a gelatinous mass (Grasmayer). Mucus is with difficulty diffused in water, requiring strong agitation, and then forms a permanent ropy fluid. The quantity of pus mixed with mucus may thus be often ascertained.

Another experiment is more conclusive. The expectorated matter must for this purpose be dissolved in vitriolic acid, or in caustic alkaline lixivium; and then to both solutions pure water added. If there be a fair precipitation in each, some pus is certainly present; if in neither, the matter is entirely mucus. Should it not dissolve in the alkaline lixivium, there is also reason to believe it to be pus.

See Morgagni de Sedibus, &c. ep. xxii. § 28, &c.; Home on the Properties of Pus; Salmuth de Diagnosi Puris; Plenciz Acta et Observationes Medicæ; Murray's Opuscula, vol. i.; Quesnay Traité de la Suppuration; Medical Commentaries, Edinburgh, vol. vii. p. 193; Bell on Ulcers, ed. 3d. p. 55—7.

PU'STULA, (a dim. of *pus*). A PUSTULE, or LITTLE PIMPLE; *ecthyma*; *eczema*; *eczema*. Pustules appear often in the spring, and are of various kinds; sometimes resembling those marks of irritation produced by the application of a nettle, or the obstruction of sweat, called by the Greeks *exanthema*; at other times of different sizes and colours. Dr. Willan defines a pustule to be an elevation of the cuticle, sometimes globate, sometimes conoidal in its form, containing pus, or a lymph which is in general discoloured. Pustules are various in their size, but the diameter of the largest seldom exceeds two lines. He enumerates four different kinds of pustules, distinguished by medical authors under specific appellations, viz. PHLYZACIUM, a small pustule containing pus, raised on a hard circular inflamed base, of a vivid red colour, succeeded by a thick, hard, dark coloured scab. PSYDRACIUM; a minute pustule irregularly circumscribed, slightly elevated, terminating in a laminated scab. See also ACHOR and PHLYCTIS.

PU'STULA O'RIS, (from *putreo*, to be corrupted). See APHTHÆ.

PUTAMEN. The bark or paring of any vegetable. In medicine the green rind of the walnut is only used, and it has been highly celebrated as an antivenereal. It is mentioned as an antivenereal remedy, in the form of a decoction, by Borelli and Ramazzini. Mr. Pearson, though he admits its utility in the pains and indurations which remain after the disease, thinks it has no salutary effect in the lues itself.

PUTICARAGA. An Indian plant, whose seeds are bitter, probably tonic. Jones in the Asiatic Researches, ii. 351.

PUTRE'DO, vel PUTREF'ACTIO, (from *putris*, putrid). PUTREFACTION.

Putrefaction has been considered as a species of fermentation, and with reason, if fermentation be defined the spontaneous decomposition of bodies, with the assistance of heat and moisture. In the vinous and acetous fermentations (*vide in verbo*) we have seen the decomposition of vegetable bodies gradually taking place; the

aerial products again united in new combinations; and the fluids gradually attenuated, till the ultimate resolution by putrefaction reduces the whole to its last elements. Solid bodies undergo similar changes, till all organization is destroyed, till the earth falls down in its native form, the water combines with the air, and the gaseous products mix with the atmosphere. The phenomena, however, of this important change differ in vegetable and in animal substances; again in the dead and living animal matter. We must examine them in each state.

When vegetable substances have undergone the former processes of fermentation, which often pass so rapidly as to be little noticed, the last important dissolution comes on. A degree of heat is, however, necessary, though no considerable one; but it seldom proceeds with any rapidity under 46° of Fahrenheit, nor at a temperature so high as to hasten evaporation. Open air assists the process, but is not essential to it. Without some degree of moisture, however, putrefaction never goes on. It is probable that in this gradual decomposition the hydrogen is separated early; for this gas is a more powerful solvent of different substances than any other. The peculiar aroma of the vegetable is apparently combined with this air, and gives the appropriate fetor, which distinguishes the putrefaction of each. It is sometimes combined with sulphur, as in cabbage; sometimes apparently with phosphorus, as in the alliacæ; sometimes with ammonia, as in the cruciform plants, and those parts of vegetables which, in approaching animal substances, contain gluten, as the husks of the cerealia, &c.

When animal matter putrefies, its colour becomes paler, and its consistence lessens; a watery matter exudes, which becomes reddish or green. All traces of organization begin to disappear: the smell is disagreeable approaching that of ammonia; and the bulk diminishes. If the substance be confined in a close vessel, the process at this period slackens; the smell is purely ammoniacal, and all the chemical marks of alkalinity attend. If the communication of the air be admitted, the alkaline effluvium yields to an intensely putrid one, which is in part corrected and confined by ammonia. It is this peculiar smell which is so deleterious and so dangerous to animal life. After this smell has in part disappeared, the process proceeds with more rapidity. The substance swells with bubbles of air, and again subsides; the appearance of fibres is almost lost in an offensive, uniform mass, of a soft brown or greenish colour, of little consistence, of a faint nauseous smell, and of a poisonous nature. The smell then gradually disappears, the substance becomes more solid, the colour deeper, and at last it resembles a brown, nearly friable, earth.

During this process heat is usually extricated, and various gases are emitted, chiefly hydrogen, holding in solution sulphur, carbone, or phosphorus; ammonia; water, carbonic, and occasionally, for a short period, nitric acid and azotic gas. The residuum is an earth mixed with carbone, oil, and a small portion of ammonia.

The human body, when buried, undergoes a peculiar change. As the gaseous matters are prevented from escaping, by a new play of affinities a singular compound is formed, a kind of ammoniacal soap, with an excess

of frothy matter, containing also some phosphat of lime. The oily matter, separated by a diluted acid, and dried, resembled spermaceti; and a manufacture of this kind was established near Bristol, at first with some success; but it was almost impossible to deprive it of an unpleasant smell; and the attempt has, we believe, been for some time discontinued. A stream of water passing through the animal matter seems almost essential to the success of this singular change.

These chemical facts have been applied somewhat rashly to the human body, and a putrid dissolution of the fluids and solids has been too generally spoken of as no uncommon occurrence. In the human body the concurring causes of putrefaction, heat, and moisture, are constantly present; yet the system is preserved, and by its own powers. What these powers are, or by what means their effects are produced, we know not. The putrefaction of animal food is quickly corrected in the stomach; and that we may not attribute too much to the fancied powers of the gastric fluid, the same effect is produced by placing a bit of putrid flesh in the cavity of an ulcer. The prevention of putrefaction has been attributed to the discharge of excrementitious fluids, and the constant accession of fresh nourishment. The extent, however, of these effects is inconsiderable, and will not explain the facts just mentioned. It is not more singular that the stomach should correct putrefaction, than that it should have no power of digesting what has life. Each must be left among the arcana of physiology: arcana that we can never explain till we know what life is.

The effect of putrid matter in the stomach is nausea, with considerable debility, sometimes faintness and convulsions. If not evacuated, and if the stomach is unable to correct it, death must ensue. In general, however, the fatal event is avoided by its exciting vomiting, but its poisonous effect is too rapid to enable us to explain it from an assimilatory process. Breathing putrid air produces nearly similar symptoms, so that it must act as a sedative power on the nervous systems. From Dr. Evans' inaugural dissertation, published at Edinburgh in the year 1790, we find that putrid matter injected into the veins is almost immediately fatal. The human system, by habit, will, however, constantly breathe air infected to a certain degree with putrid miasmata, without injury. The constitution either resists their power, or gradually throws them off. If, however, any sudden cause of debility concur, they immediately show their peculiar virulence; and so rapidly, that we must attribute the previous immunity to the former cause. In general, also, as the effect of putrid matter communicated to the system is debility, so putrefaction only takes place in the human body from a diminution of the activity of the living principle. In the worst cases of putrid fever the blood we have found scarcely altered; for what change actually takes place is diminished by the discharge from the excrementitious excretories. The stools, the urine, the breath, and the perspiration, are offensive, while the albuminous part of the blood is only slightly attenuated. One apparent symptom of putrefaction in the blood is certainly owing to debility, viz. petechiæ. These arise from the laxity of the exhalents; and the blood, when out of the vessels, is subject to the usual changes of dead matter, while the power of the living principle is so greatly diminished.

When the powers of life are nearly destroyed, putrefaction soon takes place, and we then perceive the additional heat which attends this process. De Haen found the heat in a man, dying in a high degree of a putrid fever, two or three degrees above the usual standard; and a greater degree of heat in the hands of persons in a similar state has been the subject of observation and astonishment. It may add to the force of the former arguments to remark, that all causes of death which act immediately on the principle of life, as appears by their destroying irritability, are followed by an almost immediate putrefaction. The chief of these are lighting and narcotic poisons.

The means, then, of obviating putrefaction in the living body is to support the energy and activity of the living principle. In fact, we have no other resource; for, while the circulating fluids are little changed, we cannot expect great effect from mechanical action of astringents, except we admit the reasoning we shall soon adduce. The nature, the kinds, and the comparative power of these it is, however, necessary to consider.

Putrefaction is prevented by cold, and by a high degree of heat in circumstances which favour evaporation. Meat is preserved in ice, and by smoking, though in the latter process the pyroligneous acid may have some effect. Heat, however, alone, while it dries, checks putrefaction. All astringents are supposed to be also antiseptics; for an obvious reason, that they contract the fibres, and separate any watery fluid that they may contain in their interstices. One other suggestion may come in aid. The tannin and the gallic acid have been lately found to be nearly connected in their nature, and in different proportions these are found in all astringents. Their action is on the albumen or gelatin, which they precipitate; and it will not escape probably the recollection of an attentive reader, that the only change which Parmentier and Deyeux could discover in the blood of persons in putrid fevers, was in this portion. May not then astringents precipitate this morbid ingredient, and may not the same change gradually taking place in every part of the body, which contains even lymph, correct the tendency to putrefaction in the whole system? It may be said, that after having combated the humoral pathology, we are reverting to it. We might plead guilty, and declare that we will not obstinately shut our eyes to any fact, however it may militate against our principles. In cases of dissolved fluids from putrefaction, however, we find often decided advantages from the purest astringents, if given in large doses, and steadily continued, particularly the oak bark; and it would be highly improper to reject a medicine essentially of service because its effects cannot be readily explained.

The action of other antiseptics is not always clearly perceived; but a slight attention will support the reasoning just mentioned. Salt of amber, alum, myrrh, and asafœtida, are by far more powerful antiseptics out of the body than many astringents, but have little effect on putrid diseases. The bark, which is a powerful tonic, is not an active antiseptic in a phial; and chalk, which seems to accelerate putrefaction, is by no means injurious in putrid fevers.

If sea salt be taken as a standard, all the other neutrals seemed, from the experiments of sir John Pringle,

to exceed it in power. Nitre and kali were four times more powerful, and they appear to act by abstracting water, since their constant effect is to harden the meat. Alum, for a similar reason, appeared thirty times more powerful. Catechu, as may be understood from its astringency, was nearly equal; but we cannot easily explain the foundation of the power of asafœtida, myrrh, aloes, and, above all, fixed air, camphor, and charcoal, which are said to exceed sea salt three hundred times. The circumstances of the experiments have not been clearly detailed. These substances as remedies are chiefly applicable to topical putrefaction or local gangrene.

We shall not detail these experiments more minutely, nor endeavour to reconcile many contradictions in different authors, since we find scarcely any facts applicable to medicine; and shall, therefore, point out the sources of more extensive information in the different writers. See *PUTRIDA FEBRIS* and *SCORBUTUS*.

See sir John Pringle's *Diseases of the Army*, appendix; Macbride's *Essays*; *Essais pour servir à l'Histoire de Putrefaction*; *Dissertationes sur les Antiseptiques qui ont concourues*, &c. Dijon; Percival's *Essays*; Belengieri *Considerazioni intorno alle Maladie Putride*; Cartheuser de *Remediis Antiseptis*; Cullen's *Materia Medica*; Gaberi *Experimenta de Putrefactione in Melanges de Philosophie*, &c.

PU'TRIDA FE'BRIS, (from *putris*). Putrid fever, *febris continua putrida*, the plague, spotted or petechial fevers, pestilential, malignant, camp, jail fever, &c. See Cullen's *Nosologia*; genus *typhus*.

A putrid fever has been the subject of alarm in every country, and at every period. It has on this account claimed the peculiar attention of physicians; but we can scarcely recognize it as a distinct variety, since the putrefaction is a symptom only. There is a striking distinction, as we have seen in the exacerbating and more continued fevers; yet each may become highly putrid. Medicine has recorded no more fatally putrid diseases than the malignant remittents; and if these do not show so great a deprivation of the fluids as the fever we are now to describe, it depends only on the predisposition of the patients; for this is the fever of jails and hospitals.

In reality, the putrid fever is the typhus gravior of nosologists, distinguished by a comparative mildness of the early inflammatory symptoms, and increased debility in the progress, particularly in the latter stages. This debility, joined with the predisposition of the usual victims, occasion the high degree of putrefactive symptoms, which give it a character and a name. From the preceding article it will appear that the latter can have no other source. See *NERVOSA FEBRIS*.

Putrid fevers attack with more violence than the nervous; the cold is greater, the heat sharper and more permanent. The rigors, at first, are sudden, transient, and remitting; the pulse is more tense and hard, though generally quick and small, sometimes slow and regular, then fluttering and unequal. During the first twenty-four hours the alternate heat and cold are usually considerable; the fever increases every evening, and in the second week the patient becomes delirious. About the end of this period the delirium changes to a stupor; and about this time he is sometimes relieved. If a crisis does not, however, take place about the fourteenth day, or if some remarkable amendment is not observable about that time, the putrid symptoms

increase both in their number and degree, and the patient sinks under them. In the beginning the headach and vomiting are violent; there is often a pain in the temples, over the eyes, and in the bottom of the orbit: the eyes are full and heavy, yellowish, a little inflamed; the countenance bloated; the temporal arteries throb, though the pulse at the wrist be small. Tinnitus aurium; great dejection of spirits; faintness; difficult respiration, mixed with sighing: breath hot and offensive; pains in the loins and limbs; an universal weariness; a load at the stomach, attended with pain and heat; a nausea, and often a discharge of blackish or bilious matter, add to the distress. In the beginning the tongue is white, then grows drier and darker, sometimes livid, black, or of a dark pomegranate colour. In the increase of the fever the thirst is greatest, and every liquor is mawkish and bitterish to the taste; but often the sense of thirst is inconsiderable during the whole of the disease. The lips and teeth are furred with a black tenacious sordes; in the beginning the urine is pale and vapid, high coloured in the advance, and at last very brown or blackish, with an offensive smell; the stools blackish and very offensive, often passing off insensibly. After profuse evacuations by stool, the belly sometimes swells, and is tense; livid spots appear on the skin; hæmorrhages, and cold clammy sweats sometimes, though not usually, with convulsions usher in death. This happens at different periods, from the fifth to the eighteenth day.

In this fever the degrees of debility, oppression, and nausea, are more considerable than in any other; the prostration of strength, sudden and violent, has for its associates extreme despondency, or insensibility, and want of apprehension to an uncommon degree. The loss of appetite, or loathing of food, sickness, languor, with a dull pain of the head, are in the beginning always more severe than the inflammatory, though seldom so violent as in the nervous, fever. The smallness of the pulse; the dejection of the spirits; the early insensibility; the high coloured urine and thirst; the broken texture of the blood; the purple spots, and the putrid state of the excrements, distinguish it from the milder typhus, and from inflammatory fever. Its formation is distinguished by coldness and shivering, accompanied with nausea, vomiting, confusion of the head, an extreme and sudden prostration of strength.

The prognostics are generally very uncertain. A red rash, and an inflamed scab below the nose, or about the lips, are usually favourable. Deafness at the decline is said to be a promising symptom; but it is often the effect of insensibility, which is always unfavourable. A change of voice, a wild stare, difficulty of swallowing, inability to put out the tongue, a constant inclination to uncover the breast, urine that deposits a dark or blackish sediment, insensibility to thirst, inflamed fauces, a diarrhœa with a swelled belly, bloody saliva, purple or livid spots on the skin, black aphthæ, laborious respiration, ichorous and fetid stools, cold sweats, or convulsions, are highly dangerous; and if many of these concur, little expectation of recovery can be entertained.

This fever chiefly attacks those who live in confined air, whose spirits are depressed by affliction, whose vital energy has been weakened by previous diseases or excesses. The weather most calculated to predispose the constitution to it, is a hot summer after a mild winter,

fogs and rain without wind, and with a considerable temperature. A poor diet, diseased corn, and stagnant water, equally depress the living principle, rendering every cause of fever more peculiarly debilitating, and the disease itself, of course, putrid. In jails and hospitals, the confined effluvia from the human body readily become an exciting cause: in other situations, cold with damp, indigestion, the repulsion of evacuations, terror, apprehension, grief, or any cause of debility, will excite putrid fever.

The cure of putrid fever will appear from this and the preceding article to depend on every means of supporting the vital energy; but our attempts for this purpose must be conducted with some care, not only to prevent the matter already depraved and putrid from being confined, but to avoid danger from those local accumulations, which appear to constitute the essence of fever.

Bleeding is, in every view, inadmissible; but yet it has been employed, and we have repeatedly stated the foundation on which it may be useful; though in every asthenic fever we cannot advise the imitation of this rash practice.

The early appearance of nausea will appear to indicate *emetics*, and they should certainly be used, though with some degree of caution, so as not to exhaust too violently the strength. We have often remarked, that nausea is an effect of weakness, and where the vis vitæ is so certainly depressed, we should, at least, keep in our view that it may arise solely from such depression. The ipecacuanha only should be used; for we do not always know how far the operation of antimonials may extend, and it should be followed by a warm cordial draught.

For all the reasons formerly assigned (see FEBRIS and CATHARTICA), *laxatives* are useful; but the acid ones, as tamarinds, prunes, and cream of tartar, are preferable. If a quicker action is necessary, the senna or jalap should be joined. Rhubarb, as a bitter and a tonic, has been sometimes employed; but the former kind has appeared to us preferable; though in the later stages, when the debility is considerable, we must trust only to clysters. Very few hours, however, should be lost in these preparatory steps; for the disease often hastens on with rapidity, and the worst symptoms sometimes occur so early as the fifth day.

Tonics, *cordials*, and *antiseptics*, must be very soon employed. The great dependence of practitioners is on the bark, and it must be given in considerable doses. This medicine will, even in these cases, sometimes produce a considerable stricture on the skin, and increase the uneasiness. This may be sometimes removed by the addition of camphor, which will also contribute to the benefits derived from the bark; but when this is insufficient, the aqua ammoniæ acetatæ may succeed. Should the bark be still borne with difficulty, we are constrained to add an antimonial: the safest is the powder of James; yet this can be seldom trusted, without a drop or two of the tincture of opium. The dose of bark should not be inconsiderable. If we begin with half a drachm of the powder or extract, in a suitable draught of the decoction and tincture, every six hours, and find it agree with the patient, it may be soon increased to two scruples every four hours, and even farther if necessary. We have no other vegetable tonic of equal

efficacy in this variety of fever, and it forms an exception to the general rules laid down under the article. The oak bark may sometimes supply its place, but the dose must be much larger; and its astringency checks all discharges from the exhalents of the bowels, so as to bring on obstinate costiveness. Of the arnica we have no experience. The German physicians speak highly of its effects in putrid fever; but, from its sensible properties, and its botanical analogy, it seems to be only a narcotic bitter, with some acrid stimulating principle. (See ARNICA and BOTANY, nat. order *discoideæ*.) The other tonics most useful are the mineral acids. Of these the vitriolic is much employed, though by some authors the muriatic is chiefly recommended. They do not, at least in this disease, apparently differ: each is a valuable addition to the bark. Zinc and phosphorats have been employed apparently with the same views, but with little success.

Of every other medicine cordials only would supersede the bark; and with these putrid fever is sometimes successfully conducted, when the bark disagrees, or is rejected. The chief is *wine*, which it is necessary often to give in large quantities. We must recollect, however, that wine is an indirect stimulus, followed by a narcotic effect; so that when we begin, we must continue its use until nature can exert herself. In this case, and in all instances of putrefaction, whether general or local, our remedies are intended to supply the powers of nature. When these are roused, our exertions may be safely remitted; and we find that this effect is produced in general fever, when the pulse becomes fuller and softer, the eye more quick, the skin more clear, and the tongue more clean and moist; in partial gangrenes by a beginning separation of the mortified part. When wine disagrees with the stomach, good London porter is an excellent succedaneum, especially to those accustomed to it; and brandy may, though with less decided success, supply the place of either: to these aromatics will prove useful assistants. We say assistants; for alone they are unequal to the removal of the complaint. By the proper combination of such auxiliaries we have certainly succeeded in combating putrid fever, when the bark was inadmissible. In the latter case it has been sometimes given in clysters, we suspect with little real advantage.

There are numerous useful medicines which may be classed indifferently under the head of STIMULANTS, or WARM DIAPHORETICS. They act probably in both ways, though chiefly as diaphoretics. We mean the *contrayerva*, the *serpentaria*, and the *camphor*. The two former were commonly employed by the Boerhaavians, and, indeed, often *misapplied* to the common bilious epidemics. In putrid fevers they are, however, sometimes useful, though less so than the cordials just noticed. The camphor is a remedy highly useful in this fever. It calms the low delirium, produces a genial glow on the surface, and seems to act as a steady permanent cordial. We have no reason to attribute any of these changes to an antiseptic power. *Opium* has often similar effects, though by no means so advantageous in putrid as in other fevers.

Of BLISTERS authors have spoken differently, according to the opinion formed of their effects. Their stimulus was supposed useful by some who dreaded

the consequences of their evacuation; and the latter was thought the chief source of their utility by those who expected little from their stimulus. We have found them, on the whole, useful; have obtained little advantage from their stimulus; and had no reason to dread the debility arising from their evacuation. Having first given the result of experience when the theory had not occurred, we will add the explanation.

The usual accumulations in the head of fevers, if we except the nervous fever, the typhus mitior, seems to be accompanied with some action of the vessels, producing a degree at least of inflammation. In this variety, the vessels, in consequence of debility, yield without reaction; and the symptoms are those of fulness only, which blisters will remove; but their effects will not be so striking as when they counteract also increased activity. It has been the custom to apply numerous blisters, not only to different parts of the head, but to the arms and legs, apparently with a view of stimulating. When the patient has been capable of feeling the pain, these have been highly troublesome, and apparently exhausted the little irritability which remained. It is a practice to be wholly discouraged, as it is never useful, and often detrimental. Cataplasms to the feet, to render the circulation more equable, if not to rouse the patient, is a more probable remedy. Yet, we think, we never saw them advantageous.

Through the whole course of the disease, the bowels, either by the acid laxatives, by fruits, or by clysters, should be kept soluble, without such a discharge as to weaken. Two or three stools daily may be safely borne, though if so great an evacuation should appear to debilitate, even this number must be curtailed. It may be owing to this plan that we have never found the fixed air, in the form of *yeast*, necessary. Yet the experience of others speaks highly in its favour; and it is a remedy so easily procured, and at the same time so innocent, that to neglect it in emergencies is unpardonable. It has been used under our eyes; but apparently to us without benefit or injury. If the petechiæ suddenly disappear, a blister should be applied to the head, and large doses of camphor, with the warmest cordials, be given; but the patient can seldom be preserved. If vomiting continue, after the first exhibition of an emetic, the columbo root, with a slight opiate, will often relieve it. Too great evacuation by stool is best prevented by rice gruel, with cinnamon, and by clysters containing about sixty to eighty drops of tinctura opii.

From this view of the treatment of putrid fever, which contains the observations of the first practitioners, it will be seen how little dependence is placed on the most powerful antiseptics, and how much on cordials and general tonics. Asafoetida, for instance, is equally powerful as an antiseptic with camphor; but is never substituted for it. In this enumeration of the remedies, we have neither mentioned volatile alkali as a diaphoretic, nor the powder of chalk as a restringent; for both are septics. Yet we can truly add, that we have used each in the worst putrid fevers with advantage, for the purposes mentioned. Putrid fevers are, however, now so uncommon, that in this article we have been obliged to recur to cases of a very distant era. We can perhaps truly say, that we have not seen more than two accidental instances of putrid fever in thrice as many years at least; while, within a year, at a more distant

period, we have visited thirty. However it may be accounted for, such is the fact.

The general management of putrid fevers is not peculiar. The room should be large and airy, the liquors cold; the diet acid and acescent, consisting chiefly of the vegetable acids. Acid vapours, or even heated vinegar, in private practice, are of little use, if free ventilation be admitted. The stools, &c. should be immediately removed, the linen frequently changed, the communication with the external air kept up in different degrees day and night. The nurses should be frequently changed; and when relieved they should carefully wash themselves, and very often change their linen. With these precautions there is little danger of infection.

See Stoll, Aphorismi de Febribus et Ratio Medendi, part i. ii. and vii.; Hoffman Historia Febris Malignæ Petechizantis Halæ Grasantis, Supplem. ii. 2; Stahl de Malignitatis precipue Febrilis indole; Saalman Descriptio Februm Malignarum in genere; Bianchini Lettere Medico-pratiche; Sarcone Istoria ragionata di Maladi a Napoli; Huxham, Grant, and Pringle on Putrid Fevers; Fordyce's Elements, part ii.; an Inquiry into the Causes, &c. of Putrid Fevers, by W. Fordyce, M.D.; Sydenham's Works, p. 201.

PYCNO'TICA, (from πυκνω, to condense). See INCRASSANTIA.

PY'GÆ, (πυγή, the buttocks). See CLUNES.

PYLO'RIC ARTERIA, (see PYLORUS,) is a branch of the hepatic artery, which runs and is ramified on the pylorus, from thence to the cardia, anastomosing with the arteria gastrica dextra, and terminating on the pylorus by an anastomosis with the coronary artery of the stomach.

PYLO'RIC VE'NA is a branch from the vena portæ ventralis, sometimes a branch only of the gastrica dextra. It passes over the pylorus to the short arch of the stomach, where it anastomoses, with its coronary vein.

PYLO'RUS, (from πυλῆ, a door, and αἰεω, to guard,) the right orifice of the stomach; janitor; portorium, ostiarius. It is a circular aperture, surrounded by a broad, thin, circular border, which consists of a duplication of the two internal coats of the stomach, with distinct fleshy fibres in the doubling of the nervous coat. The inner edge of this ring is plaited and turned obliquely towards the stomach, and it certainly acts as a sphincter.

This part is subject to many diseases. In the Medical Observations and Inquiries is a case where it was contracted by an union with the liver; and Haller has observed it filled with abscesses. Contractions in this organ have arisen from substances swallowed, as a piece of money (Kerkringii Spicilegium); by cartilages (Bonetus); by callosities (Richter); by scirrhusities (Andry Histoire de la Société Royale de Médecine, and Cortier apud Haller Bibliotheca Medica); by steatoma and strumous glands (Brunner). It is diseased also by wounds, by cancers, and by palsy. Each disease is unfortunately beyond the reach of medical aid.

PYO'SIS, (from πυω, to suppurate). See HYPO-PYON.

PYRACA'NTHA, (from πυρ, fire, and ακανθα, a thorn; as its pyramidal leaves were supposed to re-

semble the flame of a candle). See LYCIUM BUXI FO-LIIS.

PYRAMIDA'LES MU'SCULI. The PYRAMIDAL MUSCLES OF THE BELLY present themselves next to the ascending and descending oblique muscles, and were first discovered by Fallopius. They are situated before the extremities of the recti, arising from the fore part of the os pubis, close to the symphysis. They grow smaller as they proceed, end in a point like pyramids, and are lost in the linea alba, or the recti. Fallopius called them succenturiati, auxiliary muscles, from a supposition that they are only supplemental to the recti in their action, as the order of the fibres in both agree; and the latter are absent when the recti are continued fleshy to the juncture of the ossa pubis.

PYRAMIDA'LIA CO'RPORA. (See MEDULLA OBLONGATA.) The SPERMATIC CHORD, is also called *corpus pyramidale*.

PYRAMIDA'LIS NA'SI MUSCULUS, is also called *triangularis* and *anterior*. One extremity is inserted in the synarthrosis of the os frontis, and ossa nasi; from whence it runs down the side of the nose, and is again inserted into its cartilage.

PY'RAMIS, (so called from its shape). See CONUS FUSORIUS.

PYRETHRUM, (from πυρ, fire; because of the fiery heat of the root). *Buphthalmum Creticum, bellis montana putescens acris; salivaris herba; PELLITORY* of SPAIN; *anthemis pyrethrum* Lin. Sp. Pl. 1262, is a trailing perennial plant, with finely divided leaves, and naked thick stalks, bearing each a large flower, with a yellow disk, surrounded with white petals on the upper side, and of a fine purple underneath. The root sinks deep in the ground like a carrot, is of a brownish colour on the outside, and white within. It is a native of the warmer climates, and is brought to us from Italy, but bears the cold of the northern regions, flowering from January to May. The roots which grow in England are larger than those from abroad.

The root is hot and pungent to the taste, but has little or no smell. Its pungency, which resides in its resin, is scarcely extracted by water, but completely by spirit. In distillation neither water nor spirit carries over any portion of it. The watery extract is most copious, the spirituous most active. It is chiefly used as a masticatory in tooth aches and rheumatic affections of the face, to produce salivary discharge; and it has also been recommended as a stimulant in lethargic complaints, and paralysis of the tongue. Internally it is given in palsy, in amœnorrhœa and cachectic cases, where the circulation is languid, in the same manner as arum root, in a dose of from five to ten grains. Dr. Lewis recommends a decoction of these roots with the tinct. aloes in clysters for the saturnine colic. As a stimulant gargle it is considered useful. R. Pyrethri contusi ʒss. aquæ distillatæ ꝑi. coq. ad dimidium, colaturæ adjiciantur aquæ ammoniæ ʒij. m. It is not certain that the pellitory of the moderns is the same with that of the ancients. See Neumann's Chemical Works; Lewis's Materia Medica.

PYRE'XIÆ; πυρετικος, (from πυρετος, febris, and that from πυρ, fire). FEBRILE DISEASES; the first class in Dr. Cullen's Nosology. See FEBRIS.

PYRIFO'RMIS MU'SCULUS, (from pyrus, a pear, K k 2

and *forma, shape*.) *iliacus externus*, rises from the lower part of the os sacrum, where it is joined to the os ilium, passes through the sciatic notch, and is inserted into the inside of the root of the trochanter major, serving as a rotator, an extensor, or abductor, according to the direction of the thigh. See QUADRAGEMINI.

PYRITES, (from πυρ, *fire*.) *marcasita, fer sulphure* of Haüy, iv. 65, is yellow, resembling bronze, crystallizing in regular octoedra, of a specific gravity from 4.1 to 4.7. It strikes fire with flint; and is for this reason sometimes styled fire stone. It contains sulphur; and when exposed to the air the sulphur attracts oxygen, producing sulphuric acid. Pyrites are never used in medicine.

PYRIUS PULVIS, (from πυρ, *fire*). **GUNPOWDER**.

PYRMONTANA AQUA. **PYRMONT WATER**, one of the principal chalybeates, is found in the county of Pyrmont, in the circle of Westphalia, in Germany. The spring is situated in one end of the village, and the water, as it rises up from the springs, seems to boil in its basin, and sparkles in a glass like the brightest champagne. It seems to yield different quantities of solid matter, at different times. Dr. Rutty mentions that the residuum which he obtained was of a pale brown colour, with a nauseous bitter taste, not deliquescent; of which about one third was vitriolated magnesia, mixed with a little of sea salt, the remainder consisting of selenite, calcareous earth, and ochre. Bergman found the Swedish kanne, containing 42,351 grains of this water, to be impregnated with ninety cubic inches of aerial acid, which is in the proportion of 130½ cubic inches from the English gallon of 61,440 grains: and the solid contents from his analysis were, from the English gallon of aerated iron, 4½ grains; of aerated lime, 29½; of vitriolated lime selenite, 55½; of aerated magnesia, 65½; of vitriolated magnesia, 36½; of common salt, 10½. Dr. Higgins obtained from a Winchester gallon of Pyrmont water, of selenite, two pennyweights 13.2 grains; carbonated lime, one pennyweight 22 grains; carbonated magnesia, 15.6 grains; vitriolated magnesia, 15.6 grains; oxide of iron, 2.6 grains; vitriolated magnesia, one pennyweight 6.7 grains; sea salt, 10.1 grains; with 192 measures of acidulous gas. At Pyrmont, the quantity of two, three, or more English pints of this water are sometimes drunk in a morning, and it chiefly operates by urine. Its laxative effect is often assisted by the addition of vitriolated magnesia. It is chiefly used in debility of the stomach, and in biliary complaints. See *AQUE MINERALES*.

PYROLA ROTUNDIFOLIA, (from *pyrus*, because its leaves resemble those of a pear tree). See **PARNASSIA**.

PYRO-LIGNEOUS ACID, (from πυρ, *fire*, and *lignum, wood*.) an acid obtained by distillation from beech, birch, or box wood, of a brown colour, and a somewhat acid, burnt smell. Fifty-five ounces of very dry beech chips yielded seventeen ounces of rectified acid, of an amber colour, not empyreumatic, somewhat heavier than distilled water. It has all the qualities of an acid, and supports the action of heat when joined to an alkaline base; but by a strong heat alone it is burnt like all other vegetable acids. It has a greater affinity to lime and barytes than to pure alkalis; but in other respects

follows in the order of its affinities the acetous acid, from which it only differs by holding in a strong union a small portion of empyreumatic oil.

PYRO-LIGNIS, (from πυρ, *fire*, and *lignum, wood*). **PYROLIGNITES**. Salts formed by the union of the pyrolignic acid with different bases.

PYRO-MUCOUS ACID is obtained from sugar, gum, and mucilages, by distillation, in which process carbonic acid and hydrogen gas are first copiously evolved, and a spongy coal remains. When rectified it has only a slight yellow tinge, and it cannot be concentrated by heat, as it is equally volatile with water; but by freezing it is rendered stronger, and has a pungent taste. When burnt in close vessels it leaves a coal like that of sugar; and is apparently a mixture of acetic and oxalic acids.

PYRO-MUCIS, (from πυρ, and *mucus*). **PYROMUCITES**. Salts formed by the union of the pyro-mucic acid, and different bases.

PYRO-TARTAROUS ACID. The acid produced by distilled tartar in the naked fire. It differs little from tartar except in an acrimony derived from its oil.

PYRO-TARTRIS, (from πυρ and *tartarum*). **PYROTARTRITES**. Salts formed by a combination of the pyrotartarous acid and different bases.

PYRO-PUS, (from πυρ, *fire*, and ωψ, *aspect*). See **PHOSPHORUS**.

PYRO-SIS, (from πυρω, *to burn*). The **WATER BRASH**, in Scotland; **BLACK WATER**, in England; *pyrosis suecica* of Sauvages; *cardialgia sputatoria* of Linnæus; Dr. Cullen places it among the spasms, defining it a burning pain of the epigastrium, with a quantity of water, usually insipid, sometimes acid, discharged by the mouth. He considers the pyrosis as an idiopathic disease; and observes that it is frequent among people in lower life, occurring also, though more rarely, in people of superior rank. It appears more frequently in persons under middle age, but seldom before that of puberty. When it has once taken place, relapses are common, though but seldom in persons considerably advanced in life. It affects both sexes, but more frequently the female, when unmarried, or when pregnant, sometimes those only who are in that condition. The fits of this disease usually come on in the morning and forenoon, particularly when the stomach is empty. The first symptom is a pain at the scrobiculus cordis, with a sense of constriction, and as if the stomach was drawn towards the back: it is increased by raising the body into an erect posture, and is often very severe. After continuing for some time, it brings on an eructation of a thin watery fluid in considerable quantity; sometimes acid, but more frequently insipid. The eructation is frequently repeated without relieving the pain which preceded it, though at length it terminates the fit. No exciting cause can be discovered; but it more frequently attacks those who live on milk and farinacea. Cold applied to the lower extremities, and often every considerable emotion of mind will appear to bring them on. The disease, according to Dr. Cullen, seems to begin by a spasm of the muscular fibres of the stomach, communicated to the blood vessels and exhalents, so as to increase the impetus of the fluids in the vessels, while a constriction takes place on their extremities. The increased impetus pours out a

larger quantity of fluid than usual, while the constriction upon their extremities allows only the pure watery parts to pass, analogous in every respect, he thinks, to what happens in the diabetes hystericus. Opium relieves the paroxysm. The vitriolic ether, volatile alkali, &c. are sometimes of service; and Linnæus speaks of the nux vomica as useful. These, however, relieve only for a time, and to prevent the returns of this disorder is not easy. The metallic tonics have not been sufficiently tried; and the zinc, perhaps the bismuth, may be salutary. See Cullen's First Lines, vol. iv.

It is also the name of a disease in the ear, which affects the patient as if a burning coal was applied.

PY'RUS, (because its fruit is shaped like the flame of a candle). The PEAR TREE, *apios*. The tree and fruit are sufficiently known: from pears the liquor

called *herry* is obtained by expression; a light pleasant drink, though without a sufficient strength to agree with weak stomachs. Like champagne, it abounds in an aerial fluid, probably carbonic acid gas.

PY'RUS CYDO'NIA. See CYDONIA.

PY'RUS MA'LUS. See MALUS SYLVESTRIS.

PY'THON. See OB.

PYU'LCON, (from *πυν*, *pus*, and *ἔλκω*, *to draw*). An instrument to draw the matter from the cavity of the breast or any sinuous ulcer.

PYU'RIA, ARTHRI'TICA, MUCO'SA, vel VIS'CIDA, (from *πυν*, *pus*, and *ουρον*, *urine*). See DYSTURIA.

PYXIS, a box; sometimes the name of the acetabulum of the hip bone, from its resemblance to a box.

Q.

Q U A

Q.

P. *Quantum placet*; as much as you please.Q. S. *Quantum sufficit*; as much as is sufficient.Q. V. *Quod vide*; which see, when the preceding word is referred to.Q. V. *Quantum vis*; as much as you will.

QUACKS, and QUACK MEDICINES. The appellation of QUACK arose from *quacksalber*, the German appellation of quicksilver; since on the first appearance of lues the irregular practitioners only employed this reputedly dangerous medicine. At present it is confined to those who sell a pretended nostrum, the preparation of which is kept secret; but may be applied to every practitioner who, by pompous pretences, mean insinuations, and indirect promises, endeavours to obtain that confidence which neither success nor experience have entitled him to.

The human mind is captivated by confident promises, especially if, like the oracles of old, they are couched in ambiguous language, and if they are directed to those points which are most interesting, and which chiefly influence the imagination. We have often observed that the idea of a latent lues is with difficulty eradicated; and that no failure is so sensibly felt as that connected with the function by which the species is reproduced. For these reasons, remedies are held up with the most indecorous ostentation as infallible in such cases; and the mind is allured by promises that the medicine is equally safe and secret. We know a single individual who, on the latter pretence, for years expended from 70*l.* to 100*l.* annually, in trash like the solar tincture, and the balm of Gilead; and the author of this article was asked if he had not a high opinion of Dr. Freeman, by a patient who professed himself almost ruined in the pursuit of quacks, and had determined to leave them.

There are undoubtedly various remedies sold by plausible, captivating titles, which are truly insignificant; others of some service; others highly useful. Had the remedies of quacks been always despised, we should have wanted the compound powder of ipecacuanha; the sudorific powder of Ward; some of the aloetic tinctures and pills; the powder of Dr. James; the paste of Ward, &c. The nature of these remedies is now known; but there are others which are valuable, whose nature we know, though the particular preparation we are unacquainted with.

We had intended to have noticed the quack remedies at some length, and could have pointed out the principles of many with some certainty; but we found that

Q U A

we "walked on burning coals ill concealed by delusive ashes." We shall, therefore, add only a few remarks on the different classes just distinguished.

Of the trifling, insignificant remedies, those recommended for coughs and consumptions are the most inert. The balsam of liquorice, of lungwort, and honey, are little more than opiates in disguise; for it is well known that the valuable parts of each medicine consist in mucilage, which is incapable of concentration. Godbold's balsam is of a similar kind. We have, however, reason to believe that it was first prepared from the various, supposed expectorants of an old herbal, since Godbold (the elder,) though an ignorant, seemed an honest man; and he professed that he had given us the receipt. This idea is since supported in a late periodical publication, the "*Medical Observer*." At present, however, it is certainly only vinegar and honey, with a proportion of laudanum, and some aromatic, varied apparently at different times. The solar tincture, the balm of Gilead, and the whole tribe of pretended restoratives are at best trifling, unless, as is suspected, the balm contains a stimulus, which gives temporary activity at the expense of the little remaining strength. Many of these cordials owe their reputation to the spirit; and we knew a lady who thought she could not live without them, till her brother filled an empty bottle with brandy only, which she continued taking without discovering the difference till he explained it, and convinced her of her folly. Our own country, however, does not exclusively furnish dupes. The continent, particularly Germany, swarms with them; and one of the latest as well as the grossest impositions of this kind was Dr. Lendhart's liquor for accelerating delivery, which was found to be a solution of Glauber's and Epsom salts, disguised by an innocent colouring. But though in itself an imposition, it were to be wished that every quack remedy were ultimately so useful; for by inspiring confidence it reconciles the patient to delay, when nature frequently succeeds in the attempt. Numerous are the valuable remedies introduced, in this secret way, first in Germany; among the rest is the zinc, styled the *luna fixata Ludemanni*, first detected by Gaubius.

There are certainly many medicines of some utility under this disgraceful form; and if those who object to the charges of an apothecary will be contented in this way to pay them ten times told, the revenue will gain, and no one be materially injured. There can be little

doubt of Dr. James' analeptic pills being accurately prepared at a moderate expense, and Anderson's pills may undoubtedly be sold at an inferior price of equal goodness. The antimonial in the pills of Dr. James probably suggested to Mr. Barclay, as it did many years since to ourselves and many others, the union of emetic tartar with the resinous purgatives. It undoubtedly quickens and facilitates their action; and Barclay's pills are a warm, useful laxative, particularly convenient for those to whom aloes may be injurious. It is not to our purpose to add, that every apothecary's apprentice could have composed an equally useful medicine, and one less inconvenient from its bulk, or that from any apothecary it could have been purchased at a much cheaper rate. *Si populus, &c.* It reminds us, however, of an application made by a druggist to an apothecary to furnish a composition of this kind, which he engaged to vend in considerable quantities, by the simple expedient of affording a larger allowance to the retail trader than he received by any rival medicine.

Whitehead's essence of mustard is a similar medicine, and an elegant form of turpentine, with camphor, perhaps opium, which was well known, and used long before Mr. Whitehead's existence. The various remedies for the whooping cough, when internal, are either opiates or the white vitriol; when external, the polish embrocation of oil of amber, ammonia, &c. The soda water is well known; and the sodaic powder, which is, however, a solution of soda, with a rapid *extrication* rather than the *union* of fixed air, we have already mentioned. If added to the water, and the whole immediately confined with wire in a strong jug, soda water may undoubtedly be prepared from it; but an effervescing saline draught is, in its proposed form, an equally efficacious and a more elegant remedy.

There are other preparations which contain active medicines, which should not be entrusted to common hands. Of these the secret remedies for the venereal disease, which stare every one in the face, at the appropriate corners, where the disease is most felt, are particularly obvious. All these preparations undoubtedly contain mercury in its most active forms, and the authors defy detection by the smallness of the dose, the deep colour, and the viscosity of the fluid which contains it. Modern chemistry has, however, many resources, which cannot fail to discover the deception. Gowland's lotion is equally a mercurial, and highly pernicious. Numerous are the lives which have been sacrificed to it within our own observation; and those who have escaped, have passed their remaining days in torture or distress. Spilsbury's drops, a solution of muriated mercury, are less injurious, because the dose is small and they do not repel; but indiscriminately used have been highly injurious.

The composition of Ching's lozenges is well known, and they contain calomel; in the brown kind united to resin of jalap. They are undoubtedly active medicines, and often on that account injurious when indiscriminately employed; nor is it certain in these preparations that the calomel is always properly prepared. The opium in Godfrey's cordial and Dalby's carminative is also frequently dangerous, by indiscriminate use, and many children's lives have been sacrificed to the impatience of nurses, though in proper hands each is a pleasing and

useful anodyne. The concentrated essence of ginger, in the same manner employed in the relief of colic, has more than once induced inflammation of the bowels under our own eye.

We have thus selected some of the most common medicines as instances of the different forms which empiricism assumes, viz. merely picking the pocket, without any advantage; demanding an extravagant price for common medicines, and holding up confident promises by medicines of real activity, which, by undistinguishing ignorance, become really injurious. The legislature demands the receipt of the remedy before it grants the patent; but this is eluded by general directions, by multiplying useless steps in the process, as in Whitehead's specification, often concealing some leading observation essential to its success; nor is any security given that the medicine shall be always prepared according to this process. Every patent requires, we apprehend, that the *principle* should be new; and if it be not, an action cannot lie for its infringement. If this be true, we would engage to show the principle of every patent medicine in works long since published, and very often the process described much more accurately than in the specification.

The confident promises are supported by numerous attestations. How these are procured is well known; and common names, in remote parts of the metropolis, or in distant provincial villages, are secure from detection. The answer of one man, who had given a countenance, perhaps an attestation, to every quack who visited the town in which he lived, will perhaps explain the mystery. "I thought it an honest way of gaining half-a-crown; for I did no one any injury."

The conduct of those in superior ranks of life, who sanction by their names the circulation of the most injurious medicines, demands some severer strictures. "What," it will be alleged, "should hinder me from publicly saying that I was relieved from a given disorder by such a medicine?" The very circumstance that, as you know not the disease, you cannot ascertain the reality of the cure; nor can you say it was owing to the medicine. A physician who has spent his life in study and observation finds himself often baffled in these conclusions; and yet they are rashly drawn by persons wholly unacquainted with the subject, whose minds have received little cultivation, or who have directed their attention to very different sciences. Credulity and confidence are the constant companions of ignorance; and the wisest man must be ignorant of professional subjects if that profession has claimed no share of his attention.

QUADRAGE/SIMUS DIES. The fortieth day was, in the opinion of the ancients, the last to which acute distempers could extend. Dr. James observes, that he hath seen an acute disease which continued sixty days; but the logical, rather than the medical, accuracy of the observation might be questioned, if the subject merited a moment's consideration.

QUA'DRANGULA'RIS, (from *quadrus*, four square, and *angulus*, an angle). A leaf of a plant that has four prominent angles in its edge.

QUA'DRANS. See **CYATHUS**.

QUADRA'TI MU'SCULI. See **OCCIPITALIS MUSCULUS**. **DEPRESSORES LABII INFERIORIS.**

QUADRATUM, (from *quadra*, a square). See CUBOIDES.

QUADRA'TUS BU'CCAS DE'TRAHENS. See ADDUCTOR AURIS.

QUADRA'TUS FE'MORIS. This muscle is flat, thin, and fleshy, by no means square, it rises tendinous and fleshy from the lower edge of the tuberosity of the ischium, and is inserted into the line between the trochanter major and minor, serving to bring the thigh outwards.

QUADRA'TUS GE'NE. See PLATYSMA MYOIDES.

QUADRA'TUS LA'BII INFE'RIORIS. See DEPRESSOR LABII INFERIORIS.

QUADRA'TUS LUMBO'RUM, *quadrigeminus*, and *lumbaris externus*. This muscle rises from the posterior part of the spine of the ilium, whence it goes to the transverse processes of the four upper lumbar vertebræ, and partly from these transverse processes to the last rib, and by a small tendon passing under the diaphragm into the side of the last vertebra of the back. This muscle, therefore, lies between the contents of the belly and the erectors of the back, serving to pull the body to one side, by bringing the last rib down. See ABSCESSUS LUMBORUM.

QUADRIFO'LIIUM, (from *quatuor*, four, and *folium*, a leaf). A grass with four leaves on each stalk. See TRIFOLIUM.

QUADRI'GA, (from *quatuor*, and *juga*, yokes). *Cataphracta*. A bandage for the sternum and ribs, called from its resemblance to the trappings of a four horse car. It is twenty-four feet long, three or four fingers broad, with two heads, to bind upon the thorax and sternum when the ribs are fractured. The middle is placed on one side of the body; the two heads are carried so as to intersect on the opposite shoulder; they are brought back to where they begin, and then pass circularly round the body.

QUADRIGE'MINI, (from *quatuor*, and *geminus*, double). A name for the following muscles taken together, viz. *pyriformis*, *gemini*, and *quadratus femoris*.

QUADRIGE'MINUS. See QUADRATUS LUMBORUM.

QUADRIJU'GUS, (from *quatuor*, and *jugum*, a yoke). A leaf composed of four pair of folicles.

QUADRILO'BUS. A leaf consisting of four lobes.

QUADRILOCULA'RIS. A berry with four cells.

QUANTICAMO'TLI. See CASSADA.

QUA'QUARA. See CHINA ORIENTALIS.

QUARANTINE. (French.) QUARANTINE, or QUARANTAIN. The term is derived from the space of forty days, being the time which a ship suspected of infection is restrained from any intercourse or commerce, lest that infection should be communicated to the inhabitants of the country. We have already made some observations on this subject (vide PESTIS), to which quarantine is chiefly applicable. Infection, however, is not so much dreaded; and, as we have remarked on the subject of the yellow fever, the apprehensions need not in many cases be considerable, unless the constitutions of the inhabitants could be imported with the disease. See Howard on Lazarettos.

QUARTA'NA FE'BRIS, vel QUARTA'NA LEGI'TIMA. An AGUE, or QUARTAN INTERMITTENT FEVER, which Dr. Cullen defines similar paroxysms

within the space of twenty-four hours nearly; the accessions coming on in the afternoon. (See INTERMITTENS, vol. ii. p. 38.) It receives different names from its symptoms, viz. *quartana comatosa*, *siphylitica*, &c. (See Cullen's Nosology.) A quartan is usually both more violent and obstinate than a tertian, and is called spurious when the fit begins at any other time of the day than about four or five o'clock in the evening.

The quartan is distinguished by the steadiness of its attack, about four or five in the afternoon, seldom anticipating or retarding, and by the shortness of its paroxysm. It is seldom attended by much agitation; but the coldness continues often for more than two hours. Vomiting and diarrhœa are less frequent than in tertians. The heat is less violent; but the sweating is inconsiderable. The intermission is never perfectly complete, and is sometimes very imperfect, much fever continuing in the intervals. It has then the name of *quartana continua*.

The quartan was supposed to be the opprobrium medicinæ; and to cure a quartan was supposed to be the acme of the art, and the highest power of any febrifuge. We have said, that in thirty-five years practice we have seen but one quartan, brought from Coxheath camp. This had resisted every remedy; but was at last cured by arsenic; perhaps by a change of air.

QUARTA'NA SPURIA. SPURIOUS QUARTAN, hath no certain period for its returns, which generally occur in the forenoon: the heat also is greater, and affects the patient more than the cold fit does.

QUARTA'RIVS, (from *quartus*, fourth). A measure which contains about four ounces, or one quarter of a pint.

QUARTA'TIO, QUARTU'RA. QUARTATION is an operation in chemistry, by which the quantity of one thing is made equal to the fourth part of the quantity of another. Thus, when gold, alloyed with silver, is to be separated, we are obliged to facilitate the action of the aqua fortis by reducing the quantity of the former of these metals to one fourth part of the whole mass, which is done by sufficiently increasing the quantity of the silver, if it be necessary. Some extend this name to the operation of parting. See DEPART.

QUA'SSI LIGNUM, vel QUA'SSIA AMA'RA. QUASSI WOOD, or BITTER QUASSIA, called from a negro who lived at Surinam, and used it medicinally, with success, in intermittent, malignant, and putrid fevers; *quassia amara* Lin. Sp. Pl. 553. The wood hath no smell, and is a very pure bitter, without any astringency. An infusion in boiling water is the best preparation. A drachm may be infused in a pint of boiling water, and an ounce may be given for one dose; but the proportion of the wood is sometimes greater, without adding to the virtues of the medicine. The watery extract is given in a dose of from ten to twenty grains.

It scarcely differs from a pure bitter; but was given with serpentaria, in the intermission of malignant tertians, when the bark could not be borne. Any other bitter would have had a similar effect; nor has the quassia superior powers to the gentian or the camomile flowers, except in the optics of weak minds or quacks. We observe among the quack medicines the *anima quassia*. It is the *soul* of the author, as of the licentiate in the Introduction to Gil Blas. Cullen's Materia Medica.

QUA'SSIA, *simarúba*. See SIMARUBA.

QUATE'RNUS, (from *quater*, *four times*). When the leaves of plants stand four on each side.

QUA'TRIO, (from its four sides). See ASTRAGALUS.

QUE'RCERA. See EPIALA.

QUE'RCULA, (a dim. of *quercus*), *calamandrina*. See CHAMÆDRYS.

QUE'RCUS. The OAK TREE, *quercus robur* Lin. Sp. Pl. 1414. The COMMON ENGLISH OAK TREE. The bark is a strong astringent, moderately bitter, without any particular smell; striking with iron an inky blackness. It hath been used with success in intermittent fevers, for restraining hæmorrhages, alvine fluxes, and other immoderate evacuations; in gleet, gangrenous wounds, and ulcers. (See PUTREDO.) It yields its virtues both to water and rectified spirit, and is used as an astringent, in decoction, in slight tumefactions of the mucous membrane of the fauces, a prolapsus uvulæ from a slight cold, and a cynanche tonsillaris; as a fomentation, or lotion, in *procidentia ani et uteri*. Alum often renders it more efficacious. Half a drachm of the powder given every two or three hours during the intermission of a fever, joined with camomile flowers, is said to have prevented the returns of paroxysms of intermittents. The same virtues are said to belong to the scaly cup, which embraces the bottom of the acorns, called *glandes*, and *balani*. Cullen's *Materia Medica*.

The bark is often used in the following form as an astringent lotion. R *quercus contusi* $\frac{3}{4}$ li. *aquæ distillatæ* $\frac{1}{2}$ ij. *coquantur ad* $\frac{1}{2}$ i. See GALLÆ.

QUE'RCUS COCCI'FERA. See CHERMES.

QUERCUS MARI'NA. See KALI.

QUE'RQUERA, (from *querquero*, *to quake*). See PHRICODES.

QUIETA'LES, (from *quies*, *rest*). Diseases in which the voluntary, the involuntary motions, and the senses, are diminished; a class in the nosology of Linæus.

QUI'NA QUI'NA. See CORT. PERUV.

QUI'NCUNX. See CYATHUS.

QUINQUE-COCCUS. Having five berries.

QUINQUEFO'LIIUM, (from *quinque*, and *folium*), *pentaphyllum*. COMMON CINQUEFOIL, FIVE FINGERS, or FIVE LEAVED GRASS, *potentilla reptans* Lin. Sp. Pl. 714, is a trailing plant, with serrated leaves, set five together, on long pedicles; perennial, growing wild on clay grounds, and flowering in June. The roots are astringent; yielding their virtue to water and spirit. The leaves resemble in their nature the roots. See Raii *Historia*.

It was employed by Hippocrates in the cure of intermittents, and according to Ray still used by the peasantry with this intention. The external or cortical part of the root, containing chiefly the medicinal quality, is employed internally in diarrhoeas and other fluxes, and externally in gargles and astringent lotions. As the cinquefoil is inferior in efficacy to many other plants of

the same class, it is now rarely used, though it may be found no bad substitute for several of the other astringents. Dose in substance, one drachm.

QUINQUE-JU'GUS, (from *quinque*, *five*, and *jugum*, *a yoke*). A leaf composed of five pair of lesser leaves.

QUINQUE-LO'BUS. Composed of five lobes.

QUINQUE-PARTI'TUS. A leaf consisting of five divisions down to the base.

QUINQUI'NA, (corrupted from *cinchona*). See CORT. PERUVIANUS.

QUINQUE-NE'RVIA, (*quinque*, *five*, and *rupa*, *strings*). See PLANTAGO MINOR.

QUIN'TA ESSE'NTIA. The peculiar, most concentrated essence of a plant prepared by agitating with any essential oil twelve times its quantity of pure alcohol till the oil disappears. If these are distilled in a close vessel, with a fire of 90°, the alcohol will rise with only the purer part of the oil. If the thinner part is several times carefully separated, by repeated gentle cohobation, the alcohol will be impregnated with a still purer oil, or, in other words, the oil will gradually disappear.

What are styled quintessences are sometimes made by dissolving an aromatic oil in alcohol, adding ten times its weight of sugar, finely powdered, and placing the mixture in a proper vessel to exhale the spirit. The sugar will remain dry, but with the virtues of the oil in it. A scruple in a glass of wine is a good cordial, but both are now disused.

QUINTA'NA, (from *quintus*, *the fifth*). An AGUE, the paroxysms of which return every fifth day, while the second, third, and fourth, are free from fever. This, as well as the *sextana*, *septana*, *octana*, *nonana*, *decimana*, &c. are generally denominated *erratica*; for the periods are never regular, and they require no peculiar treatment. For the varieties, see Sauvages' *Nosologia Methodica*.

QUISQUI'LIIUM. See CHERMES.

QUOTIDIA'NA FE'BRIS, *amphemerina*, *amphemerinos*; *methemerinos*. A QUOTIDIAN INTERMITTENT intermits, but returns every day, generally early in the morning: when the fit approaches at any other time, it is called spurious or anomalous. Dr. Cullen defines it an intermittent fever, in which similar paroxysms occur in the space of twenty-four hours; the paroxysms attacking in the morning. When its attack is general, returning at the same hour in the morning, it is called simple or true quotidian; when partial, it receives the name of the part affected, as *quotidiana cephalalgica*, *ischiadica*, &c. &c. The hysteric, catarrhal, and strangurious quotidians which have evening paroxysms, appear to be only symptomatic. See INTERMITTENS FEBRIS. When the intermissions are not distinct, it is called a remittent, sometimes a *continued quotidian*.

QUOTIDIA'NA SOPORO'SA, vel TERTIANA CAROTICA. A tertian fever attended with comatous affections.

R.

R A C

R. The abbreviation of *RECIPE*, the inelegant commencement of a prescription, concluded often more barbarously. The imperative mood, though it was conspicuous in every line of the former edition of this Dictionary, is always inelegant; and the verb *recipere* has scarcely in any instance a meaning analogous to the English word, "take," which should be confined to the pages of Hannah Glass. How much more elegant would be a commencement of this kind: *Habeat haustus solvatur, misceatur, &c.* previous to the enumeration of the ingredients, and *haustus hujusmodi sumatur*, instead of *misce fiat haustus*? The pages of Celsus contain no such word. We cannot, however, expect a reform in this respect, while prescriptions are written by those to whom the grammatical construction of their own language is often a science yet untaught.

RABDOIDES, (from *ῥαβδος*, *virga*, and *ειδος*, *similis*). See *SAGITALLIS SATURA*.

RA'BIES CAN'NA, (from *rabio*, *to be mad*). See *HYDROPHOBIA*.

RACE'MUS, (a dim. of *ramus*, *a branch*). A BUNCH OF GRAPES, OF IVY BERRIES, OR OTHER fruit which grows in clusters; sometimes a stalk divided into several branches, sustaining each a flower or fruit, set thick together.

RACHIA'LGIA, (from *ῥαχίς*, *spina dors*, and *αλγῆ*, *dolor*). Pains of the bowels, supposed to arise from the nerves of the spinal marrow. See *COLICA*.

RACHIA'LGIA PI'CTONUM; **META'LLICA**; **AB ADIAPNEU'STIA**; **TRAUMA'TICA**. See *COLICA*.

RACHI'TÆ, or **RACHIÆ'I**, (from *ῥαχίς*, *the spine*). The muscles belong to the back.

RACHI'TIS, (from *ῥαχίς*, because it was supposed to be a disease of the spinal marrow). The *RICKETS*, *cyrtonosus*; the *ENGLISH DISEASE*, because it first appeared in England about the middle of the seventeenth century, and from thence is said to have spread over Europe. Dr. Glisson thinks that it was first observed in the west of England, between the years 1600 and 1620; but from many passages of Latin authors ridiculing deformity; from Thersites, the supposed Æsop of Greece; the Vari, Volgi, &c. of the Romans, deformities almost exclusively derived from this disease, we may reasonably suppose it a very ancient one, especially as it certainly does not arise from any specific infection.

R A C

Van Sweiten and Trinka contend for its novelty, Zeviani for its antiquity.

Usually the first appearance of this kind is in the eighth or ninth month of the child's age. The several parts of the body by degrees become disproportioned, the skin grows lax, the belly flaccid, the muscles are extenuated, particularly those of the neck; the joints of the hands, arms, knees, and feet, are enlarged, so that there seem to be excrescences on the bones of the wrists and ankles; the bones and the spine, too weak to support the body, are at length incurvated; the child walks with more difficulty, until this exercise becomes too troublesome to be continued; the carotids and jugulars swell, but the other blood vessels disappear; the head grows large; the sutures are more visible; the fontanelle is often membranous; the neck too weak to support the head steadily. The countenance is, however, lively, and the child is more sensible than usual at the same age; the breast is strait, and compressed on its sides; the sternum rises up in a point, and the extremities of the ribs are enlarged and crooked; the hypochondria swell; fever, with symptoms of consumption, comes on, and the patient sinks from debility. In children predisposed to rickets the teeth come forward slowly, and soon decay. The appetite, however, seldom fails; but digestion is seldom perfect.

The rickets chiefly prove fatal from the attending hectic, consumptive symptoms, or asthma. If the disorder continues after the fifth year of the child's age, the body usually continues weakly and deformed for the whole life. When from a damp air or a bad diet, if succeeded by the small pox, the itch, or other cutaneous eruptions, and not accompanied with considerable incurvation of the bones, or inability to motion, the cure is not very difficult. The bones of the legs, though very crooked, will become nearly, often perfectly, straight during the growth of the child, if it becomes strong and healthy.

It is a species of cachexy, thus defined by Dr. Cullen. The head large, and much swelled anteriorly; the knees swelled; the ribs depressed; the abdomen tumid, and the other parts of the body emaciated. He distinguishes two varieties, the simple and the complicated rachitis. On dissection the muscles are found pale and flaccid, the livers indurated, the mesenteric glands enlarged and hardened, the bones spongy. Its usual period of attack is from six months to two years. Stoll

in his Lectures, and Thomas in the *Journal de Médecine*, mention its attacking adults. The top of the spinal marrow is said to have been uncommonly hard and obstructed; water is sometimes found between the dura and pia mater; and the brain is enlarged.

The remote causes are those of debility only. A cold moist atmosphere disposes to the disease, and it is, therefore, more frequent in marshy countries, as in Holland, at Halle, in Saxony, and in the marshy districts of this kingdom.

The exciting causes are want of exercise, and unalimentary food, particularly those substances which abound with water, which are not susceptible of change by the process of digestion, and consequently are not animalized. This defect of animalization, as hinted in the article *MORBI SOLIDI SIMPLICIS*, q. v.; seems the chief cause of rickets. The digestive powers and the general strength are impaired before the disease comes on; the belly swells, from flatulence and a retention of the more solid matter, in consequence of an obstruction in the lymphatic glands. We have observed, in the article just referred to, that animal gelatine differs from vegetable jelly chiefly from the addition of nitrogen; and this addition renders it less soluble in water. The bones of young infants are gelatinous; and in this jelly the osseous matter, we have said (see *BONES*), crystallizes. If this jelly, then, is not animalized, at least in some degree, it is dissolved in the water of the blood, and washed away. This view of the disease connects very strikingly the early symptoms and the cure.

A deficiency of bony matter in the system has been supposed, by some late French pathologists, to be the cause of rickets; but if the observations just adduced have any weight, the disease should rather be attributed to a want of the proper matrix in which the bony matter is deposited. We now know, from the later experiments with madder, that the serum rather than the bony matter is the medium of its deposition and removal; nor is it improbable that the watery state of the lymph is the real cause of the softness of the bones in this instance. By these means also we remove the objection, started by a late author, that the mollification of bones has been found connected with gout, where the phosphat of lime is apparently in excess; an objection, however, of little importance, and perhaps easily replied to on other foundations.

The ratio symptomatum is perfectly obvious. The ribs fall down from want of resistance; the child straddles in his walk, from the bulk of the belly, and from debility, and the legs are consequently bent. The upper part of the bones, where the cancelli are most numerous, yield most easily to the pressure, and consequently are enlarged in their diameter. The head swells in consequence of the diminished resistance of the bones to the distending arteries; the sutures and the fontanelle consequently separate.

We know not whether the freer circulation through the brain may render the intellectual powers more clear and brilliant. It is, however, highly improbable, when we compare the state of the cranium in different diseases with the changes in the intellectual functions; and we would rather refer the increased acuteness to the less active life, to more frequent opportunities for observation and reflection; which we find in many diseases, where the young patient is confined to his chair.

As the digestive powers are apparently injured, it is the first object to clear them from mucus, and every impurity which would impede digestion or absorption. The directions, therefore, in every practical author, are to begin with emetics, followed by gentle, steady laxatives. The rhubarb, as a bitter, has been selected, sometimes calomel. Tonics are then employed; and steel, either in filings, combined with ammonia, or in tincture, has been preferred, and sometimes used with rhubarb. Copper, as a tonic, is recommended by Buckner and Dupau. Peruvian bark is spoken of in general terms, as if not tried, or used with little decisive effects. Our own experience in this disease is inconsiderable; but we should certainly prefer tonics, which had no admixture of astringency, and even the pure bitters to the bark.

Fourcroy recommended breathing oxygen gas; but it was probably not successful, for it has not been imitated. Madder has been frequently given in this disease, though we are unable to ascertain the principle of the practice, except the vague idea of its having the strongest affinity to the bony matter, which we now know to be fallacious. Joined with fixed alkali, according to the plan of Abilgaard, in the Copenhagen Medical Transactions, it may be apparently of service from its accompanying medicine. The cicuta is warmly recommended by Storck; but his cases and reasoning are more astonishing than convincing.

Saponaceous medicines are mentioned as deobstruents; and in the fourth volume of the *Edinburgh Medical Commentaries* we find a striking instance of the good effect of the fixed alkali joined with bark. We can easily perceive the source of the relief derived from the former medicines; for the alkali would probably contribute to dissolve the lymphatic tumours, or might possibly supply azote to the blood. The empirical practice in the western islands strongly confirms the theory of the disease which we have suggested; for they rub the arms and wrists, and successively the whole body, with the oil of the skate. It is evident that this furnishes a supply of animal matter to the blood, for it excites fever; and when this effect is no longer produced, the surface to be rubbed is increased, and at last the shirt is wholly impregnated with it. *Edinburgh Medical Commentaries*, vi. 165.

Dry frictions and the warmest stimulating liniments are also recommended, and sea bathing is often very salutary, though if the child be very weak, the tepid sea bath, at about 82°, should be premised.

The diet should be generous and nutritious, chiefly animal, though in a fluid form; and the stomach may be stimulated by a slight addition of spice. The air should be dry and moderately cold, and the child kept much abroad, occasionally allowed to walk, but seldom for a long time together, so as to fatigue. The swing will afford proper exercise, and occasionally he may be carried on a horse.

Wine is seldom highly useful; nor do we find that the mineral acids are spoken of with warm commendations, though a promising remedy. If alkalis, however, are eminently successful, no great advantages can probably be derived from their opposite. The French physicians, in pursuance of their theory, have given phosphat of lime, but without any decided benefit.

See Boerhaave's Aphorisms; Buchner de Rachitide;

Sydenham's Works; Glisson de Rachitide; F. Hoffmanni Opera, tom. iii. p. 487, &c.; Medical Museum, vol. i. p. 66. 71.; Edinburgh Medical Commentaries, vol. ii. and iv.; Cullen's First Lines, vol. iv.; Zaviani della cura de' Bambini, attachati della Rachitide; Mémoires de la Société de Médecine.

RACHO'SIS, (from *ραχωσ*, *lacro*). Excoriation of the relaxed scrotum.

RACK. A Tartarian liquor, highly intoxicating, prepared from mare's milk.

RADIÆ'US, (from *radius*). See **FLEXOR CARPI RADIALIS**.

RADIÆ'US EXTER'NUS. See **EXTENSOR CARPI RADIALIS**, **LONGIOR** and **BREVIOR**.

RADIA'LIS, (from the same). The nerve so called. See **CERVICALES**.

RADIA'LIS, vel **RADIÆ' A ARTE'RIA**, is a branch of the humeral artery, running down the side of the radius, covered by the supinator longus. At the wrist it divides into two; one, passing over the palm of the hand, is lost in the fleshy part of the thumb; the other, in its progress between the metacarpal bone of the fore finger and the first bone of the thumb, plunges into the palm, and forms an arch. In its course it sends off branches, which run on both sides of the hand, communicate with the cubical branches, and are lost among the metacarpal bones.

RADIA'LIS MU'SCULUS. See **FLEXOR CARPI RADIALIS**.

RADIA'LIS EXTE'RNA VE'NA. When the cephalica hath reached the bend of the arm, it divides into two principal branches, one of which, spreading over the fore arm, has this appellation.

RADIA'LIS INTE'RNA VE'NA, a long branch from the mediana cephalica.

RADICA'TUS, (from *radix*, a root). Leaves from which roots shoot out. This is the case with the succulent plants, the ficoides, stapeliæ, and aloes.

RADICULA, (a dim. of *radix*, a root,) strictly speaking, the small fibres of the principal root; in a medicinal view, equally active in most instances with the body of the root. See **RAPHANUS HORTENSIS**.

RA'DIUS, one of the bones of the fore arm, denominated from its resemblance to the spoke of a wheel; *cercis*; *focile*. Its upper extremity is formed into a small circular head, hollowed for an articulation, by arthrodia, with the tubercle of the os humeri at the side of the trochlea; and the half of the round circumference of the head, next to the ulna, is smooth, to be received into the semilunated cavity of that bone. The part below the head, rendered smaller by the action of the supinator radii brevis, is called its *cervix*; at the external root of which a tuberos process rises for the insertion of the biceps flexor cubiti. From this a spine runs downwards and inwards, for the insertion of different muscles.

Internally, it has a sharp spine, to which the interosseous ligament is fixed; but this is wanting at the upper end, where the supinator radii brevis, and flexor digitorum profundus, are connected. Both ends of the bones of the fore arm are first cartilages, and then epiphyses at the earlier periods. The lower extremity of the radius is much larger than the superior, flattened before, and grooved backwards by the tendons of the muscles. The extremity of the radius is hollowed for

the reception of the bones of the wrist. The reason why the fibres of the interosseous ligament run obliquely upwards from the ulna to the radius is, that, as the latter is very slightly articulated to the os humeri, the force of it would in a fall be communicated to its upper extremity, and easily dislocate it, if this ligament was not to take off the force of the shock. The fibula is also so called.

RA'DIX, (from *ῥαδιξ*, a lower branch). A root, that part of a plant by which it receives nourishment. Some roots are fleshy, others fibrous, others woody. Linnæus divides them into fibrous, bulbous, and tuberous, which are again subdivided, chiefly in the following manner:

RA'DIX ASPHODE'LI, composed of several oblong fleshy knobs, as the king's spear, and the day lily.

RA'DIX BULBO'SA, composed of several coats, involving, or of several scales lying over, one another. The first of these is called tunicated, as the onion; the last, squamous, as the lily.

RA'DIX CARNO'SA. **FLESHY** or **ESCULENT** ROOT, as the carrot.

RA'DIX FISTULA'RI. **TAP** ROOT, or that part which runs perpendicularly deep into the ground. In taking up trees, it should be neither cut nor broken; and in planting them, a hole should be made proper for its reception.

RA'DIX FIBRO'SA, consists only of small fibres, like hairs, as those of grass and corn.

RA'DIX GRANULO'SA, consists of many small fleshy knobs, which resemble grains of corn, as the white saxifrage.

RA'DIX GRUMO'SA, usually a pendulous root, consists of many oblong fleshy knobs, joined to one centre at the top, as that of the ranunculus.

RA'DIX PALMA'TA, a tuberous root divided apparently into several fingers, so as to resemble a hand, as the handed orchis.

RA'DIX TESTICULA'TA, a double tuberous root, consisting of two knobs, resembling the testicles, as in the orchis. Roots are sometimes styled *comosæ*, which send out fibres from the top, at a knot between the trunk and thicker part of the root; *fusiformes*, when they gradually lessen to a point; *entire*, as in liquorish, and *parted*, as in St. John's wort. Perennial roots are styled *radices fruticosæ*.

RA'DIX TUBERO'SA, consists of an uniform fleshy substance, and is generally roundish, as that of the potatoe.

RA'DIX BRASILIENSIS. See **IPECACUANHA**.

RA'DIX DULCIS. See **GLYCYRRHIZA**.

RA'DIX I'NDICA LOPEZIANA. *Radix serpentum ophi-orrisa mungos* Lin. Sp. Pl. Pharmacopœiæ Edinburgensis; Gaubii Adversar. cap. vi. The root of an unknown tree, growing at Goa, or Malacca, and brought to Batavia. The pieces are sometimes of two inches diameter. The woody part is whitish and very light, softer, more spongy, and whiter next the bark, including a denser, somewhat reddish, medullary part. The bark is rough, wrinkled, brown, soft, woolly, pretty thick, covered with a thin paler cuticle, without any remarkable smell or taste, or any appearance of resinous matter. When boiled in water it has no smell, and the strained liquor, of a yellow hue, is almost insipid, impressing the tongue with a very light bitterishness,

without viscosity. The tincture is brown and equally insipid. The extract obtained by evaporating the decoction is equally void of sensible activity. After drawing off the spirit from the tincture a balsamic matter remains, which bubbles and flames in the fire, with a bitterish taste, like that of opium.

This root is regarded in the East Indies as a medicine of extraordinary efficacy in diarrhœas. Gaubius found it effectual in abating colliquative diarrhœas, particularly those attending the last stage of consumptions. It seems to be a narcotic bitter not unlike the simaruba, but in Gaubius' opinion more efficacious. The powder is given in doses from fifteen to thirty grains, repeated three or four times a day. A tincture made with common spirit is said to be equally effectual with the root; and its dose was a tea spoonful three times a day: a dose somewhat disproportioned to that of the root and to its sensible qualities. Lewis's *Materia Medica*, edit. 3.

RA'DIX RHO'DIA. See RHEDIA.

RA'DIX RU'BRA. See RUBIA.

RAI'JIS DE MOSAMBIQUE. See COLUMBO.

RAMA'LIS VE'NA, (from its minute branches). See PORTA VENÆ.

RA'MENTA. SHREDS OF FILINGS.

RA'MEX, (*ramus*, a branch, from its protruding forward like a bud). See HERNIA.

RA'MEX VARICO'SUS. See CIRSOCELE.

RA'MUS, (*quòd radice manet*). A BRANCH, the subdivision of a stem of a tree.

RA'MUS INFE'RIOR. See MAXILLARIS INFERIOR NERVUS.

RA'MUS SUPE'RIOR. See FRONTALIS NERVUS.

RA'NA, (Hebrew, *ranah*, to croak). The FROG, or PUDDOCK. The spawn of frogs was formerly used as a refrigerant, but now wholly neglected. See RANULA.

RA'NA ESCULEN'TA. The hind legs of the frogs are only eaten. They resemble delicate veal, and are much less luscious than the tortoise.

RA'NA RUBE'TA. See BUFO.

RA'NGIFER, (from *ramus*, a branch, and *fero*, to bear, named from its branching horns). See CERVUS RANGIFER.

RANI'NÆ ARTE'RIÆ and VE'NÆ. (*Quia nigrae sunt instar ranularum*). See SUBLINGUALIS.

RA'NULA, (a dim. of *rana*, a frog). *Batrachos*, *hypoglossus*, *rana*. An indolent tumour under the tongue, named from its situation in the venæ raninæ, or perhaps from its altering the voice of the patient. This tumour is formed in the salivary glands, and is seated on either side of the frænum: it is often of a scrofulous kind, defined by Vogel a folliculous tumour, containing a thick or tofaceous matter; but the nature of the matter varies, and it is sometimes like the white of an egg, at others more solid, and even sandy, purulent, or differing from each. It has been styled a hydatid, and is said by Siebold to be an expansion of Wharton's duct. When it grows suddenly, both the speech and swallowing are impeded with much pain; but it generally increases gradually, and its effects are not violent. Instances, it is said, have occurred of these tumours degenerating into cancers; but this is highly improbable, for they are with great difficulty dispersed or brought to suppuration, and generally require the knife for their removal. The actual cautery has sometimes been

employed, and the oil of hypericum recommended. If a tumour of this kind is seated where the salival ducts enter into the mouth, incisions must never be attempted, because of the danger of wounding these ducts, and we must wait till nature discharges the contents. If seated on either side, great care is required, lest the nerves or the blood vessels should be injured; but if we hold up the tongue, and make an incision transversely into the tumour, the matter will be safely discharged. The wound must be dressed with honey of roses acidulated with spirit of vitriol, that the cyst may also be destroyed, to prevent a return of the disease. Mr. Justamond relieved a patient who would not submit to an operation, by rubbing it daily with a strong solution of alum.

See Heister's Surgery; Bell's Surgery, vol. iv. p. 325; White's Surgery, p. 275.

RANUNCULOIDES PRATE'NSIS, (*ranunculus*, and *ειδος*, likeness). See CALENDULA PRATENSIS.

RANU'NCULUS, (because found in marshy places where frogs abound). CROW FOOT, is a plant with perennial, pentapetalous, rosaceous flowers, set in five leaved cups, and followed each by a round cluster of naked seeds. A name also for the *myosuros*.

RANU'NCULUS BULBO'SUS, Lin. Sp. Pl. 778, *tuberosus major*, ROUND ROOTED OR BULBOUS CROW FOOT, hath a round tuberous root, the size of an olive; the leaves are divided commonly into three segments, and further subdivided; the stalks are erect, the flowers of a bright glossy yellow, their cups turned downwards; common in pasture grounds, and flowers in May. This is one of the caustic species.

RANU'NCULUS LONGIFO'LIIUS PALU'STRIS MINOR; *ranunculus flammula* Lin. Sp. Pl. 772. *citrinula*, SPEAR WORT, OR SMALLER WATER CROW FOOT, with fibrous roots, long narrow leaves, acuminate at both ends, leaning on procumbent stalks; growing in watery places or moist meadows, and flowering in June. The roots and leaves have no smell, but an acrid fiery taste. Internally they appear to be deleterious, even when boiled in water so long as to discover no pungency to the palate. The effluvia of the less acrid species, or varieties cultivated in gardens, when freely inspired, have occasioned headaches, anxiety, vomitings, and spasms. The leaves and roots applied externally blister the part, and destroy it. For this purpose they are used in Mrs. Plunket's remedy for cancers. Indeed all the species are highly acrid, exciting itching, inflammation, blisters, and ulceration on the tongue or on the surface. In the stomach they have all the effects of an acrid poison. The most virulent species are the *r. bulbosus*, *sceleratus*, *acris arvensis*, *thora*, and *illyricus*; but the acrimony resides, sometimes in the roots, occasionally in the stalks, leaves, or flowers. The acrimony of the *ranunculus alpestris*, according to Haller, is most considerable; but no medicine will counteract the virulence of this tribe. The wild plants are more acrid than the cultivated ones; their pungency is diminished by drying, and destroyed by long keeping. See Raii *Historia*; Lewis's *Materia Medica*; Kraft *Experimenta de nonnullorum Ranunculorum Venenata Qualitate*, Vien. 1766; Mayr de *Venenata Ranunculorum indole eorumque usu*, Viennæ, 1783.

RANU'NCULUS VI'RIDIS. The name of a species of frog: the term *ranunculus* is also given to several other of the vegetable class, viz.

RANU'NCULUS FICA'RIA and VE'RNUS. See CHELEDONIU' MINUS.

RANU'NCULUS NEMERO'SUS. See MOSCHATEL LINA.

RANU'NCULUS PHRAGMI'TIS. See ANEMONOIDES.

RANU'NCULUS TRIDENTA'TUS VE'RNUS. See HEPATICA NOBILIS.

RAPA, (from the Arabic term *raphagh*, to germinate). The TURNIP, or ROUND ROOTED TURNIP, *raphum*, a plant with jagged leaves, yellow flowers, with small round, smooth, reddish or blackish seeds, in long pods. The garden turnip is supposed to be a variety produced by culture from the smaller sort, which grows wild in sandy grounds in some parts of England. It is biennial.

Turnips are to many an agreeable food; but watery and flatulent; in weak stomachs inconvenient. They are said to be detergent, laxative and diuretic; are mild rather than sweet, but contain no sugar, and very little amylaceous matter. The yellow turnip has a sweeter and more mucilaginous taste, and is therefore apparently the most nutritious. (Cullen's *Materia Medica*.) The liquor pressed from them, after boiling, and sometimes from the raw root, is taken medicinally in coughs and disorders of the breast; and applied to the mouth in aphthæ, the seeds are styled *alexipharmic*, *diaphoretic*, and *diuretic*; they have no smell, but to the taste are mildly acrid. The female turnip is of a less rounded shape, and preferred. See Raii *Historia*; Lewis's *Materia Medica*. See RAPISTRUM.

RAPHA'NIA, (a disease supposed to arise from eating the BASTARD RADISH. *Raphanus raphanistrum* Lin.). *Convulsio soloniensis*; *eclampsia typhodes*; *necrosis ustilaginea*; *kriebel, krankheit*; is defined "a spastic contraction of the limbs or joints, attended with convulsions and excruciating periodical pain."

Rothman observes that it had been frequently epidemic in Sweden, though considered as a new disease, and he has traced it in the works of different authors from the year 1596 to 1727, so that it has been common in other parts of Europe. He adds, that this dreadful distemper sometimes continued for three or four weeks, and that it terminated fatally from a diarrhœa or convulsions. The poorer people were the chief subjects of this complaint, and were usually attacked in autumn, soon after eating bread made of new corn. The lolium temulentum, and the disease of corn styled ergot, by which the end of the seed is elongated like a horn, have been accused, as well as the charlock (*raphistrum*), of producing the disease; but it most probably proceeds from the ergot.

Valerian, castor, camphor, and other similar antispasmodics, were given with little advantage. Camphor has been sometimes combined with vinegar, and the animal oil of Dippell, with scarifications, blisters, and emetics, have been repeatedly employed with no decided success. See Pulteney's *View of the Writings of Linnæus*; *Memoires de la Société Royale de Médecine*, at Paris, Année 1776, 1786; Rothman's *Dissertatio de Raphania*; *Amœnitates Academicæ*, vol. v.; Rosenstein de *Morbo Convulsivo Spasmodico*; Tissot *Epistolæ Medico-practicæ*; Marcard von Einerder *Kriebelkrankheit*.

RAPHANI'STRUM, (from *raphanus*, in consequence of its likeness to the *raphanus minor*). It

agrees with this plant also in its medical virtues; and is sometimes the appellation of *miagram*.

RA'PHANUS, (*ῥαπα το ραδιος πανερθαι*, from its rapid germination). The RADISH.

RA'PHANUS AQUA'TICUS. See SISYMBRIUM AQUATICUM.

RA'PHANUS HORTEN'SIS, *radicula*, *raifort*; *raphanus sativus* Lin. Sp. Pl. 935; COMMON GARDEN RADISH. The root is attenuating, occasionally carminative; and all the parts of the plant are antiscorbutic. The roots are more acrid after drying than when fresh, but this acrimony is soon dissipated by boiling. It is commonly eaten raw with its cortical part, in which its acrimony consists; and this rather serves as a condiment to its acescent substance, and which therefore seldom proves flatulent. It is, however, in weak stomachs indigestible.

RA'PHANUS RUSTICA'NUS, MARI'NUS, and SYLVE'STRIS. HORSE RADISH, *cochlearia armoracia* Lin. Sp. Pl. 904. The leaves are large, long, and indented about the edges. It is found wild about the sides of ditches and rivulets, but for medicinal and culinary purposes cultivated in gardens; perennial, flowering in June. It rarely perfects its seeds, but is propagated by transverse cuttings of the roots.

The smell and taste of the roots are quick and penetrating; but they contain also a sweet juice, which sometimes exudes in little drops upon the surface. Its pungent matter is very volatile, dissipated in drying, and carried off in distillation, both by water and spirit. As the pungency exhales, the sweet matter, though partly dissipated, becomes more sensible. It impregnates both water and spirit by infusion or distillation very richly with its acrimony, and in distillation with water yields a small quantity of essential oil, exceedingly penetrating and pungent. This root differs from mustard seed in the volatility of its pungent matter, and its solubility in spirit. It is properly employed as a condiment with animal food, as it stimulates the stomach and promotes digestion. Externally applied, it is an useful rubefacient in palsy and rheumatism. Its infusion often cures hoarseness, when it depends on the interrupted secretion of mucus; and it readily proves emetic, when taken in infusion, or assists the action of other emetics. Infused in wine, it stimulates the whole nervous system, and is useful in palsy; but employed in large quantity it is often injurious by the excess of heat which it excites, though on this account useful in chronic rheumatism. Cut down into very small pieces, without bruising, and swallowed without chewing, according to Bergius, it has been extremely useful in arthritic cases, perhaps of the rheumatic kind. Its pungency passes to the kidneys, and often proves a powerful diuretic; and by promoting urine and perspiration, it has long been known as a powerful antiscorbutic. Held in the mouth it proves a certain and good sialagogue. The syrup of horse radish is made by infusing one drachm of the root in four ounces of water, and forming that into a syrup, in a moderate heat, with sugar. An infusion of it with bruised mustard seed, either in wine or boiling water, acts as a stimulant and diuretic, and is often prescribed with success in dropsical and paralytic complaints. An infusion of this root in milk is also one of the safest and best cosmetics.

If the root be kept in a cool place, and buried in dry

sand its virtues are long retained. Dr. Alston thinks that it may be dried and powdered without losing any considerable portion of its virtue.

The London college directs the following compound spirit, *spiritus raphani compositus*, to be kept.

Horse radish root fresh, the exterior rind of Seville orange dried, of each two pounds; fresh garden scurvy grass, four pounds; bruised nutmegs, an ounce; are added to proof spirit of wine, two gallons, with water, a sufficient quantity to avoid an empyreuma: distil two gallons. *Pharmacopœia Londinensis*, 1788. See Neumann's Chemistry; Lewis's and Cullen's Materia Medica.

RA'PHANUS SYLVE'STRIS. See LEPIDIUM.

RAPHE, (from *ραφή*, a suture). The longitudinal eminence which divides the scrotum, passing through the perinæum to the anus.

RAPHE CEREBRI. The longitudinal eminence which divides the corpus callosum.

RAPHONTICOIDES LU'TEA. See BEHEN ALBUM.

RAPI'STRUM, (from the resemblance of its leaves to those of the turnip). *Rapha lamifera*, *miagra*, *sinapi arvense fræcox semine nigro*, CHARLOCK, CHADLOCK, KEDLOCK, or WILD MUSTARD; a plant said to be antiscorbutic, but never employed in practice.

RAPOCAULIS, (from *rapha*, and *caulis*, the cabbage). See BRASSICA CONGYLODES.

RAPU'NCULUS, RAPUNTIIUM, (from *rapha*). Plants which much resemble the campanula in external appearance. See CERVICARIA.

RASH. A familiar name for any papular eruption.

RASPATORIUM, (from *rado*, to scrape). A SURGEON'S RASP.

RAUCE'DO, RAU'CITAS, (from *raucus*, hoarse). A HOARSENESS, a diminution of the voice, sometimes attended with a preternatural asperity or roughness of the parts affected, the aspera arteria, and particularly the larynx. It is generally a symptom of catarrh, but sometimes a species of PARAPHONIA, q. v.

It is chiefly occasioned by an inflammation, sometimes a want of tone in the nerves of the part; for whether the whole larynx acts as a wind, or its ligaments bring it nearer to a stringed instrument, a due activity of the nerves is necessary. In the first case it is a symptom of cold, or it may arise from swallowing acrid powders. When it occurs also from measles, small pox or repelled eruptions, it is probably owing to the same cause.

It is, however, often a symptom of hysteria, and then is probably owing to an altered state of the recurrent nerve; for the voice involuntarily changes from an acute to a grave tone, goes off, and returns suddenly. Sometimes hoarseness comes on from swallowing deleterious substances, as in the instance recorded by Plater, where a beetle swallowed produced it; sometimes it is said to be a symptom of pregnancy.

Its most common causes are, however, fixed organic diseases of the trachea and neighbouring parts, often from syphilis. An ossification of the thyroid and cricoid cartilages; a thickening of the first ring of the trachea (Fantonus); an erosion of the epiglottis (Haller); an ulcerated larynx (Wathen's Memoirs of the Medical Society, London, vol. i.); and an erosion of the uvula (Lentilius), are all said to have produced the

disease. Substances fixed in the œsophagus are said, in the Memoirs of the Academy of Surgery, to have had the same effect.

Various are the remedies prescribed for the complaint, not always with a rational view of its cause. If Plenck found the arnica, the bark, and the aqua vulneraria useful, it must have been in a case of debility. The erysimum and horse radix often given in the form of a syrup, must have succeeded on the same principle. Breathing watery vapours, bleeding, whey, cold water, and demulcents could only be of service in the inflammatory disease; the seton of Hildanus, when it arose from a topical complaint; and mercury when it was a symptom of the venereal disease.

RAU'CITAS. See BRANCHUS and RAUCEDO.

REA'LGAR, *arlada*, *auripigmentum rubrum*, *arsenicum rubrum factitium*, and *abessi*. A composition of sulphur, orpiment, and unquenched lime; of a red colour, always glossy, but not always transparent. See ARSENICUM ALBUM.

RE'BIS, *abessi*, *azoth*. The alvine sordes, in old authors; or the hair of choleric or plethoric men. Amongst alchemists it means the seed from whence gold is generated; and it has obtained the barbarous name *rebis*, because its first two ingredients, by long coction, become one in species and number. For a similar reason the *mercurius duplicatus philosophicus*, consisting of sulphur and mercury, is called *rebis*.

RECEPTA'CULUM CHY'LI, vel PECQUETI, (from *recipio*, to receive,) *diversorium*, *sacculus chyliferus*, the RECEPTACLE OF THE CHYLE, first demonstrated by Pecquet at Paris, 1651, 1652, though Eustachius and Asellius were in some degree acquainted with it. It lies on the right side of the aorta, at the union of the last vertebra of the back with the first of the loins, and is in reality the union only of the different lymphatics somewhat enlarged; but by no means a sac in the human body, as it is sometimes described. The upper portion lies between the aorta and the vena azygos, and forms a particular canal which runs up through the thorax, called the DUCTUS THORACICUS, q. v. See MONRO'S Osteology.

RECEPTA'CULUM. A RECEPTACLE, by Ray called *sedes*; by Boerhaave, *placento*; and by Vaillant, *thalamus*, is the basis upon which the other six parts of fructification are fixed.—1. *Receptaculum commune*, connecting many flosculi. 2. *R. floris*, a basis to which are fixed the parts of the flower exclusive of the germen. 3. *R. fructificationis*, common to the flower and fruit. 4. *R. fructus*, a basis for the fruit only. 5. *R. proprium*, belonging to the fructification only. 6. *R. seminum*, the basis on which the seeds are fixed within the pericarpium.

RE'CIPE. TAKE. It is usually placed at the beginning of prescriptions, and is generally wrote thus, R. or R. or with the character for tin, \mathcal{R} . As this is the astronomical character for Jupiter, it has been ridiculously supposed an invocation for success. See R.

RECLINA'TIO, (from *reclino*). An inactive state of the muscles; in botany a leaf which bends down, and whose top is lower than its base.

RECTIFICA'TIO, (from *rectifico*, to make clear). See DEPURATIO.

RE'CTOR SPI'RITUS. See SPIRITUS.

RE'CTUM INTESTI'NUM, (from *rectus* straight,)

apenthysmenos, longanon, archos, cyssaros. This last of the large intestines is every where covered by longitudinal muscular fibres, and hath strong circular ones for expelling the fæces. It is not furnished with bands like the colon, nor covered with the peritonæum, as the other intestines. At the lower extremity of the rectum are cryptæ, supposed to be the seat of worms, and vascular ridges between the cryptæ, the seat of hæmorrhoids, apparently raised by the fat between the membranous and muscular coats, interspersed with little glandular follicles, which separate mucus. The folds near the extremity are longitudinal, forming little lacunæ of a semicircular form, turned upward towards the intestine. This gut is a continuation of the last convolution of the colon, which, having passed below the lowest vertebra of the loins to the inside of the os sacrum, is bent backward in the concave side, to which it is connected; and having reached the os coccygis it runs in the same direction, bending a little forward, terminating beyond its extremity. The arteries are from the hæmorrhoidalis interna, the last branch of the mesenterica inferior, which communicate with the hypogastrica, and particularly with the hæmorrhoidalis externa. The veins are branches from the mesaraica minor, or hæmorrhoidalis interna, which communicate with the hypogastrica. The nerves are from the plexus mesentericus inferior and the plexus hypogastricus.

Sometimes hard, scirrhus lumps, without pain, are seated near the anus, which are thrust out at every effort to void the fæces, and are then slightly painful; but at no other time, unless handled. If they have a small basis, Mr. Pott advises their speedy removal; for otherwise they certainly prove fatal. The early symptoms do not elucidate their nature: the first sensation is that of wanting to void a large stool, but without effect. This unavailing inclination frequently returns, and on trying a clyster, the pipe is obstructed by a hard substance. The nature of the case is often discovered; but we can in general only palliate. A tumour perhaps of this kind was apparently dissolved by the external application of the beladonna. Medical Commentaries, i. 464.

Another disease of this gut is a general relaxed state of its whole substance. When extruded through the anus, it is bound by the sphincter muscle, and resembles a fungus with a narrow basis; a true fungus is, however, uniform, and the finger may pass round it; it is soft to the touch, yet from irritation may be as painful as a cancerous one. It is, therefore, proper to distinguish them with accuracy, as the first may be cured, but the latter cannot. The cancerous fungus within the rectum is seldom uniform, but generally unequal, spreading from a large basis, and discharging an offensive ichor or gleet.

Another disease of the rectum is a scirrhus contraction. It occurs usually about an inch or two above the anus, and the first symptoms are obstinate costiveness, alternated by a watery diarrhœa, of a short continuance. The fæces are usually retained. Hemlock, and all the variety of medicines, have been tried with little success. The cure is palliative only. The existence of the disease can often be ascertained with accuracy, as it is within the reach of the finger.

The anus is sometimes contracted by hæmorrhoids,

sometimes by venereal tubercles; and in the Memoirs of the Academy of Surgery, vol. i. and iii. there are instances of an abscess formed in this part, in consequence of swallowing some foreign bodies, or of substances forced into the gut. In the Medical Commentaries of Edinburgh, a case occurs of a calculus formed in it. Palsy and gangrene, sometimes cancers, of this part are said to have followed the abuse of drastics; and ulcers of the rectum are endemic in the Brazils. They are always with difficulty cured, though Dr. Rowley boasts of his success with antimonials and salts. See FISTULA.

Siebold Dissertatio de Morbis Intestini Recti; Wrisberg de Preternaturali, Intestini Recti cum Vesica Coalitu; Rowley's Seventy-four Cases; Memoirs of the Medical Society, London, vol. ii. art. 2 and 25; Edinburgh Commentaries, ii. 373.

RE'CTUS. STRAIT. The name of several muscles, denominated from the rectilinear direction of their fibres.

RE'CTUS ABDO'MINIS. The recti muscles of the belly arise from the os pubis, are inserted into the sternum, and are expanded upon the cartilages of the fifth, sixth, seventh, and sometimes of the eighth ribs, having expanded into a thin aponeurosis, which passes under the pectoral muscle, and is said sometimes to extend far up the sternum. In their course they are divided into four or five portions, by tendinous intersections, most apparent on the anterior surface. They lie on the fore part of the belly, immediately under the integuments; and the vessels which pass underneath the upper parts are the mammary artery descending, and its vein ascending; those of the lower part are the epigastric artery ascending, and its vein descending. In this muscle certain white lines and impressions are perceptible, called by Vesalius *perigraphæ*. Its use is to compress the abdomen, and to assist in raising the body.

RE'CTUS ANTE'RIOR. See RECTUS CRURIS.

RE'CTUS A'NTICUS BRE'VIS. See RECTUS INTERNUS MINOR.

RE'CTUS A'NTICUS LO'NGUS. See RECTUS INTERNUS MAJOR.

RE'CTUS ATTO'LLENS. See GENIO HYOIDÆUS.

RE'CTUS CRU'RIS; *rectus femoris, rectus anterior*, or *gracilis anterior*, rises by a strong tendon from the anterior and superior process of the ileum, and from the cartilaginous tip of the acetabulum, and is inserted into the upper part of the patella.

RE'CTUS DE'PRIMENS, et INFE'RIOR O'CULI. See DEPRESSOR OCULI.

RE'CTUS EXTE'RNUS O'CULI. See ABDUCTOR OCULI.

RE'CTUS INTE'RNUS; *gracilis internus*, rises close to the edge of the os pubis, where it joins to the ischium, and runs to the internal condyle. It serves to bend the thigh forward.

RE'CTUS INTE'RNUS MA'JOR; *rectus anticus longus, flexor capitis*, lies before the rectus internus minor; rises commonly by as many tendons from the transverse processes of the fifth, fourth, third, and second cervical vertebrae, and is inserted into the anterior part of the cuneiform process of the os occipitis, bending the neck forward.

RE'CTUS INTE'RNUS MI'NOR, A'NNUENS: *rectus*

interus minor of Cowper; *rectus anticus brevis* of Winslow; is also named *renuens*. It rises from the root of the transverse process of the atlas, and is inserted into the cuneiform process of the os occipitis, just behind the groove where the lateral sinus forms the beginning of the internal jugular. This muscle gives the head a lateral motion upon the atlas.

RE'CTUS INTE'RNUS O'CULI, rises from the bottom of the socket near the hole by which the optic nerve enters the orbit, passes on the side of the globe next the nose, and is inserted into the sclerotica. It draws the eye towards the nose. See ABDUCTOR OCULI.

RE'CTUS LATERA'LIS, rises from the transverse process of the atlas, and is inserted into the os occipitis and os temporis, near the mastoid process. It bends the head to one side.

RE'CTUS MA'JOR; *rectus capitis posticus major*, rises from the upper part of the spinal process of the dentata; runs upwards and outwards, and is inserted by a flat tendon, near where the os occipitis is joined to the os temporis, serving to bring the head backwards. It is in part a rotator of the head, and, though styled *rectus*, is in reality an oblique muscle.

RE'CTUS MI'NOR; *rectus capitis posticus minor*, rises from the knob which answers to the spinal process of the atlas, and passes thence to the head. It can only move the head upon the atlas.

RE'CTUS SUPE'RIOR O'CULI. See ELEVATOR OCULI.

RECU'RRENS, (from *recurro*, to return). The RECURRENT NERVE. See PAR VAGUM, and NERVUS.

REDDLE. An argillaceous ocre, formerly used as a tonic, and externally as an astringent.

RE'DUC, vel RE'DUX, (from *reduco*, to bring back). A FLUX, or a POWDER by which oxyds are reduced to a metallic form. Fluxes are generally either of the vitreous or the saline kind: by the former are meant all those that are, or readily assume a glassy form in the fire; the chief of which are the glass of lead, or of antimony, and borax: by the latter those composed of salts. There are fluxes of a yet cheaper kind; such as dried wine lees, dried cow dung, dried horse dung, dried river mud, fuller's earth, iron filings, &c.; and a variety of compound fluxes, some of which are chiefly adapted for particular ores: indeed almost every operator has his favourites. For the common black flux, see CALCINATIO.

REFECTI'VA, (from *reficio*). See CARDIACA.

REFRIGERANTIA, (from *refrigero*, to cool). A class of medicines of peculiar utility in all cases of increased tone or action of the sanguiferous system. As increased action of the vessels produces increased heat, so, on the other hand, different causes of the latter influence the former. If it were necessary to make any distinction in a class of medicines so simple, we should say, that they are adapted either for a sudden or a permanent effect. Of the former kind, cold is the principal remedy; of the latter, a diet of weak alimentary powers, or, more strictly, every means of lessening the proportion of the gluten in the circulating mass.

Cold is administered in the form of cold air, cold water, or the different fluids which attract caloric. The more temporary effect of cold produces, we have seen, reaction, so that the continuance of its application is

necessary. The neutral and earthy salts are, in different degrees, refrigerant; and nitre is perhaps the most powerful, or a combination of nitre with crude sal ammoniac. The acid fruits and the native acids appear to be refrigerant from the same principle, though they have some influence, when long continued, as weak aliments.

Sedatives, however, repress inordinate circulation by an action apparently chemical, and hold a middle rank between cold and the diminution of the denser parts of the blood. Emetics in nauseating doses are of this kind; probably the acid products of fermentation; more certainly the preparations of lead. Avoiding all stimuli must be also a comparative cause of diminished action.

The great source, however, of the change intended by this class of medicines is the diminution of the denser parts of the blood. Thus all evacuations of blood are permanently refrigerant; for though watery fluids are quickly supplied to fill the vessels, the gluten and red globules are of slower production. Low diet is a remedy of the same kind; and when we consider the effects of vinegar in reducing the bulk, we are tempted to believe that it may have some effect on the digestive process, and added to its sedative quality, obvious in the mouth and on the lips, may also lessen the proportion of gluten in the blood.

The great utility of refrigerants is chiefly seen in all inflammatory affections, and in all the pyrexia of Dr. Cullen, which depend on increased action, particularly hæmorrhages and inflammations. In these cases the diminution of the symptoms only affix the limits; but in the continued action of refrigerants of every kind we have reason to dread the most permanent chronic debility. The greatest caution is consequently necessary, in their employment.

REFRIGERA'TIO. See HORROR.

REFRIGERATO'RIMUM, (from *refrigero*). A REFRIGERATORY; the vessel filled with water, through which the worm passes in distillations, to condense the vapours as they pass through it.

RE'GIA A'QUA. See NITRUM.

RE'GIMEN, (from *rego*, to govern). The REGIMEN, or the regulation of the diet with a view to preserve or to restore health. See DIÆTA; (Stahl de Regimine). In chemistry it is the regulation of fires.

REGIONA'LIS MO'RBUS, (from *regio*, a country). See ENDEMIUS.

REGI'STERES, (from *rego*). REGISTERS, or OPENINGS, in different parts of furnaces, to be shut occasionally. By their means the fire may be regulated, for the heat is increased or diminished in proportion to the access of air. These holes should be from two to four inches wide, if the internal diameter of the furnace does not exceed a foot.

RE'GULIS BARBADE'NSIS, vel JAMAICE'NSIS. See PALMA NOBILIS.

RE'GULUS. A metal in its metallic form; from *rex*, because the alchemists expected to find gold in the metal.

RELAXA'TIO, (from *relaxo*,) *chylasis*. See PRO-CIDENTIA UTERI, and ATONIA.

REME'DIUM, (from *re*, and *medeor*, to heal,) a REMEDY; *boethema*; a medicine by which any illness is cured. See MATERIA MEDICA.

M m

REMITTE'NTES, (from *remitto*, to abate). REMITTING DISEASES are fevers in which the paroxysm abates without wholly receding.

As we have spoken so fully of intermittents, diseases of a similar nature with remittents, we have less temptation to enlarge on the present subject. Some considerations were, however, referred to this article. We have seen that the true regular intermittent has but one paroxysm in twenty-four hours. When a remittent first assumes the form of an intermittent fever, the remission is regularly more distinct; the sweat comes on, and the urine drops a more copious sediment. This remission becomes, by degrees, more perfect, and after the sweat there is some interval of apyrexia. The disease then soon becomes an intermittent. When the contrary change takes place, the paroxysm is prolonged, and its crisis is less complete. It is seldom prolonged to the period of the next attack; but the fever remains in a less degree, and its violence is gradually increased in each interval till the remissions are indistinct.

In general, every fever begins with exacerbations and remissions, but the exacerbations of the true remittent are, on the alternate days of the continued fever, every evening, and more slightly every day about eleven or twelve. Every fever approaches, however, the tertian type. Remittents generally show it very strikingly, and the most continued fevers have, as already observed, their more remarkable changes on alternate days, down to the fourteenth; the period, independent of accidental circumstances, of every continued fever. With respect to remittents, however, this is perceived most strikingly, for twenty tertian remitting epidemics are described for one quartan or quotidian remittent. In examining the symptoms of different epidemics, the succession of the paroxysms may appear to oppose this opinion, and quotidian remittents to be more common than we have represented. On a closer examination, however, these apparent amphimerinæ are in reality double tertians. Stahl has pointed out numerous instances of this kind in his dissertation *De Tertiana, Febris genium universum manifestante*. It is a principle which should be always kept in view, in every consideration relating to the progress of fever.

We found it difficult to explain why, after a complete solution of the paroxysm of an intermittent, the same series should recur. With respect to remittents there is little difficulty, for almost every epidemic of this kind is attended with asthenic symptoms, or rather with the most extreme debility. At the conclusion of the paroxysm, the sensorial energy is not restored: the fomes remains, till the returning evening exacerbation, or, more often, the returning tertian tendency renews the train of symptoms. These considerations render it highly probable that the true reason of the renewal of intermitting paroxysms is the imperfect restoration of the sensorial energy by the former fit; a cause already suggested, and which the remaining languor in the intervals strongly supports. This reasoning acquires more force when we find that all the febres comitatæ of Torti are remittents, and that the accompanying symptoms are chiefly those of debility. As we may suppose the nosology of Dr. Cullen to be generally known, it is sufficient to refer to his enumerations of the tertianæ

comitatæ of Torti, page 53, vol. ii. 1780. To this we may add the various accounts of the yellow fever of the West Indies and America; the epidemics observed by Sarcone at Naples; and the different publications respecting camp fevers, and those occurring in long voyages, especially in transports conveying large bodies of troops.

It is easy to say with our predecessors in this work, that we must "empty the bowels and throw in the bark." It is the language of inexperience and ignorance; but we need not enlarge on the more difficult parts of the treatment, as we have already noticed them in our account of the yellow fever.

The asthenic remittents of warm climates are the diseases in which cold applications are found chiefly useful; and the account which sir John Chardin gives of the treatment of the fever which he experienced at Gombroon is a good example of the practice. It consisted in cold drinks and cold applications. Cold affusions are too violent repellents of the blood from the surface; and sponging the body with cold water and vinegar is all that can be allowed in this line. The bark may assist recovery, but there is seldom any proper period for its use during the fever.

RE'MORA ARA'TRI, (from *remoror*). See ANONIS.

REN, (a kidney,) *nephros*. See RENES.

RENA'LES ARTE'RIÆ, (from *renes*, the kidneys,) *emulgentes arteriæ*, are generally two in number, and go out on each side from the lower descending aorta, immediately under the mesenterica superior. The right is situated more backward, and is longer than the left, because the vena cava lies on the right side between the aorta and the kidney. They run commonly without division, almost horizontally to the kidneys, into the depressions of which they enter by several branches which form arches in the inner substance of the viscera. From these arches many small branches go out toward the circumference, or surface of the kidneys. Sometimes two arteries go into one kidney. Generally the right renal artery passes behind the vena cava, and the renal vein in the other side; and the left artery first behind, and then before the vein. Sometimes they send branches to the glandulæ renales, membrana adiposa of the kidneys, and even to the diaphragm.

RENA'LES VENÆ, *emulgentes venæ*, spring from the inferior cava, when it arrives at the kidneys, into which these branches are sent. They are the largest veins connected with the vena cava, between the liver and the bifurcation. The right emulgent is the shortest, the left the longest; for it crosses the trunk of the aorta. Usually the left emulgent vein receives the left spermatic vein.

RENE'LIUS. See RHENCOS.

RE'NES, (*απο τῷ ᾠνι*, from the flow of urine). The KIDNEYS are two oblong flattened bodies, extending from the eleventh and twelfth ribs to the fourth lumbar vertebra. The right kidney lies under the great lobe of the liver, and is lower than the left, which is situated under the spleen. They resemble in shape a large bean, of which the concave side is towards the vertebræ. Their length is double their breadth, and the latter double their thickness. The upper extremity is broader and more incurvated than the lower, and the depression

in the concave side is oblong, surrounded by small tubercles. The kidneys themselves are covered chiefly with a cellular substance; for the peritonæum is extended only over the upper and fore side, so that, when the kidney adheres to the muscles, matter and even stones may be discharged through an abscess, without danger from access of air to the cavity of the abdomen. The aorta descendens, and the vena cava inferior, lie between the kidneys, pretty close to the bodies of the vertebræ. (See *RENALES ARTERIÆ* and *VENÆ*.) Each artery is surrounded by a nervous net work, from which the nerves enter with the arteries. The kidneys are covered on one side by the peritonæum, and the whole substance is invested by a capsule, composed of two laminae, connected together by cellular substance. The external lamina is thin and smooth, rendering the kidney uniform, and passing by numerous elongations into its substance. In children, the convex part is divided into little lobules; a form sometimes continued in adults. The substance of the kidney is divided into the external or cortical, and the internal, tubular, or mammillary portion, the latter of which is made up of a number of pyramidal bodies, about twelve in each kidney, whose points are received into the pelvis, so that the cortical part not only lies round the outer surface of the kidney, but its processes pass into the interstices. The cortical part is wholly vascular, but in minute injections, certain appendages, called *CORPORA LOBOSA*, are observable. These are natural cells, where the small arteries seem to be expanded. Ruysch thinks them only convoluted arteries. In the veins no cryptæ are seen, so that they are not extravasations; they are also uniform, and confined to the cortical part.

The ramifications of the blood vessels are peculiar; for in their ultimate branches they resemble stars, and in this form are lost on the proper membrane of the kidneys. The medullary, the striated, and the mammillary portions, are apparently continuations of the same substance, differing only in the proportion of red vessels. Every anatomist has refined in his observations on the structure of the kidneys; but these refinements are sometimes doubtful, and scarcely in any instance applicable to physiology. Each mammilla lies in a kind of membranous calyx, or infundibulum, which opens into a common membranous cavity, called the pelvis. After the infundibula have contracted into a conical form round the apices of the mammillæ, each forms a small short tube, which, uniting at different distances along the bottom of the sinus of the kidney, constitute three large tubes, passing from the sinus obliquely downwards, and uniting into one trunk called the *ureter*. This excretory duct runs down obliquely on each side, with a small degree of inflection, to the lateral parts of the inner side of the os sacrum, and passing between the rectum and bladder, terminates in the latter at its inferior part, near the vesiculæ seminales. The ureters perforate each coat distinctly in a slanting manner; so that their oblique insertion answers the purpose of a valve, when the bladder is distended. The internal ligamentary membrane of each ureter does not end with its passage into the bladder, but is continued toward the prostate gland, where it seems to be inserted; keeping the lower part of the bladder from too great distention, and the ureters fixed. The artery is in the upper part of the sinus of the kidney, and partly before the vein; the

vein is about the middle, and between the artery and the ureter, which is in the lower part, a little behind the vein, and partly surrounded by a branch of the artery. Nephrotomy therefore appears impossible; and the operation, however represented, is only opening an abscess in the loin, when, from inflammation, a concretion between the kidney and peritonæum has taken place. See *NEPHROTOMIA*.

One kidney is occasionally absent (Stoll *Ratio Mendendi*, ii. 386), sometimes of a monstrous size, from calculus or from purulent matter: it has been found to weigh thirty-five pounds. (*Histoire de l'Academie des Sciences*, an. 1732, and Haller de *Renibus Monstrosis*.) When one has decayed, the other has been enlarged. (Morgagni de *Sedibus*, &c. ep. xl. 14.) The most frequent changes are, however, a depraved substance and a diminished bulk. It has been found by Warton (*Adenographia*, p. 96.) so small as not to weigh more than a drachm; to be gangrenous; eroded; full of hydatids, or tubercles; and ossified. (Fearon in the *Medical Communications*, i. 27.) The principal complaint is, however, ulceration, of which we have numerous instances in the works of physicians of every age from the time of Hippocrates. (See *NEPHRITIS*.) Worms have been sometimes found in the kidneys; but rarely in the human kidney, except when ulcerated or consumed. Wounds in the kidneys are sometimes healed (Haller *Pathologia Obs.* 69.); but frequently fatal. Haller, in the *Gottingen Commentaries*, describes a case in which it was displaced, and also degenerated; and, in his *Opuscula Minora*, iii. 40, is an instance of the two kidneys coalescing. See also *CALCULUS*.

RE'NES SUCCENTURIA'TI, (from *succenturio*, to *supply or fill up*). These supplementary kidneys are sometimes peculiarly large, sometimes wanting, and occasionally double, without any peculiar affection of the function, and their use is little known. See *CAPSULÆ ATRABILIARIÆ*.

RENI'SUS, (from *renitor*, to *resist*). *RESISTENCE*, properly belongs to hardness, which resists impressions, or to perfect elasticity, if such existed. The *renitentes corporis dispositiones* are those powers of the body which resist the effects of morbid miasma, or contagion. Galen, and Vander Linden.

RENOVA'TIO, (from *renovo*, to *renew*). *RENOVATION*, or the restoration of a mineral body from an imperfect to a perfect state.

RENU'ENS MU'SCULUS, (*renuo*, because it throws back the head). See *RECTUS INTERNUS MINOR*.

RENUNCIA'TIO, (from *renuncio*, to *declare openly*, *elogium*, an opinion or judgment given by a physician or surgeon to a magistrate or judge with respect to the mortality of a wound; of poison being taken, &c. See Ambrosius Paræus, *Tractatus annexus Chirurgiæ de Renunciationibus*).

REPELLE'NTIA, (from *repello*, to *drive back*). *REPELLENT MEDICINES*; those which prevent such an afflux of a fluid to any part as would excite tumour or inflammation. These are chiefly astringents and stimulants. See *DISCUTIENTIA* and *INFLAMMATIO*.

RE'PENS, (from *repto*, to *creep*). The epithet of a plant which creeps on the ground.

REPRODUCTIO, (from *reproduco*, to *reproduce*, or *renew*). *Regeneratio*, *resurrectio*. This function has

been considered as more extensive and important in its operation than sound observation will support. In the lower orders of animals, composed like vegetables of a congeries of buds, each part can become a living animal, and this power is greater in proportion to the simplicity of the structure; but we have remarked, that fibrous, primordial parts are not reproduced in their original organized forms. We greatly doubt of the reproduction of the glans penis, recorded in the Medical Essays of Edinburgh, for this reason, that even the sensation is said not to have been injured; and totally disbelieve the Ephemerides Naturæ Curiosorum, where veins and the tongue are said to have been regenerated. If either could happen, it would not occur in solitary instances. See REUNIO.

Ambrose Parey Opera Chirurgica, lib. xxii.; Domier de Viribus Naturæ in Reparandis Partibus, &c.; Goldhagen de Reproductione Partium.

REPU'LSIO, (from *repello*, to drive back). REPULSION, an action of bodies opposed to attraction: a principle of the most extensive application in chemistry, indeed equally with attraction. It is supposed to depend on a polarity in the particles of bodies, analogous, if not similar, to that observed in magnetism. This is, however, explaining ignotum per ignotius; for we know little of the causes of magnetic phenomena. Repulsion, however, we know to be connected in general with caloric; but as antagonizing attraction it apparently acts independent of caloric. The French philosophers often confound it with resistance and elasticity.

RES NATURA'LES. According to Boerhaave these are life, the cause of life, and its effects, which remain in some degree, whatever may be the disease. See CIRCUMSTANTIA.

RE'SEDA, (from *resedo*, to atfese; from its allaying inflammation). See BARRAREA.

RESINÆ, (from *resin*, because it flows from vegetable substances). Resins are the productions of the vegetable kingdom, and sometimes exude spontaneously from trees, and at others are separated by chemical art. Except when they spontaneously exude, they are usually mixed with extractive matter and with gum. From the first they may be separated by sulphuric ether, and from the latter by alcohol. Yet in each case the resin is seldom wholly pure.

Resins are usually in some degree transparent, and their taste is sometimes pungent, though this vegetable substance is more frequently tasteless. Its colour is yellow or brown; its specific gravity about 1.10, and it is an electric. It is insoluble in water, soluble in alcohol, ether, and volatile oils; easily melts; burns with a white flame, much smoke, and a strong smell. When distilled it yields a large proportion of volatile oil, with a very inconsiderable one of acid: the latter is sometimes absent. When its solutions in alcohol, ether, or oils, are evaporated, the resin remains unchanged, with a smooth shining surface, styled a varnish. It is scarcely acted on by alkalis or acids, and, distilled in close vessels, furnishes some acid, and a large proportion of empyreumatic oil.

From these facts it might be supposed that resin is another form of oil; and, in fact, if volatile oils are exposed to oxygen, they become resins, forming in their change a little water, so that they probably lose a portion of hydrogen. If we wish to discover whether any

vegetable substance contains resin, we should pour on it sulphuric ether, and expose it to the light; when the resin, if any exist, will become of a brown colour. Resin has, therefore, apparently the same analogy to volatile which wax has to fixed oils.

Resins appear to be of almost infinite variety, and, indeed, every difference in the taste and flavour of the essential oils influences the sensible qualities of the resins derived from them. The principal resins are, *Chio turpentine*, from the *pistacea terebinthus* Lin.; the *Venice turpentine*, commonly employed in medicine; the *Strasburg turpentine*, from the common fir; *pitch*, from the *pinus picea*; *elemi*, from the *amyris elemifera*; *mastic*, from the *pistachia lentiscus*; *guaiacum*, from the *guaiacum officinale*; *ladanum*, from the *cistus ladaniferus*; *dragon's blood*, from the *dracena draco*; *balsam of Mecca*, from the *amyris opobalsamum*; *balsam of copaiba*, from the *copaifera officinalis*. Benzoin, the balsams of Peru and Tolu, and the storax, contain resin joined with the benzoic acid. See BALSAMUM.

All vegetable extractive matters, by an union with oxygen, seem to be in part changed to resin; so that the London college has properly directed decoctions of bark to be boiled only for a short time in close vessels. There are a variety of gum resins used in medicine, of which the principal are the fetid gums, aloes and opium.

The acrid resins exhibited by themselves often adhere to the coats of the intestines, irritating and inflaming them. These inconveniences are remedied by alkaline salts, by soap, and in a great degree by sugar, if previously triturated with the resin. Essential oils are said to correct resins; but the oil soon separates in the stomach, and the resin is equally active with the added stimulus of the oil.

The action of these medicines is extended beyond the primæ viæ, as is evident from the children being purged by the milk of those nurses who take them. See Neumann's Chemical Works; Aikin's Dictionary of Chemistry.

RE'SINA A'NIME. See ANIME.

RE'SINA FLA'VA remains after the distillation of oil of turpentine, and is the common resin of the shops, chiefly employed in external applications. It forms part of the composition of several plasters, and gives a name to one ointment, *unguentum resinæ flavæ*. (See BASILICON.) Lewis says, in taste it is considerably bitter, and sometimes given as a corroborant and diuretic, in preference to the turpentine, as containing less of its stimulating qualities. On trial we could not find any remarkable medicinal virtue in it, even in large doses. *Materia Medica*. See ABIES.

RE'SINA LUTEA AUSTRALASIE. The yellow resin of New Holland, is produced from a low herbaceous plant, which bears its fructification at the end of a long hollow reed. The resin seems to exude from different parts of the plant; but is found in the earth after the tears have separated, and may be obtained in large quantities. Its most powerful menstrua are alcohol and ether; but it is wholly soluble in the water of pure kali. It seems to be slightly tonic and antispasmodic, to which pectoral qualities have been liberally added; but does not promise to be an important addition to the materia medica.

RE'SINA RU'BRA AUSTRALASIE. The red resin of

New Holland, is a production of the *eucalyptus resinifera* of Willdenow, ii. 977, and Linnæan Transactions, iii. 84. It resembles in every respect the gum kino; nor is it in a medical view superior.

RE'SINA TO'STA, FRICTA, NIGRA. See COLOPHONIA.

RE'SINÆ FLAVÆ UNGUENTUM. See BASILICON FLAVUM.

RESPIRATIO, (from *respiro*, to take breath).

BREATHING, *anafncusis*, the action of taking in and discharging the air from the lungs, including, therefore, inspiration and expiration.

This function is of the most extensive importance, since there are few animated beings to whose circulating fluids the occasional access of air is not essentially necessary, either in its gaseous state, or as combined with water. In general the weight of the air is alone sufficient for its impulse, and it is necessary only to make some vacuum to admit either air or water. In the amphibia, and in fish, the aperture of the mouth, and the action of the jaws propels the fluid, either air or water, into the lungs or over the gills, that the blood may partake its salutary influence. In insects we find no apparatus to assist its action, though some such apparently exists, since the spiracula lead to canals which pass through the whole body, anastomosing freely with each other. The numerous spiracles seem to show, independent of these anastomoses, some separate influence, since by varnishing them in succession, so as to prevent the access of the air, the parts become successively paralytic; but the animal does not die till the upper apertures are closed.

In the human body air is received into the lungs in consequence of a vacuum formed by the elevation of the ribs. With their action the diaphragm seems to correspond; and from a convex form towards the cavity of the thorax, it becomes nearly straight. It has been represented as becoming concave; but this is wholly inconsistent with the phenomena of muscular action. When the action of the intercostals is remitted, the chest falls in consequence of the elasticity of its ligaments, and relaxation is a constant alternating state with contraction in every muscle, unless when diseased. This statement is now generally acknowledged to be correct; nor need we enlarge on the very different opinions which have been offered on the subject, or attempt to elucidate the difficulties, which, on other views, have been felt. The only remaining difference of opinion relates to the respective share of the diaphragm and intercostals in this function. The latter are said by some late authors to fix the ribs only, and that the enlargement of the chest is chiefly effected by the contraction of the diaphragm. Each, however, produces some effect, though the chief agent is undoubtedly the diaphragm. In women the intercostals seem to have a greater share in enlarging the thorax than in men, from the greater arches of the ribs, and the final cause is to assist respiration, when the motion of the diaphragm is impeded by the enlarged uterus. We have said, that all the ribs are raised, and this is perhaps strictly true, though Sabatier contends that the lower ribs descend. (*Memoires de l'Academie Royale, année 1778.*) Other physiologists have, however, drawn different conclusions, both from the structure of the parts, and from observation. It has been contended also, that as the external and internal intercostals cross each other obliquely, their action must be different, and

even opposite; but this has been fully contradicted by an experiment of Haller. In this experiment, it was also found, that in inspiration the ribs did not approach, but rather receded, and the space was, in part, gained by their protruding the sternum.

If, as we find in pregnant women, near the time of delivery, the intercostals carry on the function of respiration almost exclusively, so at other times it is chiefly, if not wholly, effected by the diaphragm. The union of the ribs with the sternum has been ankylosed sometimes with little injury to respiration, though more often with dyspnœa. When, from various causes, respiration is difficult, or, in other words, when water, inflammation, or other causes prevent the access of the air, or the elevation of the ribs, different neighbouring muscles are brought to the assistance of the usual agents, particularly those of the thorax in inspiration, and those of the abdomen in expiration. To give a more fixed point to the former, the elevator scapulæ are exerted, and the shoulders are raised.

In the whole of this function, the lungs are passive. Contiguous to the pleura, or at least separated only by an halitus, they are in contact with that part of the membrane which lines the ribs, both in inspiration and expiration, following in each the motions of the chest. The apparent object in this function is to expose every particle of blood, in succession to the air. The circulation seems to stagnate through serpentine vessels during expiration, and to flow freely when these are distended by the distention of the lungs. This, though apparently obvious, has been denied, chiefly on the principle, that the regular return of blood irritates the heart to regular contraction. Yet, when the lobules are distended, the canals of the vessels are necessarily straiter, and when respiration is more frequent, the pulse is quickened. Whatever be the state of this function, there is always sufficient blood carried back, to stimulate the heart to regular action. The blood vessels, we have seen, dispersed freely on the cellules into which the extremities of the bronchiæ terminate, and the containing coats are there so thin, that the wax of the injection exudes. Whether air can pass or repass has been the subject of some controversy; and however discordant the calculation respecting the extent of surface to which the blood is exposed, physiologists have generally agreed that it exceeds considerably the whole surface of the body.

The capacity of the thorax, the quantity of air taken in at each inspiration, and that remaining after complete expiration, has been differently estimated. Dr. Goodwyn, Mr. Coleman, Dr. Menzies, Mr. Kite, and Mr. Davy, by different experiments, have endeavoured to determine these questions; but the results have greatly differed. The subject does not appear to us one of considerable importance, so that, without any extensive disquisition, we shall adopt the conclusions of Dr. Bostock, in his late Essay on Respiration. He thinks, that about forty cubic inches of air are taken in, at each inspiration; that the lungs, in their natural condition, contain about 280 cubic inches; and that about 109 cubic inches are left after an ordinary expiration. Were we inclined to be critically minute, we think we could show that each number is somewhat too high; though, on the whole, these conclusions are supported by the

best physiologists. According to this calculation, however, about one seventh of the contents of the lungs are discharged by an ordinary, and somewhat more than half by a violent, expiration. A bulk of air nearly equal to three times the contents of the lungs will be thus discharged in a minute, and about 4114 times their bulk in twenty-four hours.

The uses of respiration were for a long time unknown; and imaginary effects were imputed to this function, particularly a more intimate mixture of the blood, by its fancied rapidity through the lungs. The whole mass of blood was supposed to pass through the lungs in the same time that it did through the rest of the body, and, of course, it was thought that its course must be more rapid, though it would be apparently obvious, that if the circuit was shorter, the celerity need not be so great. There is, however, no evidence, except the most uncertain calculation, that the whole mass does pass through the lungs in a corresponding period with its circulation through the whole system: nearly the same quantity is returned in the same time; but if we can measure, or at least approximate, the capacity of the vessels of the lungs, we are unacquainted with the extent of the vessels of the general, or as it may be styled, the aortic system. The nerves, in their passage through the diaphragm and the liver, from the compression of this muscle, were supposed to be affected; and the alternate contraction and relaxation of the diaphragm, as well as of the heart, were attributed to it. The nerves in general, however, pass through the more tendinous portion; and, as the diaphragm in its contraction is only less concave, the pressure on the liver cannot be considerable. The concurring actions of the stomach and abdominal muscles are the only powers which seem to emulge the biliary ducts. The influence of respiration on the course of the chyle in the thoracic duct is wholly imaginary; for pressure would only be useful if there were valves in it; but there are none; and, in experiments on living animals, the chyle is seen to move in the duct, though respiration be impeded or prevented.

The necessity of a supply of fresh air in respiration must have been known from the earliest periods; but the source of this necessity was little understood, till Boyle found the respired air loaded with aqueous vapour, and diminished in bulk. Mayow, whose fair fame has lately been rescued from oblivion, showed that some principle, which he called a volatile ethereal spirit, was imbibed from the air, and Dr. Black found that air respired contained carbonic acid gas. In this view of the subject, the unfitness of the air for the continuance of life was attributed to its diminished elasticity; for it was only suspected that carbonic acid gas was not fit for the continuance of this function. At last, after a period of more than twenty years, the constitution of the atmosphere was taught by Scheele and Lavoisier. They found that the apparently homogeneous atmosphere was composed of two gases of different properties, the oxygenous and the azotic, in the proportions, if bulk be considered, of 22 to 78, if the weight, of 26 to 74. This proportion of a fluid unfit for respiration, in air essentially necessary to life, was at first astonishing, till it was found that oxygen, like ardent spirit, was poisonous, by its destroying, from excessive stimulus, the excitability, and that, like it, to be innocuous, it must be lowered. Late experiments,

however, seem to show that the azote is not wholly useless. In explaining the process of animalization, we found the necessity of some principle, which could reduce the newly absorbed nutriment to an animal nature, and this appears to be azote. Yet the idea is encumbered with difficulties. Azote is an excrementitious fluid; and the changes produced in the blood, from its circulation through the lungs, are apparently those from oxygen only. It is not, however, a very absurd idea that a principle, at first necessary, may in the end be injurious from excess. In fact, Mr. Davy, in some very accurate experiments, found a remarkable deficiency of azote, amounting in twenty-four hours to about four ounces and a half.

The changes, produced in the atmospheric air, from respiration, are found chiefly to affect its oxygenous portion: this is diminished; and water, in the state of vapour, with carbonic acid gas, are substituted. It is not certain whether the latter gas is separated, or that its basis, carbone, with the oxygenous gas inspired, are its ingredients. The latter is more probable; and, though air contains a small portion of this gas (about 0.01) naturally, its proportion in expired air is very considerable. The oxygenous portion is undoubtedly that part most essential to life in general; and, from the highest order of animals to the lowest, the great difference seems to be, that in the latter the oxygen is more slowly and more completely separated. A man dies while the air still retains a comparatively large proportion of oxygen; snails separate the whole completely (Vauquelin *Annales de Chymie* xii. 278; Spallanzani on Respiration). In general, the greater the heat, the larger proportion of oxygen is necessary: birds, in general, die when two thirds of this principle are exhausted. In the human body the greater the rapidity of the circulation, whether from increased temperature, muscular action or fever, the larger proportion of oxygen is required. From a hundred parts of oxygenous gas, were lost in respiration, during an hour and quarter, when the animal breathed with great difficulty, three and a half cubic inches; and of the remainder sixteen and a half were absorbed by potash. In another experiment, the proportions lost and absorbed were somewhat greater; and it seems probable that the purer the air, the greater is the proportion of carbonic acid gas, as if at least a portion of the oxygen was converted into it. The quantity of oxygen, consumed by a man in twenty-four hours, is nearly 46.000 cubic inches, or about two pounds eight ounces troy; and the quantity of carbonic gas formed probably exceeds three pounds troy. The diminution of the bulk of air by one respiration is about $\frac{1}{18}$ of the whole. Mr. Abernethy supposed, that in common respirations the bulk of air was actually increased. It must undoubtedly be expanded by the heat of the body, a circumstance perhaps not sufficiently taken into the calculation; but he supposed also, that the carbonic acid gas was a superadded portion by exhalation from the vesicles of the lungs, while the diminution, apparent when an animal was long confined in air, arose, in his opinion, from its absorption. The quantity of moisture which is discharged has been differently estimated. It appears to have varied from 11180.57 to 13704 grains in twenty-four hours: the average is 12442; but perhaps the quantity of watery fluid, discharged at different times, varies. It is supposed, by Lavoisier, that this water is formed by the union of the oxygen with hydrogen.

Other physiologists have attributed it to a common exhalation; but, when the quantity of oxygenous gas which disappears is accurately examined, it will be found greater than can be accounted for, if we even admit portions to be employed in forming the water and the carbonic acid gas. It is highly probable, therefore, that it is in part absorbed. It is not, however, equally probable, that the water arises from the union of the oxygen with hydrogen. In general, the union of these gases is effected with some difficulty, and we suspect that, in every instance, the co-operation of the electric fluid is requisite. This fluid is generally found free, in the atmosphere, and may become an intermede in the present process. In the change also from a vegetable to an animal nature, hydrogen is generally lost; so that, though some of the water in expired air arises from exhalation and evaporation, some perhaps may be formed.

The changes produced on the blood by respiration are now more clearly understood than in the time of Boerhaave and Haller. Blood which has passed through the lungs is of a brighter colour than the venal blood, and has a greater capacity of heat. The colour we now know to be owing to the influence of the oxygenous gas, and the darker colour of venal blood to carbone. Blood, stagnating without the access of air, becomes of the nature and colour of venal blood: it assumes the same appearances, when exposed to any of the unrespirable gases.

When we considered (see DIGESTION) the different nature of the alimentary substances taken in, which are generally in part vegetable, we found an accumulating portion of carbone, and sometimes of hydrogen, while in the animal fluid these in part disappeared, and the predominating principle was azote. We can detect the source of the carbone in the blood, in conformity to this idea, from the thoracic duct, and we perceive that the newly formed aliment is anxiously conveyed, immediately on its reaching the blood vessels, to the lungs. The oxygenous gas is there united with it, and carbonic acid gas immediately formed, which is carried off by the air. At the same time probably a portion of hydrogen becomes water, while the azote taken in more completely animalizes this new fluid, and adapts it for furnishing the different secreted fluids. In the course, however, of the circulation, the oxygen more completely unites with the remaining carbone, so as to form an oxide, which thus assumes a dark colour, and requires a new supply of oxygenous gas, to change it to carbonic acid air, and fit it for its discharge.

The change thus induced by the circulation is chiefly chemical, since it may be imitated out of the body, and the successive variations, from the florid colour to the darker hue, and the contrary, may be effected by confinement from air, and again restoring the blood to the access of oxygen. The oxygen, in this instance, will have its effect through a small bladder, or indeed any vessel of the body, if the cellular substance be removed. The effect, therefore, will be more certain and speedy through the thin vessels of the lungs, whose diameters admit but a small proportion of the blood. It acts also through the serum, and, as Mr. Davy supposes, by its previous solution in this fluid. The reason of the more striking change to the florid hue we do not, however, understand, as we are so little acquainted with the na-

ture of the red globules. Their colour is found from some late experiments to be owing to phosphorated iron, with perhaps some uncombined oxide of the same metal. That the oxygen and hydrogen may form this acid, which immediately unites with the uncombined oxide, is not an improbable, though an unsupported suggestion; but we are apparently on the eve of obtaining more satisfactory information. The azote absorbed in this function contributes to form the gluten of the blood, which probably differs, in this respect only, from albumen; and, in an increased proportion, the fibrin. Whether this last principle can supply any waste or destruction of the truly fibrous parts of the body is doubtful. We have never been able to detect any such supply, nor has, in any instance, a truly organic portion of the body been reproduced, within our observation or recollection. Where organs are reproduced, it is not probably in a single animal, but in a congeries of animals propagated, analogously to vegetables, from buds.

One effect of respiration has been already considered, viz. the heat of animals. (See CALIDUM INNATUM.) We again introduce the subject to remark, that were this the effect of the chemical changes which take place in the lungs, this part of the body should be warmer than any other, which is by no means true. It is probable, therefore, that if wholly owing to a chemical change, it is produced by the gradual incorporation of the oxygen with the carbone, during the circulation, an opinion first suggested many years since by Dr. Duncan. The increase of heat which actually takes place in the lungs, from the play of affinities, is apparently compensated by the cold produced by the evaporation of the moisture.

With respect to other gases, the hydrocarbonate is the only one decidedly injurious from powers certainly sedative; for nitrous, vitriolic acid, and alkaline airs, are only these substances in a gaseous form. The carbonic acid air cannot be breathed for any considerable time, even when diluted, without pain; and hydrogen and azote appear to be only injurious inasmuch as they exclude oxygenous gas. Carbonic acid air, unmixed, produces an immediate spasm on the lungs, and cannot be taken into them. The last experiments of Lavoisier (*Memoires de l'Academie des Sciences*, 1789,) we perceive, afford great room for doubt whether the last is capable of any great advantage or injury, unless from constant use.

Annales de Chymie, vols. iv. v. vii. ix. xii. xxi. xxiv. xxix. xxxiv. xxxvi. xliii.; *Journal de Physique*, vols. xxv. xxviii. xliii. xlv. xlvii. lii.; *Memoires de l'Academie des Sciences*, pour 1739, 1724, 1729, 1777, 1778, 1780, 1789, 1790; *Memoires de la Societe Royale de Médecine*, année 1782-3; *Philosophical Transactions*, 1776, 1779, 1797; *Hales' Statical Essays*; *Richerand's Physiology*; *Blumenbach's Institutiones Physiologiæ*; *Fourcroy Médecine Eclairée par les Sciences*; *Davy's Researches*; *De la Rive de Calore Animali*; *Goodwin on the Connection of Life with Respiration*; *Kite's and Abernethy's Essays*; *Menzies and Coleman on Respiration*; *Lavoisier's Elements*; *Higgin's Minutes*; *Thompson's Chemistry*; *Bostock on Respiration*; *Spallanzani on Respiration*.

RE'STA BO'VIS, (because it hinders the plough).
REST HARROW. See ANONIS.

RESTAURA'NTIA, (from *restoro*, to revive). RESTORATIVES, *analeptica*, *resumptiva*. Medicines suited to restore lost strength; but chiefly confined to those medicines which repair the waste of fluids, and in that sense nearly synonymous with the *nutrientia* and *stimulantia*. See CARDIACA.

RESUPINA'TUS, (from *resupino*, to turn upwards). A leaf of a plant turned the lower side uppermost.

RESUSCITATIO, (from *resuscito*, to revive,) the art of reviving persons apparently dead. Apparent death, as remarked in the article MEDICINA FORENSIS, arises from narcotic poisons, either fluid from intoxication, or deleterious gases introduced into the lungs; excessive evacuations, extreme cold, sudden terror, hanging, or drowning. A stroke of lightning has been added to the causes; but the apparent death from this cause is real: the victim rarely recovers. The signs of death we have also enumerated in the same article; but having remarked their equivocal nature, we need scarcely add, that unless the cause has long continued, or the symptoms are peculiarly decisive in their degree, they should not deter us from continuing our attempts.

The principal cause of death in these instances is the destruction of the irritability of the muscular fibres, or a diminution of the fulness of the vessels to such a degree that they are no longer able to support the due tension of the brain. Hanging or drowning as connected with topical injury, we shall reserve for a separate consideration under the appropriate articles SUSPENSIO and SUBMERSIO.

The apparent death from loss of tension in the brain occurs where the evacuations, chiefly the sanguineous ones, have been excessive, or where it has followed sudden terror, which seems to paralyze the heart, or at least greatly to diminish its force. In the first case, if the sanguineous discharges continue, we must not too eagerly attempt resuscitation, as death will probably ensue from the return of the hæmorrhage. It requires the most careful attention, and the exhibition of such restoratives as will preserve life, but will not powerfully excite the action of the heart and arteries: such cases are not usually fatal, and we recollect no instance where increased discharges of any other kind produce apparent death, which requires the exertion of the medical powers of resuscitation.

Sudden terror partakes of each cause; for though it immediately destroys the irritability of the heart, yet it is fatal by depriving the brain of the tension which it derives from the fulness of the vessels. Its remedies will, therefore, be considered under the next head.

To restore the irritability of the sanguineous and nervous system, plans apparently the most improbable and absurd have been employed, sometimes with success. Bleeding is one of these, and when the immediate cause of the loss of irritability is a congestion in any system of vessels, or when a debilitating cause, from relaxation, occasions an accumulation of fluids, this evacuation is often useful. Thus it is equally beneficial in those cases of apparent death which follow a suddenly altered determination of the blood, or which proceed from deleterious gases of a sedative nature. Taking off from the load will often occasion an immediate contraction, as we know from the observation of Mr. Coleman, so often repeated; and when a chain of actions is once begun, it is usually followed by those

before associated with it. The blood in this case should be taken from a large orifice, that the necessary discharge may be made in the smallest space of time, and produce the desired alteration with as little debility as possible. For this reason topical bleedings, though directed to the affected part, are less beneficial, since the discharge is slow.

Emetics have been directed from an indiscriminating empiricism, rather than sound argument or judicious induction. Yet so general has been the practice, that it would be rash to deny their utility in some cases. The first action of emetics inducing nausea is undoubtedly sedative; and during the whole of this introductory process, emetics are debilitating powers. We know not that on this account these remedies should be rejected, since relaxation, in many instances, is the *novi motus initium*. Yet reasoning of this kind is too fallacious to support their use. The action of vomiting, on the other hand, we have found useful, even, we suspect, in cases where there is a considerable congestion of blood in the head. If then we can produce this action, without any, or with a very slight preceding nausea, we may perhaps assist recovery without adding to the debility. This effect may be produced by the vitriolated zinc, assisted by mustard whey, or camomile tea, with the aqua ammoniæ; or, if we still want a more active power, by a few grains of vitriolated mercury. It is obvious, however, that this remedy is confined to that period of recovery, or that degree of asphyxia, where the patient has retained, or possesses the power of swallowing.

Cathartics are also confined to the period when the powers of life have been partly roused, or are not wholly lost; and they should be of the most active kinds; but in the form of clysters they are among the earliest and most useful aids. In a moment of emergency three or four ounces of common salt may be dissolved in a pint and half of water; three or four ounces of soap, or a large table spoonful of the soft black soap, in the same quantity. If more time be allowed, three drachms of the pulp of colocynth may be boiled in a pint and half of water to a pint, and a bunch of groundsel, a weed found in every garden, will add to its activity. Tobacco clysters are subject to the same objections as emetics, and indeed are chiefly used for the relaxation they produce. Those who adopt the idea of relaxation contributing to a new chain of associated motions may employ them; but, though the theory might be rendered plausible, experience will contradict it, and tobacco clysters, with nauseating emetics, should be banished from the resuscitating powers.

Of the *diaphoretics* warmth and friction are only admissible, and these, with a few exceptions, are to be very early employed, and steadily continued. Clysters contribute to resuscitation by their warmth; and warm air blown into the lungs is highly useful. Expanding the chest we found the chief agent in the function of RESPIRATION, q. v. and in every case of apparent death there is usually an accumulation of mucus in the lungs, which the warm air will contribute to dissolve. Air of a higher quality, if at hand, will be more useful. Carbonic acid gas, and, as we shall find, water in persons drowned, produce a constriction on the glottis, which may not be removed; and indeed the difficulty of inflating the lungs, except by the most experienced operator, is considerable. Bronchotomy has been there-

fore advised; and this operation may be easily performed by a small, flat trochar, which may be introduced safely through the rings of the trachea, after cutting the skin, to lessen the resistance, which would otherwise require so great a force as might carry it beyond the posterior part of the tube.

General stimulants of the most active diffusible kind are immediately necessary, and the good effects of friction are greatly increased by every rubefacient, as common salt, flour of mustard, aqua ammoniæ, tinctura cantharidum, diluted vitriolic acid, &c. When the patient can swallow, wine or spirits, as nearest at hand, and most congenial to the feelings of the attendants, are generally employed, and they will not be improper: the volatile alkali is, however, always more useful, since these, though diffusible, are indirect stimulants. If given, they should be followed by warm fluids, impregnated with some of the common aromatic herbs, and particularly by nourishing broths, warmed by condiments, as the cayen or common pepper. Among the stimulants electricity and galvanism have been usually reckoned; but as higher degrees of each destroy by exhausting irritability, even the lowest are suspicious; nor can either be safely admitted in the form of shocks. Drawing sparks by an electrical machine will undoubtedly stimulate with less danger; but in this view it is by no means a powerful agent, and we have not yet learned to manage galvanism in the same way.

We have hinted at exceptions to the general directions respecting warmth, and we alluded to the cases of apparent death from intoxication, deleterious gases, and perhaps sudden terror. In these *cold water*, dashed against the face and breast, is often quickly efficacious. The seamen immerse their comrades in the sea; and the poor victims of the carbonic acid gas, in the Grotto del Cani, are recovered by throwing them into a neighbouring lake.

RE'TE, (from the Hebrew term *reshta*). A congeries of vessels, or any contexture of fibres resembling a net.

RE'TE MALPI'GHI. See PULMONES.

RE'TE MIRA'BILE, *dictyoides*, a congeries of blood vessels in the brain.

RE'TE MUCO'SUM. *Corpus mucosum* and *reticulare*. The true skin on its whole surface is covered with two lamellæ; the inner, styled *rete mucosum*, the exterior, the cuticle. The former is the principal seat of colour in man; in Europeans transparent, in mulattoes brown, and in negroes black. One of its uses is, to keep the papillæ moist, which would otherwise be unfit for sensation; and its colour apparently depends on the blood, which is darker in the African than in the European: the bile and semen of the Africans are said to be darker than of the Europeans. Wherever the cuticle thickens, the rete mucosum becomes thicker in proportion; and in the fœtus of nine months the rete mucosum is yellower than the cuticle. In Africans it is more easily separated from the cuticle than in Europeans.

RETE'NTA, (from *retineo*, to keep back). See EX-GRETA.

RETICULA'RIS MEMBRA'NA, (from RETICULUM, q. v.). See CELLULOSA MEMBRANA.

RETI'CULUM, (a dim. of *rete*, a net). The second stomach of a ruminating animal. (See ABOMASUM.) It sometimes means the *omentum*.

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RETIFO'RMIS, *amphiblestroides*, an epithet applicable to any net like appearance, used to express the coat of the eye, encircling, according to Galen, the vitreous humour; in modern language, the *choroides* which forms the plexus choroides, or retiformis. See CHOROIDES, and PLEXUS CHOROIDES.

RE'TINA, *amphiblestroides*, the expansion of the optic nerve on the inner surface of the eye. Though it is supposed to be a production of the medullary substance of the optic nerve spread like a membrane, and from its resemblance to a net, called *retina*, its medullary substance cannot be clearly traced as continued on to form it. There is, however, little doubt of its being an expansion of the nerve, and the seat of vision. (See OCULUS.) Haller records a case in which it was changed to a solid substance.

RETRA'HENS AURI'CULUM, (from *retraho*, to draw back). See ABDUCTOR AURIS.

RETROVE'RSIO U'TERI, (from *retroverto*, to turn backward). See PROCIDENTIA UTERI. In this disorder the womb falls backward, between the rectum and vesica, with its fundus on the intestinum rectum, raising the os tincæ to the upper part, and drawing the meatus urinarius from its natural position. It sometimes happens that the fundus is thrown over the os pubis, and the meatus drawn backward; but this cannot be a *retroverted* uterus, and indeed seldom occurs but in women who have borne many children. The retroverted uterus often happens in the early stages of pregnancy, seldom later than the fourth month, occasioning first a difficulty, then by degrees a suppression of urine, soon after of the intestinal discharge. The urine is in this case to be drawn off by means of the catheter, and a stimulating clyster injected. The woman is then placed on her knees and elbows, with her head downwards, and by introducing one hand up the vagina, we endeavour to draw it forwards, assisted by two fingers in the anus. After repeated trials in different positions, we often succeed, and we must then be cautious to keep the woman in the most perfect state of rest till the uterus rises above the pubes. See London Medical Observations and Inquiries, vol. iv. p. 388, &c. Hunter's Tables; Denman on the Retroversion of the Uterus; White's Surgery, p. 163.

REUNIO, (from *reuniri*, to unite again). The union of parts separated by wounds or accidents. This is a very important function of the human system, and most happy provision of nature to prevent the consequences of injuries. When any part is wounded, an inflammation of the extreme vessels apparently takes place, and an effusion, as in common inflammations of membranous parts, follows. This effusion consists of the gluten, perhaps the fibrin, of the blood; and when the solution of continuity is in the bone, the divided arteries retain their function of separating the calcareous phosphat. The watery parts, in which the gluten and the fibrin were dissolved, are absorbed, and the solid substance constantly assumes a looser texture; in fact, becomes a cellular membrane, more or less dense in proportion to the quantity of fibrin; in other words, to the strength of the constitution. Sometimes arteries seem to shoot into the inorganic mass of a firmer texture, which seems to defend the divided extremities, and suggested to Mr. Hunter his opinion of the vitality of the blood; but this extension of the arterial system is limited,

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and not in a greater degree than can be accounted for by the convolutions of the extreme vessels. In reality, with the utmost attention we have been able to exert, we have never seen in the human system the reproduction of an organized part; nor in the cellular substance any thing but inorganic matter. See REPRODUCTIO.

Journal de Médecine, vol. xxxiii.; Domeier de Viribus Naturæ Medicatricibus, in Reparandis et Coadjuvandis Partibus Corporis Humani abscissis; Richter's Chirurgical Observations; Theden Neue Bemerk, i. 81.

REVULSIO, (*à revello, to draw back*). See DERIVATIO and CIRCULATIO.

See Goelicke de Revellentibus et Derivantibus Veterum; Halleri Opera Minora, i. 212; Gohlius de Motus Tonici Demonstratione per Revulsionem et Diversionem Veterum; Watt's Dissertation on the New Doctrine of Revulsion.

REX METALLO'RUM. See AURUM.

REX VEGETABIL'IUM. See CROCUS.

RE'XIS ANE'BION. See ANCHUSA.

RHA VE'RUM ANTIQUO'RUM, (*Ρα, from the river Rha, the Volga, upon whose banks it grew*). See RHAPONTICUM.

RHABA'RBARUM, RHUBARB; *rheum*; *lappathum Orientale*; et *Chinense*. The latter Greeks are said to have called it *barbaricum*, because it was brought from a country lying on the Sinus Barbaricus.

It is the *rheum palmatum* Lin. Sp. Pl. 531, a plant resembling the docks. The seeds of different species were at various times brought to us, particularly those of the *rheum compactum et undulatum*; but the seeds of the true kind, the *rheum palmatum*, we owe to the care of Dr. Mounsey; though different naturalists contend that rhubarb is sometimes procured from the other species just mentioned. The leaves are palmated, acuminate, and slightly hairy. The root, the only part in use, is brought from China, and from Siberia, by way of Russia. The latter is generally brought to us from the Levant, and has consequently obtained the name of Turkey Rhubarb. It is of a finer grain than the Chinese, is perforated in the middle, and less active as a purgative, though supposed to be a more powerful astringent. The English rhubarb is a still more active laxative; but inferior in every other respect. The root is always raised too soon, for it should not be less than twelve years old. All the foreign rhubarb is, however, brought from nearly the same place, a chain of high mountains near Sini in China, extending from the thirty-fifth to the fortieth degree of north latitude: the difference owing, it is said, only to the care in selecting and drying the roots. The Turkey rhubarb is in flatish round pieces, perforated in the middle, the Chinese (East Indian) in cylindrical ones.

The rhubarb which is in smell aromatic, in taste subacid and bitterish, of a lively colour when cut; firm, and solid, but not hard; easily powdered; when powdered of a bright yellow; and, when chewed, imparting to the saliva the same colour, without a mucilaginous taste in the mouth, is always preferable.

Rhubarb yields its purgative quality most freely to water; after digesting with water it becomes inactive; but after repeated digestions with alcohol, it retains a portion of its purgative virtue. The powder is most active, given in a dose from ℥ i. to ℥ i. An infusion in

water follows; but the spirituous tincture, though less purgative, retains more of the aroma and of the astringency of the root. The watery infusion, reduced to an extract, is less powerful; but the spirituous extract is nearly of the strength of the powder.

The tincture of rhubarb of the London college is directed to be prepared in the following manner: Take of rhubarb sliced, two ounces; smaller cardamom seeds, husked and bruised, half an ounce; saffron, two drachms; proof spirit of wine, two pints: digest for eight days, and strain.

The compound tincture of rhubarb is prepared by digesting two ounces of sliced rhubarb; ginger powdered, and saffron, of each two drachms; liquorice root bruised, half an ounce, in twelve ounces, by measure, of proof spirit for fourteen days, adding a pint of distilled water.

Wine of rhubarb.—Take of rhubarb sliced, two ounces and a half; smaller cardamom seeds, bruised and husked, half an ounce; saffron, two drachms; Spanish white wine, two pints; proof spirit of wine, eight ounces by measure: digest for ten days, and strain. Pharm. Lond. 1788.

These are intended for stomachics and tonics, as well as for purgatives. Spirituous liquors chiefly extract that part of the rhubarb in which the two first qualities reside. When given with the first intention, a spoonful or two is a dose; but when used as purgatives, from two to three ounces must be given.

The Edinburgh college directs an infusion in water, in the proportion of an ounce to a pint, adding to each pint an ounce of the spirituous cinnamon water.

Toasting rhubarb, supposed to add to its astringency, only diminishes its purgative power, so that a larger dose may be taken.

Rhubarb is a mild cathartic and astringent, strengthening the intestines, and leaving the belly costive. It is consequently preferred in diarrhoeas and dysenteries; but in the latter is often inconvenient from its astringent property. It is by no means peculiarly advantageous as a purgative, though for ages highly valued, since it acts with considerable irritation and much pain. It is chiefly useful in weak stomachs as a laxative, uniting an astringent power; and often as a cholagogue, since it seems to irritate in a peculiar manner the orifice of the biliary ducts.

It is often advantageously joined with neutral salts, and these appear to form an useful laxative in fevers, as the salts seem to act more quickly, and to assist the solution of the rhubarb. Soap, in obstructions of the bile, is not only a convenient addition, but the medicine appears to act with more success. In the diseases of children, it is apparently useful by dislodging the viscid mucus, and discharging the bile; and in this effect it is assisted by magnesia. Alkalis, absorbent earths, and neutral salts, change its yellow colour to a red, and seem to produce some chemical change in its nature; for with these additions it is more quick in its operation, and apparently more mild. Chemistry has not, however, taught in what this change consists; for rhubarb has ceased to be the fashionable medicine it once was. The extractive matter is the chief repository of its virtues; but the aroma apparently consists in the resin; and when rhubarb has lost the aroma, its purgative powers are greatly diminished. As the extractive matter is soluble both in water and alcohol, it probably

contains a portion of resin, which is dissolved in the aqueous fluid by the intermede of the gum. The vinous tincture, which we have described, is apparently its best preparation. Neumann obtained from 480 grains 180 of alcoholic, and afterwards 170 of watery extract. By inverting the process, the former amounted only to five grains, and the latter to 350. Rhubarb also contains some tannin, and about one sixth of oxalate of lime.

It has lately been applied to ulcers with some success, though the particular species of ulcers to which it was best adapted, or the principle on which it is supposed to act, have not been explained. It is sprinkled over the wound lightly, once, sometimes twice, a day; but in cases of great irritability, one part of powdered opium is added to eight of rhubarb. The compound powder of rhubarb, formed of equal parts of rhubarb and ipecacuanha, has been employed for the removal of warts.

See Lewis and Cullen's *Materia Medica*; Neumann's *Chemistry*.

RHABA'RBARUM A'LBUM. See MECHOACHANA ALBA.

RHABA'RBARUM DIOSCO'RIDIS. See RHAPONTICUM.

RHABA'RBARUM MONACHO'RUM. See LAPATHUM HOR-TENSE.

RHABA'RBARUM SIBERICUM, *rheum undulatum* Lin. Sp. Pl. 531. See RHABARBARUM.

RHABDO'IDES, (from *ῥαβδος*, a straight twig, and *ειδος*, form). See SAGITTALIS SUTURA.

RHACHIS. See SPINA.

RHACHISA'GRA, from *ῥαχίς*, and *αἶμα*, pain). See ARTHRITIS.

RHACHIÆ'T, or RHACHITÆ, (from *ῥαχίς*). The muscles belonging to the spine of the back.

RHACO'SIS, (from *ῥακος*, a rag,) *detritio*. A ragged excoriation of the relaxed scrotum.

RHA'GADES, (from *ῥηγνυμι*, to break off). CHAPS, CLEFTS, or FISSURES in the SKIN; are usually caused by a want of moisture, either from a defect of perspiration, or from an unusual dryness of the air. They are seated about the anus and various parts of the pudendum muliebre, the corners of the mouth, nostrils, eye lids, nipples, &c. From these chaps issues a thin, sharp ichor, sometimes venereal, or the production of other acrimony; at times they are very painful. If newly contracted, they are easily removed; but if their lips are deep, callous, and inflamed, the difficulty is considerable. Emollient and sedative applications are the most useful; but the hard, callous lips must be scarified. See a Treatise on the Venereal Disease, by N. D. Falk, M. D. edit. 2. 1774.

Different from the rhagades, in appearance, are the chaps in the palms of the hands and soles of the feet; proceeding often from syphilitic virus, but more frequently either from too great dryness, or some occupations which destroy the organization of the cuticle and cutis, as dyeing, brass work, soldering, &c.

RHA'MNUS, (from *ῥαίω*, to destroy, because of its thorns). *Spina cervina, solutiva, purgatrix, infectoria, cervi*; *hippophæes*. BUCKTHORN and PURGING THORN, *rhamnus catharticus* Lin. Sp. Pl. 279, is a prickly bush, or a low tree, common in hedges, having pointed leaves; producing small green flowers in June, and in the beginning of October black berries, which contain a dark green juice, with four seeds in each.

It is usual to find these berries mixed, with the berries of the black elder, and of the dog berry tree; but the juice of the buckthorn berries is green; and the buckthorn berry hath four seeds. These berries have a faint unpleasant smell, a bitterish, acrid, nauseous taste; operate briskly by stool, and have frequently been employed as hydragogues. They occasion dryness in the mouth and throat, with thirst, and pain in the bowels, unless warm liquor is frequently drank during the operation. Twenty of the fresh berries; forty or sixty in decoction; a drachm or a drachm and a half of the dried berries: an ounce of the expressed juice, or half an ounce of the rob, or extract, are the usual doses: but the juice made into a syrup is generally preferred by physicians, though it is rarely prescribed alone. If the berries are not pressed, the juice is more pleasant, and also more active as a purgative. The inner bark of the tree is said to be a strong purgative, and to occasion vomiting.

The London College order the syrup of buckthorn to be made in the following manner: take of the juice of the berries of buckthorn, ripe, and fresh gathered, one gallon; ginger bruised, one ounce; pimento in powder, one ounce and a half; sugar, seven pounds. Strain the juice after it has stood some days to subside; and in a pint of it macerate the ginger and pimento for four hours, and strain. Boil the remaining juice to three pints; add that part in which the ginger and pimento has been macerated, and make the whole with sugar into syrup. (Pharm. Lond. 1788.) From one to two ounces are given for a dose, but it is rarely used, on account of its nauseous taste, and sometimes its violent operation. When the berries, however, are not pressed, its taste is pleasing. See Cullen's and Lewis's *Materia Medica*; Neumann's *Chemistry*.

A name also for the *paliurus, hippophæes, alnus, nigra*, and *frangula*.

RHA'MNUS ZI'ZIPHUS. See JUJUBA.

RHAPO'NTICUM, (the Rha of PONTUS). RHAPONTIC, *rheum*; *rheum ponticum*; *rha verum antiquorum, rheum Dioscoridis; rhapsonticum Alpini; rhabarbarum Dioscoridis*; ENGLISH RHUBARB; *rheum raponticum* Lin. Sp. Pl. 531. Leaves smooth and roundish, pedicels somewhat channelled: grows wild on the mountains of Thrace, whence Alpinus brought it into Europe about the year 1610; and it bears the hardest winters in our climate. The roots are often mixed with those of the true rhubarb, but are detected by their mucilaginous taste when chewed, and not tingeing the saliva of the bright yellow of the true rhubarb. The rhapsontic when cut through appears regularly marbled in a radiated manner; is dusky on its surface, and of a loose spongy texture; more astringent than the *rheum palmatum*, and less purgative; requiring for the latter purpose two or three drachms. See Raii *Historia*; Tournefort's *Materia Medica*.

RHAPO'NTICUM VULGA'RE, *rhapsonticum folio heleni incano, centaureum majus, centaureum magnum*. GREAT CENTAURY, COMMON RHAPONTIC; *centaurea rhapsontica* Lin. Sp. Pl. 1294, is a large plant with leaves composed of oblong serrated segments set in pairs on a middle rib, edged in the intermediate spaces with a serrated margin; the stalk dividēs towards the upper part into several branches, which bear on their tops, round, soft, scaly heads, from which arise bluish flosculi, followed

by down, inclosing the seeds. It is perennial, a native of the southern parts of Europe, and raised in our gardens. The root is of a dark black colour on the outside, internally reddish, yielding, when fresh, a juice of a deep red; with a slight, not disagreeable, smell, and in taste viscid, with sweetness, roughness, and some degree of acrimony. It is considered as an aperient and corroborant, and supposed to be particularly useful in diarrhœas; but very much inferior to the true rhapontic. See Raii Historia; Tournefort's *Materia Medica*.

RHATANIA, a native of South America, not yet introduced into any botanical system. This root is about the size of a crow quill, and the cortical part is very thick, the ligneous very fibrous. When recent it is succulent, and full of extractive matter, which, when pressed out and evaporated, furnishes what has been styled the *American extract of bark*, and an astringent, coloured, ingredient for the red wines of Portugal. The extract mixes readily with water; and the powder resembles that of the pale bark. It precipitates a greater proportion of tannin than the Peruvian bark, is more pleasing, it is said, to the taste, and sits easier in the stomach. Half a drachm of the extract makes a turbid solution in eight ounces of water, said to equal in virtue the same quantity of a strong decoction of the Peruvian bark.

RHE'NCHOS, (from *ῥῆγχα*, to snore). *Rhochmos*; *ronchus*; *stertor*, SNORING; a sound supposed to be made betwixt the palate and nostrils by persons asleep. Independent of sleep, this noisy respiration is a symptom of apoplexy, in which the mucus from the fauces is forced through the nostrils. Slevoght attributes it in some instances to the premature healing of the parotid ulcers of children. See Halleri *Dissertationes*, ii. 43.; and Alberti de *Rhoncho Dormientium*.

Cerchon or *cerchnos* is that rattling noise made in respiration, from the larynx, or the aspera arteria, when the air passes through an accumulated fluid, in cases of asthma, or the last struggles of exhausted nature.

RHE'ON, and **RHE'UM**. See **RHAPONTICUM RHABBARUM**.

RHENOPHO'NIA, (from *ῥηνόφωνια*, vox peregrina). See **PARAPHONIA**.

RHEU'MA, (from *ῥεω*, to flow). A defluxion of fluids, in the language of former pathologists, on any part. More properly an increased, and often an inflammatory action of the vessels of any organ, generally confined to inflammatory action of the mucous glands, attended with increased discharge and an altered state of their excreted fluids.

RHEU'MA, CATARRHA'LE, and **EPIDE'MICUM**. See **CATARRHUS** and **INFLUENZA**.

RHEUMA'TICA, (from *ῥευμα*). The **RHEUMATIC FEVER**.

RHEUMATI'SMUS, (from *ῥευμα*). The **RHEUMATISM**, a painful disease, affecting the muscles in different parts of the body; sometimes it is supposed the viscera also. It is with or without a fever; called the *acute*, or *chronic rheumatism*. Dr. Cullen places it among the *phlegmasiæ*, defining it a disease arising from an external, and for the most part from a perceptible cause, attended with fever, pain about the joints, fol-

lowing the course of the muscles, affecting the knees and larger joints, rather than those of the hands and feet, increased by external heat. The acute rheumatism is called *myositis*, when the pain is seated chiefly in the muscles; *lumbago*, *lordosis*, *nephralgia rheumatica*, and *tabes dorsalis*, when in the loins; *ischias*, when in the muscles of the hips; *pleurodine rheumatica*, and *pleuritis spuria*, when in the muscles of the thorax.

The chronic rheumatism is considered by Dr. Cullen as generally the mode in which the acute rheumatism terminates, and he styles it *arthrodinia*, defining it, after the rheumatism, some violent exertion, or subluxation, pains of the joints or muscles, much increased, particularly on motion, more or less erratic, and alleviated by the heat of the bed, or other external heat. The joints are weak, rigid, very readily or spontaneously growing cold, not attended by any febrile affection, and for the most part without any swelling.

Each variety may be either acute or chronic; yet the latter, though often a sequela of the acute, is in many instances truly a distinct disease; and, as already observed, nearly allied to palsy. In the progress from one to the other state, as in ophthalmia, there are many shades of difference, so that we can scarcely say where the one begins or the other ends. Yet when each is fully established, there can be no doubt of ranking them as distinct species. By assuming articular pain as a genus, independent of fever, we have been able to connect these diseases, without losing sight of the operations of nature, or the rules of classification.

Persons of any age may be afflicted with the acute rheumatism; but it is usually the disease of the young, the strong, and active: while the chronic rheumatism occasionally affects those more advanced in life, and in these it is often peculiarly distressing and obstinate.

The acute or inflammatory rheumatism is attended with fever, pains in the limbs, generally felt in the joints, preventing their motion, and often accompanied with heat, redness, and swelling of the part. When the redness is fixed, and a swelling comes on, the fever and pain abate, though they sometimes continue many days, generally, though not universally, increasing in the evening.

In many instances the fever first appears, and is highly inflammatory, assuming only its peculiar local appearance after some days. The pain is often felt in the muscles, but it shoots out with the greatest violence in the joints; and as it is there felt most severely, the attention of the patient is chiefly directed to them. In many instances it is apparently as much a disease of the joints as the gout itself.

After some days, the pain commonly quits one part and attacks another; but the knees, hips, loins, nape of the neck, shoulders, shoulder blades, arms, and elbows, are its usual seats; sometimes the feet, ankles, and wrists, are similarly affected, but seldom the fingers or toes. The tenderness of the parts diseased is extreme. The violence of the acute rheumatism sometimes continues about fourteen days, but generally longer, and unexpectedly recurs, when it has appeared to vanish. A weakness and swelling will often remain for a long time.

Rheumatism is generally attended with copious

sweats; but these contribute to support the opinion we endeavoured to establish in the articles DIAPHORETICA and FEBRIS, q. v. that warm fluid sweats, while the skin underneath feels tense and harsh, are not salutary. They certainly are not so in the disease before us, and until the sweat is less clammy, attended with less heat, and a free soft pulse, no relief follows. The urine often deposits a sediment of a dark red colour through the whole course of the disease; but this seems to arise in part from its paucity, since the discharge is compensated by the sweating, and in part from the febrile spasm not being communicated to the renal vessels. Yet we recollect one instance, if we mistake not, in Leigh's History of Lancashire, where it is said that the urine did not contain its usual saline contents. Sometimes a red sediment is supposed to be critical; but in such cases there is reason to apprehend a mixture of gout. The blood is always sily even in constitutions otherwise debilitated; and in the most asthenic states of chronic rheumatism. Miliary eruptions are said to be critical; but it is observed by Dr. Rutherford, that no sweating proceeds from the pained parts, except when the disease yields; and when the perspirable matter has been retained, it often flows with such rapidity as to be stopped under the skin, and to produce papular eruptions. This seems to be the cause of miliaria, when it appears critical.

The distinction of rheumatism is often peculiarly difficult. With gout it is sometimes mixed; but more often the mixture of the two diseases is supposed to exist by those to whom accurate discrimination is an inconvenient task. We have already noticed the distinguishing symptoms under ARTHRITIS, q. v.; and we would only correct the diagnosis in one respect, viz. the remitting form of the disease. Each remits; the gout, however, irregularly; the rheumatism follows the common febrile periods of remission and exacerbation.

We have observed, that rheumatic pains in the chest resemble peripneumony, or pleurisy, and in the abdomen, enteritis. In each case the soreness to the touch, the pain felt at the origin or insertion of the muscles, while the more appropriate symptoms of the real inflammation of the part are absent, will sufficiently distinguish the nature of the disease. The lumbago sometimes resembles nephritis, or a stone in the kidneys or ureters; but may be easily distinguished. A stone in the kidneys is attended with some irregularities in the secretion of urine, generally with sickness in the stomach; in the ureters, by sickness, a pain shooting down the thigh, with a numbness of the thigh, or a retraction of either testicle. In each case also there is no difficulty of bending the body, which is a constant symptom of lumbago. The sciatica cannot be easily confounded with any disease.

The seat of rheumatism has varied according to the fancy of every author; for reason and observation have seldom lent their aid. Dr. Motherby is decidedly of opinion that its seat is the cellular substance, and its cause acrimony, without inquiring whether the cellular substance is sensible, or what is the source of the acrimony when the disease arises from cold. Dr. Smyth, in the Medical Communications, fixes it in the muscular fibre; but of the nature of the fibre, independent of its vessels and nerves, we know nothing. Some au-

thors suppose it seated in the ligaments, others in the cartilages; but in general it is supposed to arise from acrimony, either from the air, from dysentery, from pituita, suppressed gout, repelled eruptions, from lues, or scurvy. These opinions have been apparently suggested from rheumatism succeeding such diseases in particular cases; but neither system will bear the test of examination as a general cause.

Rheumatism is undoubtedly an inflammatory disease, and its seminum at least is inflammatory diathesis, which consists, as we have said, in increased tone of the arterial system. This is proved by the usual victims of the disease, who are the robust and strong; by the symptoms, those of inflammatory fever; and by the remedies, such as oppose inflammatory diathesis. Even in the weak and emaciated the pulse is harsh, the blood coriaceous, and bleeding often indispensable. It is an inflammatory affection also of the muscles; for motion is painful, the muscles are sore to the touch, and we may assume as a position, at present granted, that muscular organs are only affected. Though the muscles are the seat of the disease, the pain, we have said, is chiefly felt in the joints; and this Dr. Cullen explains by the general principle, that when membranes are affected, the pain is chiefly perceived at their extremities, as the irritation of a vomica in the lungs is felt at the epiglottis, and of a stone in the bladder at the extremity of the urethra. This explanation, however, we are unwilling to admit, as the present disease seems to have no analogy with membranous inflammation. In general, the more closely compacted organs, though insensible in a sound state, are more acutely painful when diseased; and whatever becomes of the question respecting the continuation of the muscular fibres in the tendons, yet both receive arteries from the same trunk, and both must suffer when these arteries are diseased; the tendons, in consequence of their structure, most severely; and thus the pain is chiefly felt about the joint, where the arteries with greater difficulty admit of distention.

It is not easy to say in what consists the difference between rheumatic and membranous inflammation; in other words, between inflammation of the arteries themselves and the membranes on which they are dispersed. That there is a difference is evident; for rheumatism seldom terminates in effusion, scarcely ever in suppuration. The joints indeed sometimes continue puffed, and the limb itself occasionally swollen. We recollect, too, that Morgagni records a case in which rheumatism terminated in suppuration (Ep. lvii. art. 20), and a similar one occurs in the second decad of the Medical Commentaries (iv. 198). We may reply, however, by the old logical axiom, *exceptio probat regulam*; so few are the cases of suppuration, that this is not the natural termination. It is not improbable that, while topical debility occasions the obstruction in the common inflammation, too great action may be its cause in rheumatism; so that while the former is relieved only by effusion, the latter is carried off by the powers of the vessels themselves. This idea is in some degree supported, when we reflect that rheumatism, of all the internal inflammations, is best relieved by stimulants after the phlogistic diathesis has been removed by bleeding.

Rheumatism, therefore, appears in every view of the

subject to consist in inflammatory action of the arterial system, and probably inflammation of the coats of the arteries themselves. This idea will meet every circumstance of its appearance, and connect the various remedies of the most experienced practical physicians. We certainly see rheumatism distinctly only in the voluntary muscles; but if these opinions have any weight, there is no reason why the internal organs should not suffer in the same way. Authors have spoke of rheumatism having affected the heart, the diaphragm, the liver, the intestines (Eyerel), and other organs, when transferred from the limbs. In cases of metastasis only the nature of the inflammation can be exactly perceived; for if these parts are originally attacked, the symptoms will not differ from common inflammation.

The remote causes are cold applied when the body is heated, or indeed any cause of the true inflammatory fever may be occasionally attended with rheumatism. It has been sometimes described as epidemic, and it may appear so in weather unusually cold and uncertain; but we suspect that these epidemic rheumatisms are truly synochi, which are often at first attended with irregular wandering pains in the limbs. The remark of Plencis is of more importance, that rheumatisms are influenced by the nature of the reigning epidemic. *Acta et Observata Medica*, 94.

Rheumatism is seldom fatal; but it is often a disease of peculiar obstinacy, and, in a more or less acute form, sometimes continues for many months. In these cases the phlogistic diathesis of the vessels continues, while the strength in general decays, and prevents the most salutary discharge by bleeding. The pain continues with a violence somewhat remitted, but with severe occasional exacerbations; the limb wastes; the strength, and the colour of the countenance, decline; the face sinks, and the patient often continues in this exhausted state for many months, sometimes for years. But to the disease in this chronic form we shall return, and now only add, that rheumatic patients are subject to relapses; and, as in other inflammations, the vessels, by repeated increased action, become more irritable, and more subject to spasmodic contraction.

The experience of many ages has established the utility of BLEEDING in acute rheumatism; and blood must be drawn from a large orifice, in a considerable quantity, frequently repeated. The severity of this evacuation, described under the article PLEURITIS, q. v. is not too great for the present complaint, if the patient be robust and strong. The usual guide is a more soft and slow pulse, a diminished heat, and a moist skin. We are always cautioned, however, that if we carry this evacuation too far, we may lessen the strength, and induce the disease in its more chronic form. There is probably a foundation for this caution, since, if we diminish the vis vitæ so far as to prevent the evacuation, next in point of advantage, that by the skin, we have no means of taking off the phlogistic diathesis but a repetition of the bleeding, which the strength will not bear. In general, then, when the hardness of the pulse remits, the bleedings should be stopped, and we must apply to other means of perfecting the cure.

Topical bleedings would appear highly advantageous; but we gain little from them while there is any remaining fever. The disease continues, and the affection of the limb is only a symptom; for by bleeding topi-

cally in an early stage of rheumatism we often occasion a metastasis to some other part. Another reason which seems to render topical bleeding less advantageous is, that the pain is often felt in the joint when the disease is in the whole muscle, for the reasons already assigned, so that the remedy is only in appearance topical.

Though *cathartics* generally diminish phlogistic diathesis considerably, yet they do not greatly relieve rheumatic pains; and the reason will be obvious, if our idea be correct, that rheumatism is an inflammation of the arterial system. Purging is also highly inconvenient, from the trouble and pain of moving the body; yet, on the whole, we have thought that interposing occasionally active laxatives, which contain a considerable proportion of calomel, have been useful in shortening the disease, though they have not greatly mitigated the pain. The neutral salts have been sometimes preferred; but they have not appeared to us so effectual.

The chief remedy are the *diaphoretics*, and the advantages of this evacuation must be obvious on the principles laid down. When the heat and fever are considerable, the more cooling kinds, as nitre, saline draughts, with camphor, are preferable. But the crude sal ammoniac, with the acetated ammonia, may be soon employed, and with each class the antimonials may be advantageously combined. The chief remedy we owe, however, to the sagacity or the lucky combination of Dr. Dover, his sudorific sweating powder, viz. the pulvis ipecacuanhæ compositus of the last London Pharmacopœia. The principle of this combination we have already explained (see DIAPHORETICA); and scarcely inferior to this is the sweating powder of Ward, which contains the white hellebore instead of the ipecacuanha. We have sometimes thought it superior. These remedies relax the skin so completely that we can often venture to add some stimulant, as the acetated ammonia; sometimes, as recommended by Dr. Hamilton and Dr. Riedly, calomel; and, in general, infusions of our own aromatic vegetables. It is particularly remarked by Dr. Cullen, though unaccountably overlooked by some late practitioners of eminence, that the sweating, when once begun, should not be intermitted, and when it has relieved, should be suffered very gradually to decline. The warm bath is an inconvenient remedy, as it requires painful muscular exertion: it would be otherwise more frequently used in this complaint, as with moderate heat it is well adapted to its relief. The vapour bath, from its superior temperature, is better adapted to the chronic form.

The other diaphoretics of a gentler power, which require a longer continuance, are chiefly adapted to the disease, when its acute form is in some degree conquered. Of this kind are the mezereon, the seneka, the bardana, and guaiacum. In the period of the disease just mentioned each is sometimes useful, and in general some ammoniacal salt, or the ammonia itself, may be combined with the decoctions of either. The volatile tincture of guaiacum, if employed too early, has been sometimes injurious.

Narcotics have been often used to relieve pain; but opium alone, unless directed to the skin, by relaxing sudorifics, seems injurious. This circumstance has been the chief support of the opinion, that opium stimulates; but in this disease a very essential discharge is the perspiration, and if this be not produced

every medicine appears injurious. Other narcotics which have been employed we may mention in this place, though they have chiefly been employed in chronic rheumatism, viz. the rhododendron, which seems to combine a sudorific power; hyoscyamus, dulcamara, hemlock, and aconite. Each seems occasionally to lessen pain and procure sleep.

We have not considered *mercurials* under the head of diaphoretics; because it would appear as if we wished to bend every thing to a system. We, therefore, have preferred selecting the facts. The practice of Dr. Hamilton, who found calomel with opium useful, (Edinburgh Medical Commentaries,) we have already mentioned; and by different authors, who are, however, chiefly army physicians, the sublimate mercurial friction, and calomel, have been recommended. We suspect, however, that these medicines have been chiefly useful when the inflammatory stage has, at least in part, disappeared. We have remarked, that we thought the purgatives which contained calomel were more effectual than others; but dare not say that any part of the relief was owing to the mercurial.

The remissions, and in some cases the intermissions, of this disease, have suggested the use of the *bark*; and this medicine has been highly commended. It has not been our fortune to have seen it beneficial; but we cannot deny our confidence to the assertions of practitioners of the highest respectability. The utility of *arnica*, recommended in the first volume of the Berlin Transactions, may rest on a similar principle.

Of the *external remedies*, we have already mentioned topical bleedings, and the next in point of utility are *blisters*. These are of little service while the general inflammatory state continues; and we have found, that to render them useful in acute rheumatism, bleeding, in a quantity proportioned to the strength, should be premised. We had adopted the practice of bleeding previous to the fresh application of each blister, for the blisters must be frequently repeated, long before we entertained the ideas now suggested respecting the nature of the disease. All external applications, if employed too early, remove the pain from the part then affected, but drive it to another limb.

The tartar emetic ointment is by some practitioners employed as an external stimulus, since it is supposed to produce a more permanent effect. This may undoubtedly be the case; but the little foul ulcers which it produces soon impede its use, and other stimulants cannot afterwards be employed. Baldinger has recommended ginger, over which alcohol has been burnt, and others the spirit of turpentine, joined with ammonia. The actual cautery has been applied, and the burning with moxa is no uncommon remedy in the east. Blisters, however, and topical bleeding, are almost the only external remedies employed in the acute stage.

RHEUMATISMUS CHRONICUS, arthrodynia. The gradual change from the acute to the chronic state of this disease admits not of any accurate limits, except, perhaps, the state of fever. Yet in rheumatisms strictly chronic there are evening exacerbations, which seem to destroy this distinction. In general, however, the fever is slight and almost imperceptible; the limb cold, almost immovable, dry, or covered only with a cold clammy sweat; the pain acute, especially on

changes of weather, or when heat is withdrawn; and the whole system highly debilitated. This form of the disease often continues for a long time, with little variation; nor does it sometimes terminate, except with life. The lumbago and the sciatica are frequently of this kind, and the knee is very often the part affected.

There can be little doubt of the state of the parts in this form of the disease. It is evident that the circulation is carried on imperfectly, from a debilitated state of the vessels, which occasions the frequent recurrence of spasm, especially when external heat, or internal stimuli, do not contribute to assist their action. As this atony affects the arteries exclusively, it must evidently arise from the previous inflammation; but if this inflammation was not of a peculiar kind, we should find a similar consequence after other phlegmasiæ. It is highly probable, therefore, that the disease is in the coats of the arteries themselves.

Conformably to this idea practitioners have found every internal and external stimulus of the highest service. Cantharides, the mineral acids, camphor, ammonia, the essential oils, particularly those of turpentine, cajeput and amber, flour of mustard, and the juice of horseradish, have been used singly, or combined in various forms, often with opium. Electricity and galvanism have had their advocates, though they have of late been seldom employed. In a more solid form the cummin seeds, the mustard, and ammonia, have been made into a cataplasm, with black soap, or into a plaster with euphorbium. All these are useful stimulants, and often successful.

Warm bathing, and warm pumping, are, however, remedies of greater utility; and the waters of Bath, combining probably a stimulant power, are often peculiarly useful. The application of sea salt or brine is often serviceable, and the tepid baths of our sea coasts have in many instances cured, when employed from about 86° to 92°. When the system is not greatly debilitated, even sea bathing is used with success; but the reaction in the part affected must be generally assisted by friction, and the most stimulating liniments. Issues and setons near the part have been proposed, but have seldom been found useful, as they are chiefly adapted to inflammation deeply seated.

The internal medicines are the more active stimulants, and those tonics which determine to the surface. The internal stimulants which have been most successful are the arum, the seneka, the mezereon, the guaiacum, and the turpentine. The arum, in the form of a conserve, with an equal part of sugar, is often highly useful. The seneka and mezereon are exhibited in decoction, often with mercurials. The guaiacum in this form is inert, and the gum is employed with more success. The greater number of medicines has yielded, however, to Dr. Dawson's remedy, the ammoniated tincture of guaiacum, given in a dose of two or three drachms, sometimes extending to half an ounce: it is much more effectual when combined with opium, or a small portion of Dover's powder. We have tried various combinations of ammonia, gum guaiacum, and opium, in a solid form, but by no means with equal success.

A very general and active stimulus is the ethereal oil of turpentine; and, according to the method recommended by Cheyne, if incorporated by melting in a

gentle heat, with an equal part of honey, a much larger dose can be taken without offending the stomach. It is in every case of chronic rheumatism a valuable medicine.

Another stimulus of considerable utility is the oleum jecoris asselli, the oil of the liver of the cod fish, recommended by Dr. Percival. It is in reality the *train oil* of the shops, and we have found it to relieve when other medicines have failed. It must be long continued, and fortunately the taste soon becomes familiar. From the sensible effects of the liver of the skate (see RACHITIS), we should expect some benefit from it in chronic rheumatism.

The tonics which determine to the surface are the metallic, of which the principal is mercury; a medicine more successful when combined with antimony. Calomel every night, in the dose of a grain, was, if we recollect rightly, recommended by Dr. Fothergill. Other authors have employed the muriated mercury; but the Plummer's pill, in its original form, assisted by the decoction of mezereon, sometimes by the more complicated formula, the Lisbon diet drink, we have found more successful.

What share in the success the sarsaparilla may have is uncertain. One violent case of chronic rheumatism is said to have been cured by the sarsa in substance, taken in the quantity of a scruple two or three times a day. The relief, however, was found at the end of a summer, after two winters of peculiar mildness; a change of climate is a well known remedy for this disease. The seasons in this case meliorated our northern region.

The only other metal which has been employed is arsenic. From the few trials made by Dr. Bardsley it seemed to be highly useful. We have not been equally successful; but, in the infancy of its use, it is probable that the cases to which it is adapted, have not been sufficiently distinguished.

See Cullen's First Lines; Smith in the Medical Communications, vol. ii.; Essay on the Nature and Cause of Rheumatism, 8vo. London, 1776; Heister de Rheumatismo; Lancisi de Nativis et Adventitiis Cœli Romani Qualitatibus, ad Calcem; Fordyce's Fragments; Demiani Adversaria; Ploucquet de Myositide et Neuritide; Sydenhami Opera, pp. 344 and 732, &c.; Saalman Descriptio Rheumatismi Acuti; Theden N. Bemerkungen, vol. i. p. 130; Stoll Ratio Medendi, p. 3 and 5; Bardsley's Reports.

RHICNO'SIS, (from *ῥιχνος*, *rugged*). LEANNESS and WRINKLES.

RHI'GOS, (from *ῥίγω*, *to shake with cold*). RIGOR; the slight convulsive tremors, most commonly following the cold fit of fevers. Dr. Cullen considers them as the first marks of reaction; but they appeared to us (see FEBRIS) rather as the effects of debility. They are not confined to fever; but sometimes arise from any disgusting object, and in some persons from the introduction of the catheter into the urethra. Bellini seems to confine it to diseases of the head, and Bonetus thinks it peculiar to inflammations of the uterus, pleura, or liver. In general, when heat does not follow, it seems a fatal symptom, and in the worst fevers the cold is often fatal without producing rigor. See Boneti Sepulchretum, lib. i. sect. 14. obs. 16. Hippocrates *περί νευρων*; Ga-

lenus de Tremore, &c.; Opera tom. iii.; Baglivi Praxis Medica, i. 9.

Rigor sometimes signifies an inflexible hardness and tension of the muscles; but the more proper appellation is *rigiditas*. See HORROR.

RHO'CAS. See EPIPHORA.

RHO'CHMOS. See RHENCHOS.

RHODI'NA RADIX, and RHO'DIUM LIGNUM, (from *ῥόδον*, *a rose*). See ASPALATHUS.

RHODODE'NDRON, vel RHODODA'PHNE, (from *ῥόδον*, *a rose*, and *δένδρον*, *a tree*; or *δαφνη*, *the laurel*), for its flowers resemble the rose, and its leaves the bay. See NERION.

RHODODENDRON CHRYSANTHEMUM. YELLOW FLOWERED RHODODENDRON, DWARF ROSE BAY, *rhododendron chrysanthum* Willdenow, vol. ii. p. 605, has been recommended in chronic rheumatisms, painful affections of the joints and bones, particularly venereal pains: it is now very generally employed in various parts of Europe, though seldom in Britain. The plant is a native of Siberia, growing in mountainous situations, and flowering in June and July. Dr. Koelpin, of Alten-stetin, used an infusion of it in water, kept twenty-four hours in nearly a boiling heat, in the proportion of two drachms of the leaves and tops of the plants to ten ounces of water. It was sometimes made of double this strength, and the dose was two ounces, to be repeated after a few hours, and continued as required. Dr. Home found it an astringent, and powerfully sedative; he directs it in infusion, from half a drachm to three drachms for a dose. When taken internally it produces, according to Koelpin, a feverish heat, intoxication, sometimes a stupor, with a singular pricking sensation in the limbs, or other parts of the body: the intoxication leaves neither headach nor nausea. During the heat, the patient complains of intense thirst; and drinking cold water is followed by a violent but salutary vomiting, especially in complaints of the bowels; and a copious sweat on the parts affected with rheumatism or gout. In some instances the pains grow worse at first; but this increase of disease is soon followed by a remarkable relief: the pulse is rendered weaker and slower, and in venereal rheumatism its effects are very considerable. The infusion at first often produces heat and constriction in the fauces; a proof of some little acrimony: but this effect speedily disappears. In robust habits it operates quickly, and with a degree of violence; in the infirm and feeble, more slowly, so that the dose should not be hastily increased. It sometimes proves fatal, and Morgagni has recorded the appearances on dissection of a woman who was killed by it, Ep. lix. § 12 and 14, though probably this plant was the *nerium oleander* Lin. Sp. Pl. 305, sometimes called *rhododendron*. Another species of this genus, the *r. ferrugineum* Lin. Sp. Pl. 562, has similar powers.

RHOMBOIDES MU'SCULUS, (from *ῥομβος*, *a square figure*, and *ἰδως*, *form*), rises from the ligamentum colli, the spinal processes of the third, fourth, fifth, sixth, and seventh cervical vertebræ; and the first, second, third, and fourth dorsal. It is also attached below to some of the ribs, runs beneath the latissimus dorsi, and is inserted into the whole length of the basis of the scapula to bring it upwards and backwards. The rhomboides is sometimes divided into the major

and minor: the minor is then above, and the major below.

RHOPA'LOSIS, (from ῥοπαλον, a club, probably from the increased size of each hair). See **PLICA POLONICA**.

RHUS, (from ῥεω, to flow, because it checks fluxes,) *byrsodepsicon*, *rhys coriaria* Lin. Sp. Pl. 379, COMMON SUMACH, is a shrub, with oval, pointed, serrated leaves, and clusters of yellowish or greenish flowers, each of which is followed by a small, red, flattish berry, including a roundish reddish brown seed. It is a native of the south of Europe, and cultivated in our gardens. The berries have an acid, austere taste, are cooling and restringent. The leaves and young twigs are powerfully astringent; but it is chiefly used by dyers and tanners, though recommended by foreign authors in hæmorrhages and mucous discharges. The *r. typhinum* is similar in its virtues. See Tournefort's *Materia Medica*; Neumann's *Chemical Works*.

RHUS SYLVESTRE. See **MYRTUS BRABANTICA**.

RHUS VERNIX, Lin. Sp. Pl. 380, is the poison wood tree, whose juices are so acrid as to blister the hands of those who gather them. Internally, in infusion or extract they seem less deleterious; as Fresnoi, a French physician, took twelve of the petioles (for the leaves are pinnated) in infusion, which greatly increased the urine and perspiration. He was from thence led to use this infusion in herpes and palsy, which, in his opinion, were cured by it. The leaves are in their greatest vigour in June, and thirty-two pounds of water, distilled from four pounds of the leaves, yielded a fluid somewhat odorous and highly pungent. Each pound of the leaves yields about half an ounce of extract, highly successful in our author's hands in the cure of pertussis. Half a grain dissolved in syrup was a sufficient dose.

RHY'AS or **RHŒ'AS**, (from ῥεω, to flow). The existence of this disease has been doubted; but Galen describes it as an affection of the eye, diametrically opposite to *encanthis*, consisting of a too great diminution of the lachrymal caruncle. Riverius allows the cause of it to be a consuming, exsiccating, or corrosive matter, succeeding or accompanying a fistula lachrymalis. Eyes thus affected are denominated by Ætius, ῥυαδης, *vel ῥυαδης οφθαλμος*, *Fæsius*.

RHYSSE'META, (from ῥυσσω, to wrinkle). A WRINKLED FACE.

RI'BES NI'GRUM, Lin. Sp. Pl. 291. BLACK CURRANTS seem to possess a slightly sedative power, and are used in sore throats. They are said also to be diuretic. The leaves of all the currants are narcotic, resembling peach leaves.

RI'BES RU'BRUM, (from raib, Arab, or rivah, Hebrew,) *grossularia non spinosa*, *ribes rubrum* Lin. Sp. Pl. 290. RED CURRANT. Currants in general have a cool, acidulous, sweet taste, agreeable both to the palate and the stomach; resembling the other subacid fruits in their medicinal qualities. They may be used with considerable advantage to allay thirst in febrile complaints; lessen the increased secretion of bile; to correct a putrid, or scorbutic state of fluids. Hoffman and Boerhaave had great confidence in the efficacy of these fruits in obstinate visceral obstructions. The white currant tree is merely a variety of the red; the fruit therefore possesses similar properties.

RI'CÆ, ῥίκος. A veil which covered the heads of

the Roman women during the time of sacrifice; hence *rica*, the kerchief. The great kerchief, called by the French *le grand couvre chef*, is used after trepanning. It is made of a square cloth, and, when dexterously applied, confines strictly the dressings. By observation and experience only can a dexterity in the application be obtained. *Couvre chef en triangle*, is a square cloth, folded in the form of a triangle: the middle of the longest side is applied to the forehead, the two ends tied behind the head, and the angle, which falls behind the head, secured to the confined ends of this kerchief. Its use, in general, is to fix the dressings on the face and head.

RICI'NI O'LEUM, (from *ricinus*, the spurge seed). See **CATAPUTIA**.

RICI'NUS, (quasi ῥις κυνος, a dog's nose, because they stick to dog's noses). The TICK or TYKE, a reptile which infests dogs. The name also of the spurge laurel, whose seeds resemble the tick.

RICI'NUS AMERICA'NUS MA'JOR. See **CATAPUTIA MINOR**.

RICI'NUS MI'NOR. See **CASSADA**.

RICINOI'DES, (from *ricinus*, and εἶδος, likeness). *Cataputia minor*. See **HELIOTROPIMUM TRICOCCUM**.

RI'GOR. See **RHIGOS**.

RIG'OR NERVO'SUS. See **TETANUS**.

RI'MA. A CHINK, applied in anatomy to any longitudinal aperture.

RIM'ULA. A diminutive of *rima*.

RINÆ'US, (from ῥις, the nose). See **NASALIS**.

RING-WORM. A species of herpes, or rather of lepra, in which the eruptions are annular.

RI'SAGON. See **CASSUMUNAR**.

RIST. See **CIST**.

RISUS, (à ridendo). LAUGHTER scarcely requires a definition. It is occasioned by short, imperfect, convulsive expirations after a full inspiration, with a contraction of the glottis, which produces a sound in men resembling those of o and a, and in women i and e. The lesser degree, a smile, which the verb chiefly imports, is unconnected with respiration, and consists only in the contraction of the buccinator and zygomatic muscles, while the cheeks are slightly raised, and the eyes in some measure closed. The former is the expression of boisterous mirth, in minds untutored and unregulated; the latter of complacency and pleasure.

It is singular that laughter generally proceeds from a mental cause, in most instances without any corporeal influence, and sometimes from an irritation of the nerves, wholly independent of mirth. Of the former kind is the loud laugh in hysteria; and the convulsive laugh in hysteric paroxysms, sometimes induced by the most distressing events: of the second, tickling is the cause, which in excess has been used as a kind of torture to induce confession. The causes of laughter are obscure. Pleasure produces cheerfulness and complacency; unexpected happiness more frequently draws tears; and the loud repeated laugh of the bacchanal, or of the spectator of the comic humour of Munden, if analyzed, will be found to arise from a source very different from pleasure. One cause of laughter is a combination of incongruous images. Chrysippus is said to have died from laughing at the idea of an ass being invited to a banquet. A similar fate, according to Valerius Maximus, attended Philemon; and we are told of a pope who died in the same way, from seeing the

tiara placed on the head of a monkey. A question which has perplexed both moralists and metaphysicians is the cause of that laughter which ensues from seeing another person fall. It is often irresistible though considerable injury be apprehended. The maxim of Rochefoucault has been quoted on this occasion, that there is something in the misfortunes of our best friends which does not displease us; but we would, for the honour of humanity, rather refer it to a sudden agitation. We know a gentleman who, on such an accident to himself, and he has often fallen from his horse, is seized with violent laughter; and Binninger has remarked, that a fall on the sinciput is generally attended by this convulsive expiration. The conclusion, therefore, must be, that it is a tremulous action of the diaphragm, not necessarily connected with mirth, but rather with surprise. The well regulated mind, accustomed, *nil admirari*, is, therefore, seldom betrayed into it; and immoderate, frequent laughing is usually the effect of mental imbecility. Such was the decision of lord Chesterfield; and whatever ridicule may be thrown on his system of education, it must be admitted that no one was more intimately acquainted with all the intricacies of the human mind.

Laughter is peculiar to the human race. It has been observed in a child just born (*Ephemerides Naturæ Curiosorum*), and Schelhamner remarks of one of the wild boys found in woods, that he could laugh, but not speak. We have observed dogs and monkeys grin, when pleased, apparently from imitation. The more immediate causes of laughter, or rather the connection between it and surprise, or the titillation of distant nerves, is wholly inexplicable.

Laughter is said to be useful from the effect of the succussions in expediting the passage of the blood through the system of the vena portarum. Laughters are proverbially fat, and generally long lived; but weak minds are commonly exempt from care. The injuries from sudden and immoderate laughter are numerous. The circulation through the lungs is impeded, and the blood accumulated in the head: the records of medicine are filled with narratives of ruptured vessels in the head and lungs from laughing, with some more consolatory instances of a fortunate rupture of an abscess. Castellus mentions a case where a thorn was thrown up from the throat in consequence of immoderate laughter; and Erasmus was saved from death by a fit of laughter, which burst an abscess.

The *risus sardonicus* is rather a smile, or, more properly, a grin, than real laughter. Even Hippocrates quotes, as an old observation, that it arises from a wound in the diaphragm, which modern authors have confirmed from their own experience. (Joubert du Ris apud Halleri Bibliothecam, ii. 135.) Franck records it as a symptom in a bilious peripneumony, connected with rheumatism. The name was derived from the herb *sardoa*, to which it was attributed. We cannot now exactly ascertain what this plant is; but it had the leaves of parsley, and was sweet, two circumstances which meet in the *œnanthe crocata*, a powerful narcotic. It is the sardonic grin, which Van Helmont tells us is so unfavourable a symptom in wounds of the nerves.

The *risus sardonicus* has also been owing to swallowing the root of the *ranunculus palustris* (*Ephemerides Naturæ Curiosorum*, Dec. iii. an. 2, obs. 87); and in

the same collection of a former year, we find an instance where it was induced by terror, and was a fatal symptom in a puerperal case. Saffron has been accused as a cause by Sennertus, apparently with little reason.

See Lyserus de Risu; Alberti de Risus Commodo et Incommodo; Platner de Risu a Splene; Halleri Physiologia; Plinii Historia, lib. xi. 629; Schelhamner de Affectibus Animi.

RIVINIA'NÆ GLA'NDULÆ. See SUBLINGUALES GLANDULÆ.

ROASTING. A culinary and chemical process. In the latter, metals are exposed to an open fire, to dissipate their inflammable or volatile parts. In the former the meat is rendered more moist, perhaps more soluble; but, as we have observed, the empyreuma communicated to the fat and skin renders roasted meat often inconvenient in weak stomachs.

ROB, (from the Arabic *rob*, dense,) *robub*; a galenical form, in which fruits and leaves are preserved by sugar and evaporation, often by the latter alone. Acids, however, suffer some decomposition, and are not afterwards equally miscible with water, or equally salutary in scurvy. See EXTRACTIO and SAPA.

ROBORA'NTIA, (from *roboro*, to strengthen.) See CORROBORANTIA, TONICA, and ASTRINGENTIA.

ROCELLA; *lichen rocella* Lin. Sp. Pl. 1622; a blue dye, but, like other lichens, used in hectics. From its allaying coughs, and particularly hysteric coughs, it seems to possess some narcotic power.

RODA'TIO, (from *rodo*.) See TARSUS.

RO'NCHUS. See RENCHOS.

RORE'LLA, RO'RIDA, and RO'SA SOLIS. See ROS SOLIS.

RORISMARI'NUM SYLVE'STRE. See LEDUM PALUSTRE.

RORISMARI'NUS. See ROSMARINUS.

ROS CALABRI'NUS. See MANNA.

RO'SA, (from *ῥοσος*, or *ῥόδος*, the rose.) White roses are the weakest; so that when the damask, the *rosa pallida*, or *centifolia* Lin. can be procured in sufficient quantities, they only are used. Their odour is imparted to water and to spirit, but chiefly to the latter; and they lose little by drying, or keeping, if well managed. On distilling large quantities, a small portion of a fragrant butyraceous oil, of a yellowish colour, is obtained, which concretes in a slight degree of cold: both the water and the oil are chiefly used as perfumes.

The red rose, *rosa centifolia* Lin. Sp. Pl. 704, has but little of the fine flavour of the pale sort: to the taste the leaves are bitterish and somewhat astringent. The astringency is the greatest before the flower opens, and this quality is improved by hasty drying in a gentle heat; but by slow drying both the colour and astringency are impaired. Water they tinge with a deep red colour, and spirit with a pale one. The extract from a watery infusion is austere, bitter, and subsaline; that from spirit in a greater degree. The fixed matter of the petals is slightly laxative, and the syrup is sometimes given for this purpose to children. Former dispensatories had a *syrupus rosarum solutivus*. (See Lewis's *Materia Medica*.) The London College have directed several preparations.

Aqua rosa.—Take of the fresh petals of damask roses, the white heels being cut off, six pounds; water sufficient to prevent an empyreuma: draw off one gallon.

Conserva rosæ rubræ.—Red roses are to be gathered before the petals are unfolded, the heels cut off, and the leaves treated in the same manner as the worm wood. (See *ABSINTHII MARITIMI CONSERVA*.) The virtue of the roses is supposed to be found in this composition, and probably their best effect will be produced, when given in substance, and in considerable quantity. In phthisis and hæmoptoe they have been employed, sometimes with success, especially when joined with a diet of milk and farinacea, and gentle exercise in open air. At most, two parts of sugar to one of roses would be sufficient, and afford a better medicine than the larger proportion.

A cataplasm is made of the conserve, and employed in the latter stages of ophthalmia; one drachm of alum finely powdered is mixed with two ounces of conserve.

Mel rosæ.—Take the petals of the red rose not yet unfolded, the heels being taken off, first dried, four ounces; boiling distilled water, three pints; clarified honey, five pounds; macerate the petals in the water for six hours; afterwards with the strained liquor mix the honey, and boil the mixture to the consistence of a syrup.

Syrupus rosæ.—Take of the petals of the damask rose dried, seven ounces; purified sugar, six pounds; distilled boiling water, four pints; macerate the petals in the water for twelve hours, and strain: evaporate the strained liquor to two pints and a half, and add the sugar to form the syrup. For infants, the dose, as an aperient, is from half an ounce to an ounce; though its purgative effect is very inconsiderable.

Infusum rosæ.—Take the petals of the red rose in bud, the heels taken off, half an ounce; diluted vitriolic acid, three drachms by weight; boiling distilled water, two pints and a half; purified sugar, one ounce and a half. Pour the water first on the petals in a glass vessel, then add the acid, and macerate them for half an hour; strain the liquor cold, and add the sugar. *Pharmacopœia Londinensis 1788.*

This is an elegant preparation, but its virtue consists more in the vitriolic acid than the roses. See Cullen's *Materia Medica*.

The attar, or essential oil of roses, so highly esteemed as a perfume, is prepared in India. Forty pounds of roses, with their calyces, are put into a still with sixty pounds of water. After the ingredients have been well mixed, a gentle fire is lighted, and when fumes begin to arise, the cap and pipe are properly luted on. When the impregnated water begins to come over, the fire is lessened by degrees, and the distillation continued four or five hours, till 30lb. of fluid is come over. This water is to be poured again upon 40lb. of roses, and fifteen or twenty pounds more are to be drawn off. It is then to be poured into pans of earthen ware, or tinned metal, and exposed to the fresh air for the night. In the morning the attar will be found congealed, and floating upon the surface of the water. Its smell exactly resembles that of roses. It is only slightly pungent; but has been recommended as a cordial and analeptic.

The roses of India do not appear richer in oil than those of Europe. From two to three drachms of oil are procured from one hundred weight; while Tachenius procured half an ounce of oil from that quantity, Ham-

berger one ounce, and Hoffman two. It is adulterated sometimes with the oil of sandal wood; but this oil does not congeal in common cold, and its peculiar smell predominates, sometimes with that of a sweet grass. The latter imparts a green colour, and the oil does not easily congeal in a moderate temperature. The colour, however, is no criterion of its genuineness, since the real attar differs greatly in this respect. Colonel Polier in the *Asiatic Researches*, vol. i.

RO'SA CANI'NA et SYLVE'STRIS. See CYNOSBATUS.

ROSA'CEA, (from *rosa*, a rose). ROSEA. See GUTTA ROSACEA.

ROSA'TUM. See DROSATUM.

RO'SÆ ODO'RÆ LI'GNUM. See ASPALATHUS.

ROSEOLA, of Willan. See GUTTA ROSEA.

ROSMARI'NUS, RORISMARI'NUS, (*folia albescentia quasi rore, ut in maritimis, inspersa*.) *libanetis coronaria*; *dendrolibanus*; COMMON ROSEMARY; *rosmarinus officinalis* Lin. Sp. Pl. 33; is a large shrubby plant, with long, narrow, stiff leaves, set in pairs, of a dark green colour, above, and hoary beneath, with flowers of a pale bluish colour. It is a native of the southern parts of Europe, where it grows wild in dry gravelly ground; common in our gardens, where it smells stronger in proportion as the soil is dry and gravelly.

Rosemary hath a warm, pungent, aromatic, bitter taste, and a fragrant smell, approaching to that of lavender, joined with a camphorated odour: the leaves and tender tops are the strongest, and next to these the cup and the flowers. The flowers are the weakest, but most pleasant; and whatever virtue has been attributed to them resides in the cup. This plant is said to stimulate and strengthen the nervous system, and is recommended for nervous headaches, deafness, vertigo, palsy, hysteria, and dyspepsia, yet its active power scarcely extends beyond the stomach, which it gently stimulates; though recommended by Bergius as an emmenagogue, and chiefly useful in chlorosis. For distillation the calyces and leaves are preferable, partially dried.

The leaves and tops yield their fragrance, in a great degree, to rectified spirit, leaving in the extract the greatest share of both their flavour and pungency, with some portion of the aroma.

The active matter of the calyces and flowers is more volatile than that of the leaves, the greatest part of it rising with spirit.

Spiritus rorismarini, or Hungary water.—Take of the fresh tops of rosemary, one pound and a half: proof spirit of wine, one gallon. Distil in a water bath, five pints. (Pharm. Lond. 1788.) This with the essential oil are the only preparations now kept; but the rosemary is an ingredient in compound spirit of lavender, and some other preparations. A conserve formed of its flowers is now expunged both from the London and Edinburgh Pharmacopœias.

To make the Hungary water in perfection, the spirit must be very pure, the leaves at their full growth, gathered without bruising. If the flowers are suspended in the retort, and a gentle heat applied just sufficient to raise the spirit, the vapour lightly percolating through them will, it is said, add to the fragrance.

Aqueous liquors extract some portion of the virtues

of rosemary by infusion, which pass over in distillation. With the water a considerable quantity of light, thin, green, or yellowish essential oil rises.

See Tournefort's, Lewis's, and Cullen's *Materia Medica*; and Neumann's *Chemistry*.

ROSMARINUM STOECHADIS FA'CIE. See POLIUM CRETICUM.

ROS SOLIS, *rosa solis, rorella, sponsa solis, rorida*; RED ROT; SUN DEW; *drosera rotundifolia* Lin. Sp. Pl. 402; is a small low plant, with a little fibrous root, from which spring small, round, hollowish leaves, on foot stalks of about an inch long, covered with short red hairs, which make the whole leaf appear red. It grows in boggy ground, and flowers in June and July. It is injurious to cattle if eaten, and very caustic; but has been commended as a cordial. See Raii *Historia*.

ROSSALIA. See SCARLATINA.

ROSTELLUM, (a dim. of *rostrum*.) A little beak. See CORCULUM.

ROSTRUM, (from *rodo*, because birds tear their food with it.) A BEAK.

ROSTRUM LEPORINUM. The piece of flesh which hangs betwixt the division of the hare lip, resembling a beak. See LABIA LEPORINA.

ROTA'TOR MI'NOR, MA'JOR, and NA'TIS, (from *roto*, to turn.) See FEMORIS OS.

ROTTEN STONE. A partly decomposed granite from which the felt spar has been separated; resembling the petuntze of the Chinese, and used in making porcelain.

ROTULA, (a dim. of *rota*.) The PATELLA, q. v. In pharmacy a round lozenge.

ROTUNDA LIGAMENTA, (from *rota*, a wheel.) THE ROUND LIGAMENTS OF THE WOMB are two vascular ropes, composed of arteries and veins, lymphatics and nerves, arising from the fundus uteri, running under the duplicature of the broad ligaments to the rings of the abdominal muscles, and, passing under Poupart's ligament, are lost on the groin. They run in a contorted form, and are capable of being elongated. The nerves of these ligaments compressed in time of labour, between the uterus and abdominal muscles, may cause the pain felt in the inside of the thighs at that time.

ROTUNDUS MUSCULUS. See TERES MAJOR.

ROUCOU. See ACHIOTL, and ORLEANA.

ROUTROU'S SOLVENT. See ANTIMONY, vol. i. p. 136.

RUBE'DO, (from *ruber*, red). An uniform redness of the skin, seldom rising into pustules, or even papulæ. See GUTTA ROSACEA.

RUBEFACIENTIA, (from *rubrum facere*, to redden,) are usually simple stimulants, and such as do not raise vesications. They resemble in their effect blisters, but their power is inferior and more transitory.

RUBE'OLA, (from the same.) See MORBILLI, and RUBIA CYNANCHICA.

RUBE'OLA MONTANA OD'ORA. See ASPERULA.

RUBE'RCUM MA'CULIS, (from the same.) See GUTTA ROSACEA.

RUBE'TA, (from its living among brambles.) See BUFO.

RUBIA, (from its red roots.) *Rubia tinctorum* Lin. Sp. Pl. 158 β ; *erythrodanum*; *rubia major*; DYER'S

MADDER, is a rough procumbent plant, with square jointed stalks, and five or six oblong pointed leaves, set in the form of a star at every joint; from the top arise greenish yellow flowers, followed by two black berries. The root is long, slender, juicy, red, both externally and internally, with a whitish woody pith in the middle. The plant is perennial, and cultivated in different parts of Europe for the use of dyers.

The roots are bitterish, somewhat austere, with very little smell, imparting to water a dark, to rectified spirit and distilled oils a bright, red colour, preserving in each the taste unchanged. Taken internally it renders the urine red and milky; and tinges the bones of animals fed with it, from its affinity, as already shown, to the serum, rather than the calcareous phosphat: the flesh and cartilages continue unaltered. From its supposed effect of tinging the earthy salt of which the bones consist, it was considered as a powerful aperient, and from its effects on the urine a diuretic. But it is neither; for it only tinges the serum. Its power as an emmenagogue is equally equivocal.

When first recommended, distrusting the author's accuracy, we gave it at the same time in a case of mænorrhagia and amænorrhœa. The former complaint disappeared, the latter continued without any change. In fact, we believe it wholly useless. It has been given in dropsy, in jaundice, and in ecchymosis from bruises, in the dose of a scruple, or from this to half a drachm.

It is also a name for the rubeola, a species of crosswort, and of horse tail.

RUBIA SYLVATICA LÆVIS; *gallium mollugo* Lin. Sp. Pl. 155; MOUNTAIN BASTARD, or WILD MADDER. Its virtues are at least equal to the *rubia tinctorum*.

RUBIA CYNANCHICA; *rubeola cynanchica* *Lugdunensis*; *asperula*; *saxifraga*; *asperula cynanchica* Lin. Sp. Pl. 151; SQUINANCY WORT, hath a black, thick, woody root, which runs deep into the earth, with many capillary fibrils divided into a multitude of heads, and shoots up in many smooth, slender, ungulose stalks. At every joint are four short and broad leaves: the flowers are on the top of the stalks and branches, forming umbels of a red colour, in smell resembling the jasmine; and each flower is followed by two rough seeds, which when dry are of a yellow colour. It is found on chalky grounds, and said to be of use in quinsies; but at present neglected or forgotten.

RUBINUS VERUS, (from *ruber*.) See CARBUNCULUS.

RUBRICA FABRI'LIS, (from the same.) See OCHRA.

RUBUS, (from its red fruit.) See DUMUS.

RUBUS ALPINUS and PALUSTRIS HUMILIS. See CHAMÆMORUS.

RUBUS IDÆUS, Lin. Sp. Pl. 706; *batinon*, *moron*; RASPBERRY, is a native of Britain, usually growing about woods and hedges, and in moist situations, producing its flowers in May and June. The raspberry is commonly cultivated in our gardens, and we find three varieties, the red, white, and smooth. The fruit is sweet tasted, accompanied with a peculiarly grateful flavour; and like other fruits it allays heat, quenches thirst, and promotes urine. A syrup is made of the juice in the common way.

RU'BUS VULGA'RIS; COMMON BRAMBLE; BLACK OR DEW BERRY BUSH; *rubus fruticosus* Lin. Sp. Pl. 707; *batos*; *chamabatos*; grows wild in hedges and in woods. The berries have a faint taste, with a moderately agreeable flavour, and the leaves are slightly astringent. The flowers appear in July, and the fruit is ripe in August and September; but neither the bush nor its productions are employed in medicine.

RUCTA'TIO, RU'CTUS, (from *ructo*, to belch). A discharge of wind from the stomach; a symptom of dyspepsia.

It is usually attributed to flatulent food, and is often owing to a defective digestion; for we have remarked that the flatus, separated in the early stage of the digestive process, is again combined with the food, in the second period. We consequently find that whatever disturbs this function produces flatulence, and consequently eructation. This variety of the disease is best remedied by moderately warm stimulants, and rest after eating. If the cause be more violent, or the food of that kind which quickly hastens to putrefaction, the eructations show the peculiar nature of the contents of the stomach by acidity, or what are styled *nidorous eructations*, in taste resembling a rotten egg. The former are removed by absorbents joined with aromatics, and the latter most effectually by vegetable acids.

Eructation does not, however, always arise from the contents of the stomach. It is sometimes a convulsive action, and the wind discharged is only the effect of the relaxation of the previous contraction. It is thus a common symptom in hysteria, of a stomach weakened by over distention, drinking spirits, &c. The disease is sometimes alarmingly violent, and we are told has, in one or two instances, induced appearances of hectic. (Commercium Norimbergense, 1743.) It is singular to observe eructations attributed to the imagination; but we find this cause assigned, not only in a dissertation by Alberti, but in a tract of Muller de Morbo Motuum Habituali ex Imaginatione.

The cure of this nervous eructation is generally attempted by tonics: but more immediate relief is often necessary; and opiates, with the fetid gums, are, for this purpose, chiefly useful. The opium should not, however, be given in such a dose as to produce costiveness; or rather this state should be counteracted by eccoprotics, frequently interposed. The best tonic is the bark, to which the valerian is with advantage added; iron, and sometimes zinc, are used; and, from some late observations of Dr. Bardsley, there is reason to suspect that the oxide of bismuth may be beneficial. The oil of amber is recommended by Zacutus Lusitanus, and we find the mineral acids have been occasionally employed.

Borborygmi are produced by nearly the same causes, and may be relieved by the same remedies.

RU'FI PI'LULÆ; *pilulæ ex aloë cum myrrha*. Two parts of aloes are combined in this composition with one of myrrh, one of saffron, and a sufficient quantity of syrup. See ALOË.

RUM. A spirit distilled from the sugar cane. It is oily, and has been supposed more useful on this account in catarrhs and coughs. The difference, however, between this and other spirits is inconsiderable. When new it is injurious, and has been said to produce the Poitou colic.

RU'MEX ACETO'SUS, PRATE'NSIS, SCUTA'TUS et HELVETICUS, *Linnaei*, (from *ramach*, a spear). See ACETOSA.

RU'MEX AQUA'TICUS, and HYDROLA'PATHUM. See LAPATHUM AQUATICUM.

RU'MEX ACU'TUS. See LAPATHUM ACUTUM.

RUMINATIO. This is a part of the process of digestion peculiar to some animals, chiefly belonging to the pecora of Linnæus, of which the cow is an example. The herbage received into its first stomach is there macerated, and, by an inverted motion of the œsophagus, is again brought into the mouth, to be more completely masticated. This operation is commonly called *chewing the cud*. Its object is apparently to combine the vegetable aliment more completely with the saliva. Rumination would be scarcely a part of our subject, if it did not occasionally occur in the human system, and an instance of it is recorded by Dr. Cullen. Meyer in 1792, Ackford in 1783, in dissertations published at Erlang and Halle respectively, have mentioned instances of it, and we find numerous descriptions of a similar operation in different foreign authors.

We have seen some approaches to it; but the rumination has then not been regular and constant. It has seemed owing to eructation, and the food has come into the mouth with the flatus. The remedies for RUCTUS, q. v. seem to be chiefly indicated, and will probably be successful.

Schurig Chylogogia; Slare Philosophical Transactions, No. 193; Morgagni de Sedibus, xxix. 4.; Boneti Sepulchretum, Lib. iii. § v. 9, 10.

RUNCINA'TUS, (from *runcina*, a saw). SERRATED; leaves of plants with indented edges.

RUPICA'PRA, (from *rupes*, a rock, and *capra*, a goat). See CAPRA ALPINA.

RUPELLE'NSIS SAL, (from *Rupellum*, Rochelle, where it was first made,) *sel de seignette*, *natron tartarigatum*, and ROCHELLE SALT, is a soluble tartar, made by combining twenty ounces of natron, by weight, with two pounds of crystals of tartar, in boiling distilled water, ten pints. The natron should be melted by heat, that it may shoot more easily into crystals. Half an ounce or six drachms of this salt is a gentle cooling purge; but it should be mixed with a large proportion of water.

RUPTU'RA, (from *rumpe*, to break). A RUPTURE; the English term for HERNIA, q. v.; from the idea that the peritonæum was ruptured when the intestine protruded through the ring of the muscles. The word rupture is most properly applied to a cartilage, a ligament, or a tendon, when divided by violence.

RU'SCUS, (from the carnation colour of its berries,) *bruscus*, *oxymyrrhine*, *myrtacantha*, *myacantha*, *scofia regia*, WILD MYRTLE, KNEE HOLLY, BUTCHER'S BROOM; *ruscus aculeatus* Lin. Sp. Pl. 1474, is a low woody plant, with oblong, stiff, prickly leaves, joined immediately to the stalks: from the middle ribs of the leaves, on the upper side, issue small yellowish flowers, succeeded by red berries. The root is thick, knotty, furnished with long fibres matted together, of a pale brownish colour on the outside, and white within. It grows wild in woods and heaths, is perennial and evergreen; flowers in May, and its berries ripen in August. The root tastes sweet, and is slightly bitter; is aperient and diuretic, yielding its virtues to water and spirit; and on inspissating the tincture they remain in the extract.

The young shoots are eaten instead of asparagus. See Miller's Botany.

RU'SCUS HIPPOGLO'SSUS, or LATIFOLIUS. See LAURUS ALEXANDRINA.

RUSH NUT. The root of the *cyperus esculentus* Lin. Sp. Pl. 67, which is mucilaginous and oily, resembling chestnuts.

RUSMA, (*nouret* of the Arabians,) a depilatory generally used in the Turkish bagnios, supposed to be so precious as to be equal in value to its weight of gold. We learn, however, from Sonnini, that it is a very common preparation, consisting only of seven parts of lime, with three of orpiment. It must be laid on in a warm bagnio moistened with water, and the effect is almost immediate; but the hair grows again, and the operation must be repeated. Sonnini Voyage dans la Haute et Basse Egypte, vol. i. p. 303; Belon Observat. lib. cap. 33.

RU'TA, (from *ῥῦν*, to preserve, because it preserves health). RUE. *Armala, besasa, peganon, ruta graveolens* Lin. Sp. Pl. 548, LARGE WILD RUE, is a small shrubby plant, with thick bluish green leaves, divided into numerous roundish segments. On the tops of the branches rise yellowish flowers, followed each by a capsule, divided into four partitions, full of small, blackish, rough seeds. It is cultivated in gardens, flowers in June, and is an evergreen.

Rue hath a strong unpleasant smell, a penetrating, pungent, bitter taste; if much handled, apt to inflame the skin, a property lessened by cultivation. It is commended as a powerful stimulant, aperient, antiseptic, and antispasmodic, useful in crudities, indigestion, in uterine obstructions, hysteric diseases, and to guard against infection. It is, however, only a warm antispasmodic, of no considerable powers. Externally, in a fomentation, it is thought to be discutient and antiseptic.

Its virtues are extracted by water and spirit of wine, but most perfectly by the latter. On inspissating the spirituous tincture, very little of its flavour rises with the menstruum, nearly all the active parts of the rue

remaining in the extract, which is warmly and durably pungent, and in smell it is rather less unpleasant than the herb. This is the best preparation of rue: water, in distillation carries over a part of its aroma. The principal virtues reside in the essential oil, which is not very volatile.

Distilled with water, a yellowish or brownish essential oil is obtained; and the remaining liquor may be inspissated into a warm, pungent, bitterish extract, inferior, however, to the spirituous.

Rue leaves, distilled for their essential oil, should be fresh, and gathered when the flowers are ready to fall off: the seeds with their capsules should be added, and macerated previous to distillation.

Rue is directed in form of an extract, is a principal ingredient in the pulvis cum myrrhâ compositus, and often given in the form of tea. To it was attributed, by Hippocrates, the power of resisting the action of contagion, and other kinds of poisons; and in this view it is highly extolled by Boerhaave. For making the extract, see CHAMOMÆMELI EXTRACTUM.

See Tournefort's, Lewis's, and Cullen's Materia Medica; Neumann's Chemistry.

RU'TA CAPRA'RIA. See GALEGA.

RU'TA BA'GA A coarse esculent beet, highly commended as the "*root of scarcity*;" but now deservedly neglected.

RU'TA MURARIA, *asplenium ruta muraria* Lin. Sp. Pl. 1541, WHITE MAIDEN HAIR, is slightly astringent, and has been used in hectic, though at present neglected.

RU'TA SYLVE'STRIS. See HARMEL.

RUTADOSIS. A sinking of the cornea from a wound, old age, or death.

RUYSCHIANA TU'NICA, (from *Ruysch*, the discoverer). See CHOROIDES.

RY'SAGON. See CASSUMUNIAR.

RY'THMUS, (from *ῥυθμός*, measure,) a term used by musicians with respect to time in music; but, since the era of Herophilus, employed to express the time, motion, or modulation of the pulse. See ARYTHMUS.

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SABADI'LLA. See CEVADILLA.

SABI'NA, *savina*, *brathu*, COMMON OR BARREN SAVINE, *juniperus sabina* Lin. Sp. Pl. 1472, is an evergreen shrub, with short, narrow, prickly leaves. When old it bears blackish berries, like those of the juniper. It is a native of the southern parts of Europe, and is raised in our gardens. The leaves and tops have a strong disagreeable smell; a hot, bitter, and acrid taste; yielding a large proportion of their active matter to watery liquors, and the whole to rectified spirit. Distilled with water they afford much essential oil, which smells strongly, and tastes moderately of the savin: its dose is from two to four drops.

The decoction yields an extract which retains much of the pungency, warmth, and bitterness of the plant. On inspissating the spirituous tincture, the extract is a yellow, unctuous, or oily, bitterish, and pungent, mixed with a black, resinous, tenacious, subastringent, and less acrid substance.

Savin is styled a stimulant and aperient, useful in uterine obstructions, proceeding from a want of irritability in the vessels, heating and stimulating the whole system, and promoting the fluid secretions. It seems to be an efficacious emmenagogue, chiefly suited to relaxed and weak habits, but improper in plethoric ones. Of the powder the dose is from \mathfrak{z} i. to \mathfrak{z} i. twice a day; of the extract (see CHAMOMÆMELI EXTRACTUM) from ten to thirty grains.

Pulvis sabinæ compositus is composed of equal parts of sabine and ærugo, and employed as an escharotic for warts and excrescences, upon which it is to be sprinkled every day. The powdered savine alone, if fresh, is sufficiently active, when the epidermis is removed. The oil impregnates the urine with its smell, and contains the whole of its virtues. See Lewis's *Materia Medica*; and for the *tinctura sabinæ composita*, ELIXIR MYRRHÆ COMPOSITUM, under MYRRHA.

SA'BINA BACCI'FERA. See CEDRUS CUM FOLIIS CYPRI.

SABI'NA GOE'NSIS. See CEDRUS PHENICIA.

SABBURRA'TIO, (from *saburra*, sand). See ARENATIO.

SACCA'TA. See CENUS DIACHEOMENUS.

SA'CCHARUM, (from *sachar*, Arab). SUGAR, *μῆλις*, *καλῆμινον*, *Αἰς*, *Ἰνδικός*, *sackohar*, *sakchari*, *salcharion*, *sphodian*, *cantion*; and when unrefined, *cas-*

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sonada. It is procured from the *saccharum officinarum* Lin. Sp. Pl. 79, COMMON SUGAR CANE.

Sugar seems to have been exclusively the production of India in the old, and of South America and the American islands in the new, world. It was apparently brought from India to Arabia, and from the Arabians we seem to have received the first description of the cane and its contents. If any part of the world besides those mentioned, can claim the sugar cane, it is the Canary islands. Sugar seems to have been first refined by the Venetians about the end of the eleventh century, but the process only practised in England about the middle of the sixteenth. The form in which sugar was previously imported from the east seems to have been that of sugar candy. Actuarius, the last of the ancients, apparently first used sugar instead of honey in medicinal prescriptions.

The expressed juice of the sugar cane is clarified with the addition of lime water, and when boiled down to a thick consistence is removed from the fire, when the saccharine part concretes into a granular mass, the *saccharum rubrum*, leaving an unctuous liquor, called *molazzo*, or molasses; from its consistence commonly *treacle*. This red sugar is clarified in conical moulds, by spreading on the upper broad surface some moist clay, whose watery part, gently percolating through the mass, carries with it a large portion of the treacle; and this is further refined by dissolving it in water, and mixing it with the whites of eggs, or bullock's blood, which, coagulating, carry down the remaining impurities. It is then covered with clay again in the mould, and becomes the *saccharum album*, Ph. Edinb. This process again repeated produces the *saccharum purissimum*, Ph. Lond. Brown sugar boiled to a proper consistence is placed in a hot room, to shoot into crystals upon sticks placed for the purpose, and it is then called *saccharum candidum*; and *candum*; *canthum*; *saccharum cantion*; *sugar candy*; or clarified, and the thinner parts evaporated, so that it forms a brittle substance, which, when made into small rolls, is called *barley sugar*. The term sugar candy is only with propriety applied to the crystallized white sugar, unless, with Salmasius, we derive the term from *καυτιον*, angular, or, with other authors, from *khand*, or *kend*, an eastern appellation of sugar; the latter is most probable.

Sugar, when pure and crystallized, is perfectly trans-

parent; when in a more confused granular form, opaque, with little shining crystals, soluble in water, and with the assistance of heat in alcohol. It melts into a yellow, tenacious liquid, and burns with a strong flame, exhaling an acid vapour. It is almost exclusively a vegetable production; and even the milk may be traced to a vegetable principle, except in animals wholly carnivorous. It is contained in almost every part of different vegetables, the flower, the leaves, the trunk, the root, and the fruit; but in each is confined to the period of maturity, and contaminated with mucilage and other vegetable principles. In the seeds of the cerealia it is formed by the addition of oxygen and of hydrogen from the decomposition of water.

Sugar is an oxide composed of carbon, hydrogen, and oxygen, of which 0.64 are oxygen, 0.28 hydrogen, and 0.08 only carbon. With an excess of oxygen it forms oxalic, or oxalic with malic acid, and with considerably less carbon, and a larger proportion of oxygen, it becomes the sugar of milk. When distilled without addition, it affords a pungent acid liquor of a yellow colour, called the pyromucous acid, which is also furnished by mucilage. Hydrocarbonate gas, mixed with carbonic acid, come over at the same time, and the residuum is a charcoal of peculiar purity. No other substance is contained in this hydrocarbonate oxide, so that it is peculiarly pure.

Mucilages are, we have seen, nearly allied to sugar, and we have pointed out one connecting substance whose farther analysis would greatly elucidate the chemical nature both of sugar and mucilage, viz. MANNA, q. v. Mucilages contain the same principles as sugar, with lime and azot. Sugar, in part deoxygenated, resembled mucilage in its chemical properties; but gum could not by any process of oxygenation become saccharine. In fact, it required that its azote should be separated. Gum, treated with nitric acid, produces the malic and deposits the mucous acid. The former, by the farther addition of nitric acid, becomes the oxalic.

Vegetable farina may become sugar, by the addition of oxygen and water, the last of which is apparently decomposed. Sugar deoxygenated is no longer susceptible of the vinous fermentation, as it is well known to be before, and neither vegetable nor animal mucilages, alone, afford either vinous or acid fluids. The combination of the principles which form sugar sometimes take place a little unexpectedly, as in diabetic urine, and the acetite of lead. The latter, Neumann tells us, may become the subject of a vinous fermentation, and the former affords a true sugar. These subjects require a farther examination. Sugar has been procured also from the birch, the skirrett, the white beet, and the sugar maple; but these processes scarcely belong to our subject, which is sugar in the abstract, from whatever source it may be procured, and its effects on the human body.

To treat of the advantages and disadvantages of sugar is a difficult task, since with one class of authors it is the most salutary food and the best of medicines; with others, little less than a poison. Sugar, unless it produces heart-burn, is probably harmless; no does it injure the teeth, or contribute to the production of worms. It is highly nutritious; since in the crop season the most sickly negro and the leanest pig become fat and healthy. Yet somewhat in these effects must be attributed to the mu-

cilage with which the sugar is mixed in the cane, and something to the fresh vegetable substance in which a powerful antiscorbutic property resides, though we cannot detect its source or its nature. If sugar, too, contributes to evacuate worms, as Dr. Moseley contends, it must be in part attributed to its laxative power, and in part to its salutary, nutritious tendency; for he describes the amendment in the general health, while he speaks of the discharge of worms. It has been supposed to attenuate the juices, by contributing as an intermede to their more intimate mixture, and consequently to resolve obstructions. On this principle it is said to cure hectic, and to relieve infarctions in the viscera: but this power is wholly chimerical; for we have no proof that it enters the blood in its saccharine state, or that, from its chemical properties, it is capable of assisting the mixture of the oily and watery portions of our fluids. Dr. Stark's experiments seem to show that it really possesses an attenuating power; but his saccharine diet was the last of his wanton experiments, and we cannot depend on the general effects of any medicine from what may have been the result in an exhausted constitution. Others have contended that it thickens the fluids, and occasions infarctions; but this effect is equally visionary, and derived only from its nutritious qualities. Sugar is undoubtedly a demulcent as well as a nutrient; but we have no evidence of any farther advantages: it produces often flatulence and acidity in the primæ viæ; but we know of no other inconvenience. Impure sugar is slightly laxative. Externally to wounds sugar is slightly stimulant and escharotic: burnt sugar, from the evolution of the pyromucous acid, more active in each respect.

In experiments out of the body sugar is a very powerful and useful antiseptic; but it shows no effect of this kind when internally taken. In pharmacy it is used to preserve vegetable substances; but for this purpose its proportion must be considerable, and the whole inspissated, or it will accelerate the changes it was intended to prevent. It is generally used also to render medicines more palatable, without consulting the taste or often the circumstances of the disease. We have seen antacid lozenges produce more acid from their sugar than their proportion of an absorbent earth could destroy.

Sugar, when depurated, boiled in rose water, and cast into troches, is called *Christi manus*; when pearls are added, *manus Christi perlata*.

By the assistance of heat, sugar dissolves in rectified spirit; but the greatest part separates when cold, concreting into a crystalline form. On this foundation saccharine concretions are obtained from saturated spirituous tinctures of several of our own plants, the saccharine part separating when the tincture is cooled, while the resinous and other matter separated from the plant remains in the solution.

See Moseley on Sugar, second edition; Neumann's Chemistry; Lewis's and Cullen's Materia Medica; Slare on Sugar; Cruickshank's Experiments in Rollo on Diabetes.

SA'CCHARUM CANADE'NSE, and ACERINUM. See ACER.

SA'CCHARUM ALU'MINIS. See ALUMEN.

SA'CCHARUM LACTIS: the SUGAR OF MILK has been long known and highly esteemed; probably,

however, beyond its real value; but its real nature is not yet generally known. Kempfer has informed us that it was prepared by the Bramins; though Fabricius Bartoldi first mentioned it in his *Encyclopædia*, published at Bologna in 1619, under the title of manna, or nitre of milk. It was long highly esteemed in the forms prepared in Switzerland, viz. of tablets and crystals. The tablets were only inspissated whey, prepared from rennet. These tablets are dissolved in water, depurated by the white of an egg, and set to crystallize. The first crystals are beautifully white; but those which follow require another depuration and evaporation. They are not sensibly acid, rendering oils miscible with water, and preventing the separation of cream from milk. Sheep's milk, though seemingly the sweetest, afforded the least proportion, and asses' milk the largest; goats', cows', human, and mares' milk followed that of sheep's in the same order; goats' milk producing the least, and mares' the greatest quantity next to asses' milk.

The crystals of the sugar of milk are rhomboidal; their taste is sweetish, or rather mawkish, and they are soluble in four parts of boiling water, and about twelve of cold. It seems to contain the radical of the saccharine acid, without any separate acid or alkali, with what is styled a saponaceous substance, but is, however, mucilage. In reality this boasted remedy, which has been used in hectic, &c. is little more than a mucilaginous substance, with an excess of the radical of saccharine acid. It was supposed to be the subject of, or at least to assist, the vinous fermentation; but this suspicion Fourcroy has shown to be unfounded.

SACCHARUM SATURNI. See PLUMBUM.

SA'CCHO-LACTIC ACID differs, as will be obvious from the former article, from the *mucous*. It is prepared by treating the sugar of milk repeatedly with nitric acid, during which the saccho-lactic separates in a white powder, and from the remaining sugar some crystals of oxalic acid are formed. This white powder is sparingly soluble in hot water; but it reddens the blue vegetable juices, effervesces with chalk, expelling the carbonic acid, and forms neutrals, styled *saccholats*, which have not been examined. It is probably a mucilage, with a little saccharine or oxalic acid slightly adhering, or what is more probable, an oxalic acid disguised by the union of animal matter. See Scheele's *Essays*; Hemstadt in *Crell's Chemical Journal*.

SA'CCHO-LAS, (from *saccharum*, sugar, and *lac*, milk). SACCHOLATS. Salts formed by the union of saccholactic acid, with different bases.

SA'CCULI ADIPO'SI, (dim. of *saccus*, a bag, and *adeps*, fat). See CELLULOSA MEMBRANA.

SA'CCULI MU'CO'SI. See BURSAE MUCOSÆ.

SA'CCULUS and SA'CCHUS. See EPITHEMA.

SA'CCULUS CHYLIFERUS. See RECEPTACULUM CHYLI.

SA'CCULUS CO'RDIS. See PERICARDIUM.

SA'CCULUS LACRYMALIS. The LACRYMAL SAC is an oblong membranous bag, situated behind the caruncle at the inner canthus of the eye, by which the tears are conveyed from the surface of the eye to the nostril on each side. It receives the tears at the lachrymal points, from whence it conveys them to the os turbinatum inferius, where it opens into the nostril. The body of the bag is in the grooves of the os unguis, and os max-

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illare, which form the passage. See PUNCTA LACRYMALIA.

SA'CCUS, (from the Hebrew term *sak*, because it is only open at one end). The *intestinum cæcum*, *anus* *diacheomenus*.

SA'CER MU'SCULUS, (from *sagur*, Heb. *secret*), *transverso-spinalis lumborum* of Winslow, is composed of several oblique, converging, or transverso-spinal muscles, and lies between the spinal and oblique apophyses of the loins, reaching to the os sacrum. The lowest is fixed to the upper lateral parts of the os sacrum, and to the posterior superior spine of the os ilium; the rest are fixed to the three lowest transverse apophyses, and to the four lowest oblique apophyses of the loins and their lateral tuberosities; from thence they run up to all the spinal apophyses of the *vertebræ*.

SACERDOTIS VIRILE. See ARUM.

SACK. A wine much drank by our ancestors, and celebrated in the pages of Shakspeare. It seems to have been a stronger Rhenish, which is at first sharp and unpleasant. We suspect it to be of this kind, because it was sometimes adulterated with lime. "There's lime in this sack," says sir John Falstaff. Sugar was occasionally added: but this does not furnish an argument on either side; for our ancestors were always fond of sweet liquors. Howell calls it a dry Spanish wine, *vin sec*; others derive it from the *borachios*, in which it was probably brought from the mountains; but these were never called *sacks*. Sack is called by Venner, "a penetrative wine, a quality retarded by sugar;" and we should suspect, that by penetrative he means pungent.

SA'CKCHAR, SA'CKHARI. See SACCHARUM.

SA'CRA ARTERIA, (from *sacer*), goes out from the back part of the aorta, at the bifurcation, on each side respectively. Sometimes there are three or four, and sometimes but one. They occasionally rise a little higher from the *lumbares*, or from the *iliacæ*; and are ramified on the os sacrum and the neighbouring parts of the *peritonæum*, *rectum*, and *fat*, penetrating into the substance of the bone.

SA'CRA HERBA. See VERBENA.

SA'CRA TI'NCTURA, NOW ALOES VINUM. ALOETIC WINE, is made by digesting eight ounces of *socotorine aloes*, and two ounces of *canella*, in seven pints of Spanish white wine, to which a quart of proof spirit has been added. It will be of use to prevent the aloes, when moistened, from running into concretions, to mix the aloes and *canella*, separately powdered, with pure well washed white sand. (Ph. Lond. 1788.) This is esteemed a warm purgative, in doses from six to sixteen drachms. Three or four drachms, with a drachm of spirit of lavender, repeatedly taken about noon, or at bed time, have been thought useful in cases of indigestion and headaches: large doses of the wine or the tincture of aloes have been directed to produce the bleeding piles where they have been suddenly suppressed, and their return supposed to be necessary.

SA'CRA VA'SA. The arteries and veins which belong to the os sacrum and the adjacent parts.

SA'CRA VE'NA sometimes proceeds from the bifurcation of the *vena cava*, at others from the origin of the left *iliaca*, and accompanies the artery of the same name.

SA'CRI ACU'MEN O'SSIS. See ACUMEN.

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SA'CRO LUMBA'RIS, vel **LUMBA'LIS**. This muscle is a part of the *longissimus dorsi* at its origin; but soon divides, and is inserted by digitations into the angle of every rib. The uppermost tendon is inserted into the transverse process of the last cervical vertebra.

SA'CRO LUMBA'RIS ACCESSO'RIVS; *accessorius sacro lumbalis*; *cervicalis descendens*, *cervicalis dorsi*, is a continuation of the *cervicalis dorsi*, lies on the outside of the complexus, and coming down from the transverse processes of the lower *vertebræ colli*, is continued down under the *sacro lumbaris* to the ribs, which it depresses, as well as the *sacro lumbaris*.

SA'CRO NE'RVI. Five or six branches of nerves from the spine pass through the *os sacrum*, and from thence obtain their name. The three first join the fourth and fifth lumbar nerves to form the sciatic nerve. The third sacral nerve gives some branches to the pelvis.

SA'CRO COCCYGE'US. See **COCCYGE'US POSTERIOR**.

SA'CRUM OS, (from its magnitude and importance, since it is the support of the spine,) *os basilare*, *albagiazi*. This bone is of a somewhat triangular shape, broad above, narrow below, convex behind, for the more advantageous attachment of the muscles, and concave before, to enlarge the cavity of the pelvis. In the fœtal state it consists of five distinct bones, which in adults are united, though the marks of the former separation continue. On the outside there is a ridge, which is called the spine; and the bodies of the *vertebræ* are united to the processes by strong bony bridges, which support the weight of the whole spine. Oblique processes are only found in the upper bone of the sacrum, and these are connected by strong ligaments to the processes of the last lumbar vertebra. Where the oblique processes in the bones below should be, we find only tuberosities. The transverse processes are united, and the three first form two irregular cavities, of which that behind is divided by a transverse ridge. The *transverse processes* of the last two bones are short, and from these to the ilium the *sacro sciatic ligaments* pass. The *spinal processes* of the three uppermost bones are nearly erect, short, and sharp: the lower ones are opened behind, and the fourth is more blunt or bifurcated, without the two legs forming a spine. Sometimes they do not form a canal by their union, but a fossa by their approach. The canal contains the lower part of the spinal marrow, which gradually grows smaller, terminating, as we have seen, in filaments styled *cauda equina*, and the cavity is proportionally diminished. On the fore part there are four pair of holes for the transmission of the nerves. The holes on the back part are covered by membranes, which admit of the passage of small nerves, but the largest nerves pass anteriorly. The size of the holes, as of the canal, lessens as they descend. This bone is connected with the *ossa innominata* by *symphysis*, and forms the posterior part of the pelvis; its substance is spongy. Below, the *os sacrum* is connected with the *os coccygis*.

SA'FFRAN DE TE'RRRA, (from the Arabic term *xafar*, yellow). See **CURCUMA**.

SAGAPE'NUM, *serapinum*, is the gummy resinous juice of an oriental or rather an African plant, supposed to be a species of *FERULA*, q. v. It is brought from Alexandria, either in distinct tears, or in large masses; externally it is yellow, internally paler, and clear like horn; but sometimes of a greenish hue, soft, and stick-

ing to the fingers when handled. Pieces of bdellium, sometimes sold for it, may be distinguished by their weaker smell: that of *sagapenum* is alliaceous, and resembles a mixture of *asafetida* and *galbanum*. The taste is moderately hot and pungent. This gummy resin is superior to the *opoponax*, *galbanum*, and *ammoniacum*, approaching nearest to the *asafetida*. It is generally used as an expectorant, deobstruent, and antispasmodic, often in the same cases as the *ammoniacum*, or *asafetida*. Boiling water dissolves about three fourths of it; rectified spirit about one half. From 480 grains, 306 of spirituous and 108 of watery extract were obtained; by an inverse operation, 170 of watery and 241 of spirituous extract. Water brings over with it in distillation much of the flavour of the *sagapenum*, and a small portion of essential oil, but the distilled spirit is not wholly destitute of flavour. It is an ingredient in the *pilulæ gummi*, now *pilulæ galbani compositæ*. See Lewis, Tournefort's and Cullen's *Materia Medica*; Neumann's Chemistry.

SAGIT'TA, an arrow. **ARROW HEAD**, from its leaves resembling the head of an arrow. *Sagittaria sagittifolia* Lin. Sp. Pl. 1410, β. At first the leaves of this plant resemble those of plantain, but afterwards the bearded head of an arrow; the fruit consists of a collection of seeds like the strawberry. It is said to possess similar virtues with the plantain, but is rarely used. Its roots are esculent.

SAGITTA'LIS SUTU'RA, (from its resemblance to an arrow,) *virgata*, *obelæa*, *rhabdoides*, the **SAGITTAL** or **STRAIT SUTURE OF THE HEAD**, which runs from the *os frontis* to the *os occipitis*, between the parietal bones.

SAGITTA'RIA ALEXIPHA'RMICA, (from its use in counteracting the poison conveyed by darts,) *aguti-guepo-obi Brasiliensis*, *Malacca radix*, *canna Indica*, *thalia geniculata* Lin. Sp. Pl. 3, **ARROW ROOT**, **DART WORT**. It is found in the West Indian islands, is two or three inches long, as thick as a man's thumb, jointed and white. See Raii *Historia*.

SAGITTA'TUM, the leaf of a plant shaped like an arrow.

SAGOU. (See **PALMA JAPONICA**.) It is procured from the *cycas circinalis* Lin. Sp. Pl. 1658, which grows in Amboyna, Sumatra, and the Molucca islands, in marshy grounds; and there are two or three species, or at least varieties, of it not accurately described. Its trunk rises to ten or twelve feet in height, and the medullary substance is interposed between the fibres. It bears fruit only when arrived at its full growth, or rather when it is near the decline; and as the fruit is nourished at the expense of the medullary farina, the natives endeavour to retard the period of fructification. When the medulla has attained its perfection, the leaves are covered with a white powder, which seems to be a transudation of this substance. Sometimes the trunk is perforated, a part taken out, and rubbed in the hands, to ascertain the state of the farina.

When the period of the collection of this *fæcula* is arrived, the tree is cut down, divided transversely into billets, which are split in three or four pieces. The medulla, then cleared from its involucre, is bruised, agitated in water till it is entirely suspended, and then strained. What remains on the filter is given to the hogs, or thrown into the garden; what has passed through it is separated by rest, and after some time the

fluid is poured off. If the more solid parts which do not pass through the filter are thrown into the garden, mushrooms of an exquisite flavour are soon produced, and larvæ of weevils, which are not less esteemed as food, soon swarm on the residuum.

The fæcula which thus subsides is cut into little cakes, and dried in the shade. This is the true sago of which biscuits are made; but as it is not susceptible of fermentation, it will not produce bread. Soups are thickened with it, and it is an ingredient in sauces of every kind in India, and the adjacent islands.

Sago, kept dry, may be preserved for an indefinite period; but to bear the vicissitudes in climate in a long voyage it must be roasted in a furnace, and the surface slightly browned. In this last form it is generally brought to Europe.

With us it is usually eaten in a simple state, boiled with water or milk, sometimes seasoned with spices, sometimes warmed with wine. It is a light and nourishing food, adapted to the extreme of either period of life, to hectic patients, as well as those recovering from long fevers, or diseases where the digestive faculties are much weakened. Its chief recommendation arises from its not fermenting, and consequently from its being neither flatulent nor acescent.

Potatoes, it is said, will afford a similar fæcula, and the caryota, with many other palms, contain apparently a medulla of the same kind.

SAL, (from *αλς*, salt). SALT. Difficulties on every side have met those chemists who have with the greatest care attempted to define salts, and the reason will be obvious from what we have often had occasion to observe, that nature has no limits: those which we perceive are the result of our imperfect knowledge, and when the lacunæ are filled by progressively extending science, our definitions are useless. The saline taste is a simple idea, of which common salt is a familiar example; and if we were to define it, we should say that it is a pungent taste, without heat, or biting acrimony. The best authors who have defined salts from their properties consider them as remarkable for their sapidity, soluble, incombustible, and capable of crystallization. Yet many neutrals have no taste, and some metallic oxyds a sensible one. Vitriolated barytes crystallizes, but is scarcely soluble in water; and many bodies certainly not saline are incombustible, as the various earths of the micaceous genus. In short, objections rise on every side, nor will chemical analysis assist us. If azot is a principle of some salts, oxygen is of others; if some are apparently simple, others are compounded; if some are fixed, others are volatile. The difficulty, in fact, arises from a name having been assigned when science was in its infancy, and having been obstinately retained when it was found neither scientific nor accurate. We shall, therefore, not consider them in the abstract, but divide them according to the following scheme:

I. Simple salts.

α Alkaline.

Potash, natron, ammonia.

β Earthy.

Barytes, lime, alumine, magnesia.

γ Acid.

Mineral; vitriolic, nitrous, and muriatic.

Vegetable; tartar, the acid of sugar, of wood sorrel, of fruits, &c.

Metallic; arsenic, columbium, &c.

Animal; phosphoric, uric, bombic, formic, lactic.

Aerial; carbonic acid gas.

δ Neutral.

Alkaline, with the different acids.

Earthy, with the same.

ε Triple or quadruple compounds.

It is needless to pursue this subject, which is merely chemical; for the salts used in medicine occur under their proper heads, and we shall add only tables of the synonyms of the different salts, and of their respective solubility.

TABULA OF SYNONYMORUM.

ACIDA.

ACIDUM VITRIOLI VEL SULPHURICUM.

Oleum vitrioli.

Spiritus vitrioli.

— sulphuris per campanam.

Acidum sulphuris.

Spiritus aluminis.

Acidum calcantis.

— primigenium.

— universum.

— aereum.

— vagum fossile.

— sulphurosum.

ACIDUM NITROSUM.

Spiritus nitri.

— Glauberi.

Aqua fortis.

Acidum nitricum.

ACIDUM MURIATICUM.

Spiritus salis marini.

— Glauberi.

— acidus salis ammoniaci.

Acidum muriaticum oxygenatum.

ACIDUM ACETOSUM.

Acetum.

— distillatum.

Spiritus aceti.

Acidum aceticum.

ACIDUM TARTARI.

Acidum œnolithicum. Black.

Chrystalli tartari.

Cremor tartari.

ACIDUM BORACICUM.

Sal sedativum Homberg.

— narcoticum Homberg.

ALCALINA.

ALCALI FIXUM VEGETABILE.

Lixiva. Black.

Kali Pharmacopœiæ Londinensis.

Potassa Gallorum.

Sal tartari.

— absynthi.

Cineres clavellati.

Nitrum fixatum.

Cassob, alkakest Glauberi.

Oleum tartari.

Lixivium tartari.
Aqua kali.
Pearl, pot, and blanch ashes.
Cineres russici.
Lapis infernalis.

ALKALI FIXUM MINERALE.

Trona. Black.
Soda. Pharmacopœiæ Edinensis.
Natron. Pharm. Londinensis.
et Antiquorum.

ALKALI VOLATILE.

Ammonia. Black.
Ammoniacæ Gallorum.
Sal volatile ammoniacæ.
— cornu cervi.
— urinæ.
Spiritus salis ammoniaci.
— cornu cervi.
— urinæ.
Aqua ammoniæ.

NEUTRA SALINA.

KALI VITRIOLATUM.

Alkali vegetabile fixum. Vitriolatum Edin.
Sulphas potassæ.
Sal polycrestum.
Nitrum vitriolatum.
Sal enixum.
Sal è duobus.
Lixivia sulphurica. Black.
Nitrum stibiæ.
Panacea ducis holsatiæ.
Arcanum duplicatum.

KALI NITRATUM.

Lixivia nitrata. Black.
Nitrum.
Nitræ potassæ Gallorum.
Sal petreæ.

KALI MURIATUM.

Lixivia muriata. Black.
Murias potassæ Gallorum.
Sal digestivus.
— febrifugus Sylvii.
— marinus regeneratus.
Spiritus salis marini coagulatus.

KALI ACETATUM.

Lixivia acetata. Black.
Alkali fixum vegetabile acetatum.
Acetas potassæ (acetis) Gallorum.
Tartarus regeneratus.
Sal diureticus.
Terra foliata tartari.

KALI TARTARISATUM.

Lixivia œnolithica. Black.
Alkali fixum vegetabile tartarisatum.
Tartris potassæ Gallorum.
Sal vegetabile.
Tartarus solubilis.
— tartarisatus.

NATRON VITRIOLATUM.

Trona sulphurica. Black.

Soda vitriolata. Ed.
Alkali fixum fossile vitriolatum.
Sal Glauberi.
— mirabile Glauberi.
Sulphas sodæ Gallorum.

NATRON NITRATUM.

Trona nitrata. Black.
Nitræ sodæ Gallorum.
Nitrum cubicum.
— quadrangulare.

NATRON MURIATUM.

Trona muriata. Black.
Muria. Ed.
Sal marinus.
— communis v. culinaris.
— muriaticus.
Murias sodæ.
Sal gemmæ.

NATRON ACETOSUM.

Trona acetosa. Black.
Acetis sodæ Gallorum.
Sal vegeto mineral.

NATRON TARTARISATUM.

œnolithus tronatus. Black.
Soda tartarisata.
Sal rupellensis.
— polycrestus rupellensis.
— de seignette.
Tartris sodæ Gallorum.

NATRON BORACINATUM.

Borax (tincal).
Borax sodæ Gallorum.

AMMONIA VITRIOLATA.

Ammonia sulphurica. Black.
Sal ammoniacus vitriolicus.
Sulphas ammoniacalis Gallorum.
Ammoniacus secretus Glauberi.

AMMONIA NITRATA.

Nitræ ammoniaci Gallorum.
Nitrum semivolatile.
— flammans.

AMMONIA MURIATA.

Sal ammoniacus. Edin.
Ammonia muriata. Londin.
Murias ammoniacalis Gallorum.

AMMONIA ACETATA.

Spiritus Mindereri.
Aqua ammoniæ acetatæ. Londin.
Acetis ammoniacalis Gallorum.

NEUTRA TERREA.

CALX VITRIOLATA.

Selenites.
Gypsum.
Vitriolum calcareum.
Plaster of Paris.

CALX NITRATA.

Nitrum calcareum. Monro.

CALX MURIATA.

Sal ammoniacum fixum.
Oleum calcis.
Sal marinum calcareum.

MAGNESIA VITRIOLATA.

Sal catharticum amarum.
Epsom and Sedlitz salt.
Sal anglicum.

ALUMINA VITRIOLATA.

Alumen.
Vitriolum aluminis.

ALUMINA NITRATA.

Alumen nitrosum.
Nitrum argillæ.

NEUTRA METALLICA.

FERRUM VITRIOLATUM.

Vitriolum martis.
———— anglicum.
Sal martis.

CUPRUM VITRIOLATUM.

Vitriolum Romanum.
———— veneris.
———— cupreum.

ZINCUM VITRIOLATUM.

Vitriolum album.

MERCURIUS VITRIOLATUS.

Turpeth mineral.

MERCURIUS MURIATUS.

Mercurius corrosivus sublimatus.

ANTIMONIUM MURIATUM.

Butter of antimony.

ANTIMONIUM TARTARIZATUM.

Emetique Gallorum.
Tartar emetic.

We had ultimately reserved for this article the result of the experiments on the composition of the muriatic acid and soda, suggested by MM. Pacchioni, Peele, and Guyton. It is with feelings of mortification and disappointment we must add, that the experiments of the galvanic society at Paris, and the very minute delicate examinations of Mr. Davy in the Philosophical Transactions of the present year (1807), have nearly set the question at rest, and shown that the acid and the alkali apparently produced were separated either from the apparatus, or the fingers of the operator. Mr. Davy's researches have, however, pointed out a very refined mode of analysis by means of the galvanic fluid, which promises the most important results.

Very few hours had elapsed, after writing the last sentence; when the discovery of Mr. Davy, thus predicted, was announced. By the galvanic fluid he discovered both potash and soda to be metallic bodies, attracting oxygen so powerfully as to decompose water, and they thus appear in the form of oxyds. No fluid, except naphtha, will retain them in their metallic state. They are chiefly remarkable, as metallic oxyds, for their inconsiderable specific gravity; but we shall, however, add in this place the abstract of Mr. Davy's experiments from a respectable journal, and follow it with

a table of the solubility of different salts from Dr. Duncan's excellent Pharmacopœia.

Mr. Davy, in the last Bakerian lecture, suggested the probability that other bodies, not then enumerated, might be decomposed, or exhibited in more simple forms, by electricity, particularly that excited by the galvanic apparatus. Since that time, by means of several very powerful galvanic troughs, consisting of 100 pairs of plates six inches square, and 150 pairs four inches square, he has succeeded in decomposing potash and soda. This was effected by placing the alkali moistened on a plate of platina, and exposing it to the galvanic circle; when oxygen was disengaged, and the primitive base of the alkali left on the plate, in form and appearance much resembling small globules of mercury, and of an highly inflammable nature. These globules are lighter than any fluid, as they swim in distilled naphtha. The base of potash is of a specific gravity as six, that of water being ten. At the freezing point these globules are hard and brittle, and when broken and examined with a microscope they present a number of facettes with the appearance of crystallization; at 40° of Fahrenheit they are soft, and can scarcely be distinguished from globules of quicksilver: at 60° they are fluid, and at 100° volatile. When exposed to the atmosphere they rapidly imbibe oxygen, and reassume their alkaline character. In distilled naphtha they may be kept four or five days; but if exposed either to the atmosphere or to oxygen gas, they almost instantly become incrustated with a coat of regenerated alkali: this incrustation can be removed, and the reduced globule will remain in naphtha, or separated from all contact with oxygen, as before: the naphtha forms a thin film round the globule, and excludes the contact of oxygen.

One part of the base of alkali and two of mercury, estimated by bulk, (or about 1 part of the base to 48 of mercury by weight,) formed an amalgam, which when applied in the circle of a galvanic battery (which, produced an intense heat), to iron, silver, gold, or platina, immediately dissolved these, and converted them into oxyds, in which process alkali was regenerated. Glass, as well as all metallic bodies, was also dissolved by the application of this substance; the base of alkali seizing the oxygen of manganese, and of minium, potash was regenerated. One of these globules placed on a piece of ice dissolved it, and burnt with a bright flame, giving out an intense heat. Potash was found in the product of the dissolved ice. Nearly the same effects followed when a globule was thrown into water; in both cases a great quantity of hydrogen gas was rapidly liberated.

The specific gravity of the base of soda is as seven, that of water being ten; it is fixed in a temperature of 150°, and fluid 180°.

The specific gravity of the amalgam was found by means of a mixture of oil of sassafras with distilled naphtha, in which a globule remained either buoyant at top or quiescent at bottom, in a fluid weighing as nine, water being ten.

Mr. Davy tried its effects on the phosphats, phosphurets, and the greater part of the salts of the first and second degree of oxydizement, all which it decomposed, seizing their oxygen, and reassuming its alkaline qualities.

From the medium of a number of analytical, and of nine synthetical experiments, it appeared that 100 parts of potash contain 15 oxygen, and 85 of inflammable

base; and that the same quantity of soda contains 20 oxygen and 80 base.

Mr. Davy tried a great number of complex experiments on volatile alkali, in which he was assisted by Messrs. Pepys and Allen; by these he ascertained, that oxygen is also an essential ingredient in ammonia, 100 parts of it containing 21 of oxygen: but this result depended too much on eudiometrical calculation to be received as an established fact.

The earths of barytes and strontites were likewise examined, as being most analogous to the alkali's, and both yielded considerable quantities of oxygen. Mr. Davy related also some miscellaneous experiments on the muriatic and fluoric acids, which completely refutes the strange opinion held by some, that they did not contain oxygen, as these experiments proved in the most satisfactory manner that oxygen is one of their constituent principles.

TABLE of the SOLUBILITY of Saline and other Substances, in 100 parts of Water, at the temperature of 60° and 212°.

<i>Acids.</i>						60°	212°
Sulphuric,	-	-	-	-	-	unlimited	unlimited.
Nitric,	-	-	-	-	-	do.	do.
Acetic,	-	-	-	-	-	do.	do.
Prussic,	-	-	-	-	-	do.	do.
Phosphoric,	}	very soluble, proportion not determined.					
Acetic,							
Tartaric,							
Malic,							
Lactic,							
Laccic,							
Arsenic,	-	-	-	-	-	150	
Arsenious acid,	-	-	-	-	-	1.25	6.6
Citric,	-	-	-	-	-	133	200
Oxalic,	-	-	-	-	-	50	100
Gallic,	-	-	-	-	-	8.3	66
Boracic,	-	-	-	-	-	-	2
Mucic,	-	-	-	-	-	0.84	1.25
Succinic,	-	-	-	-	-	{ 4	50
						{ 1.04	
Suberic,	-	-	-	-	-	0.69	50
Camphoric,	-	-	-	-	-	1.04	8.3
Benzoic,	-	-	-	-	-	0.208	4.17
Molybdic,	-	-	-	-	-		0.1
Chromic, unknown.							
Tungstic, insoluble.							
<i>Salifiable Bases.</i>							
Potass,	-	-	-	-	-	50	
Soda, very soluble, proportion not known.							
Baryta,	-	-	-	-	-	5	50
— crystallized,	-	-	-	-	-	57	any quantity.
Strontia,	-	-	-	-	-	0.6	
— crystallized,	-	-	-	-	-	1.9	50
Lime,	-	-	-	-	-	0.2	
<i>Salts.</i>							
Sulphate of potass,	-	-	-	-	-	6.25	20
Super-sulphate of potass,	-	-	-	-	-	50	100 +
Sulphate of soda,	-	-	-	-	-	37.4	125
— ammonia,	-	-	-	-	-	50	100
— magnesia,	-	-	-	-	-	100	133
— alumina, very soluble, proportion unknown.							
Super-sulphate of alumina and potass,	}	alum,				5	133
— ammonia,							
Nitrate of baryta,	-	-	-	-	-	8	25
— potass,	-	-	-	-	-	14.25	100 +
— soda,	-	-	-	-	-	33	100
— strontia,	-	-	-	-	-	100	200
— lime,	-	-	-	-	-	400	any quantity.

Nitrate of ammonia,	-	-	-	-	60°	212°
— magnesia,	-	-	-	-	50	200
Muriate of baryta,	-	-	-	-	100	100+
— potass,	-	-	-	-	20	
— soda,	-	-	-	-	33	
— strontia,	-	-	-	-	35.42	36.16
— lime,	-	-	-	-	150	any quantity.
— ammonia,	-	-	-	-	200	
— magnesia,	-	-	-	-	33	100
Oxy-muriate of potass	-	-	-	-	100	
Phosphate of potass, very soluble.	-	-	-	-	6	40
— soda,	-	-	-	-	25	50
— ammonia,	-	-	-	-	25	25+
— magnesia,	-	-	-	-	6.6	
Sub-borate of soda,	-	-	-	-	8.4	16.8
Carbonate of potass,	-	-	-	-	25	83.3
— soda,	-	-	-	-	50	100+
— magnesia,	-	-	-	-	2	
— ammonia,	-	-	-	-	50+	100
Acetate of potass,	-	-	-	-	100	
— soda,	-	-	-	-	35	
— ammonia, very soluble.	-	-	-	-		
— magnesia, do.	-	-	-	-		
— strontia,	-	-	-	-		40.8
Super-tartrate of potass,	-	-	-	-	1.67	3.3
Tartrate of potass,	-	-	-	-	25	
— potass and soda	-	-	-	-	25	
Super-oxalate of potass,	-	-	-	-		10
Citrate of potass, very soluble.	-	-	-	-		
Prussiate of potass and iron.	-	-	-	-		
Nitrate of silver very soluble.	-	-	-	-		
Muriate of mercury (corrosive sublimate),	-	-	-	-	5	50
Sulphate of copper	-	-	-	-	25	50
Acetate of copper very soluble.	-	-	-	-		
Sulphate of iron,	-	-	-	-	50	133
Muriate of iron very soluble.	-	-	-	-		
Tartrate of iron and potass.	-	-	-	-		
Acetate of mercury.	-	-	-	-		
Sulphate of zinc,	-	-	-	-	44	44+
Acetate of zinc very soluble.	-	-	-	-		
Acetate of lead, (Ed. Pharm.) Bostock,	-	-	-	-	27	
— as it exists in Goulard's extract,	-	-	-	-	more so.	
Tartrate of antimony and potass,	-	-	-	-	1.25	2.5
— by my experiments,	-	-	-	-	6.6	33
Alkaline soaps very soluble.	-	-	-	-		
Sugar,	-	-	-	-	100	any quantity.
Gum very soluble.	-	-	-	-		
Starch,	-	-	-	-	0	very soluble.
Jelly,	-	-	-	-	sparingly,	abundantly.
Gelatin,	-	-	-	-	soluble.	more so.
Urea very soluble.	-	-	-	-		
Cinchonin.	-	-	-	-		

Salts not soluble in 100 times their weight of water.

Sulphates of baryta, strontia, and lime, and sub-sulphate of mercury.

Phosphates of baryta, strontia, lime, magnesia, and mercury.

Fluate of lime.

Carbonates of baryta, strontia, and lime.

Muriates of lead, and silver, and sub-muriate of mercury, (calomel).

Sub-acetate of copper.

SOLUBILITY of Saline and other Substances in 100 parts of Alcohol, at the temperature of 176°.

All the acids, except the sulphuric, nitric, and oxy-muriatic, which decompose it, and the phosphoric and metallic acids.

Potass, soda, and ammonia, very soluble.	
Red sulphate of iron.	
Muriate of iron,	100
lime,	100
Nitrate of ammonia,	89.2
Muriate of mercury,	88.3
Camphor,	75.
Nitrate of silver,	41.7
Refined sugar,	24.6
Muriate of ammonia,	7.1
Arseniate of potass,	3.75
Nitrate of potass,	2.9
Arseniate of soda,	1.7
Muriate of soda, (Mr. Chenevix).	Alkaline soaps. Magnesian do. Extractive. Tannin.
Volatile oils. Adipocere. Resins. Urea. Cinchonin.	

Substances insoluble in Alcohol.

Earths.

Phosphoric and metallic acids.

Almost all the sulphates and carbonates.

The nitrates of lead and mercury.

The muriates of lead, silver, and soda.

The sub-borate of soda.

The tartrate of soda and potass, and the super-tartrate of potass.

Fixed oils, wax, and starch.

Gum, caoutchouc, suber, lignin, gelatin, albumen, and fibrin.

SAL is also a term affixed to several saline substances, which, for the sake of the references to the present work, we shall add. *Sal vol. salis ammoniaci; sal e. cervi.* See ALKALI VOLATILE. *Sal absinthii; tartari; soda,* see ALCALI. *Ammoniacum,* see VOLATILE. *Alkalinus salis marini,* see ANATRON: *cyreniacus,* see AMMONIACUS SAL: *fossilis, rupeus,* see GEMMA SAL: *ca-tharticus Glauberi; Dauphiny; mirabilis; admirabilis;* see GLAUBERI SAL: *Sennerti,* see DIURETICUS SAL: *fusionis; fixionis;* see ALEMBROTH: *gemmæ; communis; marinus,* see MARINUM SAL: *alkali fixum,* see CLAVELLATI CINERES: *petræ; prunellæ; polychrestum* see NITRUM, &c.*

SALACITAS, (perhaps from *Salacia*, the goddess of the sea, *Venus*). *Hysteroecnesmus, nymphomania, hystero-romania, pruritus uteri, furor, lagnia, satyriasis.* We have introduced this article with some hesitation, as we have constantly avoided every method of furnishing any incentive to the prurient imagination, and have been at last determined, by reflecting that, as it often arises from obscure and unsuspected causes, we may relieve what is frequently a troublesome disease, and rescue from suspicion a moral character in a case where the complaint is wholly corporeal.

It is a disease often of early youth, and not unfrequently of advanced age. An unsuspected source of the complaint is often irritation from diseases of neighbouring organs. Thus it sometimes arises from diseased ovaries, from calculus in the bladder or kidneys, from leucorrhœa, from inflammation of the womb, from acrid purgatives, from the irritation of cantharides on the neck of the bladder, from flatulence, and is hence probably the disease of melancholic temperaments, from whipping, from the diuretic effect of acidulous waters, from a disproportioned clitoris, and from worms, particularly ascarides. A general acrimony is accused by Schurig; but we find more decisive proofs of its effect in hydrophobia and lepra; in the effects of aromatics; and, if the facts are well

founded, in the use of satyrium. General fulness, plethora, and continence, are obvious causes, and require no remark; but the use of tea, connected with plethora, is accused, probably with little reason. Riding on horseback is equivocal in its effects, and we find it sometimes enumerated among the causes, and sometimes among the remedies. It is certainly not a remedy.

When the disease proceeds from any of the causes enumerated, the cure must depend on their removal. When it originates from increased excitement of the vessels of the respective organs, the remedies which we shall enumerate will often relieve; and these will mitigate the complaint, though it arises from other, more distant, irritations.

Cold is the principal remedy, and even cold water has been injected into the vagina by Nicolai. Nitre, as a means of abstracting heat, and diminishing the action of the vessels, is highly useful; but large doses of camphor, as we have often mentioned, are still more effectual. Hahn directs this medicine in combination with vinegar. A similar remedy is the acetated lead, recommended in the *Ephemerides Naturæ Curiosorum*, Annus ii. 121.

Every means of diminishing the quantity of fluids is useful. Venesection yields, however, a temporary and precarious relief. Saline purgatives are more effectual, and a cooling diet of acid fruits and vegetables is more permanently beneficial. The portulaca has been particularly recommended, though without any sufficient foundation.

Narcotics have not been fairly tried. Opium has seemed useful; but the cicuta, digitalis, and aconite will be apparently more so. Amusing the mind, and avoiding every lascivious idea, will be highly necessary; for Ovid's Cure of Love is peculiarly applicable to this disease. *Res age tutus eris.* We find instances where ulcers or the small pox have relieved; but the idea has not been pursued so as to recommend a drain by means of a seton or issue.

See Moschion de Morbis Mulierum; Ambrose Parey, xxiii. 64; Mercurialis de Morbis Mulierum; Schurig Gynæcologia.

SALAMA'NDRA, (because it is not destroyed by fire, a property reported of the salamander). See **AMIANTHUS**.

SA'LEP, vel **SA'LEB**. See **ORCHIS**.

SALICO'RNIA, (so called from its salt taste and horn like shape, from *sal* and *cornu*). Jointed **GLASS WORT**. Its leaves are gathered and pickled instead of samphire. See **KALI**.

SALI'TRON. See **ANATRON**.

SALIUN'CA. See **NARDUS CELTICUS**.

SALI'VA, (from a salt taste,) is that fluid by which the mouth and tongue are continually moistened in their natural state, and is supplied by glands, from thence called salivary. This fluid is thin and pellucid, not concreting by heat, almost without taste and smell. By chewing, it is expressed from the ducts, and is intimately mixed with our food, the digestion of which it greatly promotes. In hungry persons it is more acrid, and copiously discharged; and in those who have fasted long it is highly so, so that the fasting spittle has been styled resolvent: about twelve ounces have been discharged in a day. The saliva contains chiefly water, with mucus, sea salt, and probably some animal matter. It is coagulated by alcohol, inspissated by a small proportion, and dissolved by a larger one of mineral acids. The sea salt is not obvious to the taste, from our constant experience of it, but the muriatic acid is in part also combined with ammonia, since lime and caustic alkali separate ammonia from it. The animal matter appears from the tartar on the teeth, and it sometimes is found in the form of a calculus in the salivary ducts. Its specific gravity is greater than water. Saliva probably hastens fermentation, since it is apparently the ferment to the bowls of Kava in the South Sea islands. Pringle found it an antiseptic; though it easily becomes putrid in warm air, out of the body, a quality counteracted probably by the action of the stomach. (See **DIGESTION**.) When wanting, the functions of the stomach are greatly disturbed.

The saliva is variously diseased. When we spoke of the sweet taste in the mouth, analogous to the sweetness of diabetic urine, we considered the observation as new; but we have since met with it in Schurig's *Sialogia*, in Riedlin, and the Copenhagen Transactions. The saliva is occasionally yellow, particularly in jaundice, and sometimes it has been said to be blue. From too active salivation Nuck informs us that it is sometimes bloody.

It is well known that the infection of a rabid animal is conveyed by the saliva, and more than one instance has occurred of its producing nervous affections when conveyed during a violent fit of rage. (Hoffman de *Saliva ejusque Morbis*.) We find also that the bites of epileptic persons have been attended with disagreeable consequences. It is sometimes deficient in quantity from inflammation and obstruction of the salivary duct, occasionally from calculous concretions. Worms, it is said, also have been found in it. Diseases have been occasionally conveyed to children by the disgusting custom of tasting the pap, or, in part, masticating the food: each should be severely reprobated.

A too copious evacuation of it produces thirst, loss of appetite, bad digestion, and an atrophy.

VOL. II.

See Haller's Physiology, in the article of Mastication; Boerhaave's Institutes; Fordyce's Elements, part i. p. 23.

SALI'VA'LES GLA'NDULÆ, (from *saliva*), the **SALIVARY GLANDS**, are commonly reckoned three pair, viz. the parotid, the maxillary, and the sublingual; but Dr. Hunter would refer the last to another class.

Various subordinate glandular bodies, distributed round the fauces and throat, seem also to furnish saliva, though probably their chief use is to supply a mucus, to defend the tender skin of the mouth. The parotids, the largest of these glands, are irregular and oblong bodies; but these we have already described. (See **PAROTIS**.) The maxillary have also been already noticed. (See **MAXILLARES GLANDULÆ**.)

The sublingual glands are smaller, oblong, and flattened, situated under the anterior portion of the tongue, on the lateral portions of the mylo-hyoidei. The extremities are backward and forward; the edges obliquely inward and outward. They are covered by the external membrane of the tongue; their ducts are small and short, opening near the gums in distinct orifices. The musculi genio glossi separate the two sublingual glands and the two maxillary ducts. The arteries are derived from the lingual, and the nerves from the fifth pair, which supply the tongue.

To these may be added the **MOLARES GLANDULÆ**, q. v.; the buccales and labiales, which are rather mucous follicles than glands. We may just add, that the situation of the salivary ducts is not always constant, and that the calculous concretions are often found in them. They are subject also to tumours from other causes, particularly inflammation. (Murray de *Tumouribus Salivalibus*.)

When obstructions have taken place in the duct, suppuration is often the consequence, and the saliva flowing through the wound causes a fistulous ulcer. (Memoires de l'Academie de Chirurgie, iii. and v.) It is cured sometimes by compression, occasionally by the actual cautery (Saviard); by the gluten of parchment burnt with opium (Riedlin); sometimes by caustics (Gill in the Medical Commentaries, and Louis in the Memoires de Chirurgie, v. 10. iii. 18); chiefly the lapis infernalis. Tessart employed a seton with success.

SALI'VA' LIS DU'CTUS STENO'NIS. The **UPPER SALIVAL DUCT**, is the duct which carries the saliva from the parotid gland into the mouth. See **BUCCINATOR MUSCULUS**.

SALI'VA'NTIA, (from *saliva*). Medicines which excite a salivation.

SALI'VA'RIS HE'RBA, (from its exciting a discharge of saliva). See **PYRETHRUM**.

SALI'VA'TIO, (from *saliva*). A **SALIVATION** is an extraordinary discharge of spitting, chiefly excited by the use of mercury; a practice seldom employed in any considerable extent. As it may be, however, requisite to excite a gentle spitting, we shall offer a few remarks on the most convenient method of producing and conducting the evacuation, after we have spoken of the increased discharge of saliva from different causes.

A salivation, or *ptyalism*, is sometimes a symptom of disease, more often excited for the purpose of curing. As a symptom it is frequently salutary, though at times, as in paralytic patients, the effects of debility only. We know, for instance, that in the natural

Q q

small pox the discharges of saliva, about the acmé of the disease, is a favourable symptom; in fevers it has been sometimes found critical, and the fluid of dropsies has been occasionally discharged in this way. Yet we perceive from some references to authors whom we have not been able to procure, that it has been fatal, perhaps from its excess, or from the great debility previously induced. Salivation is said to be sometimes periodical, sometimes epidemic.

Its causes are numerous. Suppressed evacuations are very frequent ones, and suppressed fluor albus, ischuria (Daniel in the Medical Communications, vol. i.), suppressed lochia, and perspiration of the hands, have been found to produce it. The state of the stomach is a frequent cause, and it is a common attendant on dyspepsia; generally preceding vomiting. From this effect the squills and antimonials have been probably considered as causes. Acrid substances masticated are common causes, and the irritation of tobacco smoke is well known. It is only necessary to add, that the continued use of smoking produces a debility of the salivary glands, and often renders the salivation permanent. From debility, also, it is a common symptom in scurvy, often in jaundice. Neighbouring irritation sometimes excite the action of these vessels. We have seen it, we think, owing to scrofulous tumours; and Dr. Power mentions its arising from wool kept too long in the ear.

We know no internal medicine which acts with certainty on the salivary glands, except mercury; for, though we have mentioned the nitric acid, it was introduced with doubt and hesitation. See MATERIA MEDICA.

The cure of salivation will, in general, depend on its causes. Of mercurial salivation we shall afterwards speak at some length; but this discharge from other causes is chiefly relieved by tonics, with astringent gargles. The latter should, however, be employed with caution, for many inconveniences are recorded to have arisen from hastily suppressing the discharge. (Sylvester's Medical Observations and Inquiries, iii. 241.) Yet these relate rather to what we may style the more acute salivation from mercury: the more chronic kind, from debility, is not so easily suppressed. It often continues for the whole life, without any change, notwithstanding the most active astringents are employed. The chief vicarious evacuation is that by urine.

Mercurial salivation is chiefly used in LUES, q. v. but sometimes for other complaints, particularly obstructions of the liver, and lepra. In the two latter it is seldom carried far; and in the first the discharge is now comparatively slight. It is of little importance by what preparation it is excited, if of sufficient activity to increase the salivary secretion without injuring the stomach or irritating the bowels. Each practitioner has his favourite form, and each may be indulged. In general, mercurial ointment rubbed in externally is the safest; and calomel or mercury, divided by mucilaginous or fatty fluids, are the most general internal preparations; perhaps inferior to none. The practice of rubbing the calomel into the gums and fauces originated with Mr. Clare, not "Mr. Cline," to whom, by a typographical error, it was attributed in the article "LUES." He applies it also under the prepuce and within the labia, by which he thinks the cure is expedited.

Mr. Cruikshank, in an Appendix to Mr. Clare's publication, observes, that there is no doubt of the absorption of a fine powder taking place on the inside of the mouth, of the præputium, of the labia, &c; for the particles of the blood, seen in the simple microscope, are at least ten times larger than those of the levigated calomel, yet the absorbents are often turgid with red blood. The particles of quicksilver, in the best prepared mercurial ointment, appear in the same microscope as distinct from each other as the red globules of the blood; yet they are very readily taken up by the absorbents of the skin. Mr. Hunter hath frequently directed calomel to be rubbed on the skin with the volatile liniment, and it has been followed by the effects of the unguentum hydrargyri. The inside of the cheek is a better absorbing surface than perhaps any other accessible to friction in the body; and probably calomel becomes milder in its operation this way, as the divided quicksilver becomes milder when absorbed by the skin. It is also a less tedious, less laborious process than that of rubbing the unguentum hydrargyri. These are undoubtedly advantages; yet they may be considered as affording a favourable view of the comparative merits of the two preparations. The friction is by no means so easy as is represented; and we have heard that it has been followed by troublesome sores in the mouth. But by whatever preparation salivation is excited, the medicine should be slowly accumulated, unless when employed in the urgent cases of hydrocephalus, hydrophobia, croop, &c. When used in lues, a warm bath may be used two or three times before the unguentum hydrargyri; and the patient, during its use, should be kept in a warm room, wear a flannel shirt, having previously lived on a low diet for a few days. Except in strong constitutions, from a pint to a quart is a sufficient discharge of the saliva in twenty-four hours. The patient's strength should be supported with a light, nourishing, and mucilaginous diet; and, if faint, a little wine whey, or mulled wine, may be allowed.

The quantity of mercury necessary to excite salivation differs greatly in different circumstances and constitutions. In debilitated, scorbutic, and perhaps scrofulous habits, we have found three grains of calomel given in the dose, or one grain on three succeeding nights induce the discharge. It has been brought on by sprinkling precipitate on a wound (Hildanus); by a mercurial injection in a fistula; by a mercurial girdle; and the mercurial ointment employed to kill lice. In these cases, the idiosyncrasy of the patient seems to influence the effect; and, therefore, this should be, if possible, ascertained before mercury is exhibited in any considerable quantity. The inflammation which this medicine induces is rather erysipelatous than phlegmonic, and it sometimes attacks the inside of the cheeks, producing small, irritable, creeping ulcers, with a very slight or no affection of the gums. The latter are, however, most commonly inflamed.

It is usual at present to produce this discharge in a very moderate degree; but some action on the gums is necessary, to show that the medicine has been introduced into the system. This is particularly the case in lues and chronic inflammations of the liver. In other complaints it is less essential if the symptoms disappear. The effectual relief of these is the only certain criterion by which we are taught to leave off the medicine, and it will be prudent to continue it for some time

after these have disappeared. On omitting the mercury the salivation gradually subsides.

The discharge of saliva is, however, sometimes too violent, or it continues long after the symptoms have disappeared, from the increased irritability induced by excess of excitement. This increased discharge is obviated by purgative medicines, by opium, and by sulphur. If any mercury remains in the system, these will sometimes relieve; but if so long a period has elapsed that we may suppose the whole discharged, the cure must rest on the general indication of increased irritability from debility. The medicines just mentioned are not all of equal efficacy. Mr. Hunter thinks purgatives useless; and we certainly have not found them highly beneficial, though sometimes they lessen the discharge. Opium we have thought highly useful, particularly in the form of Dover's powder. Sulphur is known to lessen the activity of mercury out of the body; and as it enters the circulation with little change, it may have the same effect in the circulating system. But this, like other finely spun theories, deceives us in practice. Sulphur is by no means highly useful in these circumstances. Diuretics, which seem to excite what appears to be a vicarious discharge, have not been tried, or, if employed, not effectual. We believe every practitioner, by the means mentioned, has been able to mitigate salivation; but by no remedies, in every instance, to conquer it wholly.

See Hunter, Swediaur, Bell, and Howard on the Venereal Disease; Stahl de Salivatione Mercuriali et Alberti de Hydrargyrosi.

SA'LIX, (from the Hebrew term *sala*). *Itea*, the common white or the Dutch willow tree; *salix fragilis* Lin. Sp. Pl. 1443, is distinguished by its oblong, pointed serrated leaves, hoary on both sides, though most so on the lower, and in the branches being tough. See Raii Hist. Plant. Philos. Trans. 1763.

The bark of the branches of this tree is considerably bitter and astringent; and has been recommended not only in intermittents, but in all those cases which require tonics and astringents. Dr. Cullen thinks it a promising substitute for the bark; and we have found it equally useful in dyspepsia, profluvia, and every case of chronic weakness. His experiments were made with the bark of the *salix pentandria*, which, in Bergius' hands, failed to relieve intermittent fevers.

SALLADS, (*à sale*). The term is derived from the salt, an ingredient which enters in the smallest proportion. This species of vegetable nutriment consists of vegetables, undressed, either etiolated ones, thus deprived of their acrimony, as endives and celery, or of the tetradynamia, whose seed leaves are only employed, or the others in their earliest periods. We eat in their natural state chiefly the lettuce, the lamb's lettuce, and the water cresses. With all we usually mix vinegar, and oil united with the vinegar by means of the yolk of an egg. The reason for employing oil we have not heard; but have suspected it to have arisen from the apprehension of the accidental mixture of poisonous plants, and the egg is added to combine it with the vinegar. In general, sallads are wholesome, but not admissible in cold, flatulent stomachs; though, in these, the water cresses seldom produce any inconvenience.

SALPI'NGO-PHARYNGÆ'US, (from *σαλπιγξ*, a trumpet, and *φαρυγξ*, the pharynx,) rises near the Eu-

stachian tube, and is inserted into the pharynx. Valsalva and Douglas think it one of the origins of the muscle of the pharynx. See PHARYNX.

SALPI'NGO-STAPHYLINUS, (from *σαλπιγξ*, and *σταφυλή*, the uvula,) arises fleshy from the bony part of the tube of the ear, and is inserted into the basis of the uvula with that on the other side. They draw the uvula upward and backward.

SALPI'NGO-STAPHYLINUS INTERNUS. See PETRO SALPINGO-STAPHYLINI.

SALSAPARILLA. See SARSAPARILLA.

SALSO'LA. See KALI.

SALUTA'RIS DI'GITUS. See DIGITUS.

SALVATE'LLA VE'NA, (from *salus*, health, from the supposed salutary effects of opening this vein in melancholy,) *splenitis*, runs on the back of the hand, from the little finger and that next to it. It has been said to proceed from betwixt the thumb and the fore finger, and to run up to the ulna.

SA'LVIA, *salvus*, (from its salutary effects, which were formerly supposed to be so considerable as to justify the axiom, "*Cur moriatur homo cui salvia crescit in horto*"). *SAGE*, *elelisphacos*, is a low shrubby plant, with square stalks, obtuse, wrinkled, dry leaves, and large bluish flowers, fixed on loose spikes on the tops of the branches. It is a native of the southern parts of Europe, but bears the cold of our climate, and flowers in May and June. Its seeds are called *ebel*.

SA'LVIA BO'SCI. WILD OR WOOD SAGE, from *boscus*, a wood, where it grows.

SA'LVIA ÆTHI'OPIS. See ÆTHIOPIS.

SA'LVIA HO'RMINUM. See HORMINUM.

SA'LVIA MA'JOR. GREATER OR COMMON GARDEN SAGE, *salvia officinalis* Lin. Sp. Pl. 34. The leaves are nearly oval, but pointed; of a green, red, or variegated colour; but all are found on the same plant. The leaves are moderately aromatic, and used in debilities and relaxations both of the nervous and muscular system, as a stimulant, carminative, and tonic. Their smell is strong, but not disagreeable; their taste warm, bitterish, and subastringent; with a solution of vitriolated iron they strike an inky blackness. This species is more agreeable, but not so strong as the lesser sage; the flowers of both are weaker, but more agreeable than their leaves. The best preparations are the watery infusion, and a tincture or extract made with rectified spirit of wine, which contain the whole virtue of the plant. The watery infusion, acidulated with the juice of lemon or of orange, is an agreeable common drink in fevers. From 3 ss. to 3 i. of a conserve made with sage leaves is said to cure weak stomachs, if repeated twice a day. (See SALVIA MINOR.) By distillation with water a small quantity of essential oil is obtained, which possesses only the aromatic part of the herb. See Tournefort and Lewis's *Materia Medica*.

SA'LVIA MI'NOR, *salvia virtutis*. LESSER SAGE, *salvia minor aurita*, and *non aurita*, of Caspar Bauhine; *s. officinalis*, β. Linnæi. Its leaves are narrower than those of the greater sage, whitish, and never red; they are stronger, but less agreeable; though in other respects the same.

Sage has been much employed as a sudorific, for preventing the recurrence of intermittent paroxysms, for restraining colliquative sweats, infused in spirits, or wine (Van Swieten), and the milk of nurses who had

weaned their child: it is also supposed to resist putrefaction. Cullen's *Materia Medica*. See *SALVIA MAJOR*.

SALVIA SYLVESTRIS, *scorodonia*, *scordotis chamaedrys fruticosa*, GERMANDER SAGE, WOOD SAGE. *Teucrium scorodonia* Lin. Sp. Pl. 789, grows in woods and hedges. In smell, taste, and medical virtues, it resembles the scordium rather than the sage; but is less disagreeable than the former, though more so than the latter.

Among the reputed species of sage is the phlomis, or yellow sage, *phlomis fruticosa*, β. Lin. Sp. Pl. 818, which is astringent and vulnerary.

SAMBU'CUS, (from the Hebrew *sabuca*, a musical instrument made of this tree,) *acte*, *infelix lignum*, COMMON ELDER. *Sambucus nigra* Lin. Sp. Pl. 385. COMMON BLACK BERRIED ELDER, is a tree or shrub whose branches are full of fungi, covered with an ash coloured, under which lies a thinner green, bark, and below a white one. It flowers in May, and ripens its berries in September.

The young leaves, when budding, are said to be cathartic; but the parts employed medicinally are the inner bark, flowers, and berries. The first has little smell or taste: on first chewing it impresses a degree of sweetishness, followed by a very slight though durable acrimony, in which its powers seem to reside, and which it imparts both to watery and spirituous menstria. Sydenham directs three handfuls of the inner bark to be boiled in a quart of milk and water to a pint, half of which is to be drank every night and morning, and repeated for several days: it operates upward and downward; and upon the evacuations its utility depends. Boerhaave gave its expressed juice from 3 i. to half an ounce for a similar purpose. In smaller doses it is said to be an aperient and deobstruent in various chronic disorders. These effects are sometimes confined to the ebullus, or dwarf elder; but both have been used without any remarkable advantage. An infusion of the fresh flowers is gently laxative, and of the dried ones diaphoretic, and consequently useful in eruptive disorders. Externally they are employed in fomentations, &c. The London college orders the following *unguentum sambuci*. R. *Florum sambuci* p. ℥ iv. *sevi ovilli* p. ℥ iii. *olei olivæ* m. ℥ i. decoque flores in sevo et oleo donec friabiles sint, deinde exprime et cola. The juice of the berries, when inspissated to a rob, is styled a dissolvent and aperient: it is gently laxative, promotes urine or perspiration, and is recommended in dyspepsia, and debility of the urinary passages, in doses of from one to two or three drachms. See Lewis's *Materia Medica*; *Anatomia Sambuci* per M. Blockwitz; Sydenham's Works.

SAMBU'CUS E'BULUS; *HERBACEA*; and *HUMILIS*. See *EBULUS*.

SAMBU'CUS SANAMUNDA. See *EMPETRUM THYMALI FOLIIS*.

SAMIEL. A poisonous wind in the desert of Arabia, which kills without any apparent change on the body, except a total privation of irritability, and sometimes a distention of the blood vessels, and extravasation of their contents. It comes from the north west quarter, announced by a haze in that direction; but the rest of the atmosphere is clear. The Samiel seems to be a blast of hydrogenous gas, the source of which we shall afterwards explain. See *SIMOON*.

SAMP. A preparation of Indian corn, in which the hard coat is first separated by maceration in an alkaline ley, and the grain is next softened by long continued simmering, in a temperature below the boiling point. It is then said to be a palatable food, with some common condiments, and to supply very effectually the place of bread. It is chiefly used by the Aborigines of America, in the back settlements, both north and south.

SAMPHIRE. The *crythmum maritimum* Lin. Sp. Pl. 354, *feniculum maritimum* of Caspar Bauhine, is slightly aromatic, with a taste not unpleasant. It is sometimes used as a pot herb, but is more commonly pickled, and taken as a condiment.

SA'MPSUCHUM, (from *ψαω*, to preserve, and *ψυχη*, the mind; on account of its cordial qualities). See *ORIGANUM*.

SA'MPSUCHUS. See *MARUM* and *MAJORANA MAJ. FOL.*

SA'NCTÆ HELE'NÆ RA'DIX. *Cyperus Americanus*, *cyperus longus* Lin. Sp. Pl. 67, is a long knotted root, black without, and white within: in taste it resembles the galangal root, and is brought from St. Helena, in the province of Florida, where it is used in pains of the stomach, and in nephritic complaints.

SA'NCTUM SEMEN. See *SANTONICUM*.

SANDARA'CHA. *SANDARACH*, (from the Arabic *saghad*, *narak*), a gummy resin, of a yellowish white colour, in small lumps, dry, brittle, of a pleasant smell, of a resinous and gently acrid taste; it is brought from Africa, and is the production of the *juniperus cedrus* Lin. Sp. Pl. 1471. See *JUNIPERUS*, and *ARSENICUM*, of which it is also an appellation.

SA'NDIVER. See *AXUNGIA VITRI*.

SANGUIFICATIO, (*sanguinem facere*). The animal process by which our fluids are converted into blood. We have seen that blood consists of a watery fluid, styled serum, gluten, fibrin, and the red portion, which in the microscope appear to be globular. The serum contains an ammoniacal salt, by which it seems to dissolve a portion of the gluten. The difference between this fluid and the nutriment taken in, then, apparently consists in the formation of gluten, of the salt, the fibrin, and the red globules. The nature of ammonia we well know; and as its component parts are found in the system, it is not necessary to inquire anxiously into its source. The gluten, we have seen, differs probably from albumen in its proportion of azot, and the fibrin is a more animalized gluten. The source of the azot we have also attempted to investigate. (See *NUTRITIO* and *RESPIRATIO*.) Of the red globules we know little, and their source has not yet been explained. Mr. Hewson supposed them to be manufactured in the spleen, and certainly the red globules are peculiarly copious in this viscus; but admitting all the facts, we advance but little in our knowledge of the process of their manufacture.

The formation of the red globules is connected with the strength and vigour of the constitution; for in the cachectic state they are few, and their colour unusually pale. They are sometimes dissolved in the serum, and escape by every excretory. In other cases the whole of the circulating mass seems to be remarkably diminished; and Lieutaud and others have left us accounts of dissections, in which the circulating system

was found nearly exhausted of its usual contents. Unfortunately we have not been acquainted with the previous symptoms, an omission too common in the collections of that author.

SANGUIFLU'XUS, (from *sanguis*, blood, and *fluo*, to flow). See **HÆMORRHAGIA**.

SANGUINALIS and **SANGUINARIA**, (a sanguine compescendo). *Polygonum aviculare* Lin. Sp. Pl. 519. See **POLYGONUM**.

SA'NGUINIS INO'PIA. A tabes from loss of blood. An instance of the atrophica inanitorum of Cullen.

SA'NGUIS, (απο του σαιιν γυια; because it preserves the body,) *dehene*; *hæma*; BLOOD, the fluid which is contained in the arteries and veins. See **BLOOD**.

SA'NGUIS DRACO'NIS; *cinnabaris Græcorum*, *dracanthema*, *asagen*, DRAGON'S BLOOD, is a resin of a red colour, obtained from the *calamus rotang* Lin. Sp. Pl. 463; *dracena draco* Willdenow, ii. 155, and *pterocarpus draco* Willdenow, iii. 904. The dragon's blood covers the fruit of each tree: one sort is in oval drops, wrapped up in flag leaves; another in large masses, often impure, but sometimes little inferior to the former. Its colour is of a deep red, and when powdered, crimson. It readily melts and flames, almost totally dissolving by the help of heat in rectified spirit of wine, to which it imparts a dead red colour; soluble also in expressed oils; but yielding little or nothing to water. Dragon's blood has no remarkable smell or taste, though when dissolved it seems slightly acrid. The Dutch often adulterate it with mixtures of gum arabic, Brazil wood, alum, &c. which dissolve in water, crackling without burning in the fire. It is recommended as a gentle incassant, desiccative, and restringent, but owes its credit to its union with other astringents in the pulvis stypticus. It is totally inert, and now disused. Lewis's *Materia Medica*. See **GUMMI RUBRUM ASTRINGENS GAMBIESE**.

SA'NGUIS DRACO'NIS HE'RBA. See **LAPATHUM RUBRUM**.

SA'NGUIS HERCULIS. See **CROCUS**.

SANGUI-SO'RBA, (from *sanguis*, and *sorbeo*; because it stops hæmorrhages). See **PIMPINELLA**.

SANGUI SU'GA, (from *sanguis*, and *sugo*, to suck). See **HIRUDO**.

SANI'CU'LA. **SANICLE**, (from *sanando*, healing,) *cucullata*, *dodecatheon*; *symphytum petraeum*.

SANI'CU'LA ALPI'NA LUTE'A. See **AURICULA URSI**.

SANI'CU'LA MAS, *diaphensia*, *cortusa*, *sanicle*, **SELF-HEAL**, *sanicula Europæa* Lin. Sp. Pl. 339, is an umbelliferous plant, with shining, dark green, roundish, serrated leaves: the seeds are rough, and stick to the clothes. The plant is perennial and evergreen, grows wild in woods, on hilly grounds, and flowers in May. It is mildly astringent, is slightly rough, and bitter to the taste, with an acrimony which chiefly affects the throat. Both the watery and spirituous extracts retain its virtues.

SANI'CU'LA EBORACE'NSIS, *pinguicula*, *sanicula montana* flore calcarum donata *viola palustris*, **BUTTERWORT**, **YORKSHIRE SANICLE**, *pinguicula vulgaris* Lin. Sp. Pl. 25, is a small plant, with a few glossy unctuous leaves which lie on the ground; perennial, grows in elevated marshy grounds, and flowers in spring.

Its unctuous glutinous juice is used as a liniment for chaps, and as a pomatum for the hair: it is said also to be purgative, but none of the species are used in general practice.

SANI'CU'LA FEMINA. See **IMPERATORIA NIGRA**.

SANIDO'DES, **SANIO'DES**, (*savidos*, the genitive case of *savis*, a flat table). **FLAT CHESTED**.

SA'NIES, (*quad ex sanguine corrupto nascitur*). See **ICHOR**.

SANKI'RA. See **CHINA ORIENTALIS**.

SA'NTALUM, (from the Arabic, *Zandal*). **SAUNDERS**.

SA'NTALUM ALBUM, **WHITE SAUNDERS**, is similar to the yellow, but so weak that it is now neglected. The *santalum citrinum*, *santalum album* Lin., is the medullary part of the same tree, of which the *santalum album* is the *alburnum*, or outward sappy part. See **ALBURNUM**.

SA'NTALUM CITRI'NUM, **VEL PALLIDUM**, **YELLOW SAUNDERS**, *santalum album* Lin. Sp. Pl. 497, is a pale yellowish or brownish coloured wood, with a close even grain, an agreeable smell, and a bitterish aromatic taste, accompanied with a slight pungency. Distilled with water, it affords an oil which thickens into the consistence of a balsam, and smells like ambergris, leaving the remaining decoction bitterish. Rectified spirit extracts more than water; and an extract from this tincture is six times stronger than the wood itself. Hoffman says its virtues are similar to those of ambergris; but he has apparently been too extravagant in his praises.

SA'NTALUM RU'BRUM. **RED SAUNDERS**, *pterocarpus santalinus*, Willdenow iii. 906, is of a dull red colour, with little or no smell, or taste; chiefly used as a colouring drug, tinging water with a yellowish hue, and rectified spirit with a deep red; but not dissolving in expressed oil. It is said to be an astringent, probably from its being the product of a species of the genus which affords the *Sanguis Draconis*, q. v. See Lewis's *Materia Medica*.

SA'NTALUS ADULTERI'NUS. See **BRASILIIUM LIGNUM**.

SANTE'RNA, *senin-nitra* Chald. See **BORAX**.

SANTOLI'NA, (because it smells like saunders). See **SANTONICUM**.

SANTOLI'NA, **CHAMÆCYPARI'SSUS**. See **ABROTANUM**.

SANTO'NICUM, (from *Santonica*, its native place,) *sanctum cinæ et zedoariæ*, *semen contra vermes*, *lumbricorum semen*, *sementina*, *santolina*, **WORM SEED**, from the *artemisia santonica* Lin. Sp. Pl. 1183, is a small, light, oval seed, of a yellowish green colour, with a cast of brown; easily friable; brought from the Levant, usually mixed with bits of sticks and leaves. These seeds yield their virtue to water and to spirit; but the spirituous infusion is the most agreeable. In evaporating the watery infusion, only a simple bitter remains. They are seldom genuine, but mixed with the seeds of southernwood; and when good are full, of a greenish colour, strong smell, a bitter and aromatic or rather a subacid taste. They are esteemed to be stomachic, emmenagogue, and anthelmintic; but are chiefly used to destroy and expel worms, from which their appellation is derived. For adults, the dose is from one to two drachms of the powder, twice a day.

As a bitter, the watery extract is esteemed the best preparation; but as an anthelmintic, the spirituous extract is preferable. For children, a syrup is made of the infusion, and administered in this form. See Lewis's *Materia Medica*; Neumann's *Chemical Works*.

SA'PA, (from its pleasant taste,) *apochilisma, succago, robub, rob*, and *Oenus Siræos*; the juice of any vegetable boiled up with sugar to the consistence of honey. See *EXTRACTIO*.

SAPHÆ'NA VE'NA MA'JOR, (from *σαφης, visibilis*). About an inch below the passage of the cruralis from out of the abdomen, it sends off a large branch, called *saphena*, in its whole course to the foot only covered with the integument. It follows the direction of the sartorius muscle, until it arrives at the inner condyle of the thigh bone; then runs on the inside of the tibia, sending off branches as it passes along; and at the lower part of the tibia a branch which runs over the joint of the tarsus to the outer ankle. The extremity of the saphena passes on the fore side of the inner ankle, and runs betwixt the first two metatarsal bones, towards the great toe. See *CRURALIS VENA*.

SAPHÆ'NA MI'NOR VE'NA, is a branch from the saphena major, which separates from it soon after passing from the inguen; and runs down below the ham, communicating with the saphena major. Another branch, which proceeds from the cruralis a little above the ham, and runs to the outer ankle, is called *saphena externa*.

SA'PHERA. See *COBALTUM*.

SAPIE'NTIÆ DENTES, (because they do not appear till the age of wisdom,) *cranterres, genuini dentes*; the last of the molares, which sometimes do not appear till the twenty-sixth year; in a few instances not at all. See *DENS*.

SAPIE'NTIÆ OLEUM. See *LATER*.

SA'PO, (from the Hebrew *sapon*.) SOAP, *asabon*, is a composition of oils and fats, with alkaline salts, incorporated into a milky semi-transparent liquid.

From the principles of this combination the union of every oil with alkaline salts is styled a soap, and the term has been extended to the combination of resins, not only with oil, but with salts of every kind. In the Boerhaavian school saponaceous fluids have been discovered in a variety of plants, and these have been styled resolvers, detergents, and deobstruents. In fact, Boerhaave, overlooking the strictness of chemical combination, has transferred the term to milky fluids, to combinations of oil with water by means of mucilage; while modern chemists have, by a similar laxity of language, styled the extractive matter saponaceous. We shall adopt the term in all its chemical strictness, and consider soap as the union of oil with salts, whether alkaline or acid. We thus exclude spermaceti, milk, chyle, the blood, and even bile.

Soap, in its strictest sense, is a white, solid, insipid substance, soluble in water, precipitated by acids, and by neutrals, whether saline, earthy, or metallic; and from this definition the acid soaps are only excluded, which perhaps scarcely merit the appellation. The purest and most perfect soap is made from olive oil and soda; but there are numerous shades of the less perfect material. Potash we know to have a strong affinity to water, and the soap formed by its means is less solid

and granular, until the water is carried off by common salt, and in some manufactories by alum. The alkali in each case must be pure, in the language of the old school, caustic. Various oily substances have been employed, as olive oil, animal fats, rancid butter, rape, poppy, and cole seed; beech mast, hemp, and lintseed; horse and whale oil. The seven last oily matters seldom afford soap of a firm consistence. In general equal parts of the alkali and oil are necessary; but in the large way about eighty parts of the salt are sufficient for one hundred of oil. The addition of common salt has been said to harden the soap by abstracting the water; but it has less affinity to water than the alkali has, though probably greater than the united alkali and oil. The idea of Pelletier is, however, more probable, that a double decomposition takes place, and that the soda of the common salt displaces the potash, while the muriat of potash escapes in the ley. At all events, supposing the common salt to remain, its proportion is not more than two elevenths of the whole, in the best conducted manufactories. The remaining ley is carbonated, and on that account probably effete and useless; though Pelletier endeavours to prove, that some carbonic acid is necessary to the production of soap. In this he seems to have refined too far: the truth lies nearer the surface.

The other chemical qualities of soap are its absorbing a large quantity of water, and swelling when wetted. Its solution is of a yellowish grey colour, forming frothy iridescent bubbles. It is more soluble in hot than in cold water, and in dry places remains for years unaltered. In moist situations the alkali separates, and, if soda has been employed, effloresces on the surface. When distilled, the oil first rises in tolerable purity; but at the end is fetid. Soap is less perfectly soluble in alcohol. When an acid, which first separates the oil from alkaline soaps, is added in excess, an acid soap is formed; but the latter union is so slight as to be destroyed by a boiling heat. When a solution is curdled by earths, particularly by lime, barytic, or strontian water, the oil unites with the respective earth. The precipitate formed by lime, or rather the union between the lime and oil, for the earth seems to have a stronger affinity for oil than the alkali, is decomposed only by a carbonated alkali, in consequence of the powerful attraction of the lime for the carbonic acid, which weakens its affinity for the oil. A carbonated ammonia has the same effect, and produces an *ammoniacal soap*, which is more pungent than common soap, and more soluble in alcohol than in water. This soap is made also by adding muriated ammonia to common soap; but in every mode of compounding it the union of the salt and oil is weak, and the soap never hardens. M. Berthollet, in the *Memoirs of the Royal Academy* for 1780, has examined the properties of the different compounds, formed by precipitating the oil in soap by earths or metals. They are of various colours, more or less cohesive, and generally soft, except when acetite of lead is employed; and we know from the former observations (see *EMPLASTRA*) that oxyds of lead have a powerful attraction for oil. The result of the experiment with this metallic salt is, of course, the diachylon. Some of the oleo-metallic compounds are dissolved by alcohol without heat: others require its assistance. Expressed oils do not dissolve the oleo-calcareous

or aluminous compounds. We must not pursue a subject wholly chemical; but may express a wish that the medical effects of the oleo-metallic compounds might be cautiously tried.

In a *medicinal view*, though we detract from the warm commendations of the Boerhaavians, we shall find soap highly useful. As a compound it appears to be a demulcent and a laxative. Dr. Cullen attributed the latter quality to the common salt which it contains; but this is in a very inconsiderable portion, as we have already remarked, and it is highly probable that it escapes with the water; for a very small proportion of salt will prevent soap from dissolving. In the barilla soaps also no muriated soda is employed. The laxative power of soap most probably arises from the union of its ingredients, since it is efficacious in clysters, where there is little probability of its being decomposed, and no time for the decomposition to take place. As a demulcent it is employed in catarrhs and peripneumonies, in diseases from acrid poisons, as well as in diarrhoeas and dysenteries. We have already remarked that we can scarcely suppose it to reach the bronchial glands without decomposition; yet that observation supplies some evidence of its demulcent powers even in the secretions of the bronchiæ, though similar effects may arise from the oil. When acrid poisons have been swallowed, soap is highly useful, to sheath the very sensible coat of the stomach, and often by its alkali either to decompose or neutralize the deleterious substance. (See *VENENUM*.) In old diarrhoeas, where the vilous coat of the intestines is preternaturally sensible, in consequence of being deprived of its mucus, the laxative power of the soap must be corrected, either by opium, by uniting it with wax, or by both: in dysenteries it has also been a custom to combine it with opium or astringents. Soap is supposed to have an anthelmintic power from the oil which it contains, as every oily matter is supposed to destroy worms, by closing their spiracula. This power is, however, equivocal; and if it has any effect of this kind it is on ascarides, when injected in the form of a clyster.

According to Bergius, and some very respectable followers of Boerhaave, soap is an aperient, a solvent, and a detergent, useful in obstructions of every kind, particularly in those of the chylopoietic viscera. In different parts of this work we have found it difficult to affix any precise ideas to these words, except that obstructions are relieved by gentle laxatives. Soap is one of these; but there is no reason to think it more useful than small doses of rhubarb, of neutral salts, or the saline mineral waters.

While speaking of it as a compound, we have been unavoidably led to notice the effects of its oleaginous ingredient. It is, therefore, only necessary now to observe, that its alkali is often highly useful as a dissolvent of calculi in the bladder; and the quantity introduced into the system, defended by the oil, is more considerable than can be taken in any other form. When the pure alkali is given in veal broth, a similar compound is formed, though not strictly saponaceous. It has been supposed that the alkali is equally effectual in dissolving biliary calculi; but experience has not confirmed the eager expectations of those who anxiously sought in this remedy a very general solvent. Among other fancies of this kind it has been given in cases where an imaginary pituita prevailed in the blood, to

children where the croop was supposed to be hereditary, and where mucous discharges were frequent. The most rational of these views seems to have been to dissolve the heavy viscid mucus of the stomach, which is sometimes highly troublesome, resisting every attempt to remove it, except by vomiting. In this case also, for it is a fancy we have indulged, it has appeared useless.

Soap is used as an intermede for mixing different oily fluids; but is in this respect inferior to the pure alkali, or even mucilage. It is, however, a convenient substance for forming pills; and as it promotes the solubility of wax, is an essential ingredient in the exhibition of the latter. In employing it, however, for pills, its levity must be attended to, or they will be otherwise too large; but, in general, soap will combine with an equal quantity of any resinous powder, as rhubarb, or jalap; and will advantageously unite with an equal quantity of wax.

Acid soaps are unknown in medicine. Sulphuric acid, in nearly an equal proportion, added to oil, by slow degrees, resembles in appearance tar; but, when well washed, it is like brown wax, specifically heavier than water, solid, and brittle, soluble in alcohol, uniting with water, and forming a whitish fluid (*Journal de Physique*, xvi. 411). A pure alkali, magnesia, chalk, oxide of lead, filings of iron, and zinc, as well as many saline, earthy, and metallic neutrals, form a coagulum, which resembles in appearance and properties wax. Nitrous vapour and oxymuriatic acid produce a similar change. Oxymuriat of potash, with a little oil, forms a soap, which explodes by a slight stroke.

Ammoniacal soaps we have already mentioned. These are employed medicinally as external stimulants. The volatile liniment, as it was formerly styled, is an instance of this combination.

Essential oil soaps have been styled *Starkey's*, from their first inventor, or rather from the person who first introduced them. Starkey's process consisted merely in mixing dry carbonate of potash with oil of turpentine, by agitation every day for six months. Baume has refined the process, and directed the oil to be rubbed in the proportion of thrice its weight with the potash. When mixed to the consistence of a soft extract, it is suffered to deliquesce, at rest, in damp air. The alkali united with water falls to the bottom, the uncombined oil rises to the top, and the soap occupies the middle of the cucurbit. It is separated by filtering. It has been employed in medicine; but apparently merits little attention. The saponaceous liniments chiefly consist of essential oils combined with soap. The eau de luce is of this kind.

Black soaps are generally soft, composed of an impure alkali and train or whale oil. They are useful in forming stimulant cataplasms, with more active rubefacients, and sometimes peculiarly active in clysters, though in this form they produce often sickness and general disorders of the system.

SA'PO A'LBUS; *sapo Hispanicus*, HARD, or SPANISH SOAP, is made in Spain, with olive oil and the Spanish barilla, by a process similar to that directed for the soap of almonds.

SAPONA'RIA, (from *sapo, soap*). *Struthium, lanaria, lychnis sylvestris, ibixuma*, BRUISE WORT, SOAP WORT, *saponaria officinalis*, Lin. Sp. Pl. 584, is a smooth herb, with leaves resembling the plantain, and

clusters of red, purple, and whitish flowers: the root is long, slender, spreading to a great distance, of a brownish colour on the outside, and white within, with a yellowish fibre in the middle. It grows in moist grounds, and flowers in July.

The plant is called *saponaria*, because its juice, like soap, cleans clothes. The roots and leaves are glutinous and sweet to the taste, but in the roots there is also a slight pungency, and in the leaves a bitterishness. The soapy matter dissolves either in water or in spirit of wine. The Germans prefer the root to the sarsaparilla. Andry gave its inspissated juice with success in gonorrhœa, in the dose of half an ounce daily; and in general the cure was effected in about a fortnight, without the assistance of any other remedy. Segy orders from two to four pints of the decoction to be daily taken in lues; and, in bad cases, the patient takes at the same time the plant in powder, or in the form of an extract. This is said to be advantageous in venereal, scrofulous, and impetiginous affections; in visceral obstructions and jaundice. This plant is also applied externally to venereal ulcers, either in fomentation, or in a dry form, by sprinkling it in powder over the sores. Two ounces of the root yielded eleven drachms of watery extract; but this quantity seems to be variable. It is sweetish, followed by some pungency. The spirituous extract is less in quantity, but more pungent. Decoctions, the extract, and even the leaves, resemble in appearance and quality solutions of soap: they have even been used for the same purposes. See Lewis's *Materia Medica*; Neumann's *Chemical Works*.

SAPONARIÆ NUCULÆ, *baccæ Bermudenses*, vel *Bermudæ*. SOAP OR BERMUDAS BERRIES; a spherical fruit about the size of a cherry, from the *sapindus saponaria* Lin. Sp. Pl. 526. The cortical part is yellow, glossy, and so transparent as to show the spheres which rattle within, and includes a white kernel. It is the produce of a small tree in Jamaica, and other parts of the West Indies: the kernel, when steeped in water, raises a froth like soap suds.

These berries are supposed to be powerful in removing obstructions in the liver and spleen; in relieving cachexy, dyspepsia, and chlorosis. The best preparations are, a tincture made with white wine, or spirit, and the extract from the spirituous tincture. See Lewis's *Materia Medica*; Medical Museum, vol. iii. p. 538.

SAPONIS CERATUM. See PLUMBUM.

SAPOTA. The fruit of the *achras sapota* Lin. Sp. Pl. 470, which is highly luscious, resembling marmalade. It is a native of South America; and its seeds have been used as demulcents.

SAPPAN LI'GNUM. See CAMPECHENSE LIGNUM.

SAPPHIRI'NA A'QUA, (from its colour). See CUPRI AMMONIATI AQUA.

SA'PROS, (from *σπρω*, to putrefy). See MORTIFICATION.

SA'RA. See ESSERA.

SARA'SSAS. See CORALDODENDRON.

SARCOCE'LE, (from *σαρξ*, flesh, and *κλῆ*, a tumour,) is a firm enlargement of the testicle, differing in the resistance it affords to the finger, and sometimes degenerating into a scirrhus hardness. The sarcocele, or hernia carnosæ, according to Mr. Pott, in a general sense, means any induration or diseased flesh, though

in this case confined to the testicle; adding that the sarcocele, distinguished by the ancient writers into the sarcocele, the hydro-sarcocele, the scirrhus, the cancer, the caro adnata ad testem, and the caro adnata ad vasa, are really little more than descriptions of different states and circumstances of the same disease. The caro adnata ad testem is a scirrhus beginning in the epididymis; the caro adnata ad vasa a scirrhus of the epididymis somewhat increased, apparently springing from the spermatic vessels. In the hydro-sarcocele the testicle is enlarged and hardened; or rather it is both scirrhus and dropsical. (See Pott's Works, 4to.) The sarcocele is indisputably a disease of the body of the testicle, from which it resembles a hard fleshy substance, instead of its natural soft vascular texture. Its more favourable appearances often continue without change for many years, while in others the disease quickly passes through its different stages. Sometimes the first appearance is a mere simple enlargement and induration of the body of the testicle, without pain or inequality of surface, producing no uneasiness nor inconvenience, except what is occasioned by its weight. In a few instances it remains in this state for a considerable time, without visible alteration; but in others, soon after its appearance in this mild manner, it suddenly becomes unequal and knotty, is attended with very acute pains, darting up to the loins and back; but the integuments continue entire. In short, such is the variety of the appearances of this disease, that description can hardly afford an adequate idea of it. Sometimes the disorder seems to be merely local, at others there is a pallid or leaden countenance, indigestion, nausea, colic pains, sudden diarrhœa, &c. sufficiently indicating a vitiated habit and diseased viscera. Its progress also from the testis upward is very uncertain; the disease affecting the spermatic process, in some subjects, for a long time; while, in others, it injures the testicle very soon, and almost as soon seizes the spermatic cord. The testicle sometimes enlarges to an enormous size, and this is not an uncommon disease among negroes. In the *Philosophical Transactions* for 1783 it is said to have extended to the weight of fifty pounds. The sarcocele has been said to affect the right rather than the left side, and small bones are sometimes said to be found in the tumour.

Amongst the mistaken causes of a scirrhus testicle, Mr. Pott reckons the *hernia humoralis*; not that a sarcocele never follows a hernia humoralis, but that it does not necessarily produce it. Mr. Bell observes that a hardened state of the testis and epididymis, produced originally by a venereal taint, in some instances degenerates into the worst species of sarcocele. In general, however, the hernia humoralis is one of the diseases which should be distinguished from the sarcocele. A quantity of water is sometimes collected in the vaginal coat of a scirrhus testis, and it has been erroneously supposed that this water renders the testis scirrhus. This, however, is not the case.

The only remedy from which any advantage can be expected is the removal of the diseased parts by extirpation. But before the operation is attempted, the cause of the sarcocele and the state of the spermatic cord from the ring to the testicle are objects of necessary consideration. When it proceeds from a blow on the part, the operation will be more successful than when caused by cancer or struma; when either of these last is the cause, they will generally be found to exist also

on other parts; therefore, though the diseased testicle be removed, the cause will remain, and again appear in other organs. In strumous habits the glands of the mesentery, the lymphatics, &c. are generally obstructed; therefore, external applications are useless, and proper internal medicines must be employed: in children this disorder seldom occurs without an enlarged belly, which, before any further attempts are made, must be lessened.

Of the internal medicines, mercury, hemlock, and sulphur, have been principally recommended. The balsam of sulphur was the favourite remedy of Rulandus; but to neither does the disease usually yield. The external application of mercury is more successful, and the mercurial friction has occasionally removed it. Cavillini apparently succeeded with the cold stillicidium, alternated with a cataplasm of bean flour, and Schultetus with a plaster of gum ammoniac. The actual cautery, and the subsequent discharge from the separation of the eschar, is sometimes recommended; but, in general, extirpation is the only successful method.

It is usually remarked that if the spermatic cord is soft, and of its natural size, castration may be safely performed; but if much enlarged, that the operation is not advisable. This is not strictly true; for the spermatic cord may be enlarged by varices, or by effusion, neither of which contra-indicate the operation; but when the feel is irregular and knotted, when lancinating pains shoot upward or downward, and the unequal hardness is too high to admit the ligature above it, the operation will be useless or dangerous.

The use of the knife is sometimes deferred till darting pains come on in the loins or testicles. This may not be wholly improper; but when these appear, the operation should be no longer delayed; for a local scirrhus will soon affect the constitution, and indeed when the countenance becomes of a leaden colour, the evening exacerbation strongly marked, with morning perspirations, it is often too late to attempt it. Yet it is a last resource, and, even in these circumstances, will sometimes succeed.

After a venereal gonorrhœa, improperly treated, Dr. Swediaur observes, that one or both testicles sometimes grow hard. In a few instances the disorder is accompanied with a sensation of a painful pressure; but is frequently without any pain. He adds, that, in these cases, mercury given internally, or rubbed externally into the perinæum and scrotum, twice a day, with the constant application of a warm poultice made of the root of the *atrofia mandagora*, &c. are often useful. Cicuta, applied internally and externally, may perhaps be tried, with prospect of advantage; and an emetic has been sometimes found effectual. The decoction of the mezereum, internally, with a poultice of it externally, has lately been recommended; but these swellings usually remain unaffected, except the discharge from the urethra is restored, which has sometimes been effected by a recent infection, or, according to Swediaur, by a gonorrhœal inoculation. When a hardness of the testicles does not yield to the means commonly employed, such as moderate evacuations of blood, when these are indicated, a soft easy diet, a lax belly, the use of a suspensory bandage, and especially when mercury, which, on the chance of the disorder being venereal, is very commonly tried, are all used without any effect; we

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may, according to Bell, suspect that the disease is of a malignant nature: when more inveterate symptoms come on, and the disorder, from the state of an indolent hard tumour, becomes painful, castration must be attempted. See Sharp's Operations; Pott's Chirurgical Works; Bell's Surgery, vol. i. p. 498; London Medical Journal, vol. v. p. 32; Edinburgh Medical Commentaries, vol. ix. p. 336; White's Surgery, p. 335; Heister de Hernia Carnosa; Warner's Account of the Testicles; Morgagni de Sedibus, &c. xliii. 38, &c.; Pohl de Herniis et Sarcocoele.

SARCOCO'LLA, (*σαρξ*, *flesh*, and *κόλληω*, *to glue together*, from its supposed power of conglutinating wounds,) is a gummy resinous juice, from the *penæa mucronata* or *sarcocolla* Lin. Sp. Pl. 162, brought from Persia and Arabia, in small spongy grains of a whitish yellow, sometimes of a deep red colour, about the size of a pea: the whitest and most bitter are preferred. Its bitterish subacid taste is followed by a slight sweetness; it softens in the mouth; bubbles and catches flame from a candle; dissolves freely in water, and in a large proportion in spirit of wine; but its medical qualities are inconsiderable. See Lewis's Materia Medica; Neumann's Chemistry.

SARCO-CIRSOCE'LE. A combination of sarcoma with CIRSOCELE, q. v.

SARCO-EPIPOCE'LE, (from *σαρξ*, *flesh*, *ἐπιπλοον*, *omentum*, and *κῆλη*, *tumour*). A compound rupture, consisting of a descent of the epiploon during the existence of a sarcocele. Sometimes a rupture of the indurated epiploon, either umbilical or scrotal.

SARCO-HYDROCE'LE. A combination of sarcoma with HYDROCELE, q. v.

SARCOLO'GIA, (from *σαρξ*, *flesh*, and *λογος*, *a discourse*). SARCOLOGY, including myology, splanchnology, angiology, neurology, and descriptions of the integuments.

SARCO'MA, (from *σαρξ*, *flesh*), a fleshy tumour on any part of the body; *horrus*; *sarcophya*; *nævus*). This adventitious soft substance is not contained in a cyst, and does not yield to the impression of a finger, nor is it moveable. Dr. Cullen styles it soft extuberation not painful. It sometimes arises from the sockets of the teeth, but most frequently from the labia pudendi, or the more internal parts. Extirpation is the only remedy; and if the basis be narrow, a ligature may be used; but if broad, the knife will be necessary. See Turner's Surgery, vol. i. p. 201. The name also for *folysus narium*.

SARCO'MPHALON, (from *σαρξ*, and *ομφαλος*, *the navel*). A fleshy excrescence at the navel.

SARCO'PHAGUM, (from *σαρξ*, and *φαγω*, *to eat*). See ASSIUS LAPIS.

SARCOPHY'IA, (from *σαρξ*, and *φύω*, *to grow*). See SARCOMA.

SARCO'TICA. SARCOtics, (from *σαρκοῦ*, *to heal*.) Medicines which generate flesh in wounds.

SARDIA'SIS, **SARDO'NICUS RI'SUS**, (from *σαρδάνη*, an herb supposed to cause a convulsive laughter,) *spasmus cynicus*, *gelasmus*, defined by Vogel an involuntary laughter, in which the mind is not elated with joy, but affected with pain, and often with anger. The sardonias is said to be a species of ranunculus. Ætius Tetrab. iv. serm. i. cap. 66. See RISUS.

SARPE'DO. See LICHEN.

R r

SA'RSA, and SARSAPARI'LLA, (from *zarza*, *bramble*, and *parilla*, a little vine, Spanish,) *carivillandi*, *iva pecanga*, *macapatti*, *smilax aspera Peruviana*, is brought from South America; the slenderer pale sort comes from New Spain, the dark and thick from Honduras, the darkest and thickest from Quito. That most esteemed is the *smilax aspera Peruviana*, C. B. *smilax sarsaparilla* Lin. Sp. Pl. 1459. VIRGINIAN IVY LEAVED ROUGH BIND WEED, light, white within, but not easily powdered. The root consists of a number of strings, as thick as a goose quill, flexible, free from knots, and composed of fibres which run their whole length. On their outside is a thin, brown, or yellowish ash coloured skin; within, a thicker, white, friable substance, and in the middle a woody pith.

The roots have a mucilaginous bitterish taste, and no smell. Neumann obtained from 960 grains, 360 of watery and ten of spirituous extract; inversely 240 and 220. In 1563, the Spaniards brought them into Europe, as a specific in the lues venerea; and indeed a decoction is still esteemed an excellent auxiliary to mercury. When children are affected with lues from their parents, or nurses, the powder of this root has been added to their food. It promotes perspiration, is said to attenuate viscid humours, to relieve venereal headaches and nocturnal pains; particularly when the bones are carious, or in other respects disordered from the venereal disease. Ulcers, nodes, and other symptoms of the lues, which have resisted the effects of repeated salivations, are said to yield to its use, and the health after the use of mercury to be more speedily restored. Whether given in decoction or powder, it should be continued in large doses, and for a considerable time.

The best preparation is the following decoction: R. Rad. sarsaparillæ incisæ $\frac{3}{4}$ vi. aq. distillatæ ℞. viij. In a heat of about 195 degrees, let it be macerated for two hours; afterwards take out the sarsaparilla and bruise it; then let it be returned into the liquor, and again macerate it for two hours more. Boil the liquor till it is reduced to four pints, pour off the fluid, press the sarsaparilla, and strain the whole. This will be more palatable if a little liquorice root be added at the end of the boiling.

The London college order a compound decoction of this root. R. Radicis sarsaparillæ incisæ et contusæ p. $\frac{3}{4}$ vi. corticis radicis sassafræ ligni guaiaci rasi, glycyrrhizæ contusæ singulorum p. $\frac{3}{4}$ i. corticis radicis mezerei $\frac{3}{4}$ iij. aquæ distillatæ ℞. x. These must be macerated in a gentle heat for six hours, then reduced by boiling to five pints, adding the mezereum during the latter part of the process, and the decoction strained. These decoctions are given in venereal, scrofulous, and hepatic affections. The dose of the first is half a pint, four times in twenty-four hours; the second half the quantity in the same space of time. The long stringy part only is useful.

The sarsaparilla forms a principal ingredient in the Lisbon diet drink, supposed to be thus made: R. Sarsaparillæ concisæ, radicis Chinæ sing. $\frac{3}{4}$ i. nucum juglandis cortice siccaturum, No. xx. antimon. crud. $\frac{3}{4}$ ij. lapidis pumicis pulverizati $\frac{3}{4}$ i. aquæ distillatæ ℞. x. The powdered antimony and pumice stone are to be tied loosely up in separate rags, and boiled along with the other ingredients, and this boiling continued till the

liquor is reduced to five pints. This appears to be an inferior medicine to the former; for the addition of the antimony and pumice stone can add nothing to the efficacy of the other ingredients. Notwithstanding the virtues above enumerated, and the commendations of many authors, Dr. Cullen never found it an effectual medicine in the lues venerea, nor any other disease, in whatever shape it has been tried.

Since that period, Mr. Pearson has given us a very instructive account of the real virtues of these subsidiary medicines in the cure of lues. He found, as we have ourselves observed, that it neither would cure lues, nor render a less dose of mercury necessary. Yet he thinks that, for a time, it would suspend the action of the virus, and remove the remaining complaints, after the principal disease was subdued, which arose either from its effects, or those of the medicine. Of its "suspending" power we have not found sufficient evidence; but its removing the remaining symptoms is indisputable. See Cullen's Materia Medica, and Pearson on the Effects of some Medicines in the Cure of the Lues Venerea. See LUES.

See Lewis's Materia Medica; Neumann's Chemistry; London Medical Observations and Inquiries, vol. i. p. 149, &c.

SARSAPARI'LLA. See ARALIA.

SARSAPARI'LLA GERMANORUM. *Carex arenaria* Lin. Sp. Pl. 1311, is often used in chronic rheumatisms instead of the sarsa. Some other species of *Carex*, as the *C. distans* and *hirta* 1387, 1389, are also employed.

SARTORIUS, (from *sartor*, a *taylor*,) *fascialis*. It is called *sartorius*, or the TAYLOR'S MUSCLE, because taylor's cross their legs by its action. It arises tendinous from the anterior superior spinous process of the os ilium, runs inwards contiguous to the blood vessels, and is inserted by a thin tendon into the inner part of the tibia. It partly rotates the thigh.

SA'SSAFRAS, (*quasi saxifraga*, because the decoction was supposed capable of breaking a calculus,) *anhuiba*, is the root of the *laurus sassafras* Lin. Sp. Pl. 530, light, and covered with a rough and fungous bark, externally of an ash colour, and internally of the colour of rusty iron; brought from Virginia and other parts of America. The wood, which is called *feniculi vel feniculatum lignum*, hath a fragrant smell, a sweetish, subastringent, aromatic taste: the bark is more fragrant than the internal woody part, and the small twigs than the larger pieces. Spirit of wine dissolves the whole of its active power, and water a large portion. Distilled with water it affords an essential oil, limpid at first, but afterwards yellow, or of a reddish brown: the remaining decoction affords a bitterish subastringent extract; but an extract made from a spirituous tincture possesses all the virtues of the root. It is considered as serviceable in cuticular eruptions; and is an ingredient in the compound decoction of sarsaparilla: its essential oil is given in doses of from two drops to ten.

Sassafras is used chiefly in decoction as a mild diaphoretic and corroborant in cutaneous, scorbutic, catarrhal, and cachectic disorders. Like the sarsa, it is supposed to assist the action of mercury in lues; but its real virtues do not rest on a better foundation. It is indeed inferior to the sarsa in rheumatic and syphilitic cases. (See Tournefort and Lewis's Materia Medica; Neumann's Chemistry.) Dr. Cullen has found copious

draughts of the watery infusion effectual in promoting sweat, without being able to determine the appropriate advantages of this evacuation.

SATELLITE VEINS, are those which accompany the brachial artery to the bend of the elbow.

SATUREIA SATIVA, (from *satyri*, because when eaten it is supposed to create lascivious desires,) *cunila sativa*, *thymus*, *thymbra*, SUMMER'S SAVORY; *satureia hortensis* Lin. Sp. Pl. 795, is a low shrubby plant, somewhat hairy, with small, oblong, narrow leaves, set in pairs. Its flowers are in clusters in the bosom of the leaves, and of a purplish colour. It grows wild in the south of Europe, and is sown annually in our gardens. The leaves are warm, aromatic, and smell like a milder thyme. Rectified spirit takes up all their virtue; water the smell only. By distillation with water a small quantity of essential oil is obtained. It is supposed to be heating, somewhat diuretic and emmenagogue; but its chief use is for culinary purposes.

SATUREIA MONTANA, Lin. Sp. Pl. 794; similar in its virtues to the former. WINTER SAVORY. See *Raii Historia*.

SATURNI EXTRACTIONUM. See **PLUMBUM**.

SATURNI AQUA. See **PLUMBUM**.

SATURNI NUM UNGUENTUM. See **NUTRIMENTUM UNGUENTUM**.

SATURNUS, (from the heathen god). LEAD. See **PLUMBUM**.

SATYRIASIS, (from *σατυρος*, a lascivious animal,) *brachuna*, *satyrisimus*, *arascon*, and *arsatum*, *priapismus*, *salacitas*. A violent desire of venery, in such a degree as to destroy the reason. Dr. Cullen places it in the order *dysorexia*, defining it an unconquerable desire of venery in males. The species are:

1. *Satyriasis juvenilis*, when the functions are otherwise but little disturbed. 2. *Satyriasis furens*, when, with the excess of venereal appetite, the body is diseased with fever, &c. The pulse is quick, the breathing short, the patient is sleepless, thirsty, and loathes his food; the urine is evacuated with difficulty, and a fever soon comes on. See **SALACITAS**, and **FUROR UTERINUS**, a similar disease in females; *Cælius Aurelianus*, lib. iii. c. 18. de *Acutis*.

SATYRICA. See **ENTACTICA MEDICAMENTA**.

SATYRION. A name for several species of **ORCHIS**, q. v.

SATYRISMUS. See **SATYRIASIS**.

SAUR KRAUT. See **BRASSICA**.

SAURURUS, (from *σαυρα*, the lizard, and *ουρα*, a tail). A plant called the lizard's tail, resembling in virtue the arum.

SAVINA. See **SABINA**.

SAXIFRAGA, (from *saxum*, a stone, and *frango*, to break, medicines which dissolve or break the stone in the bladder). See **PARONYCHIA**, **FILIPENDULA**, **MEUM LATIFOLIUM**, **PIMPINELLA**, **EUBIA SYNANCHICA**.

SAXIFRAGA ALBA; *sanicula sedum*; WHITE SAXIFRAGE; *saxifraga granulata* Lin. Sp. Pl. 576, is a plant with kidney shaped, yellowish green leaves, round, purplish, branched stalks, on the tops of which are short loose spikes of white flowers. The root is composed of small fibres, intermixed with little tubercles. It is perennial, grows wild in sandy pastures, and flowers in May. The tubercles of the roots have a

sweetish, slightly acrid taste, and are supposed to be aperient and diuretic; but these qualities, adopted from the *signaturists*, are derived from the resemblance of the tuberculated roots to calculi. See *Lewis's Materia Medica*.

SAXIFRAGA ANGLICA. ENGLISH OF MEADOW SAXIFRAGE; *saniculum erraticum*; *angelica*; *hippomarathrum*; *puccedanum silaus* Lin. Sp. Pl. 354, is an umbelliferous plant with winged leaves, flowers of a yellowish white colour; the root is long, and about as thick as a finger, brown or blackish on the outside, and white within. It is common in meadows and pasture grounds, and flowers in June. The root, leaf, and seeds are said to be diuretic, aperient, and carminative, and in each respect preferable to those of the white saxifrage. See *Lewis's Materia Medica*.

SAXIFRAGA MONTANA MINOR. See **BUNIUM**.

SAXUM CALCARIUM. See **CALX**.

SCABIES, (from *scaber*, rough). A SCAB: a hard substance covering superficial ulcerations, and formed by a concretion of the fluid discharged from them. A name also for a disorder of the bladder mentioned by *Ætius*. If, after a painful discharge of the urine, branny scales appear in it, with many slender filaments, which subside, the ancients call it a *scabies*, considering it as an indication of a corrosion of its mucous and villous coats. To relieve the disease *Ætius* recommends a vegetable diet, milk, broth, &c. In *Linnaeus's Nosology*, it is an order in the class of *vitia*, and signifies cutaneous diseases; see **PRURITUS**, and **PSORA**: and it is the name also of a plant, see **LICHEN**.

SCABIOSA, (from *scaber*, rough, from its rough hairy surface). COMMON FIELD SCABIOUS; *scabiosa arvensis* Lin. Sp. Pl. 143, is a rough hairy plant; growing wild in pasture grounds, of a nauseous bitter taste; and flowers in June. It is styled *aperient*, *sudorific*, and *expectorant*; used externally for the itch, from whence its name is derived.

SCABIOSA INDICA ARBOREA. See **CATTU SCHIRAGAAM**.

SCABRIDÆ, (from the same). An order of plants whose bark is rough.

SCABRITIES, (from the same). The rough surface of the barks of some trees.

SCADIDACALLI. See **EUPHORBIVM**.

SCALLA SACRA, from *σκαλις*, a ladder). See **CLIMAX**.

SCALENUS MUSCULUS, (*σκαληνος*, a figure with three unequal sides,) *triangularis*, takes its origin from the transverse processes of the vertebræ colli, grows larger as it descends, and is then collected into two masses; the anterior inserted into the inner edge of the first rib, on each side of which the subclavian vein and artery, with the bronchial nerve, pass out; and the posterior attached to the posterior part of the first rib, partly running to the second: its office is to raise those two ribs, and to move the vertebræ colli to one side, or when acting together to bend it forward. More minute anatomists, as *Douglass* and *Albinus*, divide it into many additional portions; but this minuteness is useless. A middle one may be distinguished, inserted tendinous into the outer and upper part of the first rib, from its root to about an inch from the cartilage.

SCALPELLUM. A SCALPEL. The common dissecting knife.

SCA'LPO. To SCALP; to lay the skull bare. The operation is performed by making an incision through the integuments and pericranium equally and at once, with the edge rather than the point of the knife, especially if a fracture is suspected. After making the incision, the pericranium must be raised a little from the bone with the edge of the knife, to clear the bone, and the scalprum employed.

In pursuing a fissure, a rectilinear incision is preferable; but in most other cases an oval one. Arnaud and Gooch have made a crucial incision upon the temporal muscle with good success, the muscle still continuing its action. See Gooch's Treatise of Wounds, p. 253.

SCALPRUM, (from *scalpro*, to rasp, or raise). A DENTICULAR, RASPATORY, or RUGINE, any kind of iron instrument with which a rotten bone is rasped or scraped. Sometimes scalprum means a little chisel for amputating the fingers.

SCAMMO'NIA MONSPE'LICA. See PERIPLOCA.

SCAMMO'NIUM, (a corruption of the Arabic terms *chamozah*, or *mammuzah*). SCAMMONY, MAHMOODY, *convolvulus scammonia* Lin. Sp. Pl. 218, SYRIAN BIND WEED, or SCAMMONY. The root is very long, and about three or four inches thick, the tops of which, while in the ground, are cut in June, and from this incision a milky liquor exudes, which is received in shells, &c. and when hardened by evaporation forms the scammony.

This gum resin is brought to us in light spongy masses, glossy, of different shades, from a grey or yellow white almost to a black, appearing when broken bright and shining; and easily crumbling between the fingers. If touched with a wetted finger it becomes milky; if broken, and put into water, it dissolves into a milky liquor of a greenish hue. An inferior sort is brought from Smyrna, more pungent than that from Aleppo, and mixed with much extraneous matter. Though different parcels of scammony vary so much in their colour, when powdered they are all of a brownish white. That which easily crumbles between the fingers, is pellucid, grows instantly white on being wetted, and leaves but little fæces when dissolved, is the purest and best. It is often adulterated with wheat flour, sand, or ashes, which are discovered by dissolving the scammony in water, when the impurities sink to the bottom.

The Greek and Arabian physicians employed it internally as a purgative, and externally for tumours, scabies, tinea, fixed pains, &c. Since the time of Boerhaave it has been considered a safe though stimulating cathartic, and frequently given uncombined without producing tormina, or an excessive discharge. It is, however, a very brisk purge, and usually given in cold phlegmatic constitutions.

Inflammatory disorders are sometimes increased, and very irritable habits occasionally injured by it. It needs no corrector, though for this purpose it has been exposed to the fumes of burning sulphur; but we thus only lessen its activity. When scammony has undergone this operation, it is called *diagrydium*. The resin and gum are nearly in equal parts, so that it dissolves equally in water and in spirit.

See Lewis's Materia Medica; Neumann's Chemistry; London Medical Observations and Inquiries, vol. i. p. 13, &c.

Electuarium scammonii, formerly *electarium caryocostinum*, is made by adding to an ounce and half of scammony in powder, cloves and ginger, of each six drachms; essential oil of carraway, half a drachm by weight, with a sufficient quantity of syrup of roses. Mix the species, powdered together, with the syrup, then add the scammony, and afterwards the oil. Dose ʒ i. to ʒ i.

Pulvis scammonii compositus, cerberus, triceps, cornachini pulvis.—Take of scammony, hard extract of jalap, each two ounces; ginger, half an ounce; powder them separately, and mix them. Dose gr. x.—ʒ i.

Pulvis scammonii cum aloe, consists of six drachms of scammony; hard extract of jalap, socotorine aloes, of each an ounce and a half; ginger half an ounce. They are powdered separately and mixed. Dose gr. x.—ʒ i.

Pulvis scammonii cum calomelane, contains two parts of scammony to one of calomel, and as much fine sugar. The dose is from ten grains to a scruple. Pharmacop. Lond. 1788.

Scammony is also an ingredient in *pulvis è sennâ compositus*; *extractum colocynthidis compositum*; and in the *pilula ex colocynthide cum aloe* of the Edinburgh Pharmacopœia.

SCAMMO'NIUM ORIENTA'LE. See GAMBOGIA.

SCAMMNUM HIPPOCRATIS. See BATHRON.

SCA'NDIX, (from *shandak*, to sharpen). *Acus Pastoris*, *Scandix*, *Pecten Veneris* Lin. Sp. Pl. 368, SHEPHERD'S NEEDLE, or VENUS' COMB, grows in the fields in Europe, is oleraceous, and aromatic. It is said to be antiphlogistic, diuretic, lactiferous, and it is given in dropsies and vertigo.

SCA'NDIX CEREOFOLIUM, Lin. Sp. Pl. 368. See CHÆREFOLIUM.

SCA'NDIX ODORA'TA. See MYRRHA, and MYRRHIS.

SCA'PHA, a SKIFF, (from *σκαπτο*, to dig, formerly made of an excavated tree,) is the name for one of the cavities of the ear (see AURICULA); and for a species of bandage. See DELIGATIO.

SCAPHO'IDES, Os, (from *σκαφη*, and *ειδες*, forma,) os naviculare and naviforme, or cymbæ and cymbiforme, the first bone of the first row in the wrist, articulated to the thumb. In infants it is wholly cartilaginous; also the third bone of the tarsus. See CARPUS.

SCA'PULA, (from the Hebrew term *schipha*). The SHOULDER BLADE; *epinotium*; *homoplata*; *omoplata*; is a triangular bone, situated on the outside of the ribs, fixed to the upper posterior and lateral part of the thorax, extending from the second to the seventh rib: its sides are unequal; the posterior side or basis is the longest, the inferior costa is shorter, and the superior costa is the shortest. The body of this bone is concave towards the ribs, and convex behind, where it is called *dorsum*. Three processes proceed from the scapula, the CORACOIDES, q. v.; the spina scapulæ, or intra-scapulum, which rises from the posterior convex surface, and divides it unequally: it is small at the base, and becomes higher and broader as it advances. The extremities of it are broad and flat, and hang over the cavity of the os humeri. To this part of the spine, called *acromion* or *ephomis*, the clavicle is articulated. The third process is produced from the neck of the bone; and is hollowed on its anterior part by a glenoid cavity, which is an oval, whose greatest diameter is from below upwards. The cavity in the extremity of the

neck of the scapula, in which the head of the humerus is placed, is called *omocotyle*.

The superior costa is perforated near the base of the coracoid process by a semicircular indentation, closed by a ligament, through which vessels and nerves pass. There are other indentations between the coracoid process and the head of the bone, as well as between its neck and the acromion. The scapula is thin at its middle part, in consequence of the action of the muscles. Its use is to give a fixed point to the muscles of the superior extremity, and by its motion to admit of a change of direction in the socket of the humerus. It defends also the ribs behind. The base, the acromion, the coracoid process, and head of the scapula, are cartilaginous at birth, and the three former are joined as epiphyses. The head, with the glenoid cavity, is gradually produced by a continuation of the ossification of the body.

SCAPULARIA, (from *scapula*). The SCAPULARY. See DELIGATIO.

SCAPULARIÆ ARTERIÆ. The SCAPULARY ARTERIES. The external scapular artery, *muscularis arteria*, passes through the notch in the superior costa of the scapula, to the *musculus supra spinatus et infra spinatus*, *teres major et minor*, and to the articulation of the scapula with the humerus.

The internal scapular artery rises from the axillary, near the axilla, and runs backward to be distributed to the *subscapularis*, giving branches to the *serratus major*, the axillary glands, the *teres major*, &c.

The superior scapular artery is a branch from the subclavian, running downwards to the inside of the clavicle, and following the tract of that bone from whence it goes to the adjacent muscles.

SCAPUS, (from *καπεω*, to lean upon). See CAUDEX.

SCARABÆOLUS HÆMISPHERICUS COCHINELIFER. See COCCINILLA.

SCARABÆUS, (from *καρ*, *κατος*, dung, its supposed origin). BEETLE. See CICINDELA.

SCARIFICATIO, (from *scarifico*, to scarify). SCARIFICATION; *afoschasis*, *afoschasmus*, *encharaxis*. The word generally signifies those incisions that are made with the instrument called *scarificator*, and which is used in the operation called *cupping*. See CUCURBITULA, and ANASARCA.

SCARIO'LA. See ENDIVIA.

SCARLATINA, vel SCARLATINA FEBRIS. The SCARLET FEVER, called from the colour of the patient's skin; *rosselia*. Dr. Cullen places this disease among the *exanthemata*, defining it a contagious inflammatory fever, in which, on the fourth day of the disease, the face becomes a little swelled, with a florid redness all over the skin, with broad spots, running at last one into another; after the expiration of three days forming furfuraceous scales, and falling off: to which often an *anasarca* succeeds. He distinguishes two species.

1. SCARLATINA SIMPLEX, when not accompanied with a sore throat.

2. SCARLATINA CYNANCHICA, when attended with ulcerated fauces.

Sydenham observes that children are its most frequent subjects; and when epidemical, it is usually so at the close of the summer. It begins with a chilliness and shivering, the whole skin is covered with red spots,

which are more numerous, larger, and redder, but not so uniform as those of the measles; a dejection of spirits, prostration of strength, and often a stiffness of the neck, followed by a burning dry heat, and at night frequently delirium, particularly about the end of the third day, and not attended with watery eyes or other symptoms of coryza. A sore throat sometimes comes on early, but chiefly obtrudes itself on our notice about the end of the second or beginning of the third day. It is sometimes wholly absent, but in every case a redness of the fauces is conspicuous, apparently a continuation of the affection of the skin.

It is not agreed whether the angina is a constantly accompanying symptom of this disease. From the general florid appearance of the fauces, we think that it is so; yet, as authors seem to discriminate a variety, which they style *anginosa*, we shall reserve our observations on this subject for the following article. A pungent pain is commonly felt all over the body, and the stiffness of the muscles of deglutition overpowers the uneasiness from thirst. The redness soon extends from the face to the neck, and thence over the whole body: in many instances it is a general suffusion, without any discriminated maculæ, and scarcely in any case is there an elevation of the cuticle. When the eyes become peculiarly red, delirium impends; but delirium during the nocturnal exacerbation is not uncommon through the whole course of the disease.

After about six or seven days, the scarlet colour is succeeded by a browner hue, and the change occurs first in the face, afterwards on the breast and extremities; but the fever and delirium seem to abate with the intensity of the colour in the face. We have known the scarlet continue brilliant on the extremities during the whole of the convalescence. The strength and appetite return slowly. During the whole course, and even during the delirium, the pulse is often quick and low, seldom strong or full.

All the appearances of this disease are fallacious. The most violent delirium does not always portend danger, and the recession of the scarlet effusion, apparently the most regular, is followed in many instances by tumefied glands, a slow fever, prostration of strength, and *anasarca*. The skin usually separates in branny scales, and these are apparently reproduced when they have once fallen off. In cold weather, and in northern climates, the effusion will sometimes become pustular, though in few places, and in slight pimples.

Much difficulty has been apparently felt in discriminating this disease, but the experienced eye requires little assistance. Petechiæ are distinct spots of a dark red, not a florid scarlet effusion, and the catarrhal symptoms universally distinguish measles. Erysipelas swells considerably: scarlatina slightly, if at all; and the fever of the former, particularly the nocturnal exacerbation, is much less considerable. Erysipelas is also a disease of the adult, scarcely ever attended with any affection of the fauces: scarlatina of a younger period, with, in every instance, a scarlet hue on the throat. A slight erysipelas, styled the *gutta rosea*, sometimes nearly resembles the present complaint, but it is so inconsiderable as to require little attention, and if scarlatina is equally slight, distinction is unnecessary. The period of the fever at which the suffusion comes on furnishes a general discriminating mark.

Every symptom of the disease points out a specific virus as its cause. The scarlatina is evidently infectious, generally epidemic, and usually affects persons once only in their lives. It is almost peculiar to children, for it seldom attacks adults, and those only most exposed to infection; and in them also it is peculiarly mild. After the most apparently severe attacks, we have seldom seen an adult in danger, and this we think chiefly arises from the worst effects of the disease falling on the lymphatic system. If a specific infection be admitted, the fever and all its consequences are not uncommon. The affection of the lymphatic system is obvious in the neck; and, when the swellings are not conspicuous in that part, they seem from the effects to be in the mesenteric glands. The anasarca swellings are chiefly from debility, for the urine is found to contain an unusual portion of albumen. The fever is evidently of the typhus kind, though attended with considerable heat, in consequence of the affection of the surface; and the delirium seems, as in erysipelas, to arise from a general determination towards the common carotid, and not from any metastasis, for it accompanies the most florid hue of the surface.

The variety of plants and medicines recommended by different authors would alone show that the disease is intractable, and its treatment not well understood. All the appearances, we have said, are fallacious; and the best concerted, apparently the most successful, measures are frequently followed by an unexpected reverse. The disease undoubtedly varies with the climate, the season, and the constitution of the patient; but it is probably never inflammatory to any considerable extent, and never requires *bleeding*. Even leeches in the most violent delirium are rather injurious than useful: yet bleeding is at times recommended, and we fear too often practised.

From a general view of the disease, we can seize one discriminating feature, viz. a violent determination to the skin, with excessive heat, accompanied also with a determination to the head. Conformably to the general plan, therefore, in febrile cutaneous diseases, our great object should be to moderate that determination, while we support the general strength and lessen the impetus of the blood within the cranium. *Emetics* are particularly necessary, and in general highly useful. *Cathartics* are, we think, equally so, though rejected by some authors as increasing debility, or from a fanciful apprehension of diffusing the poison usually confined to the throat through the whole intestinal canal. Since the publication of our first part, we have, under the guidance of Dr. Hamilton, employed laxatives in scarlatina more freely, and have, we think, succeeded better than before. At least we are certain that the objections just mentioned have not the smallest foundation. We have usually employed the cooling ones, as salts with senna, and have found that procuring three or four motions daily has mitigated the fever, and conducted it more safely to its termination. Glandular tumours have also been more rare.

Blisters appear to be indicated from their effects of deriving the fluids from the head; but they have not been highly useful in scarlatina, since the affection of the head depends on general rather than local excitement. We have sometimes thought that they produced, or assisted the formation of, glandular tumours.

The low state of patients labouring under scarlatina has led to the use of cordials and sudorifics; we need not say with manifest injury. The heat must be repelled rather than encouraged; and though nitre and other cooling medicines have seldom been given, cold applications, as we shall find, have been beneficial. A late author has spoken warmly in praise of ammonia, but he used it late in the epidemic, when its violence was abated, and late in the disease, when the strength began to fail. We have not imitated the practice, but have found little to recommend it in the reports of those who have adopted the plan.

The bark would appear peculiarly useful in this complaint, from the asthenic state, and the tendency to putrefaction; but it is not only useless, for it increases both fever and delirium, checks the perspiration, and impedes sleep. Opiates are scarcely more useful, though combined with camphor they sometimes calm the restless irritability. *Camphor*, with the antimonial powders, is almost the only diaphoretic, if it deserve that name, which is admissible, for even the relaxing effects of the Dover's powder have not been eminently beneficial.

The exhibition of *diuretics* rests on a very uncertain foundation. We know not to what indication their use was owing, except that the urine is an evacuation, vicarious to that of the skin, or that they might have counteracted the tendency to anasarca in a subsequent stage. Dr. Withering, if we mistake not, recommended the alkaline salts with this view, but he has had few imitators, probably from the want of success.

In this very uncertain state, Dr. Currie, by a happy boldness, has pointed out a new path, viz. by cold affusions. It is not enough to sponge the body once or again, but the cold water must be dashed against the patient repeatedly till the heat is subdued, and the process must be repeated as fast as it returns. The heat is to be conquered by cold, and the cold be freely, boldly, and steadily applied. The success which has evidently attended this plan leaves little doubt of its efficacy, yet we fairly own that we cannot commend it from our own experience. We have already, however, laid down the data on which the operation of the remedy may be explained, and we shall add the summary.

In all cutaneous diseases the morbid matter is hurried, we have observed, with peculiar rapidity to the skin, and the eruption depends on its being stopped under the cuticle. We know, from the facts stated in the article DIAPHORETICA, q. v., that the readiest way for the discharge is to lessen this impetus; and from the modern practice in small pox, that the eruption may be in a great degree, if not wholly, prevented by cold. In this disease cold water is peculiarly applicable: the heat is considerable, the determination to the head violent, the debility alarming. It is not, therefore, surprising that cold affusions should have been so successful. Why, therefore, it will be added, have you not practised them? We will frankly say, because we shall compact in this way the principal points of the practice.

On the attack of all fevers an emetic is usually premised, so that it is commonly exhibited before the nature of the complaint is known. The emetic is followed by a laxative, and before its operation is fully completed the nature of the disease usually becomes evident. In this case, then, the regular exhibition of laxatives, with the camphor and antimonial powder, in

some cases with the addition of a slight dose of opium, will succeed. The heat and the delirium will sometimes return for two or three nights, but the steady repetition of the laxatives prevents their increasing to a dangerous degree. At the same time, cool drinks, spacious apartments, and free cool air, are peculiarly necessary. The retrocession of the eruption from cold, or the danger resulting from such retrocession, Dr. Currie has taught us to consider as imaginary inconveniences.

We know no disorder which represses so powerfully the constitutional energy. For months, no exertion is often made to restore health. The complexion continues pale, the strength inconsiderable, with anasarca, and often glandular swellings. It has been said that these consequences are avoided when the disease is extinguished by cold: we know that they are greatly mitigated when laxatives have been freely used. In general, however, this state of debility is not dangerous. It yields to tonics, to country air, to a generous diet, and, above all, to time. Glandular swellings require no peculiar treatment. Of the sore throat we shall speak in the following article. We shall add our predecessors' remarks, as a specimen of the practical directions of the former edition.

It seldom requires much assistance from art, except there is an approach to that putrid state to which it inclines in the advanced degrees. Bleeding is rarely required. The patient may be kept in his room, but not much in bed; his drink may be acidulated with the vitriolic acid, or with Clutton's febrifuge spirit; and if a stool is required, rhubarb will be the most convenient: when the skin peels off, a more active purge may be given.

Sometimes a coma, or an epilepsy happens in the beginning of the disease, in which case apply a blister to the back. When it is attended with more malignant symptoms, its tendency is to the putrid kind of fever, with ulcers, &c. in the throat. Here blisters, which may be applied to the back and throat, with the bark, are the chief dependencies, and, as in the putrid sore throat, acids and cordial perspiratives may accompany the bark. Antimonial preparations, which are so generally useful in fevers in this case, are apt to occasion a purging.

See Sydenham's Works; Observations on a late particular Scarlet Fever, by N. Cotton. M. D.; Withering's Account of the Scarlet Fever and Sore Throat; De Haen Ratio Medendi Continuat. i. 7.; Clarke on Fevers, and the Scarlet Fever; Rush's Medical Enquiries; Saalman Descriptio Urticariæ, Scarlatinae, &c.; Vogel de Febre Scarlatina; Cullen's First Lines, edit. 4. vol. ii.

SCARLATINA ANGINOSA, *febris anginosa, angina, mucosa, cynanche exanthematica, angina erysipelatosa, amphimerina anginosa et mucosa, synanche epidemica*, ANGINOUS SCARLET FEVER, or MUCOUS QUINSY, chiefly affects young people and women; sometimes the aged of both sexes; is often epidemic and infectious. The tumour is less than in the inflammatory sore throat; the fauces are of a florid hue, neither deep nor surrounded with ragged edges; when ulcers appear, they are very slight. The pain in the throat usually occurs early, even before the rigor, though instead of it, there is sometimes a soreness of the tongue, and a slight degree of salivation; an efflorescence often appears on

the arms, though they sometimes swell without it. The ulcerous sloughs are, in general, only inflammatory exudations on the fauces, and may easily be washed off. The tongue often appears red and shining, is tender, swelled and affected with pain. Usually it arrives at its height in about seven days, and in a fortnight the patient is perfectly recovered.

All these appearances attend, as we have seen, the scarlatina, and this kind of angina is seemingly a symptom only of the more general disease. Yet a separate notice was necessary, as sometimes the affection of the throat is independent of any redness of the skin, and of any perceptible fever.

A difficulty has arisen on the other side, how far this disease is connected with angina maligna. We have followed in the description the former editors, who have copied from Dr. Grant. Had they been observers, however, they would have known that scarlatina is often attended with ulcers of the most malignant kind; and we have already remarked, as a circumstance almost incredible, that, during the prevalence of a scarlet epidemic, we have seen children whose throats were full of the deepest, foul ulcers, playing with little apparent inconvenience, and with little danger. We know the latter fact, for, from fear of alarming parents, we have looked on without interfering, watching, however, with the greatest anxiety, and the most unremitted attention, every change. Does the scarlatina anginosa then differ from the angina maligna? We think so; but as usual between diseases nearly allied, the confines are not easily ascertained, for the malignant angina is sometimes attended with efflorescence. In general, however, a fever, peculiarly asthenic, with a low irregular pulse, features and the eyes sunk, with every mark of debility, distinguish the putrid sore throat. When the disease is slight, they are still sufficiently conspicuous to ascertain the nature of the complaint. If they are not, distinction is unnecessary; for where medical treatment is required, the same may be advantageously adopted in both diseases, or each will be so slight as to require none.

The only subject of consideration referred to this head, in the former article, is the management of the throat; but in general it requires no very particular attention. Blisters round the throat are unnecessary, and seldom useful; but, when the tonsils are swollen, they may be applied behind the ears, to reach as far so the trachea, on each side. Mild antiseptic gargles are useful, and equal parts of simple oxymel and port wine are generally sufficient: in deeper, more ragged ulcerations, decoctions of Peruvian bark and contrayerva, sharpened with spirit of vitriol, are sometimes necessary. The ulceration in scarlatina anginosa is seldom, however, considerable or dangerous. See ANGINA MALIGNA.

SCARLATINA URTICATA. ACUTE NETTLE RASH. See URTICARIA.

SCELETOS, (from σκελλω, to make dry). A SKELETON; the bones of an animal freed from the teguments, vessels, muscles, &c. properly connected in their natural situations. It is styled a natural skeleton, when the ligaments are preserved; an artificial one when they are joined by wires, and connected with leather.

SCELOTYRBE, (from σκελος, the leg, and τυρβη, disturbance,) signifies the pains attending scurvy, frequently used for the scurvy itself. See SCORBUTUS.

SCÉLOTY'RBE FESTI'NANS. Idiopathic convulsion.

SCÉLOTY'RBE VERMINO'SA. A symptomatic convulsion.

SCHA'GRI CO'TTAM. See CORNI.

SCHARBOCK. (Danish.) A high degree of scurvy.

SCHÆNA'NTHUS, (from *σχίζω*, a *rush*, and *anthos*, a *flower*). See JUNCUS ODORATUS.

SCHEROMA. A dryness of the eye from a defect of the secretion of tears. It produces a burning, painful sensation, often with pricking pains, followed by redness. It occurs in fevers, in the last stage of life, from extraneous bodies which have not been removed; and is a common symptom of ophthalmia.

SCHI'STUS, (from *σχίζω*, to *cleave*). Schists are of different kinds, chiefly argillaceous earths, but none are used in medicine. See HEMATITES.

SCHLOTT. The pan scratch of the manufacturers of salt, from whence the magnesia was formerly procured.

SCIA'TICA, (corrupted from *ischiatrica*). See RHEUMATISMUS and ISCHIADICUS MORBUS.

SCIA'TICA ARTE'RIA, is a branch of the hypogastrica: it runs under, and gives branches to the musculus pyriformis, quadrigemini, the os sacrum, and to the inner side of the os ischium; passes obliquely over the sciatic nerve; and, as they both go through the great posterior sinus of the os ilium, detaches small arteries to the inner substance of the nerve. It afterwards runs up in a radiated manner on the outside of the os ilium, and is distributed to the inner substance of that bone, and to the musculi glutæi, especially to the medius and minimus.

SCIA'TICA VE'NA. When the crural vein hath descended to about the upper extremity of the vastus internus it sends out a branch, which runs down on the side of the trunk, covering the crural artery almost to the ham, where it is again united to the trunk: sometimes it is continued a little way down on the leg. It is called the *sciatic vein*, from accompanying the sciatic nerve.

SCIA'TICUS NE'RVUS. See LUMBARIS.

SCI'LLA, (from *σκιλλω*, to *dry*; from its property of drying up humours). The SQUILL, or SEA ONION; *ornithogalum*; *scilla maritima* Lin. Sp. Pl. 442, is a plant with a large bulbous acrid root like that of an onion. The leaves are broad, the flowers, like those of the ornithogalum, grow in a spike before the leaves appear. There are two species used indifferently, viz. the red and the white. Epimenides is said to have taught Pythagoras the use of squills, and their solution in vinegar: Pythagoras made the vinegar into an oxymel.

This plant grows on sandy shores in Spain and the Levant. The large, plump, fresh roots, whose juice is clammy, are preferred.

The root is large, conical, consisting of fleshy scales, thinner at each edge, surrounded by others dry and shining, which have occasioned the root to be styled *tunicated*. These scales, dry and semipellucid, are generally met with in the shops; but it is better always to separate from the fresh root, and dry them carefully, as the heat usually employed is sometimes too great. It contains mucilage, albumen, and extractive matter; but its peculiar acrimony is rather saline than oily, and volatile in a strong heat.

To the taste they are nauseous, bitter, and acrid; and if much handled ulcerate the skin. Internally they promote expectoration and urine; and when squills are given as a diuretic or an expectorant, the dose must be such as to produce nausea: they seldom prove purgative, except in circumstances when we least wish it, as in peripneumony.

Its stimulus appears in almost every gland, particularly in the kidneys and the mucous glands of the bronchiæ; and the squill is consequently a valuable medicine in humoral asthma, peripneumonia notha, the latter stages of peripneumony, and in dropsy. In the last it almost, from its peculiar powers on the kidneys, excludes every other; and few dropsies are cured without its assistance.

It has been supposed that when it acts as an emetic or a laxative, its diuretic and expectorant powers are proportionally lessened; but this is a refinement not supported by observation. Yet if this be the opinion of the practitioner, the medicine may be guarded by an aromatic or an opiate. In general it does not produce its specific effects until some slight nausea is produced; and such is the difference of constitutions, or the state of the medicine, that from one to fifteen grains of the dry squill have been, in different circumstances, necessary for this purpose. The medicine soon, however, becomes habitual, and the dose must be increased or the interval lessened; but when it has produced nausea it is with difficulty continued: the sickness is peculiarly distressing. The union of mercury with squills depends on a very uncertain foundation. It was probably intended as a deobstruent, for infarcted viscera are often concomitants of dropsy. If, however, necessary, the mercurial should be given separately, and its more active effects guarded against.

Some caution is necessary in the administration of this medicine, for its acrimony is so great that it ulcerates the skin; and, if given in large doses, and frequently repeated, it not only excites nausea, vomiting, and tormina, but strangury, bloody urine, hæmorrhoids, and convulsions, with fatal inflammation, and gangrene of the stomach and bowels. Squills, on account of their offensive taste, are best formed into pills; and to prevent the nausea which they excite, when not intended as emetics or expectorants, a few grains of some agreeable aromatic may be added to each dose, or it may be combined with the fresh root of elecampane. The best form is the powder, fresh and properly prepared; for age, or want of management, destroys its effect.

Water, wine, proof spirit, rectified spirit, and vinegar, extract the virtues both of the fresh and the dry squills; but neither carries any thing by distillation: so that in the extracts the whole of the active parts are retained. Alkalis lessen their bitterness and acrimony; vegetable acids make very little alteration in either, but are supposed to improve their expectorant power.

The preparations of the London college are,

Conserva scillæ, formed by beating one ounce of fresh squills with five ounces of double refined sugar. Its dose to adults is from one scruple to ʒss. when fresh.

Scilla exsiccata.—In this form the squills are cut transversely, after the outward skin has been taken off, into thin slices, and dried with a gentle heat. It is given in powder as an expectorant and diuretic; to

adults, in doses of from one to six grains: four grains of the dried root are equal to twenty of the fresh.

Mel scillæ is prepared by boiling three pounds of clarified honey with two pints of tincture of squill to the thickness of a syrup. Dose ʒi.—ʒij.

Oxymel scillæ differs only in using the vinegar of squills instead of the tincture. Dose ʒss.—ʒi.

Pilula scillæ.—Take of fresh dried squill, powdered, one drachm; ginger powdered, soap, of each three drachms; ammoniacum, two drachms; syrup of ginger, as much as is sufficient. Dose eight to fifteen grains.

Tinctura scillæ is made by digesting four ounces of squill, fresh dried, in two pints of proof spirit for eight days. Dose from twenty to sixty drops or more repeatedly.

Acetum scillæ.—Take of squill, fresh dried, one pound; vinegar, six pints; proof spirit, half a pint. Macerate the squill in the vinegar, with a gentle heat, in a glass vessel, for twenty-four hours; press out the liquor, and let the fæces subside; then pour off the liquor, and add to it the spirit. Pharm. Lond. 1788. Dose the same as the tincture.

Emplastrum scillæ compositum.—R. Galbani, ammoniaci ʒi. ʒss. opii ʒi. aceti scillæ ʒij. saponis ʒss. emplastri lithargyri ʒij. The galbanum, soap, and litharge plaster, must be melted together; to which are to be added the opium, vinegar, and ammoniacum, mixed also together, and the whole continued over the fire, and stirred till they are perfectly incorporated. To indolent tumours this is considered as an useful application.

SCI'NCUS, (from the Hebrew term *shequa*). *Crocodilus terrestris*, the SCINK or SKINK, *lacerta scincus* Lin. Syst. Nat. vol. i. 365, is a small amphibious animal of the lizard kind, caught about the Nile. Its flesh hath been esteemed as a diuretic, alexipharmic, &c. but is now neglected. It was formerly supposed to be a specific in lepra.

SCI'O TERRA. See CHIA TERRA.

SCI'o VINUM. See CHIUM VINUM.

SCIROCCO. A hot suffocating wind, in some parts of Italy, from the coast of Africa, whose effects are well described in Brydone's Travels. Like the KAMPSIN, the HARMATTAN, and the SAMIEL, q. v., it is very enervating, and the air seems to contain an unusual portion of hydrogen.

SCI'RRHUS, (from *σκληρύνω*, to harden,) a hard tumour with little or no remaining sensation. (Galen's Commentaria in Aphorismum, xxxiv. sect. iv.) Dr. Cullen defines it a hard tumour of some part, most frequently of a gland, not painful, and suppurating with difficulty. Dr. Aitkin includes the *physconia* of Dr. Cullen and the *sarcocele* as a species of scirrhus, but with little foundation, either from the laws of arrangement or the nature of the complaint. The seat of this tumour is usually some gland; but it is not a disease of the lymphatic glands. In cases of cancer, where the conglobate glands appear of a scirrhus hardness, the disease is a communicated, not an idiopathic, one, and cannot be strictly called scirrhus.

It has been doubted whether scirrhus is in every case a tumour, as the part seems sometimes lessened. In fact, however, the diseased portion is always swollen, and the irritation in general enlarges the adjacent parts. If a scirrhus takes place in the breast, for instance, at

first it will shrink; but the follicle diseased enlarges. Hardness is the consequence, for the integuments of glands are firm and inelastic: a knotty irregular feel is very common: but is not an indispensable character, at least in the early stages.

Though scirrhus is not a disease of conglobate glands, and though the lymphatic system is seldom diseased in old age, yet, as the conglobate glands are affected in cancer, and tumours of a malignant nature appear in advanced life where no secreting follicle seems to exist, we must not wholly deny the existence of scirrhus in such glands. But they scarcely in any instance suppurate, and if they do not yield to the remedies of scrofula they do not become cancerous. When they do suppurate they heal slowly, but do not spread, nor are they highly painful. We have known them continue indolent for twenty years.

We can perceive some foundation for this distinction in the nature of the fluids which the tumours contain. The conglobate glands, when diseased, are filled with a curdy matter, approaching in its nature albumen, which we have found, is incapable of suppuration, and which when discharged by the suppuration of the surrounding parts, is seldom putrid. The conglomerate glands, on the other hand, contain more azotized fluids derived from the blood, which is itself susceptible of putrefaction, and often excrementitious ones more highly putrescent. The matter of cancers is not, indeed, strictly speaking, putrid, but hepatic; and this will perhaps explain why some of the worst kind occur in glands which separate the milk and other bland fluids. The general principle is, however, probably true.

The effects of scirrhus differ according to its situation. The disease must, of course, injure the function of the part; but when this is not important, as in the mucous follicles of the lips, it may continue for years without injury. When in the neighbourhood of nerves it has produced convulsions; when on the larger lymphatics, anasarca tumours below. It is even said to have induced atrophy, by compressing the thoracic duct. Many of these consequences, though detailed by authors, are, however, apparently imaginary. In general a scirrhus tumour is harmless, unless inflammation comes on, when it becomes CANCER, q. v. Its progress in the change has been detailed in that article.

In the cure of scirrhus the first step has usually been to prevent inflammation, and this has been attempted by general and topical bleedings, by a milk and vegetable diet, and by frequent cooling laxatives. In scirrhi of the less important organs the severity of this plan may be greatly mitigated; but inordinate stimuli must be carefully avoided. When this object is attained, the next is to render the obstructed vessels pervious, and by this means to admit of the action of the lymphatics. It is difficult to combine both indications. Deobstruents and resolvers are terms familiar in therapeutical authors; but the practitioner is deceived in their employment. One obvious inconsistency is, that by exciting the small vessels we greatly endanger accelerating the circulation in general, and increasing the inflammatory action we wish to avoid. Mercurials have both effects; but by cautious management the former is more readily produced than the latter. The prepa-

ration best adapted for such purposes is the muriated mercury; and however difficult the explanation of its action, when the tumour is beyond the reach of the circulation, its good effects are certain, if the doses are small and long continued. These effects are greatly assisted by the mezereon, guaiacum, and sarsa, drank in decoction. The external application of mercury in a mercurial plaster is apparently useful; but it is doubtful whether it can have any influence, except by its external warmth. The ammonia in small doses, recommended by Martinet, the barytes muriatus by Hufeland, and electricity by our countryman, Dr. Brisbane, seem to act in a similar manner. Galvanism, from its power of analyzing fluids, may probably be still more effectual; but it has not yet been tried.

Another class of deobstruents is termed the narcotic; and, as already explained, while the one render the vessels permeable by increased impulse, the other prevent farther impaction by the action of the arterial system. It were well if we were able to direct either class from a distinction of the source of the complaint; but we believe it to be impracticable, or we can only observe, in general, that the mercurials are adapted to the languid circulation, and the narcotics to the active. This distinction will not, however, always apply, yet it may be, perhaps, with advantage kept in view. The chief of the narcotics is the *hemlock*, which has been persisted in often to the destruction of the constitution. We have actually seen a patient die of mortification of the nates, while confined to a sitting posture, taking large doses of hemlock for a milk sore. In many authors we find the doses peculiarly large, and even Warner, in his *Treatise on the Disease of the Eyes*, mentions a drachm and half daily.

Digitalis and *solanum* are of the same class, and have had their respective advocates, in Mayer and Gataker in the *Edinburgh Essays*; but they are now, we suspect, very seldom employed. *Emollients*, mentioned by some authors, are at this time in general disregarded.

Arsenic possessing some apparent advantages in cancers has been also used in scirrhi; yet, we fear, without any peculiar benefit. It might perhaps be properly classed among the more stimulating deobstruents; but we referred it to this part of the article to connect it with the bark, which has had its advocates. Neither, however, apparently do more than support the general strength.

The great uncertainty of internal remedies, or external applications, has induced practitioners to recommend an operation; and if the scirrhus is not painful, if moveable, and the constitution otherwise uninjured, little doubt can remain of the propriety of the attempt. If not moveable, should the constitution be sound, it may be attempted, though with less certainty of success. The vicinity of large blood vessels, or important nerves, is an obstacle which will call for peculiar care and dexterity; but there are few situations in which they may not be avoided.

We have now spoken of scirrhus in general; but some additional remarks are suggested when the disease affects particular organs. When it affects the sebaceous glands of the skin, particularly of the lips, extirpation may be safely attempted; but the tumour is

sometimes so exquisitely irritable as to give violent pain on the slightest touch. It is styled a *noli me tangere*, and is generally left to nature.

All persons, and at any age, may be the subjects of this disorder; but the sedentary, and more particularly women, when their menses decline, are most frequently affected.

From the most attentive examination, it appears that the substance of these tumours is inspissated lymph or gluten. They often arise without any previous inflammation, from the proper fluid stagnating in the gland, or from extravasation in consequence of contusion, &c. When a gland is the seat of a slow languid inflammation, it terminates in scirrhus instead of suppuration.

Externally scirrhi are perceived by the touch. Internally, the evidences are more obscure; but these we shall consider separately.

Scirrhus of the breast. See CANCER.

A scirrhus in the intestines is known by an irregular tumour, a sense of weight perceived in the part where it is seated. As the bulk of the tumour increases, the cavity of the intestine is lessened, and at last the canal is totally obstructed. In such cases easy gentle laxatives will palliate, and the internal remedies may be tried; but they seldom produce any advantageous change.

A scirrhus liver. A part of the liver, or its whole bulk, may become scirrhus, and this generally arises from inflammation. In warm climates the determination of the fluids to the liver is well understood, and when, from any cause of fever, that determination is increased, inflammation is the almost constant consequence. This inflammation is not, however, always of the more violent, active kind. In an organ where the circulation is languid it often proceeds with few alarming symptoms, till it has advanced beyond the power of medicine to relieve. In this state patients often return from India, and the symptoms and the remedies have been already detailed. (See HEPATITIS.) We have remarked also, that in this country we find abscesses, and sometimes scirrhus, in consequence of that languid inflammation, occasioned by concussions. Each is generally intractable, when it has proceeded to any considerable extent. The dyspeptic symptoms may be relieved, and the strength supported by a well regulated plan of diet; but the disease seldom yields. The effects of a mercurial course we have already mentioned in the article quoted. An indurated liver is always shown by the sallow hue of the complexion; but it seldom occasions jaundice, unless it happens to press on the gall duct. The part affected can be generally ascertained by pressing on the epigastrium, while the patient leans forward, or reclines in different positions.

A scirrhus in the spleen or pancreas cannot be easily ascertained, though we find an instance of the former, with the medical treatment, in one of the early volumes of the *Asiatic Researches*. The pancreas lies beyond the reach of pressure, and a scirrhus in that organ is only conjectured by the existence of dyspeptic symptoms, independent of any other evident cause. The juices of succory, and dandelion, the decoction of grass roots, &c. have been mentioned in these and other scirrhi of the viscera; but, if useful, they are so only as gentle

laxatives. In more advanced states, when suppuration comes on, the matter sometimes presses through the integuments, and is evacuated safely; the adhesion of the diseased part to the peritoneum preventing the access of air into the general cavity. See London Medical Transactions, vol. ii. p. 143, &c.

Ascirrhous in the tongue sometimes happens, and remains many years indolent. In this case all attempts to relieve it should be avoided, as it may become cancerous. If painful, and moveable, it may be dissected out; but if immoveable, a part of the sound flesh should be separated with it, and the wound dressed with honey of roses and balsam of Peru. Mr. Home has taught us that wounds of the tongue produce no peculiar inconveniences.

Ascirrhous tonsil can no way be managed with advantage, except by means of the ligature, as recommended by Mr. Sharp. See his Operations and Critical Enquiry. But it never becomes cancerous. At least in numerous instances of long continuance we have not seen it assume this appearance.

Ascirrhous womb is one of the opprobria of medicine; it, after some continuance, often degenerates into a cancer, and destroys the patient. Internal remedies seldom succeed.

Arctæus de Methodo Medendi, l. xiv. c. 4; Galen's Methodus Medendi, l. xiv. c. 5; Kaau's Dissert. de Scirrhus; Van Swieten's Commentary on Boerhaave; Heister's Surgery; Riverius's Praxis Medica; Ambrose Parey's Works, vi. 24 and 25; Guy on Scirrhus Tumours and Cancers; Heberden's Observations in the London Medical Transactions, vol. ii. p. 143; Pearson's Principles of Surgery, vol. i. p. 209; White's Surgery, p. 52.

SCI'STUS LAPIS, is a brittle and friable stone of the argillaceous class, *schista primitis* Haüy, iv. 437; ALUM; MILK, in which heated stones have been extinguished; *stercus caninum*; vinegar dropt into boiling milk, all bear the name *schiston*. Castelli.

SCLA'REA, (from *σκληρος*, because its stalks are hard and dry). See HORMINUM.

SCLA'REA HISPANICA. See HORMINUM SYLVESTRIS.

SCLEROPHTHALMIA, (from *σκληρος*, and *ὀφθαλμος*, the eye). See XEROPHTHALMIA, DEPLUMATIO.

SCLERO'TICA, SCLERO'TIS, (from *σκληρος*, hard). The outermost coat of the eye, which in the posterior and far greater part of its circumference is white and opaque; but in the anterior transparent, and then styled *cornea*. The remarkable whiteness of this coat arises from the expansion of the tendons of the muscles over its fore part. This tendinous expansion, though called *tunica albuginea*, is not properly a coat of the eye, for, like the conjunctiva, it is only partially spread over its fore part. See CORNEA, and OCLUS.

SCLOPETOPLA'GA, (from *sclopetum*, a gun, and *plaga*, a wound). A GUN SHOT WOUND is a species of vulnus, and only a contused wound in the highest degree, supposed to be a more malignant kind from the poisonous nature of the gunpowder; but such wounds are only more intractable from the contusion, laceration, &c. which necessarily attend.

Contusion, however, and laceration are not equally the attendants of gun shot wounds, unless we confine the latter to the bones; for wounds from splinters, or

the ragged stones of a fortress, are of a very different nature. To be strictly accurate, we must confine, with Mr. Hunter, the term to contused wounds from a blunt hard body.

The momentum of any body is in the compound ratio of its weight and velocity, in this case, as we speak chiefly of musket balls, in the ratio of the velocity. From the momentum, the organization of the part on which the ball impinges is destroyed, and apparently from the shock the irritability is also injured at some distance around. The part must consequently suppurate; but where the velocity is less it will sometimes heal by the first intention; and when a ball passes through a fleshy part, the suppuration takes place at the part where it enters, while the posterior wound will sometimes unite by the adhesive inflammation. In general the posterior, and even the lower, aperture heals most quickly. From the same cause, a gun shot wound will not inflame very quickly, unless a bone is at the same time broken, and injury has ensued from its splinters. This latter differs in its nature from the former, and is equally distinguished in its consequences.

Splinters are, in general, more common, in proportion to the diminished velocity of the ball; for, if sufficient to break a bone, a slighter blow increases the number of splinters; a violent one will carry away a piece of the bone, without shattering the rest. In the same way, when the velocity is considerable, an artery will be cut through, and it will bleed freely; when small, it will be compressed; and, when carried inward, somewhat elongated, which will straiten the canal, and the bleeding will be less violent.

The extent of the injury, on account of the destruction of the life of a part, is seldom at first ascertained, for the whole is a confused mass: and though we know what parts lie below, we cannot ascertain how far the momentum has extended. When, then, the slough comes away, it may bring with it a part of an artery, and a fatal hæmorrhage ensue, or a part of an intestine, occasioning a penetrating wound in the cavity of the abdomen, &c. It is highly necessary, therefore, to be on our guard, and ready to avert any dangerous consequence, so far as it lies in our power. A fatal hæmorrhage may ensue from a loss of some part of the coats of an internal artery, for instance, without its being in our power to prevent it. When in the neighbourhood of vital parts, the destruction of irritability, which probably extends to some distance around, and perhaps below, produces the most disagreeable consequences. It is scarcely less unfortunate when the functions of the part, though not, strictly speaking, vital, are essential to life, or when from their utility, or the great danger of restoring their structure, as in joints, the effects long continue.

The treatment of gun shot wounds seems to have been for ages erroneous. If a ball is fired through a plank, the aperture it makes is of a less diameter than the ball. This, though difficult of explanation, apparently led to the practice of dilating the wound, as its aperture was less than that through which the bullet, the clothes, and integuments were conveyed. Mr. Hunter seems first to have corrected this mistaken idea, and to have shown, that suppuration, without dilating the wound, discharges every extraneous substance, except what may safely remain. If the wound be

enlarged, it must be to extract the ball; but this we know will in very few cases produce any inconvenience. In fact, the circumstance formerly mentioned seems not to have occurred to practitioners, viz. that the irritability or life of the part is apparently destroyed at some indefinite distance round the wound, so that in reality the aperture is larger than the substance which originally produced it. Another reason for dilating the wound, suggested by the danger of the skin healing before the bottom of the aperture, is not well founded; for it seldom does so: and when this happens, the event as frequently follows the dilatation as in those instances where it has been omitted. If bones are splintered, some time is required before these are wholly separated, and usually some dead portion requires separation also: for these purposes nature usually provides without the assistance of art.

Openings, according to Mr. Hunter, may be admitted where the first wound is small, and a splintered bone, or any extraneous matter, presses on and irritates a part essential to life; where a wounded vessel requires a ligature; where the skull is suspected to be fractured; where a separate splinter or an extraneous body can be easily extracted; or when any viscera are displaced by the ball which require being restored. In other instances the ball is suffered to remain; and, if not in contact with a vital part, so as to injure its functions, does little injury.

The innocuous nature of a ball, remaining, was discovered sometimes by the difficulty of finding it. This has arisen from a collapse of the parts, and their leaving no direction in which the course of the offending body could be ascertained, and sometimes from its change of direction when it meets any obstacle. When it passes under the skin, even to some depth, it usually leaves a red line, which arises from the irritation during its passage, since it is not inflammation or echymosis; and when the ball has again escaped, Mr. Hunter advises an opening to be made between the two apertures, as nature will at last more tediously produce the same effect by an abscess. Where the ball has passed between the skin and the bone, he advises the aperture to be made through the whole course, as the skin unites with difficulty to the bone. But even if the ball passing through any part be felt under the skin on the opposite side, Mr. Hunter thinks it on the whole better to leave it, as if the skin is deadened it will slough out, if not, will be productive of no inconvenience.

GUN SHOT WOUNDS OF THE ABDOMEN are not always fatal. If they do not penetrate the integuments and muscles they require no peculiar care. If they penetrate and wound the epiploon or mesentery, parts not essential to life, the access of air is prevented by the inflammation which supervenes. Even if the ball has penetrated through the body, and not wounded any important part, the slough separates, allowing the extraneous bodies to escape, while the inflammation prevents the access of air to the general cavity.

Wounds of the liver are attended by a faint sickly pain, and, when in the right or left lobe, there will be a pain in the corresponding shoulder. Wounds of the stomach produce great sickness and vomiting of blood; in the intestines a discharge of blood. The sickly pain will be greater, and the blood of a darker colour, as well as more mixed with fæces, the higher the wound.

A wound in the kidneys or bladder is attended with bloody urine; but with little pain. The spleen, when wounded produces no discriminating symptom. Independent of these symptoms, wounds of the stomach, intestines, kidneys, ureters, or bladders, may induce others, in consequence of the escape of their contents. This is followed by peritoneal inflammation and tension, which soon terminate in gangrene.

GUN SHOT WOUNDS IN THE THORAX are generally considered as hopeless. Yet we should recollect, that the patient has some advantages over one who is wounded by a cutting instrument. The hæmorrhage, for instance, is not so violent, for the reasons stated; and the external aperture does not readily close: but, on the other hand, from the access of air, and the collapse of the lungs, the adhesive inflammation does not readily take place unless there were previous adhesions, and sometimes, though rarely in the lungs, the suppuration extends to every part of the wound in its whole depth. In general, superficial dressings, with the most perfect tranquillity, will secure the patient, if no very essential injury, as the wound of a large branch of the pulmonary vessels, has taken place. *Concussion and fracture of the skull* from a musket ball differs in no respect from the same effects from any other blow.

Compound gun shot wounds, analogous to compound fractures, often heal at first very rapidly; but when on their contraction the irritation of the splinter is felt, the incision is more slow, and they become fistulous. This even happens when the wounds are dilated; for we can only thus separate the perfectly detached splinters, and the others will in time produce the same effects. In this case tents have been usually employed; but if these are omitted there is little danger of the wound healing. If exfoliation is expected, the bone may be exposed to the air to expedite the process; but in general nature forms the abscess most convenient for its exit. The only objections to this rule are when the joints are affected, particularly the small joints of the extremities; for in these, unless the sore is kept open, the suppurative process is disposed to extend; or when the sore continues fistulous, by a disease at its fundus. In these cases large openings produce suppuration and granulations in a short time.

To remove parts which are incurable is an attempt which should, if possible, be delayed. The hurry, the increased energy, the fever, indispensable to active exertions in battle, raise a commotion, which, when joined with the irritation of an operation, renders the event almost hopeless. Few can support the loss of a large limb till the inflammatory state is reduced, and it must be still more dangerous, when the additional causes of irritation just mentioned are combined. *Amputation*, therefore, should be delayed, unless an hæmorrhage from the wound of a large artery renders it indispensable, and in that case, the previous hæmorrhage renders it more safe. The operation, however, seldom succeeds; and in general the greater proportion in which amputation has been delayed recovers. See FRACTURA, *Fractured leg*.

In the field we may indeed remove a limb, which hangs by a small piece of flesh only; for the amputation has been already effected by the ball: in the field, also, we may remove hard bodies sticking in the wound, replace prolapsed or protruded viscera, or remove

whatever may impede or render the removal inconvenient.

In general, *bleeding* has been employed in the first instance, and, from the agitation, &c. just described, it is undoubtedly a necessary measure; but the degree of fever and excitement, it must be considered, are temporary only, and when these recede, the constitution flags in proportion to the former increased energy. Thus we find that a second bleeding seldom succeeds when the fever at first was high. In general, it is observed that every injury bears bleeding better, the nearer the part affected is to the chest. The joints and distant parts are more susceptible of irritation than inflammation. When there is much pain and local inflammation, *leeches* are highly necessary, and particularly useful, and in every instance low diet, with gentle laxatives, are essentially necessary.

Bark has been given freely and indiscriminately; nor is it easy to lay down general rules. The great excitement has been said to be soon succeeded by collapse, and we have seen that the wounded part must be separated by the powers of nature. The bark should, therefore, be given early, nor should we wait for the remission of the inflammation if the pulse is low. It is better to direct it too soon than too late. Should the pulse rise too high under its use, a circumstance which seldom happens, small bleedings may be interposed.

Irritation and pain must be removed by *opium*, whatever the requisite dose may prove, and mortification is relieved as when it arises from other causes. The *volatile alkali*, with *musk*, recommended by Mr. White, has been in many instances highly useful.

See AMPUTATIO; Bell's Surgery, vol. v. p. 325; White's Surgery, p. 99.; J. Hunter's Works.

SCLOPETA'RIA A'QUA, (from its use in curing gun shot wounds). See ARQUEBUSADE.

SCOLOPE'NDRIUM, (from its leaves resembling the σκολοπεινδρα). See LINGUA CERVINA.

SCO'LYMUS, (from σκολος, a thorn, from its prickly leaves). See CINARA.

SCO'PA RE'GIA. See RUSCUS.

SCOPULA, (a dim. of *scofa*, a broom). A BRUSH. The flesh brush promotes a brisk circulation, and free perspiration. Persons with weak nerves, the sedentary and paralytic, should supply the want of exercise with half an hour's rubbing every night and morning. See FRICTIO.

SCORBU'TICUS SU'CCUS. *Spiritus cochleariæ auræus*. See COCHLEARIA BRITANNICA.

SCORBU'TUS, (from the German word *scharbock*). The SCURVY, *gingibrachium*, and *gingipedium*, because the gums, arms, and legs, are affected by it. Hippocrates considers it as a disease of the spleen, De Internis Affectionibus; and Dr. Cullen places it among the *impe-tigines*, defining it in the following terms. After living on putrid, salted animal food, in a cold country, without recent vegetable substances, universal debility, attended with fetid breath, loose, spongy, bleeding gums, different coloured spots in the skin, most commonly livid, particularly at the roots of the hair.

As the causes of this disease must always have prevailed, its antiquity is probably high. Some of its symptoms are mentioned by Hippocrates, and it seems to be mentioned distinctly by Strabo, lib. xvi. sub finem. Rousseus also supposes it to be the disease which so severely afflicted the Roman army under the command

of Cæsar Germanicus; Pliny, xxv. 3. The accounts, however, are vague and unsatisfactory, and that of Joinville, in his History of St. Louis is more striking. He refers the disease to the army eating a kind of fish (*bourbettes*) that feed on human bodies; and describes the spots, the wasting of the calves of the leg, and the hæmorrhages (p. 63). It is remarkable that he calls it the disease of the East.

As a disease of mariners, it first particularly attracted notice in Vasco de Gama's famous voyage, 1497, and frequently occurred in voyages during the next fifty years; but the disease was first particularly mentioned in the Botanologicum of Euritius Cordus, who recommends the lesser celandine for it. The first professed work on the scurvy seems to be that of Ecchius, in 1541, though probably not first published; but the first in which the disease was distinctly noticed at some length is that of Wierus, in 1567; but as Wierus eclipsed his cotemporaries, so he was in turn obscured by Eugalenus, whose treatise was for many years the standard. We have introduced this short early history chiefly to remark, that it is mentioned by these authors as an eastern or northern disease, particularly observed in Holland, and on the north of Germany and Denmark, where it seems to have been the genuine offspring of inactivity, gloom, and damp. At no great distance of time, however, it was appropriated to this country, and it has continued to haunt the minds of many imaginary sick men, as well as to be an opprobrium to the country and its inhabitants. The delusion is not yet conquered, and almost every patent medicine secures itself a favourable reception, by pretending to relieve and eradicate the scurvy.

The imputation was not, however, wholly groundless. England was formerly, in many parts, damp and marshy. Stall fed oxen were uncommon, and the Englishman, accustomed to an animal diet, lived chiefly during the winter on salted provisions. The diet, the damp, and the gloomy unsocial modes of our ancestors, were well calculated to produce scurvy: it was, therefore, a common disease, which the earliest vegetable sprouts were well calculated to relieve, and from whence the numerous tribe of antiscorbutics was derived. It is now equally rare with us, and with our more southern neighbours; for the more acescent diet, the comparative disuse of salted provisions, and the numerous antiseptics introduced to our tables, with more social dispositions, and less retired manners, have destroyed the predisponent and exciting causes. The disease rarely occurs, at present, even at sea.

The first appearance of scurvy is evinced by a pale, bloated complexion, lassitude, and a disinclination to motion, with diminished energy in every muscular exertion. If the gums are then examined, they will be found spongy, apt to bleed on being touched, the teeth loosened in their sockets. The skin is sometimes rough, but more often smooth and shining, covered with bluish or livid spots, which do not rise above it, and these spots often coalesce in large blotches, particularly in the legs and thighs. About the same period old ulcers often again break out, old fractures are again disunited, and the slightest mercurial quickly produces salivation. The ulcers discharge often a sanies, or are covered with a coagulated cruor, which is renewed as often as it is separated. The edges are livid, with irregular edges, apparently of new flesh, which often

increases to a bloody fungus. During the whole of this period the appetite continues good, and, though tensive pains are occasionally distressing, yet, on the whole, the patient feels little inconvenience.

The state of the bowels is very various. The stools are often frequent and offensive, but costiveness is sometimes obstinate. The urine is commonly high coloured and fetid; the pulse feeble, and seldom quick. A weakness in the joints appears early, but increases with the disease, and a shrinking of the flexor muscles renders the limbs useless. The calves of the legs shrink, with sometimes an irregular hardness, and at length become œdematous. The last stage is truly distressing. Blood is frequently discharged from the intestines, bladder, &c. The slightest motion brings on faintness, and often immediate death. Though catchings of the breath and occasional syncope appear in the more early stages, yet they only become considerable and dangerous in the later; yet so disproportioned is the pain and the actual feelings of weakness to the real state of the patient, that he often attempts exertions, and dies in the first action. When animated by any powerful motive, as to get on shore, or sometimes to join in an engagement, he will for a time succeed, but death follows the first exertion or the first remission of his energy, for it seldom cuts him off in the midst; and if a scorbutic seaman can survive the first movement, he will often bear to be carried on shore, though he may not long outlive the removal.

We have remarked, that, for many years the scurvy was considered as the endemic of Holland, and the lower districts of the north of Germany. On the shores of the Baltic it was also for a long time endemic; and no stronger proof can be alleged than the great anxiety shown by Burchard and Alberti to disprove the accusation. Mertens allows it to be frequent in Russia, and various authors admit it to be common in different parts of Germany, particularly in Thuringia. It has occasionally appeared as an epidemic in fleets and armies, particularly in the Russian, and contagion has been sometimes suspected. In Fourcroy's Medical Journal we have an instance of its being quickly fatal; but in this case there was much reason to suspect the complication of another complaint. It is greatly aggravated, when combined with lues. In some instances it has been supposed hereditary.

On dissection, effusions in the different cavities were constantly discovered; and Dr. Lind has mentioned his observing the fluid peculiarly acrimonious, probably saline. Bloody effusions in different parts had occurred, and even in the interstices of the muscles. The fleshy parts were soft and tender, giving little resistance to the slightest impression; and the epiphyses are sometimes separated from the bones. (Saviard and Poupert.) The brain was, however, sound, and the chylopoietic, as well as the thoracic, viscera usually healthy in their appearance; but spots, and sometimes effusions, were discoverable on the mesentery, stomach, &c. which were not mortified sloughs, but of a firm, resisting nature. The mesenteric glands are sometimes enlarged; different viscera are obstructed; and, in one instance, an ulcer was found in the heart.

Scurvy is not peculiar to seamen or navigators. There are instances of its occurring in besieged towns; in low damp situations, where the food has been deficient in quantity, or of a low quality. In one recorded in-

stance it occurred in a young woman, who had subsisted almost wholly on tea.

The nature of scurvy has been apparently misunderstood. The dissolved state of the blood, the general weakness, the spots, &c. seem to point out a putrescent, almost a putrid state of the vital fluid as its cause; and this opinion led to the many experiments on putrefaction, which we have had occasion to record. Yet blood, when taken, had a buffy crust, and life was certainly incompatible with the degree and continuance of a state so highly putrid, if the appearances were really from putrefaction. The most fatal blow to the theory was, however, the effect of different remedies; for, while the bark and vitriolic acids were useless, acid fruits and oleraceous plants immediately relieved. But before we can engage farther with advantage in this enquiry, it will be proper to consider more minutely the fancied or the real remote causes, and to assign the true value of some supposed sources of this complaint.

Its frequent occurrence in sea voyages led at once to the suspicion that scurvy was owing to sea salt; and the fact that solutions of almost every neutral prevented the coagulation of the blood, supported the opinion. Salt was also septic in small quantities, and all septics promoted the attenuation of the fluids. The theory was supported by numerous experiments, and even Dr. Lind, in the former additions of his work, following the opinions of sir John Pringle countenanced it. Yet this opinion was opposed by numerous observations, by some of the remote causes, and the effects of remedies. Scurvy appeared where the diet was by no means saline; in damp situations, whatever the diet were, unless generous and stimulating: it was prevented by cheerfulness and exercise; cured by remedies which had no very striking effect in a chemical view.

Copper was supposed to be a cause introduced into the system of sailors, by a neglect in cleaning the culinary vessels of the ship (Travis. Medical Observations and Inquiries, ii. 1.); but this idea is evidently fallacious; and Colbatch, who attributes the disease to a superabundant alkali, is not far distant from those who derive it from a septic poison. Unfortunately the alkaliescent plants are the best remedies. A deficiency of water and damaged flour have been accused with as little justice. Yet there is one point in which the damaged flour and the salted provisions meet, viz. in affording a diet of very inferior alimentary powers; but each is only an exciting cause, though, when long continued, each may assist in inducing the disease; for it is obvious that where such provisions only can be procured, the causes which we shall soon mention must concur.

We have remarked that scurvy is the offspring of confined air, of damp, of distress, of inactivity, or, on the other hand, too great fatigue, as well as an unalimentary diet. To all these seamen are exposed. Their births under the old regime were seldom ventilated, and usually damp. In long voyages, and in desperate attempts, the mind was in despair; in moderate weather the exertion was inconsiderable, and from the thoughtless seaman's improvidence, the clothing was insufficient, and the diet that only of the ship. The few aids which his wages might procure were sacrificed to his luxuries, viz. ardent spirits, which were equally injurious. If we look at the disease, when it occurs in other situations, we shall find the same concurring causes; and when we examine the best prophylactic

systems, we shall perceive that they are designed to obviate the effects which result from them.

The first effect must be debility, and a deficiency of perspiration. We accordingly find first a languor and a dry skin. Diminished powers of digestion follow, and the result is a defective assimilation, or a depraved state of the fluids. The original source of the disease is, therefore, depressed energy of mind and body; the consequence is diminished irritability and a diminished power of all the functions, particularly those of the digestive and assimilatory organs. The appearance of the blood shows a deficiency of oxygen, and the confined situation of the scorbutic patient sufficiently explains the source; but in every circumstance, debility is attended either with a deficiency of the red particles of the blood, or a change in their vivid hue. This effect we have often remarked, though we were unable to explain it. Numerous authors have observed that either a lower quality of the food or humidity of the air are among the causes of scurvy; and Storck, in his *Annus Medicus*, i. 22, has attributed the disease, as it occurs in hospitals, to these sources. In moist situations, especially where languor, inactivity, and distress of mind are combined, scurvy has been a frequent disease. That the principal effect of the remote causes is on the nervous system, the earliest symptoms sufficiently prove, and sir Francis Milman has collected them with this view. Dr. Trotter, who has examined scurvy in almost its exclusive seats, refers the cause to the blood; but we have often remarked that almost every change in the vital fluid is referrible to some disease of the nervous system.

As the blood, however, is ultimately affected, and as the most striking symptoms are produced in this fluid, much satisfaction would result from well conducted chemical inquiries into the real changes discoverable in it. No such, however, have been offered to the public since the nature of the circulating fluids has been more accurately ascertained. We can only, therefore, approach the solution of the question by induction.

The colour of the blood shows a deficiency of oxygen, and perhaps an accumulation of carbone. This, as observed, may be owing in part to confinement, but is certainly connected with debility. Each cause may have its influence. An equally certain change is a deficiency, or a more perfect solution of the gluten and fibrin. A want of irritability is connected generally with a deficiency of the fibrin, and this portion of the blood apparently depends on a strong, vigorous constitution. The gluten is also seemingly deficient; but we know that it may be more copiously dissolved in the serum by an additional quantity of any ammoniacal salt; though, in weak constitutions, its proportion is certainly diminished. The observations of Dr. Lind show the existence of an acrimony, probably a saline one, in the blood, which may, as just remarked, promote the solubility of the gluten. The nature of the salt has not, however, been ascertained. We now know that the slower concretion of the blood will account for the buffy coat observed on bleeding scorbutic patients, and it is expressly observed that the buff is tender.

In preventing the scurvy, the sagacity, the judgment, the experience, and perseverance of one man have done more than all the speculations of philosophers; and he has directed all his views to the causes laid down. We

mean Captain Cooke; but while he leads the way, numerous improvements have, for the last twenty-five years, added to the comfort and health of seamen.

The ship, in the first place, by frequent drying and ventilation; is preserved from damp and from foul air; the men are encouraged to change their clothes, and compelled, for so thoughtless is the British seaman that compulsion will be requisite, not to sleep, if it can be avoided, in those which are wet. Their clothes are also adapted to the climate in which they may be, and in the higher latitudes they are defended from cold with peculiar anxiety. In the night the crew is often divided into three, instead of into two watches, that is, one third of the crew only are on deck, and each man has consequently eight out of twelve hours free from duty. The mind is usually amused in the intervals of labour by encouraging every species of amusement, every kind of active exercise, which keeps up the perspiration, and prevents the dangerous ennui. Cleanliness should be constantly encouraged, and indeed enforced; the linen frequently changed; the hair combed; and the body washed in sea water. Fresh water for the linen and domestic purposes, should be provided in plenty, and if deficient, rinsing the linen in salt water will be of service, and it will not be dangerous to put on the shirt while wet. Water, however, should be taken in at every land, where access to it is practicable, and on each occasion all the water formerly collected should be started. It is best preserved from putrefaction by charring the inside of the casks; but if aerated barytes could be readily procured, it might be preserved by a small portion of vitriolic acid, and this would be completely separated by the earth, while some portion of the carbonic acid gas remaining would render the water more wholesome.

The diet of seamen should be particularly attended to. On the West India station, coffee, and sometimes cocoa, forms, with sugar, a salutary beverage for their breakfasts; and whenever fresh animal food can be procured, it should be served out in its freshest state. Oatmeal and flour, with raisins and sugar, will furnish a salubrious diet, in different forms; and the pease, which can be preserved in all climates, furnishes a little variety to their scanty fare, without adding greatly to its salubrity.

This diet, with the former precautions, will often prevent the scurvy from appearing, or from extending in any considerable degree; but modern observation has added many other prophylactics.

As vegetables are almost the only remedy for scurvy, so it has been a subject of the greatest anxiety to preserve them, with their peculiar qualities, scarcely impaired. The juice of acid fruits has been preserved in different ways; but all are too expensive for general use, and the more practicable methods rarely preserve the juices unchanged. Lemon juice, boiled down to the consistence of a rob, is changed in its quality: the mucilage is burnt, and the acid partly decomposed. Some decomposition also takes place when kept in bottles most carefully stopped, and the acid is apparently changed into a resinous substance of a bitter taste, not owing to the access of air; for it occurs when the external air is most carefully excluded, and in the darkest situations.

Sour crout, sliced cabbage packed closely with layers

of salt, and firmly pressed together, is preserved with little change, except what appears advantageous, viz. the acetous fermentation, from whence its appellation is derived. It seems to be a very useful aliment, and a pleasing, as well as a wholesome, condiment, with the usual salt provision.

As drinks, cyder and spruce beer are highly useful. The latter may be easily prepared from the extract of the spruce fir, which is uninjured by keeping. The most salutary drink, however, either as such, or a medicine, is the sweet wort. Three parts of boiling water are poured on one of ground malt, which, when well packed in small casks, is uninjured by any climate for a considerable length of time. It is ground in a hand mill when used, and is suffered to infuse for ten or twelve hours, when the clear liquor is poured off. By these means the scurvy is often prevented, and high degrees of it are cured even at sea. A necessary precaution, however, is to take in vegetables at every land where the ship touches; and, while the stock lasts, to feed the crew almost wholly on them.

Fresh vegetables, we know, are the only effectual remedy; yet they are not highly alimentary; they do not furnish oxygen, or add to the proportion of fibrin and gluten. It would appear, therefore, that the causes assigned were theoretical, did not the prophylaxis support them. Various are the suppositions on which their utility has been thought to depend; but we find none that has the semblance of probability, except their acescence. All vegetables are not, however, equally effectual, though all are useful. The acid fruits are particularly beneficial; but what are styled the alkaline plants, the tetradynamia, including the alliaceæ, are particularly so. This is partly owing to their acrimony, by which they apparently excite the languid powers of the stomach; and, in confirmation of this idea, we find, from Dr. Lind, that the virtues of lemon juice are greatly promoted by combining it with Madeira wine. The first effect of this change of diet is a moderate diarrhoea, attended or followed by a moister skin, a more genial glow, and spirits less depressed. The changes from this diet are rapid, especially on shore. If the sailor survive the first removal, even a few days will sometimes raise him to comparative strength and spirits: a fortnight often effectually restores him.

Few other remedies are successful; but many are recorded by different authors. We pass over the scorbutic juices, the hydrolapathum, the juice of celandine, salted cucumbers, preserved gooseberries, the horse radish, menyantbes trifoliata, potatoes, &c. as these are only different kinds of vegetable matter in more or less active forms. The vegetable acids have been supplied by spirit of salt, of vitriol and nitre; by cream of tartar, with sulphur, and by fixed air. The latter has been exhibited in effervescing draughts, and in fermenting mixtures, and is the only remedy of this kind which has any claim to our confidence: its utility, however, is slight or uncertain. Such are the contrarieties in medicine, that even alkalis (the cornu cervi) and alum have had their advocates. Lime water and the calamus aromaticus are recommended by Stoll.

The great debility, and the dissolved state of the fluids, indicated the use of the bark; but it has had few supporters, for it has scarcely in any instance been use-

ful. The same principle, however, seemingly led Cullen to recommend the arnica, Stoll to use the iron, and an author in the *Journal de Médecine* to speak favourably of the lunar crystals. The hemlock, it is said, has been employed with advantage; but the strongest testimony in its favour is that of Schlinder, who used it with success in the Russian armies. He employed, however, the expressed juice, and combined it with four times the quantity of orange juice.

Some of the more pungent vegetables, as the mustard, the sedum acre, and the lepidium have been recommended with the myrrh, the rubia tinctorum, and others, on a more uncertain foundation. Purgatives have been sometimes given, and mercury, either in small doses or in such as to raise a salivation. Our collection of remedies is by no means exhausted; but we shall only add one, said to be of more importance; burying the patient, so high as the neck, in warm sand. This is by no means an unpromising plan.

Though these medicines are useless in curing the disease, some of them are advantageous in relieving particular symptoms. The spongy gums may be washed with a decoction of the bark, acidulated with the muriatic acid; and ulcers spreading in the mouth, touched occasionally with the mel rosæ, acidulated with the same acid. If a salivation comes on, camphor, with some cordial, mild, opiated electuary, may be repeated every four or six hours, for it generally arises from a dry skin. If the legs are œdematous, gentle frictions are useful; and in cases of hæmorrhage, the mineral acids may be given at proper intervals. But though some advantages may be obtained by these particular administrations and applications, yet all these and the rest of the symptoms disappear in proportion as success follows the general method of cure.

The scorbutic ulcer also, called the putrid ulcer, affords no good digestion, but a thin, fetid sanies, mixed with blood, which at length hath the true appearance of cruor caked on the surface of the ulcer, and with difficulty wiped off. The flesh underneath is soft and spongy; and if the sloughs are removed they soon return: the edges are generally of a livid colour, and puffed up with excrescences of proud flesh, arising from under the skin. From compression, the fungus is apt to mortify; and the limb always becomes œdematous, painful, and for the most part spotted. As the scurvy increases in the general habit, the ulcer shoots out a soft, bloody fungus, which the sailors call, from its resemblance, *bullock's liver*: it often rises in a night to a great size, and, if destroyed, will be reproduced in twenty-four hours. These ulcers do not speedily affect the bones. The slightest wounds or bruises in scorbutic patients degenerate into such ulcers, which by their remarkable putridity are easily distinguished from all other sores. In some instances these ulcers are attended with soft spongy gums.

As an internal medicine, when scorbutic ulcers attend, Dr. Kirkland highly recommends the muriatic acid given in water, or mixed with the bark. Mr. Bell observes, that their cure depends much upon the relief of the disease of the system, which should be corrected previous to any attempt to cure the ulcer, which may be treated with the unguentum Egyptiacum, and the mel rosarum, with a small portion of vitrollic acid. In the milder instances, such as usually happen

in England, the cause is more frequently the want of due nourishment; and better food, with a more plentiful supply of it, and a little good wine, are the most effectual aids. The bark is more useful in this than in any other kind of ulcer, and it should be given as freely as the stomach will admit. As a dressing, pledgets of lint dipped in a strong decoction of the bark, or the carrot poultice, will correct the fœtor from the discharge. When this is vanished, and the sloughs only are to be removed, the ungt. resinæ flavæ, with hydrargyrus nitratus, will be the most convenient application; and the cure is finished by gentle pressure. What is said with regard to the treatment of scorbutic ulcers is applicable to all sores connected with a dissolution of the fluids, from any other cause, viz. those which remain after critical abscesses, or that succeed to putrid fevers.

See Lind on the Scurvy, third edition; Macbride's Essays, essay 4; Wieri Observationes; Eugalenus de Scorbuto; Willisii Opera; Pringle's Diseases of the Army, Appendix; Hulme de Scorbuto; Millman's Inquiry; Trotter on the Scurvy; Monro in the Medical Transactions; Zeviani Sopra lo Scorbuto; Aascow in the Copenhagen Transactions, v. i.; Guthrie and Clark, Medical Commentaries, Edinburgh; Huxham's Works; Medical Museum, vol. i. and ii.; Hoffmanni Opera, vol. ii. p. 421, &c.; Bell on Ulcers, edit. 3. p. 408.; Cullen's First Lines, vol. iv.; Medical Transactions, vol. ii. 325. 471; Lond. Medical Journal, vol. ii. p. 117. 388.

SCOR'DIO ELECTA'RIVM E. See DIASCOR'DIVM.

SCORDIVM, (from its resembling garlic, σκοροδον, in smell,) *trissago palustris*, *chamædryis palustris allium redolens*; WATER GERMANDER; *teucrium scordium* Lin. Sp. Pl. 790. The flowers resemble those of the chamædryis, one or two proceeding from the axæ of each leaf; the calyx tubulated; the leaves hoary. The leaves when rubbed betwixt the fingers yield a moderately strong alliaceous smell, and are bitter to the taste: by keeping the garlic smell is lost, and the bitter improved. The leaves moderately dried yield their virtue to water or to spirit; but though water is impregnated with the flavour, no essential oil is obtained, though a large quantity of the leaves are employed. An extract made from the spirituous tincture is the best. The plant is recommended as an alexipharmic and corroborant in putrid diseases; and was long considered as an antiseptic and alexipharmic of singular power; and it has been recorded as successful in the plague which raged in Turkey. Bergius calls it antiputrescent, tonic, diaphoretic, diuretic, and resolvent; while others employ it only in antiseptic cataplasms and fomentations. It is, however, now entirely neglected. See Lewis and Cullen's Materia Medica; Neumann's Chemistry. See SALIVA SYLVESTRIS.

SCORDO'TIS and SCORODO'NIA, (απο τῆς σκοροδοῦς οὐζῆς, from its smell). See SALVIA SYLVESTRIS.

SCORPIO, Lin. System Naturæ, vol. ii. 1037. Modern naturalists, particularly La Treille, have arranged this animal with some of its congenères, the thelyphonus, (confounded with the phalangia by Linnæus, and with the tarantula by Fabricius,) the chelifer and phyrus, (arranged also by Linnæus as species of phalangium,) under the family name of *scorpionides*. The characters of this group are, "a wingless body;

head not distinct from the thorax; without antennæ; jaws composed of two claws; abdomen separated from the thorax, or confounded with it, but distinguished by the appearance of rings, with not less than eight feet, and palpi, in the form of arms, distinguished by a kind of hand." The characters of the scorpion are, "palpi, or arms, terminated by an enlarged articulation, with closed claws, and the inferior lips of the two portions short and simple." There are from six to eight species, of which we shall only distinguish the European and the African scorpion.

The scorpion has an elongated body, with from six to eight eyes, of which the largest are in the middle of the thorax, and the others, very small ones, on the sides. The thorax is united to the abdomen, and the latter consists of distinct rings, terminated by a tail formed by six knots, the last of which is an oval mass, elongated above, in a pointed sting. It has eight feet, and two dentelated laminæ, in the form of combs, under the belly.

Scorpions are found in the warmer regions of both worlds, inhabiting neither the arctic nor even the temperate regions. Those of Europe are scarcely more than an inch long, while in India they are sometimes five inches. The tail is moveable in every direction, and the scorpion usually carries it raised above its body, bent in an arch over its head.

The bite of the scorpion, according to Redi and Maupertuis, is not always poisonous, though it occasionally is so. The full effect of the venom seems only to be felt when the powers of the animal have not been for a long time exerted. The European species are scarcely in any instance capable of inflicting a fatal wound. The remedies are oil and warm sudorifics. It was usual to order oil in which scorpions had been suffocated; but the addition of the insect is an idle refinement. Emollient cataplasms are said to be also useful; but, as the bite is seldom dangerous, many remedies have obtained an unmerited credit.

The scorpion devours its own young, and even its companions; but its favourite food is flies, and particularly spiders. The female is very prolific, producing from forty to seventy young ones, which are born alive. The females are larger than the males; but the sexual organs have not yet been discovered. They are supposed to be placed between the dentelated laminæ.

Herbst's Monography of Scorpions; Redi de Insectis; La Treille in Sonnini's edition of Buffon's Natural History.

SCORPIOIDES (from σκορπιος, a scorpion, and εἶδος, likeness; because its leaves resemble the tail of a scorpion). See ORNITHOPODIVM.

SCO'RPIUS, (from the same). See GENISTA SPINOSA MAJOR.

SCORZONE'RA, (from *escorzo*, a Spanish word for viper, because it is said to be effectual against the bite of vipers, and that this animal will not hurt one whose hands are rubbed with it,) *escorzonera*, *viperaria*, *serpentaria Hispanica*, COMMON VIPER GRASS, *scorzonera humilis* Lin. Sp. Pl. 1112, hath large sharp pointed leaves, with a prominent rib in the middle; on the tops of the branches are yellow flosculous flowers, followed by oblong, roundish seeds winged with down: the root is long, single, from the size of a goose quill to that of

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the little finger, of a dark colour on the outside, and white within. It is perennial, and a native of Spain, growing in our gardens, though that from Spain and from the island Amagria is superior. The roots are alexipharmic, antiseptic, and deobstruent, but only used as a nutritive aliment, in which the *S. Hispanica* excels. The juice is sweetish, and the roots, when boiled, do not prove very flatulent. See Miller's Botany. Lewis and Cullen's *Materia Medica*.

SCOTODI'NIA, and SCOTODI'NOS, (from *σκοτος*, darkness, and *διος*, giddiness). See VERTIGO.

SCOTO'MIA, (from *σκοτος*, darkness). See VERTIGO: sometimes a synonym of amaurosis.

SCOTOS. DARKNESS, OR DIMNESS OF SIGHT.

SCROBICULUS CO'RDIS, (a dim. of *scrobs*, a ditch). See ANTICARDIUM.

SCRO'FA, (*quia scrobes gaudeat facere*). A HOG. See PORCUS.

SCRO'FULA, (from *scropha*, a pig, an animal subject to tumefied glands, in common language styled *measles*), *struma*, *choiras*, *charas*, *ecrouelles*; and KING'S EVIL, because Edward the Confessor, and other succeeding kings, both of England and France, have pretended to cure it by the touch. Dr. Cullen places it among the *impetigines*, defining it tumours of the conglobate glands, particularly of the neck, attended with a swelling of the upper lip and column of the nose; a florid countenance, smooth skin, and tumid abdomen. He styles it *scrofula vulgaris*, when without other disorders, external and permanent; *s. mesenterica*, when internal, with loss of appetite, pale countenance, swelling of the belly, and an unusual factor of the excrements; *s. fugax*, when temporary, caused by absorption from neighbouring sores or eruptions; and *s. Americana*, when joined with the YAWS; q. v.

Children of scrofulous habits have an unusually florid complexion, and a fulness of the face, and the tumours are rarely painful, or easily brought to suppuration. A multiplicity of symptoms attend different patients, but only a few of them are observed in any individual; but among the most frequent, besides the tumours chiefly discovered in the neck, are a swelled upper lip, soreness in it, and about the nose and cheeks: the tumours sometimes break, and heal with difficulty. The eyes are inflamed, and a sharp humour running from them corrodes the cheeks: the lids are swollen, red, and in a morning cannot easily be opened: the globes of the eyes are swelling and protuberant; the adnata commonly inflamed from the irritation of the lids, with the usual attendants of chronic ophthalmia.

The tonsils are very frequently enlarged, and the tumours are usually very conspicuous in the neck. The bronchocle is by no means a symptom of scrofula, since it is common in habits essentially distinct, and seldom appears in those truly scrofulous. We have reason to suspect tumefied glands in the lungs from a dry hectic cough, which terminates, often rapidly, in consumption; and in the mesentery, from a tumefied abdomen, with atrophy, often independent of fever. Scrofula often also attacks the bones, particularly the articulations, and those in which the lymphatic glands are scarcely conspicuous, or, as in the metacarpus and metatarsus, where no glands have been discovered. The most formidable diseases of the hip joint and knee are apparently of a scrofulous nature. Various other internal

diseases have been attributed to this source, but apparently without a sufficient foundation.

Scrofula is undoubtedly hereditary, and when either parent is affected, the child only which resembles that parent in complexion and appearance is affected by the disease. It is almost peculiar to the growing state; for in a maturer age the effects only remain in a tender state of the eye lids, and some remaining tumours near the joints. It is rarely dangerous after the age of twenty-five. Steatoma, atheroma, and meliceris, are distinguished from scrofula, as their seat is distinct from glands, and they never affect the bones.

The contents of scrofulous tumours are commonly an inspissated lymph or gluten, and those authors who have described them as containing bones, hair, hydatids, cartilages, air, or worms, have evidently mistaken different tumours for them. They, however, sometimes approach a cartilaginous consistence.

Scrofula is not only hereditary, but in low damp situations endemic.

Many of the causes assigned are ridiculous; and it is now acknowledged that scrofula has no necessary connection with small pox or lues, though a latent diathesis may be excited to action by either. Gout is mentioned by Stoll among the causes derived from the parent, equally without foundation. Salivation, repelled eruptions, cold air, and snow water, are causes equally imaginary.

Mr. Hunter considers the predisposing causes to be damp, and cold alternating with heat, adding, that it chiefly prevails in latitudes above 45°. Coming from a cold to a warm climate, he thinks, induces it, and the contrary direction cures it. Not, however, wholly satisfied with these causes, he adds a debilitated state of the constitution.

The more immediate cause is uncertain. It has been supposed to consist in a peculiar matter, possessing an assimilating power; but if the contents of scrofulous glands be examined, they will be found to consist of concremented gluten, with probably a mixture of albumen. It were, however, to be wished that they had been more carefully analyzed. Mr. Hunter has not condescended to explain the connection between cold and damp, and the peculiar symptoms of this disease; nor has he shown in what the peculiar debility consists, or in what manner it operates.

We have often referred to this article, as if it were to contain some new views on the subject of the glandular complaint. We fear the reader may feel a little disappointed; for we cannot proceed far in a theoretical induction. It is, we believe, an established fact, that the scrofula is connected with the smooth, florid complexion, which we have described. The scrofulous temperament, however, though in a more general appearance resembling the sanguine, is essentially different. It wants the mobility and irritability of that temperament, and, except in the florid glow, often comes near the phlegmatic. We have seen the disease propagated from a parent of a brilliant hue to a child of the pale sallow cast; and scrofula is certainly not exclusively confined to those marked in the manner formerly described, though most frequent in such habits. It is not confined also to debilitated habits, but in those predisposed to it, causes of debility assist its action. If there is any peculiarity which we can more distinctly

perceive, it is a want of irritability in the circulating, particularly in the lymphatic, system. These views will explain the greater number of phenomena. In the younger period of human life albumen abounds, and in scrofulous habits it is apparently in excess. We have rendered it probable that gluten is only azotized albumen, and the florid hue of the scrofulous patient shows that oxygen rather than azote abounds. If then the mobility of the lymphatic system is less, the fluids will stagnate where the impelling power is least, viz. in the glands.

It will have been obvious that in describing the symptoms of scrofula the lymphatic glands were not exclusively affected. The eye lids, the mucous glands of the nose, and those of the joints, sometimes suffer. In the former the deficient irritability is peculiarly conspicuous: in the joints it is less so: but, in general, the smaller joints are affected, and the larger ones, in consequence of some bruise, which weakens, as we have seen, the tone of the vessels. If to this the morbus coxarius, the distorted spine, and the white swelling of the knee be objected, we may perhaps reply, that these are not exclusively the diseases of scrofulous constitutions, but are certainly exasperated when scrofulous diathesis concurs. The white swelling is the only disease more intimately connected with such diathesis, and it is peculiarly subject to arise from causes of inflammation, as strains, blows, &c.

The principal points of this explanation are the mixture of albumen and gluten in the exhaled fluids, and of course their stagnation in the lymphatic system when the irritability of its vessels is preternaturally less. Thus, scrofula is the disease of the young, where the albumen is in a larger proportion, in constitutions where oxygen is more copious, and where the mobility is not acutely alive. The obstructions yield with difficulty, if at all, as the want of irritability, which occasioned the disease, would certainly not assist the removal of the load when it has accumulated. Scrofulous tumours admit not of suppuration, for we have found it probable that purulent matter is a peculiar secretion from the blood (see *Pus*), and these tumours are beyond the extent of the circulation. We have found also (see *PHthisis*) that all the marks of suppuration in vomica occur in the coats of the tubercle. The other symptoms are those of a languid circulation, or of a weaker action of the excretory ducts, and are readily explicable on the same principles.

Age, which gradually obliterates the lymphatic glands, destroys also their obstructions. They become foreign bodies; the circulation in their coats is obstructed, and they are absorbed as any substance extraneous to the system. The other effects of a languid circulation, however, often remain; and the diseases just mentioned, as with difficulty reconciled to the general theory of scrofula, are those of a more adult age than the general symptoms described. The other remedies of scrofula are various, and of an almost opposite tendency. The efficacy of many of these is established on a very uncertain foundation, and their credit seems, like that of some quack medicines, to be derived from the natural cure of the complaint, during their use. There is a period when scrofulous tumours disappear, and the last remedy obtains the credit. Thus the royal touch, the pressure of a man's hand who

has died a violent death, the lead of a coffin long buried, lizards, the blood of a mouse, with a variety of other applications, have received their portion of fame.

The more important means employed by scientific practitioners are also various. The chief and the most useful are salts of different kinds, in different forms. Salt water and the sea wrack (*fucus vesiculosus*) have been celebrated in every age, and are highly useful. Salt is undoubtedly, as observed in the article *CONDIMENT*, a general stimulus, and neutral salts promote the solution of gluten in the serum. In each view the muriated natron is useful, and it is no slight confirmation of its mode of action, that its advantages depend on its continued use. Dr. Cullen spoke of its efficacy in washing out the lymphatic system; a language not very accurate or scientific. Externally, the salt and the sea weed appear to act as simple stimulants, not producing inflammation, and very slightly rubefacient.

What additional advantage is derived from an animal or vegetable empyreumatic oil is uncertain, yet burnt sponge, burnt cork, calcined egg shells, and shell of the scuttle fish, burnt or distilled toads, burnt cloth, particularly scarlet cloth (*De Haen*, ii. 157.), and calcined secundines have been recommended. The burnt sponge may be employed with all the advantages that can be expected to follow the others, and it is certainly in many cases useful. The soda alone has been sometimes employed (*Kirkland*), and its accompanying acid in sea water has been advantageously combined with barytes by Crawford and Hufeland, as well as with lime by later authors (*Swediaur*).

Other remedies which we have found to promote a more equably active circulation have been employed. Among these the chief are mercury and antimony. Numerous authorities support the utility of small doses of muriated mercury, though salivation is as generally exploded; and on this foundation mercury, triturated with hemlock, has been recommended in phthisis. Externally, the solution of sublimate, and the mercurial ointment, are suspicious remedies, as they often increase inflammation, and hasten suppuration. The turpeth mineral, mentioned by Fischer, seems to act as an emetic only, and all emetics excite absorption. Mercury, joined with antimony in the Plummers' pill, is often useful; but antimony alone does not appear peculiarly adapted to the complaint. Dr. Rowley, whose success excites our astonishment, more than his reasoning convinces our judgment, speaks of this medicine with considerable commendation, but we can scarcely find any other authority which merits our notice. Various other stimulants have been employed externally and internally. As such we may mention the oxygenous gas, tried rather than recommended by Fourcroy and Hufeland; the horse radish; the petroselinum; the calamus aromaticus; balsam of sulphur; mezereon; sarsa; and some others which we do not enlarge on, as they appear very slightly efficacious. The decoction of sarsa and mezereon is supposed to assist the action of mercury.

However the effects of tonics, if considered in all their views, may embarrass us, we must remark, that they have been by every practitioner recommended. We have observed that in such cases the circulation is languid; and whatever assists it will probably be

useful. Independent, however, of this view it is of consequence to preserve the strength during the earlier period, till, in the progressive changes in the constitution, the disease disappears. The chief tonic remedy is the *cold bath*; and to combine the effects of sea water with it, *sea bathing* is preferred. If scrofula will yield it seldom resists these united remedies; but as we have said of saline medicines they must be long continued, and a fair trial can seldom be made under twelve months. Two or three years sometimes elapse without the cure being complete, though the amendment were slowly progressive through the whole term. This is particularly the case when the joints are affected. The *Peruvian bark* acts in a similar manner, and has been highly recommended by Dr. Fothergill, who generally, however, combined a warm bitter with it. This medicine has had many other advocates in different volumes of the Medical Observations and Inquiries, in Whytt's, Bell's, and Vicat's works. In general it has appeared to us that it is most useful in the advanced states of scrofula, particularly where the tumours have suppurated, and the patient has been sinking under a discharge from these and the joints.

As a tonic, we may consider the *arsenic*, mentioned in "A Compendium of Wonderful Secrets published at Venice," in 1676, but it seems not to have been since tried. Iron is a similar remedy, but it has been seldom employed, except when heated and quenched in wine. The copper has only been applied externally (White).

It is still more difficult to explain the effects of the narcotic deobstruents. Yet we cannot resist the host of authorities in favour of hemlock, foxglove, henbane, solanum, opium, asclepias, vincetoxicum, and some others, with which perhaps the myrrh may be reckoned. It is not uncommon to see diseases cured by opposite remedies; but if the one class is useful, we can scarcely say why the others should not be detrimental. We shall, therefore, preserve the facts, however they may militate against the theory, and must add, that each medicine, particularly the cicuta, has some of the highest authorities in its favour.

Externally, stimulants of every kind, besides those already mentioned, have been employed. These are ammonia acetata, the gall of an ox, nut oil and salt, the fetid oil of tartar, turpentine, suet, oil with salt, oil of camphor, the root of the cyclamen, &c.; nor has the external use of the narcotics, formerly mentioned, been neglected. Issues and setons in the neighbouring parts have been occasionally recommended, but we have never found them particularly useful. Extirpation of the tumours is seldom necessary, for they never become cancerous; and suppuration should be most anxiously avoided.

When from suppuration a scrofulous ulcer is formed, the first discharge is viscid and glairy, sometimes a whitish curdled matter, which becomes a thin, watery sanies. The edges of the sores are frequently, though not always painful; and are at first raised, but afterwards are much thinner. So long as the scrofulous disposition subsists in the habit, these ulcers generally remain with little change. At other times they heal very quickly, and again break out in other parts. Their surface is sometimes convex, with an uniform glossy appearance. While the general morbid diathesis continues in the system, it is usually in vain to attempt their

cure, for by drying up the sores in one part they very commonly break out in others, and sometimes seem to fall, in consequence, on the lungs.

The best applications are saturnine preparations, for emollient applications are highly injurious; by weakening the parts already too much disposed to relaxation, they prevent healing, and sometimes occasion the ulcers to spread. The mischiefs occasioned by emollient applications are still more clearly shown by the salutary change produced by astringents and stimulants. The most simple of these is cold water, which hath frequently alone a good effect; but is more efficacious with every kind of saline and mineral impregnation, sea salt, and Goulard's extract. The unctuous saturnine applications are improper. In some cases, however, the ulcers are so inveterate as to require other aids, particularly when they swell, become painful, and discharge a corrosive, acrid matter. A carious bone may frequently be suspected in such circumstances to be at the bottom of the sore; and then nature must be assisted by separating such parts as are most diseased and become loose. But when the complaint is fixed in any of the large joints, art can rarely afford much assistance; and as amputation is not often advisable, from the danger of the disease returning to some other part, nature alone must be often trusted. In such a situation recourse should be had to a continued use of sea bathing, with the bark, perhaps hemlock: and we should attempt particularly to promote a proper discharge from the sores. When, by a due use of the necessary means, there is a tendency in the sores to heal, issues may be advantageous to continue a discharge which must have become habitual. Gentle compression is peculiarly useful in these ulcers, as it prevents or removes the thickness in their edges.

See Wiseman's, Bell's, and Heister's Surgery; Cheyne on the King's Evil; London Medical Observations and Inquiries, vol. i. p. 184—200, 203—322; Bell on Ulcers, edit. 3, p. 421; Cullen's First Lines, vol. iv.; White on the Scrofula: Kirkland's Medical Surgery, vol. ii. p. 446; Stoll Ratio Medendi, vii. 155; Plenciz Acta Medica; Fischer de Strumis; Meckell de Cognoscendis et Curandis Scrofulis; Dover's Last Legacy; Nuck Adenographia; Haller Opuscula Pathologica Obs. 57; Russel on Sea Water.

SCROPHULA. See SCROFULA.

SCROPHULA'RIA, (from the unequal tubercles of its roots like those in the scrofula). See CRASSULA, CHELIDONIUM MINUS, GUACATANA.

SCROPHULA'RIA MA'JOR, Lin. Sp. Pl. 863, *scrophularia nodosa fatida, ficaria, millembria*; COMMON KNOBBY ROOTED FIG WORT.

SCROPHULA'RIA AQUA'TICA, Lin. Sp. Pl. 864, GREATER WATER FIG WORT, said to be the same as the iquetaia of the Brasilians, famed for correcting the nauseous qualities of senna. Its other virtues are the same with the former species. See Raii Historia; Neumann's Chemistry.

SCRO'TUM, (quasi *scortum*, a skin or hide). The external covering of the testicles; *bursa testium, oscheus, oscheon, orchea, lacopedon*; chiefly consists of loose, wrinkled skin, rete mucosum, cellular membrane, and perhaps the expanded fibres of the cremaster muscle on each side, called by the Greeks *dartos*, from its raw or excoriated appearance, and not from its use in contract-

ing the scrotum. Immediately within the dartos is a second cellular substance, which is more considerable than the first loose portion. The external membrane allows the fleshy fibres of the dartos muscle to pass, and these are attached to, or connected with, the internal surface of the cutis; the dartos in turn allows the filaments of the internal cellular membrane to penetrate through it, so that the two cellular membranes communicate. On the external surface of the scrotum is a prominent superficial ridge, termed raphe, continued from the anus to the extremity of the penis on its inferior parts, dividing the external surface of the scrotum into two nearly equal portions. The scrotum thus consists of two distinct bags; one for each testicle, and its immediate tunics or coats, formed by a duplicature of the dartos, situated on each side of the raphe, and laterally connected to each other by the intervention of a cellular membrane. This union of the sides of the dartos constitutes that partition, by anatomists denominated *septum scroti*, sometimes *diaphragma*, or *mediastinum*. The septum scroti, on the inferior part, is connected to the internal surface of the cutis, immediately under the raphe; on the superior part, to the inferior and external surface of the urethra, after having been expanded upwards betwixt the tunica vaginalis of each testicle. Upon a removal of the several parts which unite in forming the scrotum, the tunics or proper coats of the testicles next present themselves to view.

Though we have styled the *dartos* the expanded fibres of the cremaster, yet later anatomists have chosen to consider it as a condensed cellular membrane plentifully supplied with blood vessels. The contraction of the scrotum, and the number and depth of the rugæ, are evidently occasioned by the fibres of the cremaster, as contraction is increased by a stone passing through the ureter where it crosses the spermatic cord; nor is there any reason for supposing that a distinct membrane exists, of which we cannot perceive the utility. The anterior and external lateral portions of the dartos terminate in a ligamentous expansion, connected with the cellular substance near the groin. The dartos is fixed also by an apparently flat ligament to the ramus of the os pubis.

The scrotum is liable to a variety of complaints; the first of which we shall take notice is the *prurigo scroti*, from ascarides in the rectum, from friction by violent exercise in hot weather, often from morpiones; sometimes from a morbid state of the skin, or superficial glands of the parts. See PRURIGO.

In the latter case the scrotum becomes of a brown colour, often thick, scaly, and wrinkled. The itching extends to the skin covering the penis, more especially along the course of the urethra, and the patient has little respite day or night. The treatment we have already noticed in the article referred to.

The scrotum is liable also to inflammation and abscess, attended sometimes with a considerable degree of fever and danger. In this case, bleeding, general and topical, with other antiphlogistics; discutient cataplasms applied cold, and frequently renewed, with a constant recumbent posture, are necessary. The scrotum should be suspended in a bag truss; and if it be proper to encourage suppuration, a fomentation may be used warm, at least twice a day, and, after each time of fomenting,

a poultice applied warm, and renewed as often as it becomes cool. In this case the patient must be supported with a generous diet and proper cordials, such as the *cortex Peruvianus*, *radix serpentariae*, *radix contrayervæ*, in substance or in decoction: the *confectio aromatica* may be added, with an opiate occasionally.

When, by the size and prominence of the swelling, the softness and shining red colour of the integuments, the separation of the cuticle from the cutis, the mitigation of pain in the part itself, an œdematous appearance of the integuments upon being pressed, but, above all, the fluctuation of matter under the fingers, it appears that maturation is perfected, the tumour should be opened on its most depending part. If large, and the integuments thin and discoloured, a small part should be removed to admit of a more close as well as a more extensive application of the remedies. The wound must be filled with soft lint, covered with an emollient poultice. At the end of the two first days the dressing should be renewed twice in twenty-four hours, on account of the acrimony and quantity of the discharge, so long as may be thought necessary, fomenting the wound for the space of ten or fifteen minutes previous to each dressing; sprinkling the cloths with brandy or camphorated spirit of wine, if the discharge be thin or sanious. If after the operation any considerable hardness of the integuments should remain, the suppurating poultice must be applied, over the pledgets of digestive, until it is removed. The use of the bark alone, or with the serpentary or contrayerva, in substance or in decoction, will generally support the patient's strength, and render the discharge more salutary. A gangrene is often the consequence; but the parts are generally again restored. We know no part where there are such numerous instances of complete regeneration.

Another disease of the scrotum is the cancer, peculiar to chimney sweepers, hence called *cancrum mundatorium*, the CHIMNEY SWEEPERS' CANCER, or WART, and the SOOT WART. Mr. Pott seems to be the first writer who hath noticed it: he thinks it may be owing to a lodgement of soot in the rugæ of the scrotum, and at first not be a disease of the habit. It first attacks the inferior part of the scrotum, producing a superficial, painful, ragged sore, with hard, rising edges. From its situation, it is often mistaken, both by the patient and the surgeon, for venereal; but it is much exasperated by mercurials, and soon pervades the skin, dartos, and membranes of the scrotum, seizing the testicle, which it enlarges and hardens. From thence it passes up the spermatic process into the abdomen, indurating the inguinal glands, and terminates soon fatally by attacking the viscera.

The only chance of checking or preventing this mischief is immediately to remove the part afflicted. If it be suffered to remain until the virus hath seized the testicle, even castration will seldom succeed. Early extirpation affords the best chance, but the operation should be immediate before the habit is tainted. When the disease reaches the testicle, it is rapid in its progress, and most certainly destructive in its event.

Fistulous ulcers sometimes occur in the scrotum; and if these communicate with the urethra, a particular attention to this canal will be required in attempting to relieve. The causes may be an abscess in the scrotum;

a wound made through it into the urethra; the venereal disease first affecting the urethra, producing the ulcer in the scrotum. The external sore is generally very small and sinuous; the lips grow callous; the discharge is thin, copious, almost continual; and if there is a communication with the urethra, the urine will in some proportion escape through the external wound at the times of making water, or insinuate itself into the cellular membrane of the scrotum. Many inconveniences arise from these consequences, that cannot be removed until the orifice made through the urethra is healed.

When this disorder originates in the urethra, it may be known by introducing a catheter or bougie, which will meet with an obstruction. When caused by an abscess forming itself within the cellular membrane near the urethra, or in the corpus cavernosum urethræ, there will be little or no resistance to passing the bougie. Though fistulous sores, callosities, enlargements, and distentions of these parts should appear not to be confined to the scrotum, but extend to the perinæum and nates, and fistulous openings should be observable through the integuments, yet in some instances they are discoverable only on opening into the urethra. The source of these complaints should, therefore, be particularly attended to.

When a venereal cause occasions this disorder, the judicious introduction and use of bougies, joined with mercurial frictions, soft oily purgatives, and soft, diluting drinks, will often render every severe operation unnecessary, though the complaint be of a bad and complicated kind.

Pus is sometimes collected in the scrotum, occasioning the disease named *hyocoele* (Medical Commentaries, xii. 425.); and it has in one recorded instance been found covered internally with a calcareous crust. It occasionally swells to an enormous size from the urine passing into its loose cellular substance, through fistulous openings of the urethra, from stones obstructing the passage, or sometimes from sarcoma or scirrhus. The latter complaints often originate from the testicle, and the tumour distending the scrotum confounds it with the gland; but in many cases the testicle is not injured, and we must recollect that the scrotum has numerous follicles, apparently for the separation of mucus. When the scrotum is distended in anasarca, it must be sometimes punctured to prevent gangrene from the distention; but warm fomentations and warm digestive applications, with spirituous embrocations, must be freely employed to prevent the same disastrous consequence.

See Pott's *Chirurgical Works*; Warner's *Cases in Surgery*; Warner on the *Testicles*; White's *Surgery*, p. 61.

SCRUPULUS, (dim. of *scrupus*, a small stone). A SCRUPLE, *dibogon*, *gramma*. A weight in England equal to twenty grains; but in France and Germany to twenty-four grains. Three scruples, however, are a drachm, and eight drachms an ounce, in every country. See PONDERA.

SCUTELLA'RIA, (*scutella*, a little dish, from the shape of its leaves). See CASSIDA.

SCUTE'LLUM, (dim. of *scutum*, a shield,) is a species of fructification, round, concave, and elevated in the margin, like a target.

SCUTIFO'RME OS, (from *scutum*, and *orma*). See PATELLA.

SCU'TUM, (a shield, or covering). See EPITHEMA.

SCYBALA, (from *σκυβαλον*, dung). Hardened excrement moulded in globular masses in the cells of the colon.

SCY'RUS LA'PIS. See PUMEX.

SCY'THICUS LA'TEX; *πνευμα*, DIVINE WATER.

SEA. The few facts referrible to the sea and its neighbouring shores we have collected in this part of our work, as they may be more readily sought for under this than the Latin appellation. We must divide it, for the sake of perspicuity, into the air of the sea and its neighbourhood; the water; its inhabitants; and effects.

In speaking of phthisis, we mentioned the general indiscriminate recommendation of *sea air*, probably derived from the good effects of sailing, and have before mentioned the singular idea of Dr. Rush, that the mixture of the sea and land airs are by no means salutary. If we would ascertain the real facts, in the mist of fashion, of fancy, and prejudice, we must chiefly rest on observation. Eudiometrical experiments are extremely fallacious. Ingenhous attempted to show that the air at sea contained a greater proportion of oxygen than the air on land, and that the air of islands was purer in proportion as they were less extensive. Other authors have found different results, and it is agreed that the EUDIOMETER, q. v. is a very inadequate criterion of the salubrity of the air. If we admit the accuracy of Ingenhous' experiments, they will add little to our resources in the complaint just mentioned, for hectic patients are not benefited by an increased proportion of oxygen. In another view the situation may be more beneficial. In the bold exposed shores, where the surf is occasionally violent, the atmosphere is filled with a salt spray, which is constantly inhaled in every inspiration. There can be little doubt of the efficacy of such a saline impregnation in scrofula, where we have said a residence in the vicinity of the sea is useful; and perhaps in phthisis, which we have found so nearly connected with scrofula. May not this account for Dr. Rush's opinion; for near the embouchures of large rivers the sea does not roll in such violent waves, and the atmosphere is not equally filled with saline particles. Whatever plausibility there may, however, appear in this explanation, experience proves it to be a refinement; for, whether the exposed situation, by its sharp piercing winds, counteracts the salutary tendency of the salt atmosphere, or any other causes may concur, the situations near rivers are by no means less advantageous than on the open beaches. We have already said that the sea air is most salutary from the month of August, till December; often till February.

Sea air has been supposed to favour and increase bilious complaints. From attentive observation we have not found this accusation properly supported. We think it favourable to the alvine discharge; for though costiveness is common in sea voyages, it seldom attends the residents near the sea. This effect is, however, a general one only, for there are numerous exceptions. Sea air gives strength and activity, effects in part owing to a more regular and active mode of life; but which may arise from its superior purity, should the result of Ingenhous' experiments be correct.

Of *sea water* we have already spoken in the articles

BALNEUM, CATHARTICA, and SCROFULA. As a bath we have not found it peculiarly useful, from its impregnation, though the saline crust it leaves on the skin may keep up a stimulus. As a cathartic it is chiefly useful in scrofula. This quality it owes to its salts, of which, on these shores, there are about one in thirty parts; in the northern ocean, one in sixty-four; in the tropics, one in twelve. Pages found a remarkable diversity in different latitudes, and at different depths. At the equator the impregnation is stronger, probably in consequence of the evaporation, and at different depths there is a slight variation from the superior weight of the more saturated solution. In the neighbourhood of volcanic islands, the saltiness of the sea is greatly diminished. This is particularly conspicuous near Madeira, and the Cape de Verd islands. The reason of this, as well as of the original saltiness of the sea, is not easily assigned, and it is a question which does not belong to this place. The sea on our coasts contains, in a wine pint, of common salt about 186 grains, muriated magnesia 51 grains, and of selenite six grains, besides an oily matter from the exuvia, probably of marine insects. Near the volcanic islands the sea often contains a large proportion of true bitumen.

The temperature of the sea is nearly uniform, so that it is warmer than the air and the earth in winter, and colder in summer. On the southern coasts of this kingdom it is usually about 52°. This renders the temperature of the air in its neighbourhood more uniform, possibly more salutary. The water, at the bottom, when at any considerable depth, is colder in summer and warmer in winter than near the surface. Mr. Henry found that the best method of preserving sea water from putrefaction, for the purposes of bathing, was to convert it into lime water, by adding lime in the proportion of two scruples to a quart.

Of the *inhabitants of the sea* we have already spoken in the article **ALIMENT**. Fish in the earlier ages were seldom eaten, and are mentioned as food in two places only of the *Odyssey*, when the crew of Ulysses were in extreme distress. The insects and vermes afford us many luxuries, and even the botanical riches of the ocean furnish food for the inhabitants of the higher latitudes. The sponges, the zoophytes, and lithophytes, are the work and the habitation of animals. The first and the last only afford medicinal substances; the sponges when burnt (see **SCROFULA**); and the corals now disused, but formerly employed as absorbents. In the arts, the fuci, *confervæ* and *algæ* are used for the production of natron.

The *effects of sea voyages* are, at first, a violent and distressing sickness, often occurring even in those accustomed to a sea life, when they have lived for a short time on shore. Small quantities of brandy, sometimes a little hartshorn, or laudanum, with water, will succeed in relieving it; sometimes a draught of sea water. It arises from the unaccustomed motion, and is only effectually stopped when the constitution has for a little time experienced it. In general, during a sea voyage the belly is costive, but the *health is seldom impaired*, except from scurvy. See **PHTHISIS** and **SCORBUTUS**.

SEACACUL. An appellation in the works of Serapion and Avicenna of a root resembling ginger, brought from India, and recommended as a provocative. It was suspected to be the cryngo, and hence this root,

by Shakspeare and others, has been arranged among the aphrodisiacs. Modern authors suppose that by this term the ginseng was meant.

SEBA'CEÆ GLA'NDULÆ, vel **MILIARES**, (from *sebum, suet.*) small glands secreting a sebum, to soften and polish the skin. Many of these are about the nose, where their contents are often hardened; and when the matter is squeezed out, it resembles a worm with a black head, for the hardened sebum is moulded in the duct.

The black spot which has been styled its head, seems to be produced by the obstructing matter. In young persons, particularly young women, whose constitutions are not yet firm, these obstructions are numerous, and form a class of cutaneous diseases scarcely noticed. The assistance of medicine is often required to remove them; but no medicine succeeds. Slight mercurials, topically applied, are sometimes useful, and Gowland's lotion has thus gained credit; but their removal is chiefly effected when the balance of the circulation is more completely established.

These glands, seated in the cellular membrane, under the skin, and in various parts of the body, sometimes are enlarged, and form encysted tumours.

SEBA'CEUS HUMOR. This glutinous fluid is supplied by the glands just mentioned; and when wanting, as in erysipelas, the skin is dry, parched, and often chapped.

SEBACIC ACID, (from *sebum, suet.*) We have already mentioned this acid repeatedly, and observed, that it is supposed to be the acetous, disguised by its union with animal matter. It crystallizes in needles, or by greater care in broad brilliant plates; has a slightly acid taste; reddens litmus; melts like tallow; is soluble in alcohol; more soluble in hot than in cold water. It precipitates the acetites and nitrates of lead and mercury, as well as the nitrate of silver; but decomposes neither lime, barytic, nor strontian water. These are the properties of Thenard's acid, which he thinks different from that of Crell, and contends that it is by no means the acetous. If it be so, there is a great probability that it is a product, not an educt; but till the experiments have been repeated with more attention, it may retain its appropriate name. To make it, the matter distilled from hogs' lard must be washed with hot water, and a solution of acetate of lead dropped into it, till no farther precipitate appears. On this precipitate, washed and dried, some sulphuric acid must be poured; and, on heating, the sebatic acid will rise to the top, resembling oil. For Crell's experiments, see *Philosophical Transactions*, vol. 70, 72; for Thenard's, *Annales de Chymie*, tom. xxix.

SEBADI'LLA. See **CEVADILLA**.

SE'BAR. See **AGALLOCHUM**.

SE'BAS, (from *sebum, suet.*) **SEBATES.** Salt formed by the union of the sebatic acid, or the acid of suet, with different bases. They are little known, and have been never used in medicine.

SEBE'STEN, and **SEBESTI'NA.** *Myxa, myxara, vidamaram*; the fruit of the *cordia sebestina* Lin. Sp. Pl. Resembling in shape a plum, black on the outside, with a flattish wrinkled stone, produced in Egypt and Assyria. It is cooling and relaxant, but not used as a medicine, though said to obtund sharp humours which fall on the lungs.

SECA'LE, (*a patronymic.*) *Siligo rogga*, **RYE**, a

kind of grain less nourishing than wheat, which sometimes gently moves the bowels. Of all the cerealia, it is the most readily aced. When this grain is corrupted it occasions painful and convulsive disorders, and death. The meal mixed with common salt, and dried before the fire, is an excellent discutient in erysipelas; and mixed with honey it becomes a suppurative cataplasm. When grains of rye are diseased, and grow like a horn, they are called *clavi siliginis*, and *ergot*. This disease, according to Tissot, arises from an irregular vegetation between the grain and the leaf; and, according to other authors, from the puncture of an insect, the *scarabæus solstitialis*. Perhaps the bite of the insect may produce the anomalous vegetation.

SECRE'TIO, (from *secerno*, to separate). **SECRETION**. This function, the most useful and important in the animal economy, by which every loss is repaired, every tender organ defended, still remains unexplained. Nor is it surprising that a process carried on in the minutest vessels, the elements, according to Haller, of an organ should escape the most minute inquirer. The first step which occasioned the dispute between Ruysch and Malpighi has not yet been decided, whether a gland necessarily contained, as a part of its organical structure, a follicle, or whether it was only a mass of continuous convoluted vessels. From the minutest injections we find the artery branching in the substance of a gland in a peculiar manner, and so constant in its appropriate angles, as to lead to the conclusion that these influence the nature of the secreted fluid. Yet the mechanical physicians who have examined their arrangement with the greatest attention, have been able to draw no very important consequences from it. No anatomist has, however, carried the injected fluid into the excretory duct by continuous vessels. There is a point at which the artery breaks off, and that point is apparently at a great distance from those minute branches where the change takes place. It is impossible, therefore, to determine whether follicles exist or not, but we know that there are secretions where there is no visible intermediate knot; and if secretion can take place from continuous vessels in any instance, it is impossible to say that it does not in every organ. A considerable change is certainly, at times, discovered in the secreted fluid, from the state of the vessels themselves. In the mucous membrane of the nose, for instance, the matter secreted appears a mere exhalation; yet when there is inflammation from a catarrh, it is thin, acrid, and discoloured. A more remote action changes the nature of the secretions, viz. nervous affections. A fit of passion will render the bilious secretion more copious and acrid; disastrous intelligence destroy the digestion, and render the contents of the stomach acid. Yet we are told that the glands have few nerves, and that the large ones, apparently sent to them, pass by without any communication (Haller). The glands are certainly insensible, but they are highly irritable from distant, often mental, causes. The nerves of almost all the glands (for we must exclude the brain from the number) arise from the great sympathetic. Their action is, therefore, involuntary.

Physiologists, according as they adopted the principles of the mechanical or chemical sects, have considered secretion, by which they understood the separation of a

peculiar fluid contained, formally, in the circulating mass, as depending on the angles at which the secretory vessels were sent off, or on either a ferment or the influence of attraction. The former had more than the usual support from observation, as the vessels of each secretory organ pass off from the trunks, and ramify in a manner peculiar to themselves. Thus the seminal vessels pass off at acute angles, and do not become conical; in brutes they have even their diameters enlarged, and at last become peculiarly tortuous. The renal vessels pass at right angles from the aorta, and are dispersed on the kidneys in vermicular arches. To this may be added the observation of Lewenhoeck, who perceived by his microscopes that the velocity of the blood diminished in proportion to the angle which the arterial branch made with its trunk.

The chemists, on the other hand, struck with the dissimilarity of the secreted fluid from the blood, supposed a ferment to exist in the gland, which sometimes was brought to it from the blood, sometimes pre-existed in the part. Others of this sect attributed the change to stagnation, and peculiar attractions taking place; in modern language, the play of affinities.

More nearly allied to the doctrines of the mechanical physicians is the opinion of Des Cartes, who attributes the change in the secreted fluids to the vessels fitting only particles of a peculiar figure; as triangular vessels fit only prisms, and square ones cubes; and that of Boerhaave, who considers the size of the vessels to diminish gradually, and of course the finer fluids to be separated only in the lowest series.

There is still another view, which has not been expanded so far as the arguments in its favour might admit, that is, the effects of a specific stimulus. The squill that irritates the kidneys and the bronchial glands has no effect on the skin; and the asparagus, which conveys its odour to the urine, does not tinge the saliva. If then the blood consists of different portions, those only which are peculiarly adapted to stimulate a given gland will excite its action. We suspect, however, that this theory must fall with the rest.

In short, each author down to Hamberger and Haller has, with a very few exceptions, rested his theory in the formal pre-existence of the secreted fluid in the mass of blood, a foundation which cannot be allowed. The bitter matter of Welther, and the yellow fluid separated by Higgins, are far from being true bile. Even the milk differs from the chyle, and the semen from every other fluid in the whole body. There is a real transformation in the gland which we cannot explain. We may, however, clear the way for a more adventurous theorist.

Haller divided the different secreted fluids into aqueous, mucous, gelatinous, and oily. On this arrangement Fourcroy, in the present enlightened state of chemical knowledge, has improved by considering them as *saline*, *oleaginous*, which have some solidity, as the fat and cerumen; the *saponaceous*, as bile and milk; the *mucous*, as those which line cavities; the *albuminous* and *fibrous*. Those which come nearest in their nature to the blood are the saline, the albuminous, and the fibrous. These seem merely exudations, with little change. The perspiration, for instance, contains some carbonic acid, probably also azotic gas; the urine a peculiar acid; and all probably some animal matter,

The tears contain only, in addition to the serosity, a little mucus, and a very small proportion of animal matter; the water of dropsies; the halitus of cavities; the albuminous and fibrous fluids, which form adhesions, after inflammation, appear to be exudations only.

The three last seem to differ only in proportion to the impulse impressed by the vis a tergo, or the dilatation of the vessels; for the vessels of the pleura, which in health throw out an halitus, after inflammation exude an albuminous and even a fibrous fluid.

The secreted fluid, which approaches most nearly in its nature to the circulating fluid, is the mucus. It is, however, neither serous nor albuminous, for it does not coagulate by heat. This fluid is also secreted by the simplest apparatus, viz. a follicle, a cavity of an ovoid form; and sometimes apparently by simple vessels, without the interposition of a follicle, at least where no such can be discovered, as in the Schneiderian membrane. It is of more importance to observe that the inflammation of the membrane or follicle changes the nature of the secretion, which from being a mild viscid, white, fluid, becomes acrid, thin, and coloured. This alteration of properties may be owing to the rapidity of the excretion, for it certainly thickens by stagnation, and the access, in many instances, of oxygen; but the additional acrimony, which accounts for the greater flow, must be owing to a change of quality, for when mucus is only increased in quantity by a common stimulus, it is by no means acrid. This alteration of quality, from inflammation, we find also in the mere exudations, if the explanation offered in the article Pus, q. v. be well founded; and the consequence which we would draw is, that if, in any instance, a true excretion can be produced by tortuous vessels, independent of any apparatus, there is no reason for suspecting that the most apparently complicated gland consists of more.

Again: if passions of the mind, or even associated ideas, can change the quality of a secreted fluid, we cannot suppose that any peculiar ferment can be originally placed in the gland that changes the blood. The bile becomes acrid; the saliva poisonous from passion; the urine watery from terror; the mucus of the alimentary canal highly stimulating and cathartic from the same cause, or even from the recollection of similar events which occurred at a former period. The play of affinities cannot be called in aid of the theory, for these circumstances are connected only with the living principle.

It has appeared probable to some authors, that the greater the change, the denser is the gland, or the more complicated the apparatus. The former idea, that of La Mure, appears, however, wholly without foundation, when brought to the test of experiment; nor does the latter apparently rest on a firmer basis. The cerumen of the ear, for instance, is at least as unlike the blood as the bile; and the milk resembles it more than the mucus of the simplest follicle. If the bile be examined in the pori biliarii, it is as truly bilious as in the ductus communis; and the milk is the same milky fluid in the breasts as when it issues from the nipple. The chief use of what appears a larger mass of a glandular substance is merely the accumulation of a larger quantity of the secreted fluid, either for peculiar exigences

or for a general supply. An instance of the former is the biliary cyst; of the latter the mammae.

Physiologists have doubted whether the secreted fluids are not more perfectly elaborated, or at least somewhat changed in their respective receptacles. The semen in the vesiculæ seminales undoubtedly receives an additional portion, though its peculiar value in the function is unknown. That the bile is altered, except perhaps from the absorption of its more fluid parts, is uncertain, and, on the whole, any chemical change is improbable. The sebum and the mucus, in their respective follicles, are apparently inspissated, and sometimes, as in the nose, combined with a portion of oxygen. The vesica urinaria and the distensile coats of the rectum are chiefly convenient appendages to the kidneys and intestines.

It appears then that the functions of glands closely depend on the vital solid, and its different states of excitability or torpor. This idea may appear to be opposed by the observation of Haller, already recorded, that the large nerves apparently sent to glands were not in reality dispersed on them, but passed on to other organs. To this we may reply that sensibility and irritability are not always proportioned to the size of the nerves. The quantity of nerve is necessarily considerable where the motions are violent and incessant; they are less so where motion is less requisite, and where states of relaxation, as in glands, usually alternate with states of activity. Let the explanation, however, be what it may, the fact is certain, that secretion is more intimately connected with passions of the mind than with any distribution of arteries, or any considerable proportion of nerve.

We shall add the arrangement of animal substances from Fourcroy, in his later work, the *Système des Connoissances Chimique*, ix. 117, which includes those of the secreted fluids.

“Chemists have often divided the animal fluids into recrementitious, as the blood and lymph; excrementitious, as the urine and fæces; excremento-recrementitious, as the bile, semen, &c. We cannot be satisfied with this classification, which presents nothing fixed or accurate, but may divide these matters, from their chemical nature, into eight classes, according to the superabundance of one or the other of their component principles.

A HYDROGENATED, or OILY animal substances; as the fat, cerumen, or bile.

B OXYGENATED, or OXYDS (the *albuminous* or *lymphatic*); containing the lymph, the water of the internal cavities, and the brain.

C CARBONATED (*gelatinous* or *mucous*); comprehending membranes, aponeuroses, tendons.

D AZOTIC (*fibrous* or *fleshy*); as muscles, and the visceral parenchymata.

E ACID; the uric, formic, bombyc acids, &c.

F SALINE (*watery*); aqueous and vitreous humours of the eye, tears, and saliva.

G PHOSPHORATED; bones, nails, horns, and hair.

H MIXED; blood, milk, semen, and urine.”

We have thus seen that the functions styled secretion is improperly termed, as it is by no means merely separated from the mass, except in a very few instances, as the halitus, perspiration, &c. which, how-

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ever, modern chemistry has shown to be more different from the serosity than our predecessors suspected. Though we may, therefore, be unable to explain the cause of the change in the qualities of the fluid, we may collect from observation some of the LAWS of this function, which will regulate our practice.

The general causes which influence the secretions are few: magnetism and electricity, if they really differ, are the most commonly admitted; yet, except when locally applied, they have apparently little claim to the distinction. It is said they increase the perspiration, and so far the facts support the assertion. Heat is another general cause of increased secretion; but it seems only to accelerate the discharges from the skin in either a state of vapour or of a fluid; the insensible perspiration apparently depends on a different state of the constitution. (See DIAPHORETICA.) Dr. Hamilton, in the Medical Commentaries, has informed us that calomel, tartarized antimony, camphor, and opium, when combined, will promote every secretion. This is, however, a hasty assertion, which facts will scarcely support.

It must be admitted that some medicines will influence a greater number of secretions than others. Antimonials, for instance, will excite the action of the stomach, the bowels, and the vessels of the skin. They excite expectoration by an indirect effect, viz. their action on the stomach, and it is not the antimonial but the nausea which produces increased secretion of saliva and mucus. Calomel will excite the action of the bowels, the skin, and the salivary glands. Neither medicine will excite the secretion of urine, while squills, which are diuretic and expectorant, are not generally or constantly laxative or diaphoretic. Squills, however, approach more nearly to a general stimulus on every secretory organ than any other medicine, or even Dr. Hamilton's combination.

It has been usual to consider every medicine which increases a secretion as acting on the gland, when brought to it by the course of the circulation. It more frequently happens, however, that each acts by stimulating the orifice of the excretory ducts. In this way laxatives apparently increase the secretion of bile, sapid aliments of saliva, and the suction of an infant the milk. Many secreted fluids cannot be increased by medicines thrown into the system, as the tears, the cerumen of the ear, the mucus of the nose, &c. We know not that the pancreatic fluid is really increased in quantity by mercury when it has entered the system. We suspect it only from a supposed analogy of this fluid with the saliva.

Those medicines which generally increase secretions from the circulating system are remarkable for their acrimony, as the squills, the oxygenated preparations of mercury, &c.; but, as already hinted, every vessel is not equally excited by an apparently equal acrimony. What affects the biliary duct, for instance, will not excite the lachrymal or salivary glands: the turpentine, which excites the urinary discharge, is innocuous in the stomach and intestines. It may be supposed, then, that a medicine, when mixed with the mass of blood, produces no effect unless conveyed to those organs which would be peculiarly affected by it, were not the quantity so small that we could scarcely suppose it suf-

ficient in its diluted and diffused state to influence any gland. Another idea has, therefore, been suggested, that the chemical affinity of the medicine combines it with those portions of the fluids which are conveyed to given glands. Thus salts increase the watery secretions; resins, the oily ones, &c.; but the theory will not admit of any considerable extension, for it soon fails if followed in detail.

Secretions also depend less on the state of the blood than authors have supposed. Dr. Cullen was of opinion that a larger proportion of water allows of more copious watery secretions; but this idea must be taken with a certain latitude. If pure water be carried into the circulating system, it is soon conveyed away by the watery secretions; for we have remarked, that what is not subjected to the digestive process never becomes a part of the animal mixture. It is then an heterogeneous substance, and as such rejected; but if from any other cause the tenuity of the blood is increased, no such increased secretions follow, as we see in all cachectic complaints. The saline or putrid acrimony of the fluids seems sometimes to excite the action of the urinary organs, and the urine, sometimes the perspiration, partakes of the same quality; but, though the discharge is frequently offensive, it is not always greatly increased.

The only remaining portion of this subject is the vicarious action of some of the secretory organs. The saline and watery secretions proverbially supply each other; and these will also sometimes pass off by the mucous follicles, as the watery accumulations in dropsies are occasionally thrown off by the glands of the stomach. The urine, when suppressed, and not discharged by the perspiratory vessels, is sometimes exhaled, it is supposed, in the ventricles of the brain; but the delirium thence excited seems rather owing to the acrimony, which all the watery secretions contain from the retention of the urea, and other excrementitious portions of the urine, than from the quantity, though this also is occasionally in excess, producing stupor. No organ supplies the defect of bile when the discharge is suppressed; but, as this fluid is dispersed through the whole system, some portion again reaches the intestines through the exhalants, and contributes in some degree to the assimilation of the food. No organ supplies the functions of the testes; but the whole economy is completely deranged by their destruction.

See Haller's Physiologia, vol. ix.; Cole de Secretione Animalium; Richerand's Physiology.

SECUNDINA, (from *secundus*, *second*, it being as it were a second birth). SECUNDINES; *deuterion*. The placenta and membranes. See PARTURITIO, FÆTUS, and INVOLUCRA.

SEDA'NTIA, (from *sedo*, to *appease*). SEDATIVES. This class of medicines is of the most extensive utility; but we have nothing to add to the very frequent notice we have taken of the subject in the articles ANODYNA, INIRRITANTIA, REFRIGERANTIA, and DEMULCENTIA, q. v.

SEDATIVUS SAL, (from the same). SEDATIVE SALT, now styled the acid of borax, hath been found by M. Hæffler in the laguni, or lakes of hot mineral water near Monte Rotondo, Berchiaio, and Castelnovo, in Tuscany, in the proportion of nine grains in one hundred of water. Mascagni hath discovered it

adhering to schistus on the borders of the lakes, of a dirty white, yellow, or greenish colour, and crystallized in the form of needles. This acid may be procured by dissolving eight ounces of borax in three ounces of warm water, adding three ounces of the oil of vitriol. When, on evaporation, thin plates begin to appear upon the surface, they must be swept off with a feather, the fire diminished, and the vessel stand unmoved till more crystals are formed. These are to be well rinsed with cold water, and dried, when they form the *sal sedativus*, which, Gaubius says, will procure rest in inflammatory fevers when opiates fail. To this end it is given from gr. viij. to xvi.; to maniacs, in doses of two drachms. Lemery observes that two ounces of borax afforded him rather more than half an ounce of sedative salt; but he obtained it by the more tedious process of sublimation, which produces a purer acid. For this purpose nine parts of borax, three of the oil of vitriol, and one of water, are put into a wide necked retort, which is placed over a fire, at first gentle, then hastily increased until the vessel is red hot: the salt rises, fixing about the neck of the retort, and the liquor that distils falls into the receiver, and should be poured back as the matter in the retort dries; for the sedative salt only rises while moist. The remaining salt is a vitriolated soda.

The sedative salt scarcely discovers any mark of acidity. Its taste is bitterish, and rather cool; it scarcely changes the colour of blue flowers, or effervesces with alkalis: a spirituous solution of it burns with a green flame. As a medicine it has been highly celebrated in Germany and France, as an antispasmodic and anodyne; though Dr. Cullen, speaking from experience, says that it has little effect on the human body, even in large doses. It seems, however, to have no peculiar powers, and to differ very little in medicinal virtue from the vegetable acids. See BORAX and CHEMIA.

SEDATI'VUS SAL HOMBERGII, (so called from Homberg, the discoverer). See COLCOTAR (SAL).

SEDENTA'RIA O'SSA, (from *sedeo*, to sit). See ACUMEN.

SEDLITZ, or SEYDSCHUTZ WATER. A bitter purgative water containing a large proportion of vitriolated magnesia, with a small one of a muriat of the same earth. It is used in cases where a gentle and a continued solicitation of the intestinal canal is required.

SE'DUM, (from *sedando*, because it allays inflammations,) *sempervivum*, evergreen; *vermicularis*, from its leaves resembling worms; *barba Jovis*, SENGREEN and HOUSE LEEK. The *semper vivum tectorum* Lin. Sp. Pl. 664. The GREATER HOUSE LEEK, is called *sedum majus*, *eichryson*, *anion*, *elzoon*, *crassula minor*, *illecebra*, *athalis*, *piper murale*. The sedums are small plants, whose short and thick stalks are covered with little fleshy and conical leaves, set thick together like scales; on the tops appear pentapetalous flowers, followed by a pod full of small seeds. They are annual, grow on old walls and dry stony grounds, flowering in June and July.

The leaves have an acrid taste, but no remarkable smell: applied externally, some species, particularly the *s. acre*, vesicate the parts; and internally, in no great quantity, are strongly emetic: whilst the sengreen and some other species abate external inflammation; and, if taken inwardly, are emollient and laxative, though

slightly astringent; but they are not employed in the present practice.

It is also a name for *paronychia*.

SE'DUM ACRE, Lin. Sp. Pl. 619, ILLECEBRA, q. v. It has been recommended in epilepsies.

SEGREGA'TA, (from *segrego*, to separate). A class of plants in whose flowers many smaller calyces are contained in one common calyx.

SEIGNE'TTE, SEL DE. TARTARIZED SODA. See RUPELLENSIS SAL, named from Seignette, an apothecary of Rochelle, who accidentally discovered it.

SELENI'TES, (from *σεληνη*, the moon,) a name originally given to a white fossil, and from thence continued to different species of gypsum, which are usually white. It is the vitriolated lime, a common ingredient in every water, and giving the quality usually styled hardness.

SELI'NUM MONTA'NUM, (from *σεληνη*, the moon, because it was supposed to be useful in disorders attributed to her influence). STONE PARSLEY. *Apium* and *selinum*, *peregrinum*, *daucus peregrinus*, *visnaga minor*, scarcely differing from the common or garden parsley in its medical powers. See APIUM HORTENSE.

SELLA TU'RCICA, SPHENOIDALIS, (a *sedendo*, sitting). A TURKISH SADDLE. *Ephippium*; *fossa pituitaria*; a depression between the clinoid apophyses of the sphenoid bone, on which the pituitary gland lies.

SELTZER WATER. This water rises near the town of Nieder Seltzer, in the bishopric of Triers, in Germany; has a brisk acidulous taste as taken up from the fountain, which it loses on exposure to the air. The acidulous taste and the sparkling appearance were not understood by the earlier chemists; but we now know that it is owing to the excess of the aerial acid beyond what is required to neutralize the lime and alkali. Sir Tobern Bergman from one hundred cubic inches obtained about one of common air; sixty of aerial acid, or fixed air; of aerated lime, seventeen grains; of aerated magnesia, twenty-nine one-half; of crystallized mineral alkali, twenty-four; of common salt, one hundred and nine one-half. Mr. Higgins discovered in a Winchester gallon of this water fourteen grains of mild calcareous earth, twenty one-half of carbonated magnesia, five pennyweights twenty-one grains of mineral alkali in a crystalline form, three pennyweights 20.2 of sea salt, with a small proportion of oily matter. This quantity contains also one hundred twenty-eight ounce measures of acidulous gas, exclusive of what is combined with the alkali and earth, with three one-half ounce measures of atmospheric air, and is wholly without iron. These waters operate chiefly by urine, occasionally, though rarely, by stool. They gently stimulate the stomach, allay heat and thirst, and have been frequently used in scorbutic, hectic, and nervous cases. Hoffman recommends them in gout, and as powerful deobstruents. From one pint to three, or more, are drank in a day, and milk is often added when given in hectic. See AQUÆ MINERALES.

SEMEIO'TICA, (from *σημειον*, sign). See MEDICINA, and PROGNOSIS.

SEMEN, (quasi *serimen*, from *sero*, to sow). SEED; in animals *genitura*, *γονη*; in vegetables *carpos*; the rudiment of the plant perfected during the fructification.

From analogy it is the appellation of that fluid secreted in the testicles which is so essential to generation, and which, for this purpose, must be conveyed at least into the uterus, and most probably to the ovaria. (See GENERATIO.) Though secreted in the testes, it is not perfectly elaborated in these organs, but seems to experience a change of colour, perhaps of qualities, in the vesiculæ seminales; for, during its stagnation, the colour becomes of a darker brown, or of a deeper yellow, than before.

The arteries which convey the blood to the seminal vessels pass through a long course without sending out branches, and without lessening in their diameter. In brutes it is said that their diameters enlarge. The termination of the artery in the testis has not been traced; and though it is known that the testicle is vascular, it is not certain that each contains a single tube. The epididymis is certainly composed of one convoluted canal; yet it is highly probable that the testis contains numerous canals corresponding to the branches of the arteries, or, as is supposed, though without sufficient evidence, on which the arteries are dispersed, while their contents are exhaled into the cavities. The arteries are small, tortuous, and peculiarly firm in their coats. The course of the blood is probably assisted by a slight, steady, but almost insensible, action of the cremaster. The vas deferens passes in the cord, with the seminal vessels through the ring of the abdomen, between the ureters, behind the bladder, to the right and left seminal vesicles. It is continued on the inner side of each, enlarging into cells, and bent in serpentine convolutions, till it joins the duct which passes from the vesicles to the urethra, and apparently enters the vesicles in a retrograde direction. The bile in the same way enters the gall duct. The fluid of the prostate which it receives in its course, during its discharge, contributes to its white colour.

The semen is very generally heavier than water, though its specific gravity varies in different persons. According to Plenck it is yellow in the testicles, and of a dark yellow in the vesiculæ seminales; but, if not suffered long to stagnate, it is whitish. Lewenhoeck first discovered little moving bodies, which he supposed to be animalcules, in it, and thought that these were the rudiments of the fœtus. This observation furnished to the brilliant genius of Buffon his theory of the molecules organiques. Later observers have not, however, found these animalcules in the first moments after the discharge; and they soon die, leaving some light brilliant crystals, resembling two cones united at their bases. They are discovered only in a mild temperature, and when the fluid has been at perfect rest.

According to Vauquelin, in the *Journal de Physique*, the taste of the fresh semen is sharp and somewhat pungent. Its aroma, he observes, is faint; though Plenck speaks of it as strong, peculiar, and not unpleasant. We find a similar smell in the roots of the orchis, the down of chestnuts, and the antheræ of several plants. In some animals it is so strong, particularly in the season of their amours, as to taint the flesh. When fresh, it changes the blue colour of vegetables to a green, precipitates calcareous and metallic salts from their solutions: experiments which equally show some disengaged alkali.

When part of its caloric is lost, it thickens, and be-

comes transparent; but on more perfect cooling is again fluid. When cold, also, its weight is diminished. Exposed to cold air it is soon covered with a pellicle, and deposits crystals in the form of quadrilateral columns, terminated by quadrilateral pyramids, which were found to be phosphorated lime, previously held in solution. Other crystals were afterwards formed, which consisted of carbonated soda. When dried, it is semitransparent, like horn; but in a moister atmosphere it becomes yellow, like the yolk of an egg, and smells highly putrid. By heat it swells, blackens, and, when the moisture is evaporated, yields empyreumatic ammoniacal vapours: the salts already mentioned are found in the coal. One hundred parts of fresh semen were found to contain ninety of water, six of fibrin, one of soda, and three of phosphat of lime. Vauquelin concludes his analysis by mentioning its remarkable properties, which are its becoming fluid out of the body; its insolubility in water previous to its fluidity, and its solubility afterwards, which he attributes to its animal and mucilaginous nature; its dissolving phosphat of lime, and its ready crystallization on a very slight evaporation. *Journal de Physique*, 1791.

Unfortunately this very minute analysis does not assist us in explaining the functions of this fluid, and we cannot be surprised that the appearance of animalcules should so soon have captivated the lively imagination of Buffon, whose name, from his fascinating language, was for a long time supposed to be sufficient authority. This important function must, therefore, still remain in obscurity.

The diseases of the seminal vessels, and the imperfections of this secreted fluid, are not numerous. The organs, from excess or abuse, are often relaxed, and the semen is discharged by every exertion, particularly by the action of the abdominal muscles, in discharging the fæces; sometimes during the relaxation of sleep, without any exertion, or the very slight stimulus of a lascivious dream. It is said occasionally to retain the smell of the food, the fœtor of medicines, or the colour of a medicine, particularly saffron. In the jaundice it is yellow, and in negroes its colour is seemingly darker than in the Europeans (Pauw): it is said also to be darker in hypochondriacs. In some instances it has shown a tendency to form calculous concretions. (See Zodiacus, 1680.) From great excesses blood has been discharged instead of semen.

From ruptured vessels it seems to have been occasionally discharged by stool; externally by a fistulous ulcer of the testicles (*Medical Observations and Inquiries*, ii. art. 22), through the epigastrium, and from an ulcer in the rectum and urethra.

On a certain degree of distention of the seminal vessels, the spirits, the vigour, and the general health depend. When this distention is relaxed, we find languor, debility, a want of energy both in the corporeal and mental functions. When there is no supply either from accident, disease, or unnatural mutilations, the whole system is changed, the voice weakened, the beard checked in its growth, the sternum expanded: in short, the appearance in every respect approaches that of a female. These changes have occurred when the testicles have been destroyed after the period of manhood, though in a less degree. An unreasonable suppression is a frequent source of hypochondriasis, or of a general

languor; and a French author has gravely stated the comparative disadvantages of suppression of this discharge, and that of the catamenia in women. Much, however, depends on habit; and those who have not indulged lasciviousness of thought or conduct will seldom feel great inconvenience from the retention of the seminal fluid.

Journal de Physique, Années 1784, 1791; Spallanzani's Tracts on Vegetables and Animals; Schurig's Spermatologia; Haller's Physiologia; Plenck's Hydrology.

SE'MEN ADGOWEN, an East Indian aromatic seed, resembling in its sensible qualities savoury. It is stimulating and carminative, and given in dyspeptic complaints.

SE'MEN AGAVE, a stimulating East Indian seed used in atonic gout.

SE'MEN CONTRA and SANCTUM. See SANTONICUM.

SEMENZI'NA, (dim. of *semenza*, seed, Ital.). See SANTONICUM.

SE'MI or SE'MIS. ONE HALF. A meaning which it preserves also in composition.

SEMICU'PIUM; *excathisma incessio*, a HALF BATH, rising to the waist, usually formed of warm water, sometimes impregnated with herbs, adapted to the nature of the complaint, and supposed to be productive of their peculiar advantages. The semicupium alleviates pain, dispels flatus, and relieves internal congestions. See BALNEUM.

SEMIFIBULÆ'US. See PERONEUS SECUNDUS.

SEMILUNA'RES CARTILA'GINES are placed upon the upper part of the tibia; they are thick on the outside, and contribute to enlarge the cavity. As they are moveable and variable, adapting themselves to the condyles in the various motions of the joint, they add to its flexibility and assist its rotation.

SEMIMEMBRANO'SUS MU'SCULUS rises tendinous from the posterior part of the tuberosity of the ischium, close to the origin of the musculus quadratus femoris, and is inserted into the back part of the internal condyle of the tibia.

SEMINERVO'SUS MU'SCULUS, or *semitendinosus*, lies upon the outside of the semimembranosus, forming, at its origin, one mass with the head of the biceps. When they have run together a little way they part, the semitendinosus running to the internal condyle and upper part of the tibia, making, conjointly with the sartorius and the gracilis, a fascia.

SEMIORBICULA'RIS. The orbicular muscles of the lips, if considered as two, are called *semiorbicularis superior* and *inferior*.

SEMI RHOM'BUS. See HEMIRRHOMBIUM.

SE'MIS. See CYATHUS.

SEMISPINA'LIS. See SPINALIS DORSI MAJOR.

SEMITENDINO'SUS. See SEMINERVO'SUS.

SEMITERTIA'NA FE'BRIS, *hemitritæus*, a fever returning every day, with a remission interposed more remarkably between the irregular and regular day than between the regular and irregular day, in fact, a double tertian. See INTERMITTENS and REMITTENS.

See Hoffman on the Semitertian Fever; Lommius's Medical Observations; Cleghorn on the Diseases of Minorca; Hunter on the Diseases of the Army; Senac de Recondita Februm Natura; Fordyce on Fever.

SEMPERVI'VUM, (from *semper*, always, and *vivo*, to live; because it is always green). See SEDUM.

SENE'CIO ASIA'TICUS, MADRAS PATANUS. See CHINA SUPPOSITA.

SENE'CIO BRASILIENSIS. See CAAETIMAY BRASILIENSIS.

SENE'CIO VULGA'RIS, (from *senesco*, to grow old; because it has a greyish down, like the beard of an old man). See ERIGERUM.

SENE'CTUS, (from *senex*, old). See ETAS.

In the article HOMO, q.v. we have collected the different facts which point out the progressive changes in the constitution from youth to age, in reality, from the embryo to the man sinking under the accumulated weight of more than fourscore years. This might have appeared sufficient; but when we considered the subject more nearly, there are various circumstances, both practical and dietetical, which claim our attention; nor need we cite the authority of the dramatist on this occasion, "*Senectus ipsa morbus*."

The great changes which take place in advanced life we showed to be a want of irritability in the muscular fibres, a diminished sensibility of the nervous, with an obliteration of a considerable part of the arterial system.

"Multa senem circum veniunt incommoda, vel quod Quærit, et inventis miser abstinet, et timet uti:
Vel quod res omnes timide gelideque ministrat;
Dilator, spe longus, iners, avidusque futuri,
Difficilis, querulus, laudator temporis acti
Se puero, censor castigatque minorum."

This is a faithful and elegant picture of the mental imbecilities of old age, to which we may add a less activity in volition, or a greater interval between the sensation and the action. The corporeal are not less striking. The body is bent; for the flexor muscles are still less counteracted by the extensors than even in youth, and resemble their state during the relaxation of sleep. The knees yield from imbecility; the gait is unsteady; the jaw and the under lip hang down; the whole body is extenuated, and every muscle on exertion trembles. Constitutions, however, often greatly differ; and the robust husbandman, the active mountaineer, often the old soldier of seventy-five, are active and robust, with little change in any of the functions. The foreign authors frequently indulge in inquiries whether old men should marry, and think that the offspring, if any, is weak or diseased. This question makes no part of our political medicine, and therefore it requires no farther notice. We may add, however, from our own observation, that if the other parent is of a middle age and a firm constitution, the children are in general strong and healthy. The causes of extended life previous to the deluge, which have engaged the attention of many of the German physiologists and divines, are still less within our province. It is probable that the patriarchal lives were dynasties; for without a miracle, and no such is recorded, the human constitution would not have so quickly changed. The tales of life extraordinarily extended are in the greater number of instances apocryphal.

The causes of long life are various, according to different authors. It is said, that a judge was anxious in

his inquiries respecting the mode of life of every man in a very advanced period of life, adduced as an evidence, but found that they agreed only in early hours, both of retiring to rest and rising. The various rules laid down by foreign authors are truly ridiculous. One recommended venesection occasionally; another, honey; a third, wine more largely diluted than formerly; others, the diminution of the proportion of solid food, or its total omission. In general, we find the appetite for solid food lessened, though some old people eat voraciously with little inconvenience. Sweets of every kind are unusually grateful, and the inclination for wine frequently lessens. These are apparently the dictates of nature, and may be safely followed. Wine is said to be "the old man's milk;" but it is often unpleasant, and, where wholly discontinued, we have not found any great inconvenience follow.

The principal diseases of old age arise from torpor, and from venous plethora. The torpor is perceived in every function. The perspiration is retarded, often wholly checked, probably from weakened circulation, or the obstruction of the smaller arteries. The bowels are bound, the urine in small quantity and high coloured; the saliva only copious from debility; the fæces and the urine involuntary from the same cause. The extremities are cold, and the whole body is wrinkled. The venous plethora induces load in the head, followed by apoplexy or palsy; asthma, occasioning catarrhus suffocativus, or hydrothorax; piles, or obstructions of the liver, the sources of dropsy. Of all these we have already spoken in their proper places, and can only add, that they are not prevented by venesection. The chief remedies of old age are a moderately cordial diet, with the most anxious attention to the excrementitious discharges. Lying long in bed must be indulged, from the concomitant debility, and from its assisting the determination to the skin.

SE'NEGAL GUM. See GUMMI RUBRUM AS-TRINGENS.

SE'NECA, (called from a tribe of Indians who used it against the bite of the rattle snake,) AMERICAN MILK WORT, RATTLE SNAKE ROOT, *polygala senega* Lin. Sp. Pl. 990. The leaves are pointed, and somewhat oval; the stalks upright and branched; the flowers white; the root variously bent and jointed. It is about the thickness of a little finger, and resembles the tail of a rattle snake with a membranous margin, which runs its whole length on each side; outwardly of a yellowish or of a pale brownish colour, internally white; a native of Virginia, Pennsylvania, and Maryland, and cultivated in our gardens. This root is said to be a specific against the poison of the rattle snake; the powdered or fresh root beat into a cataplasm is applied externally, and a decoction taken inwardly. (See BORCININGA.) As the poison from the bite of a viper is apt to produce difficulty of breathing, cough, hæmoptysis, a strong quick pulse, &c. evident symptoms of peripneumony, it was thought that the senega might, in diseases of this kind, be an efficacious remedy; and this it has apparently proved after bleeding, though it seems to owe its efficacy to its emetic and cathartic powers. It indeed appears to be a general evacuant, producing a plentiful spitting, increasing perspiration and urine, frequently purging and vomiting. In pleurisies, whether inflammatory or spurious, in the rheumatism,

gout, gouty rheumatism, and the humoral asthma, it is considered as singularly useful: it has been prescribed with success in dropsies, and thought to have great power in attenuating the blood. (See PLEURITIS.) The powder is preferred to any other preparation, and the dose is from one to two scruples; but a decoction of three ounces of the root in a sufficient quantity of water, to strain off a quart, is usually given in a dose of from two to four spoonfuls three or four times a-day.

See Lewis's *Materia Medica*; Tennent's *Essay on Pleurisy*, Philadelphia, 1730, with his *Epistle to Dr. Mead*; De Haen, *Ratio Medendi*, iv. 352; who contradicts the last assertion by producing a strong fact against it.

SE'NEGA, SE'NICA, SE'NIGAL, GUMMI. See GUMMI SENEGALENSE.

SE'NNA, (from the Arabian word *senna*, acute; from its sharp pointed leaves,) is a shrub with a roseaceous flower, followed with a pod containing seeds like grape stones.

SE'NNA ALEXANDRIANA; because it is exported from Alexandria; *folia Orientalia, cassia senna* Lin. Sp. Pl. 539, ALEXANDRIAN ACUTE SIX LEAVED SENNA. The leaves which are the parts in use, are of a lively yellow green colour, an oblong, somewhat oval figure, sharp pointed at the end, about a quarter of an inch broad, and not an inch long. Those which appear bright, fresh, free from stalks and spots, that are well and strongly scented, smooth and soft to the touch, thoroughly dry, sharp pointed, bitterish, and somewhat nauseous to the taste, are preferred. There are inferior sorts, but they are generally distinguished by their not being pointed, but more or less broad at the end. Of this kind is the Italian senna, a medicine much less active as a purgative. It grows in Jamaica, and is a variety of the Alexandrian senna.

The Arabians first used this medicine, which is a moderately strong, and in general a safe, cathartic, Dr. Alston prescribed it in ardent fevers; and frequent experience manifests its advantage even in the most delicate habits, and on the most robust it operates sufficiently. Two drachms of these leaves are infused in four ounces of warm water, and the addition of acids takes off the nausea which it excites. As the griping quality depends upon its resin, the dilute infusions will be the freest from this effect. From ʒ i. to ʒ i. of the powder is usually sufficient for one dose.

Senna yields its virtues both to water and to spirit, but long boiling lessens the purgative quality. If the senna is infused with bohea tea, its nauseous quality is covered as well as by the figwort; and if infused in a decoction of guaiacum, its purging quality will be, it is said, increased, and the usual griping prevented. Coriander seeds cover the taste of the senna; but cardamom, ginger, or some of the warmer aromatics, are more effectual for preventing the colic pains. It generally requires to be quickened with the jalap or scammony.

Electarium sennæ, formerly the *lenitive electuary*.—Take of senna, eight ounces; figs, one pound; the pulp of tamarinds, cassia, fresh prunes, of each half a pound; coriander seeds, four ounces; root of liquorice, three ounces; clarified sugar, two pounds and a half. Let the senna and coriander seeds be powdered, and passed

through a fine sieve to the weight of ten ounces, and boil the remainder with the figs and liquorice in four pints of distilled water to two; then press off the liquor, and strain. Evaporate the fluid to about one pint and a half, afterwards add the sugar to make a syrup, which must be gradually added to the pulp, the powder afterwards mixed. Dose \mathfrak{z} ss. to \mathfrak{z} ss.

Infusum sennæ simplex.—Macerate an ounce and a half of senna and one drachm of powdered ginger, in a pint of boiling distilled water, for an hour, in a close stopped vessel, and strain the liquor. The dose \mathfrak{z} i. ss. to \mathfrak{z} ij.

Infusum sennæ tartarizatum is made of the same quantity of senna and boiling water, to which are added two drachms of crystals of tartar, and half an ounce of coriander seeds bruised. The crystals of tartar are first dissolved by boiling in the water, which is poured upon the other ingredients, and managed as above. The dose is the same.

Extractum sennæ.—A pound of senna is boiled in a gallon of distilled water, as in making other extracts, to which a little rectified spirit of wine is added, and the strained liquor reduced to a proper consistence. This is a weaker purge than the powder, but occasions a more painful colic. The dose \mathfrak{z} ss. to \mathfrak{z} ij.

Pulvis e senna compositus.—Take of senna, crystals of tartar, each two ounces; scammony, half an ounce; ginger, two drachms. Powder the scammony separately, the rest together, and mix them. The dose gr. 10. to \mathfrak{z} i.

Tinctura sennæ.—Take of senna, one pound; caraway seeds, bruised, \mathfrak{z} i. ss.; lesser cardamom seeds, freed from their husks, \mathfrak{z} ss.; raisins stoned, \mathfrak{z} xvi.; proof spirit of wine, one gallon: digest for fourteen days, and strain. Dose \mathfrak{z} ss. to \mathfrak{z} ij. Pharm. Lond. 1788.

See Lewis and Tournefort's *Materia Medica*; Neumann's *Chemistry*.

SE'NNA PA'UPERUM. *Mauritanorum, Europhæa*, and *spuria*. See COLUTÆA.

SE'NNA SCO'RPIUM. See EMERUS.

SENIORIA. See BANANA.

SENSA'TIO, (*à sentire, to feel*). Sensation is that function by which we judge of the nature or qualities of external bodies, or of the state of our own organs. By this definition we exclude what physiologists have styled *sensus interni*, which are purely mental functions, and thus limit the term to the effects of impressions only. Sensation is conveyed by the nerves to the sensorium commune, and the impression is made on them generally through some medium, which either defends their sensible extremities from a too violent impulse, or modifies the effects of the impelling power. Thus the structure of the eye conveys a distinct image to the retina, which rays, continually diverging, could not otherwise form; that of the ear confines and increases the impulse of sonorous bodies. Smelling and tasting are more similar to touching, for these senses require the access of the body, whose quality is to be perceived in a more or less attenuated state. The nerves, like those of the fingers, are defended by integuments; but are in some inexplicable manner adapted for conveying appropriate impressions, though these sometimes intrude on each other's confines, and the smell gives some idea of the taste, or the contrary. Touch may be said to reside exclusively in the tops of the fingers; for by these we

discriminate most accurately the external properties of bodies, though the sense, in a less distinct degree, is found in every part of the surface.

The definition of sensation given above, includes not only the distinct *sensation of impressions*, but the less distinct, internal sensations, which Dr. Cullen has styled *sensations of consciousness*. The latter he refers to the following heads: 1. Those of *apperception*, by which we are in general conscious of thinking, perceiving, judging, and willing, and thereby of our existence and identity. This is the foundation of Des Cartes' philosophy; Cogito; ergo sum; and these sensations differ from the exercise of volition, judgment, &c.; for they imply only a consciousness of the power. 2. The sensations arising from the accuracy or facility by which these functions are carried on. 3. The sensations arising from the particular state of volition, and its various modes. 4. Those arising from the general state of action, as vigorous or weak. 5. Those from particular actions, or a consciousness of the actions excited, and of the motion of particular parts of the body. 6. From the diminution or absence of impressions.

Dr. Cullen observes (and we mention his name particularly, as these opinions have been publicly attributed to Dr. Hooper), that the four first genera of sensations, viz. seeing, smelling, hearing, and tasting, give no indication of the nature of the bodies; but that the sensations arising from touch correspond with the peculiar state of the impressing body, both with respect to bulk, size, hardness, impenetrability, rest, and motion. Perhaps some objections might be raised to a proposition so unlimited, were minute disquisition admissible in this place. It is of more importance to proceed with the very ingenious professor, and to add, that to produce a sensation of impression, a certain force corresponding to the sensibility of the organ or to the idiosyncrasy and habits of the person is necessary. Too weak an impression produces no sensation: one too strong, either pain or an indistinct idea. Different sensations also depend on different degrees of force combined with the previous state; as the air may feel cold or warm, according as the person comes from a much higher or a much lower temperature. Some duration of the impression is also necessary to convey a distinct idea, and to the touch this duration must be longer than in the other senses: a sensible interval also takes place between the impression and the idea, which seems to be employed in penetrating the cuticle. Next to the touch, the taste requires an interval; but this varies with the nature of the sapid body. For this reason, the best writers on the *materia medica* distinguish the times required for any medicine to produce its appropriate taste.

When the mind rests for some time on the impression it is styled *attention*, and this is necessary to ascertain the force of the impression, often its existence. Thus persons apprehensive of any disease fix their attention on the part affected, and magnify every little feeling which would otherwise pass unregarded. This is particularly the case with syphilitic patients, and those styled nervous: in both diseases the mind is greatly affected. In other respects the degree of attention is influenced by the force of the impression, by its pleasantness or pain, by the emotions arising from either, and by the relation which these emotions have to the person who feels. If the attention is alive, and excited by the

different circumstances mentioned, the impression remains after the action of the external body has ceased. Thus a lighted stick whirled round, with no great velocity, conveys the idea of a circle of fire; for the first impression is not lost before it is again renewed: an example adduced to prove the elasticity of the fluid which conveys the impression to the mind.

The mind admits of, or can attend to, only one sensation at a time, and the strongest, sometimes the most interesting, from the relations just mentioned, fixes the attention. There is, however, a fallacy in observations of this kind, arising from the rapidity with which the mind passes from one sensation to another, or from different impressions combining in one idea. The union of smell and taste we have mentioned, and the voice of Catalani combines in producing pleasure with the splendor of the scenes and dresses. It is supposed by the author whom we follow, without servilely copying him, Dr. Cullen, that these different impressions unite in producing one neutral sensation; but we suspect that this supposed combination is rather the result of the rapidity with which the mind passes from one sensation to another, especially when the sensations are nearly connected, or from the rapidity of their succession, while the former impression continues.

The same impression, by repetition, produces a sensation less lively and less interesting; hence the charms of novelty. Slight impressions, by repetition, lose altogether their power of exciting sensation, and they must be increased to produce their accustomed power. On this account, those who drink spirit and water increase the proportion of the former imperceptibly, unless accustomed to measure it.

We have already remarked, that the effect of the impression differs according to idiosyncrasy and habit; but it differs also in the same person at different times. The latter is sometimes connected with the degree of sensibility of the nerves, which is increased by warmth, by the tension of the vessels dispersed on them, by the state of the fluid which conveys the impression, or that in the brain. The degree of attention and of emotion excited by the impression increases also the liveliness of the sensation. In these remarks we assume as principles that sensations depend on the nerves; but many parts appear acutely sensible in different situations which have few nerves, and some, from experiment, are found to possess little sensibility, to which some considerable nerves can be traced. Each observation appears to be, therefore, fallacious. We know that the nerves convey sensations; because if these are tied or obstructed, the part becomes insensible, and we must consequently conclude, that not the presence of nerves only, but their expansion, when they have deposited their coats, renders them capable of conveying impressions. On the other hand, parts to which few nerves can be traced may become highly sensible, if these nerves are excited by the increased tension of the vessels connected with them. The experiments of Haller and others are daily contradicted by painful experience.

Our sensations, respecting impressions on the surface, are sufficiently accurate; but by no means strictly so. The internal sensations are often indistinct, particularly those connected with the ganglionic system, for reasons already explained. (See NERVI.) The internal feelings are often referred to the incumbent ex-

ternal part, with some obscure distinction between the more deep and the more superficial. We thus find great inconvenience in the difficulty of distinguishing between pleurodyne and pneumonia; between peritonitis and enteritis. Sensations are referred sometimes to impressions made on a very distant part; as the pain in the neck of the bladder, or in the urethra, is felt only in the extremity of the glans penis; sometimes to a part which does not exist, as a pain in the toe after the loss of a leg, and in a tooth which is artificial. In fact, the pain in the trunk of a nerve is referred to the extremity, and the association remains when the extremity has been separated. We may thus explain the return of the pain of the *Tic DOLOREUX*, q. v. after the nerve has been divided.

The sensations of consciousness are referred indistinctly to the encephalon, particularly the two first, which relate chiefly to functions purely mental. Those which arise from the particular state of volition, are equally referred to the head when moderate; but, if more violent, to those parts in which their effects are exerted. The remaining sensations are seldom referred to a particular part; but, in general, to a whole member or organ. We are not conscious of the action of particular muscles, except when their action is spasmodic.

Perceptions, formerly received, are renewed without a repetition of the objects which excited them. These perceptions, if we recognize the less perfect image, is called an idea: if we think it equally vivid, and consequently suppose the object present, *imagination*, which arises from a too acutely sensible state of the brain from different causes but chiefly from increased tension, in consequence of a greater fulness of the blood vessels, or from increased excitement of the nervous fluid.

Sensations in general are either *pleasant* or *painful*; and these terms are relative. The remission of pain conveys pleasurable sensations, while the same degree of pain, from a state of absolute ease, would be painful. Dr. Cullen would refer the term *agreeable* to external bodies, and *pleasant* to internal sensations: the terms *disagreeable* and *painful* are employed with a similar distinction. These must be carefully separated from sensations of consciousness connected with debility, lassitude, &c. and particularly from that very obscure feeling generally arising from a sense of obstruction, which we term *ANXIETY*. All these sensations may, in common language, be styled *uneasy*.

Sensation and action within certain limits are always desired, and are usually pleasant. The want of sensation, even imperfect, indistinct sensations, are uneasy. In actions of every kind, sensations of debility and difficulty are also *uneasy*. Sensations of impressions, if moderate, are *pleasant*; if violent, *painful*; allowance being made for their degree, for the sensibility of the person, or the state of the organ. As impressions, from repetition, produce weaker sensations, so painful ones, at first, may afterwards become pleasant; or the pleasant sensations become insipid; at last uneasy, for lighter impressions to those accustomed to the stronger are generally such. Hence arise the charms of novelty, the desire of variety, and of gradually increasing the force of pleasant impressions. In general, however, it appears an indisputable axiom, that no sensations arise in the mind without a corresponding change in the state of the body. *There are no innate*

ideas, but all arise from external objects variously combined, modified, and sometimes heterogeneously grouped or distorted.

SENSI'BILIS, (from *sentio*, to perceive). **SENSIBLE**, whatever is capable of making an impression on the senses.

SENSI'BILITAS, (from the same). **SENSIBILITY**, the quality of perception, and often its degree, is occasioned by some alteration in the organ of sense. It is connected with the brain, or its prolongations, the nerves, but its degree frequently depends on a variety of causes already considered. See **SENSATIO** and **NERVUS**.

Every part of the body with few exceptions, is sensible, except the hair, epidermis, and the extremities of the nails: among the insensible parts Haller reckoned the bones, the membranes, the cartilages, and the glands; but there is no organ insensible when inflamed, and consequently no part, except those mentioned, deserves that appellation.

Sensibility is a term often referred to mind, and those acutely affected with tales or scenes of distress are said to possess great sensibility. It is often the delusive covering of artifice and fraud; but frequently the effect of indulging the contemplation of distress in the fictitious scenes of the novelist. The mind, in these cases, may be compared to the body denuded of the cutis, where the touch of a fly is a source of pain. It is truly a mental disease.

Fordyce's Elements, part i.; Medical Commentaries by Dr. Hunter.

SENSO'RIMUM COMMU'NE, (from *sensus*, the senses,) *critheterium*. Des Cartes supposed it to be the pineal gland; Willis that portion of the brain where the nerves of the external senses terminated, about the beginning of the medulla oblongata, in the corpus striatum.

SE'NSUS EXTE'RNI. The external senses are those of SEEING, HEARING, TASTING, SMELLING, and FEELING, q. v. In touching, tasting, and smelling, we are conscious of the impression, but not in hearing or seeing; on which account the latter are considered as more refined. Of these seeing has the pre-eminence, as it conveys to the mind more vivid images, and a greater number of qualities, especially when assisted by the touch.

*Segnius irritant animos demissa per aurem
Quam quæ sunt oculis subjecta fidelibus, et quæ.
Ipse sibi tradit spectator.*

The connection between the impression and the idea is wholly unknown. We see only in the eye an image on the pulpy part of the retina; but it is by no means probable that the same image is conveyed to the brain. It is sufficient if corresponding impressions are conveyed; but even in that case we scarcely approach nearer to a solution of the question unless we knew the connection between the medullary substance of the brain and the mind. We know that the undulations of a cord which conveys a sharp sound, are much more rapid than those which convey a grave tone; yet there is no connection between the rapidity of the undulations and the idea excited. In short, while the nature of mind continues uncertain, the connection be-

tween ideas and sensations must be obscure. We no longer believe the bold and ingenious conjecture of Leibnitz, styled the *pre-established harmony*, where the actions of body and mind, though distinct and independent, are supposed to be simultaneous, and consequently appear to be connected as cause and effect. Other explanations are by no means more satisfactory.

A sentient nerve runs from its origin to its termination, without any connection with any other nerve, which accounts for the distinctness of the idea; and it is probable that ideas have a "local habitation," since arbitrary signs, as words, recall them, when conveyed by the same or a neighbouring nerve. Association, however, assists also in recalling ideas, and the same solution will not apply, as the sound of the drum or trumpet will recal the distressing scenes of the field: the sight of a cup which has contained a bitter draught will bring back the idea of the taste. To pursue this inquiry would lead us from our subject, and plunge us into the obscure regions of metaphysics. Of *sympathy* we have already spoken (see **NERVUS**); but the proximity of the origin of the nerves will by no means account for the different facts of this kind until the nervous fibrils shall be more minutely traced within the brain. We have added all the observations on this subject which we have been able to trace in authors of established credit; but must return to the subject. See **SYMPATHIA**.

See Lord Kaimes' Elements of Criticism; Reid's Inquiry.

SE'NSUS INTE'RNI. The INTERNAL SENSES are affections of the mind excited by its perception of ideas, and are, imagination, memory, attention, and the various passions.

SENTICOSÆ. The BRAMBLES. A natural order in the Linnæan system, comprehending the agrimonia, alchimilla, aphanes, comarum, dryas, fragaria, geum, potentilla, rosa, rubus, sibaldia, and tormentilla, which contain, in different parts, an astringent principle.

SEPARATO'RIMUM, (from *separo*, to separate). The name of an instrument for separating the pericranium from the cranium; and of a chemical vessel for separating liquors, but particularly the essential oil of any vegetable substance from the water that is distilled from it.

SE'PIÆ, OS, (from *sephia*, the cuttle fish, derived from *σκηω*, to putrefy, because its blood looks black and putrid,) *præcipitans magnum*, CUTTLE FISH BONE. The cuttle fish is a polypus, called *calmar*; and its bone, when calcined in the sun, is sometimes used as a dentifrice.

Linimentum sepiæ is made by levigating a drachm of cuttle fish bone with as much sugar candy, to which two scruples of calomel are added, and the whole is formed into a liniment with honey of roses. It is used for opacities of the transparent cornea of the eye.

SEPIARIÆ, (from *sepes*, a hedge). A natural order in the fragments of Linnæus, containing woody plants, ornamental in hedges.

SEPO'MENON, (from *σκηω*, to putrefy). See **MORTIFICATION**.

SEPTA'NA, (from *septum*, seven,) *septimana*. A SEPTENARY FEVER, which completes its period in seven

days. It is sometimes the appellation of an erratic intermittent fever, which returns every seventh day.

SEPTARIA. Fossils divided by partitions, much employed by Dr. Hutton to illustrate his peculiar theory, but of little or no use in medicine.

SEPTICA, (from *σῆπω*, to putrefy). SEPTICS. Medicines which promote putrefaction, or which destroy animal substances by corrosion. See MATERIA MEDICA, and PUTREDO.

SEPTICUS LA'PIS. See CAUTERIUM POTENTALE.

SEPTIFO'LIA, (from *septum*, and *folium*). See DENTARIA.

SEPTIMA'NA. See SEPTANA.

SEPTINE'RVIA, (from *septem*, and *nervus*). See PLANTAGO LATIFOLIA.

SEPTUM CEREBRI. The falciform process of the dura mater.

SEPTUM CEREBELLI. A process of the dura mater dividing the cerebellum.

SEPTUM CO'NCHÆ. See AURICULA.

SEPTUM CO'RDIS, vel VENTRICULORUM, (from *sepes*, a division). The partition between the two ventricles of the heart. See COR.

SEPTUM LU'CIDUM. The thin partition which divides the two lateral ventricles of the brain, a continuation of the corpus callosum, and united on its lower part with the fornix. See CEREBRUM.

SEPTUM NA'RIVM, *interseptum*; the partition betwixt the nostrils: it is formed by the descending laminae of the os ethmoides, as well as by the vomer, and placed in the groove framed by the cristæ of the ossa maxillaria, and rising edges of the ossa palati. The cartilage which forms its lower part is joined to the anterior edge of the middle portion of the os ethmoides, to the anterior edge of the vomer, and to the anterior part of the groove formed by the ossa maxillaria, as far as the nasal spines of these bones.

SEPTUM PALA'TI. See PALATUM MOLLE.

SEPTUM SCRO'TI. See SCROTUM.

SEPTUM THORACIS. See DIAPHRAGMA.

SEPTUM TRANSVE'RSUM. See DIAPHRAGMA.

SEPTUNX. See CYATHUS.

SEPULTURA, (from *sepelire*, to bury). SEPULTURE. With the life of the patient the cares and anxieties of the physicians are supposed to cease: but two circumstances have contributed to distress timid or hypochondriac persons; one, the apprehension of premature interment, while life remains, which may return in the grave; another, the danger of disseminating disease and death by burying in churches, or within the walls of large crowded cities. On each subject we shall add a few observations.

We have already mentioned the fallacy of the signs which have been supposed to discriminate death (see MEDICINA POLITICA); but at the same time have shown, that by the concurrence of the most certain changes, the real state may be ascertained. In this climate it is highly proper that no body should be interred till some appearance of putrefaction has come on; and if in lower latitudes interment is necessarily more quick, it must be remembered, that the more rapid approach of putrefaction is the cause. Sonnerat and Marx have

pointed out the precautions of the Jews and Hindoos on this point; but in this climate we wait only the appearances of incipient putridity.

The danger of recovering in the dreary cell seems inconsiderable, and the numerous stories which have been related on this subject are in general, we believe, fictitious. We have witnessed the disinterment of more than one, near whose grave noises have been heard, and returning life been suspected, but the corpse had not moved. Such facts are, however, recorded, and the greatest caution is necessary. But we ought, on the other hand, to reflect on the great improbability of a person breathing again in a coffin, who had not for a long time breathed in the open air; and there can be little doubt but if a breath or two were drawn, it would be checked by the confinement before sensation returned. This at least would mitigate the horror of the event, and prevent the methods of extinguishing every spark of returning life by an operation.

The attention of the world was particularly directed to the impropriety of burying in churches, or within towns, by the dissemination of infection on opening a grave at Lyons. The danger, however, is inconsiderable; though we admit in every view, the impropriety of sepulture in churches, or within towns. But while such continues to be the custom, it is of consequence to quiet ill founded apprehension; nor is there the slightest reason to suspect the dissemination of infection, except, perhaps, during a reigning pestilent epidemic, whether the plague or a highly putrid fever. Even in such cases, before the coffin is decayed, new affinities have taken place, and the body is not as it was. A common custom of hanging over the grave, either from affection, or, as is too frequent, from idle curiosity, should be repressed. While one last look is indulged the breath should not be drawn.

The reasons against burying in churches consist chiefly of the damps diffused, and tincturing the cheerfulness of real piety with pain and regret. Church yards in towns are generally the play places of boys. The objects themselves give pain, and the little reverence paid to the repositories of our friends is often the source of considerable anxiety.

SERA'PIAS, (*serapis*, a lascivious idol, either from its supposed aphrodisiac powers, or from the testiculated shape of the root). See ORCHIS.

SERAPI'NUM. See SAGAPENUM.

SERAPIO'NIS GUMMI. See GUMMI ARABICUM.

SE'RGELIM. See CORALLODENDRON.

SE'RICUM, (from the *Seres*, a people of Lower Bucharia). SILK. Raw silk, when calcined, is said to excel the sponge in its medical effects; for it yields more volatile salt than any other animal substance. In Switzerland, the volatile salt of raw silk is called the English salt: and they give the same name to the volatile salt of vipers. It is an error to suppose the Seres a race of Indians or Chinese. The ancients were wholly unacquainted with China.

SERIFLU'XUS, (from *serum*, and *fluo*, to flow). A class of diseases consisting of serous discharges.

SERI'FOLE BENGAL'NSIUM. See COYALAM.

SERI'OLA. See ENDIVIA.

SERIPHUM, (from *Seriphos*, an island on which it grew). See SOPHIA.

SERPENS, (from *serpo*, to creep). SERPENTS, the source of terror and the objects of adoration; the emblems of wisdom, prudence, and eternity in former ages; no longer inspire apprehension or admiration. If we omit the fables of antiquity, we may also omit the idle tales of the medical reporters of wonders, who have told us of serpents discharged from different parts of the body, though we find Fabricius, Camerarius, and some names of respectability in the list.

Serpents are animals, which breathe only by means of lungs, with a round body, an indistinct neck, moving by undulations, jaws not articulated, but dilatable, no obvious external ears. Their skeleton is formed of numerous vertebræ and ribs which are very mobile, without any sternum; their throat is wide, and their œsophagus capable of considerable enlargement, so that they can swallow animals of considerable bulk. They swallow them, indeed, by degrees; for one part is digested before the other is taken in, and in this state of glutinous torpor they are easily killed. The poison of the serpent is exclusively in his teeth, which we shall soon notice. The tongue, which is darted forth as a javelin, often a double one, for it is occasionally split, can inflict no wound; and the spur, or claw, near the anus of some East Indian serpents, used occasionally as a weapon of offence, has not been accused of conveying poison. Though the ancient fables of the dragon are without foundation, there is a small innocent animal, provided with wings, which resembles it; but this is a lizard. No serpent is winged; yet by an effort they can leap at some distance. Their pace, however, is usually slow. Their reputed powers of fascination seem, according to Dr. Barton, to arise from the terrors which they inspire in birds apprehensive of danger to their young broods.

Later observations have, in a great degree, destroyed the terrors formerly entertained of their poisonous qualities. Few are capable of injuring by their bites, and of these a very small proportion can at all times inflict a fatal wound, especially on larger animals. This is therefore the reason that many specifics have been commended, which in cases truly dangerous have failed.

The distinction between the poisonous and innocent kinds is not generally known. The first distinct account which we recollect was given by Dr. Gray, in the Philosophical Transactions for 1789; for the distinctions of Redi, Swammerdam, and even Linnæus, were often erroneous. Some of the serpents are said to have poisonous breaths; but all have a faint smell, probably from their long fasting.

Dr. Gray, in the volume referred to, thinks that a broad head, covered with small scales, though not a certain criterion, is, with a few exceptions, a general character of venomous serpents. A tail less than one fifth of the length is another, though this mark is contradicted by a few facts; but a tail longer in proportion shows the animal to be innocent. A thin acute tail is not, on the whole, peculiar to the venomous class; but a thick obtuse one is only found among the innocuous ones: carinated scales, in general, distinguish the poisonous tribe. The fangs of the poisonous are not, in his opinion, always or essentially moveable: their size is various, and they are generally situated in

the anterior and exterior part of the upper jaw, not connected with a row of teeth all round. Venomous serpents have two rows of teeth; innocuous ones four. About one in six serpents are supposed by Dr. Gray to be poisonous, though perhaps not capable of inflicting a fatal wound.

Though these distinctions have, since the period referred to, claimed the attention of numerous naturalists; yet we shall only mention the later opinions of Dr. Russell, in his account of the serpents of the coast of Coromandel. The principal distinction of this author consists in what he styles the marginal teeth, in opposition to the palatal. In effect he agrees with Dr. Gray, that venomous serpents have not a complete row of marginal teeth. With respect to the poisons of different snakes, they appeared, from the symptoms, much alike, and the order of the progression was the same, though the rapidity, as well as the commencement, varied. When a snake is first caught, its bite affects more certainly than when it is kept some time; but the deleterious nature of the poison is only impaired, not destroyed. When it no longer kills quadrupeds it is fatal to birds, though in a longer time. When a snake bites frequently in succession, the first wound is most quickly and certainly mortal; the others less so in their order. Animals are killed at different times, but not always or certainly in proportion to their size, and they sometimes unexpectedly escape from a concurrence of very dangerous and alarming symptoms. The insertion of the poison is not so certainly fatal as the bite. It is generally known that the poison is a secreted fluid, preserved in a receptacle at the base of the fang, and conveyed through a groove at its side, when the bag is pressed by the substance bitten. Fontana thinks, though with little reason, that in the viper this fluid assists digestion.

The action of the poison of serpents has been differently explained. It is singular, respecting the viper, that Mead first thought it coagulated the blood, and in subsequent editions referred its action to the nerves. Fontana changed his opinion in the opposite way; but there is little doubt of its acting on the nerves, since the very minute quantity inserted could not produce any change on the circulating mass, and the rapidity of the effects is too great to admit of its having taken the circuitous route of the absorbents.

In considering the effects of remedies, we must make considerable allowance for the innocuous nature of many serpents reputed poisonous, and for the little power which many of those which are truly poisonous have on an animal so large as man. It has been attempted to extract the poison by suction, by cupping glasses, by leeches, &c.; to stop the communication with the rest of the system by ligatures, to blunt its acrimony by applications of oil and oily frictions, the axunge of the serpent, or saliva. Each plan has been found ineffectual; and excision of the part, or amputation of the limb, are operations which require more time than the usual rapidity of the effects will admit, if we were not checked by the little danger which often follows the bites of serpents supposed to be venomous. Warm applications, as warm spirit of turpentine, and even warm water, are often useful; but the actual cautery, and even the mineral acids, were either inefficacious or injurious.

As the poison of serpents is of a sedative nature, it has been followed by the warmest sudorifics, and medicines which determine to the skin. The polygala seneka, which acts as an emetic, has the latter effect, and in Fontana's hands the tartarized antimony succeeded equally well. The theriaca was less successful; but the aqua ammoniæ, called in some authors on this subject the *fluor alkali* particularly when combined with an essential oil, as in the eau de luce, has been highly commended. The Tanjore pill, whose efficacy is much boasted of, consists of white arsenic, quicksilver, killed with the juice of wild cotton; the roots of velli navi, a poisonous vegetable from the Malabar coast; the roots of neri visham, and the kernels of nervalam, two drastic purgatives, unknown to systematic botanists. The ophiorriza mungos, the radix serpentum, is an intense bitter, apparently narcotic; the lignum colubrinum is from the same genus, perhaps the same species, which affords the nux vomica; but it is emetic and cathartic, raising considerable commotions in the system; and we find one authority for the use of the belladonna. (Munck in Richter's Bibliotheca.) We cannot easily reconcile the action of these narcotics with what we are told of the effects of the poison, except that they excite vomiting, which is neither the effect of the lignum colubrinum nor the belladonna, and must conclude that they were used in cases which would not probably have been otherwise dangerous. Cantharides were either useless or injurious; and, in reality, the volatile alkali and the eau de luce appear best entitled to our confidence. The COLUBRINUS LAPIS, q v. is an artificial combination of no real value. REDI.

Serpents, it is said, are sometimes tamed, and become faithful companions; their flesh is highly nutritious, and they are of service in devouring rats, toads, and many noisome reptiles.

La Cepede sur les Serpens; Fontana sur le Venin de la Vipere; Russell's Account of Indian Serpents; Redi Opera; Mead on Poisons; Gray in the Philosophical Transactions for 1789.

SE'RPENS A'NGUIS. See ANGUIS.

SE'RPENS I'NDICUS CORONA'TUS. See COBRA DI CAPELLO.

SERPENTA'RIA, (from the resemblance of its roots to the tail of a rattle snake). See DRACONTIUM.

SERPENTA'RIA HISPANICA. See SCORZONERA.

SERPENTA'RIA MI'NOR. See ARUM.

SERPENTA'RIA NI'GRA. See ASARUM VIRGINIENSE.

SERPENTA'RIA VIRGINIA'NA, *aristolochia, pistilochia viperina, colubrina Virginiana, contrayerva Virginiana*, VIRGINIAN SNAKE WEED, SNAKE ROOT, BIRTH WORT, *aristolochia serpentaria* Lin. Sp. Pl. 1363, is brought from Virginia and Carolina. The root is small, light, bushy, and composed of a number of strings or fibres issuing from one head, and matted together, of a brownish colour on the outside, and pale or yellowish within. It has an aromatic smell, somewhat like that of valerian, but more agreeable, and a warm, bitterish pungent taste, not easily covered by any mixture.

Snake root yields its virtue to water or to spirit; but the greatest part of its flavour is carried off either by water or by spirit in distillation, and if the quantity dis-

tilled be large, a pale coloured essential oil, of a strong smell, but not a strong taste, rises with the water; the greatest part of the pungency and bitterness of the root remaining in the inspissated extract. The spirituous extract is stronger than the watery, not from its having lost less by evaporation, but from its containing the active parts of the root concentrated in a smaller bulk; its quantity amounting only to one-half of the other.

The Virginian snake root has been thought to possess tonic and antiseptic virtues, and is allowed to be a powerful stimulant, and a warm diaphoretic. With this view, when the doctrine of concoction was held sacred, it was employed in low and putrid fevers, to raise the pulse, promote perspiration and resist putrefaction; but even in these it is now seldom used; for wine is thought a safer cordial, and the aromatics more useful stimulants. This medicine was undoubtedly abused by a too free indiscriminate use, and it has now perhaps been too much neglected. In some intermittent fevers, the bark has been found more efficacious when joined with serpentaria than when given alone. We suspect that it may be useful in chronic rheumatism, and superior to the guaiacum. Led by the practice of a respectable veteran in medicine, we have found it, we think, an useful remedy in atonic gout. Dr. Alston says it resembles the aristolochia in virtues, but that he prefers the aristolochia tenuis to the serpentaria. The dose may be from gr. x. to 3 ss. and to a drachm or two in infusion, or in tincture.

The Virginian asarum is sometimes sold for the snake root, but may be distinguished by its darker colour.

The London college direct a tincture to be made of Virginian snake root, three ounces; proof spirit of wine, two pints, digested for eight days, and strained. (Ph. Lond. 1788.) In this tincture, if powdered fine, the whole virtue of the root remains. It may be taken from two tea spoonfuls to a table spoonful, three times a day. See Lewis's and Cullen's Materia Medica.

SERPE'NTIS LA'PIS. See COLUBRINUS LAPIS.

SERPI'GO, (from *serpio*, because it *creeps* over the skin gradually,) *herpes, impetigo*. Linnæus includes under this title tetters and ring worms. See LICHEN and PURPURA SCORBUTICA.

SERP'YLLUM, (from the same, because its roots creep along the ground,) *gitarum*.

SERP'YLLUM CITRA'TUM, *serpyllum thymus* Lin. Sp. Pl. 825, var. s. LEMON THYME, differs but little from the mother of thyme in its appearance, except that it is upright and bushy. It is a native of dry mountainous places, common in gardens, flowers in July, is less pungent than the common thyme, more so than the mother of thyme, and more grateful than either. Its smell is like that of lemon peel; distilled with water, it yields a larger quantity of essential oil than the other sorts, which contains nearly all the medicinal parts of the plant. Spirit of wine also takes up the finer parts.

SERP'YLLUM VULGARE MINUS; COMMON MOTHER OF THYME, or WILD THYME; *thymus serpyllum* Lin. Sp. Pl. 825, var. α; COMMON SMALL WILD THYME: *hyssopus capitata*, grows wild on heaths and dry pasture ground, flowers in June and July, is an agreeable aromatic, similar to that of the other species, but milder, and in flavour rather more grateful. Its essential oil is in smaller quantity, as well as less acrid, and its spirituous extract is inferior in penetrating

warmth and pungency to that of the common thyme. See THYMUS.

SERRATULA AMARA, Lin. Sp. Pl. 1148, a plant botanically allied to the carduus and other bitters. It has been celebrated for the cure of agues.

SERRA'TUS, (from *serra*,) indented or notched like a saw, an epithet of indented leaves.

SERRA'TUS A'NTICUS MA'JOR, (from the same). The FORE OR GREATER SAW LIKE MUSCLE; *serratus magnus*, is broad, and fleshy; rising by digitations from the nine superior ribs, it passes backwards, and is inserted into the whole length of the scapula. Its largest portion is inserted into the lower angle of the scapula, which it rotates and brings forward. Between every portion of this muscle a quantity of cellular membrane is interposed, especially about the middle, where it seems to divide it into two distinct muscles. Winslow divides it into three. If the pectoralis minor is called *serratus anticus minor*, this muscle is called *major*, otherwise it is simply called *serratus anticus*. Its use is to support heavy weights on the shoulder. It does not raise the ribs but by elevating the scapula.

SERRA'TUS ANTI'CUS MI'NOR. See **SERRATUS ANTI'CUS MAJOR**.

SERRA'TUS POSTI'CUS SUPE'RIOR, rises by a thin broad tendon, from the two upper vertebræ of the back, and the two lower of the neck, and is inserted into the second, third, and fourth ribs.

SERRA'TUS POSTICUS INFE'RIOR, rises from the fascia of the loins, and is inserted into the three last ribs, serving to bring them down.

SERRATULA CAMPA'NA. See **MELILOTUS**.

SERUM. WHEY; the thin part of the blood. The serum of the blood contains, in solution, the gluten, which forms what is called the buff, after taking it from a vein; is fluid in any degree of heat between thirty and one hundred and sixty of Fahrenheit's thermometer, and consists of a coagulable matter and water, in which common salt, muriated ammonia, and phosphoric ammonia, are dissolved. It contains also some superfluous water, which may be separated by filtration; but the addition of superfluous water does not affect its viscosity. The abstraction or addition of water in chemical combination will affect the viscosity of the mixt; but this never takes place in the circulating system, or at least very rarely. See **MORBI FLUIDORUM**.

The serum is usually thin, and naturally without smell or colour; but the gluten gives it a yellowish tinge, and the peculiar aroma of the blood some odour. It is coagulated out of the body by acids, oils, and alcohol; but these can never reach it in the vessels except in the most diluted state, and probably the lymphatics refuse to admit either uncombined. It has, however, in no instance been found in a coagulated state: polypi are partial concretions of the gluten.

It is sometimes white, probably from a recent mixture of unassimilated chyle (Hewson); sometimes acrid from a larger proportion of neutral salts (vide **SCORBUTUS**). It often oozes from secretory organs previous to their more perfect secretions, and in one instance was discharged from the navel. (*Acta Naturæ Curiosorum*, i. 94.)

SERUM ALUMINO'SUM. See **ALUMEN**.

SERUM LA'CTIS. MILK WHEY. See **LAC**.

SERUM VINO'SUM. WINE WHEY. See **VINUM**.

SESAMOIDEA OSSA, (from *σησαμη*, an Indian grain, and *ειδης*, likeness). The **SESAMOID BONES** are those found at the articulations of the toes and fingers, sometimes at the condyles of the os femoris, and at the lower extremity of the fibula. Those at the first joint of the great toe are much larger than any others, and allow the flexors to send their tendons along this joint secure from compression, besides augmenting the force of the muscle by the angle of insertion. They are of very different figures and magnitudes, generally most numerous in old people; and Winslow thinks they are often formed from the ligaments or tendons about the articulations, where subjected to a strong compression. Cheselden observes that the sesamoid bones are reckoned to be forty-eight in number; but that there are commonly found but two under the ball of each great toe, two at the middle joint of each thumb; and sometimes one at the lower end of each thigh bone, at the beginning of the plantaris muscle. He adds, that he found in some bodies the little cartilages at the receiving ends of the bones of the fingers ossified; and concludes, that those who enumerate forty-eight sesamoid bones have mistaken these ossifications for them.

They do not appear in the fœtus, and at first are cartilaginous. A life of hard labour seems to add to their number and size; were it not for the organization of those of the great toe, they may have been thought exclusively the effects of pressure.

The great toe hath the largest sesamoids, and the inner one is the largest. The arabic name for the sesamoid bone of its first joint is *albadara*, *aldabaram*.

Dr. James, in his Medical Dictionary, article **ALDABARA**, relates a case of frequent fits, which, after resisting various means of relief, were effectually cured by amputating the great toe: this operation was proposed on a supposition that the sesamoid bone there was dislocated, from whence the fits arose. He further adds a case which seemingly arose from an injury done to the sesamoid bone of the great toe. When the patient was first hurt, he was seized with a fit; and whenever he moved that toe, with another. These fits resembled epileptic ones, except that no froth was discharged at the mouth: the injured foot first began to be convulsed, then the leg, and from thence a very uneasy sensation ascended to the head, when the convulsions began to be universal. The event was fatal.

SESAMUM VE'RUM, (from *σησαμη*), *sesamum verum*, *digitalis orientalis*, *gangila*; OILY PURGING GRAIN; *sesamum orientale* Lin. Sp. Pl. 883, is an Egyptian plant, the seeds of which afford a great quantity of oil by expression, but which, however, is not cathartic.

The oil when first expressed is pungent, but in about two years becomes mild, when it is freely eaten. The seeds when parched over the fire are eaten by the negroes, mixed with various ingredients. Sometimes the seeds are used as millet and rice to make a pudding. The quantity of oil is more than two quarts from nine pounds of seed.

SESCU'NCIA, **SESQUIU'NCIA**, (from *sesqui*, half, and *uncia*, an ounce, AN OUNCE AND A HALF). See **HEMIOLION**.

SE'SELI VULGA'RE, (*παρα το σαυται ελλην.*

because it is salutary to young fawns,) *siler montanum*, *ligustrum*; *laserpitium siler* Willdenow, v. 1, 1418; COMMON HART WORT, is a small umbelliferous plant, with large leaves set in pairs, and a large, thick, branched root. It is perennial, grows wild in the south of Europe, is raised in our gardens, and flowers in June.

All the parts of this plant are aromatic, of an agreeable smell, and warm sweetish taste; the roots are the most warm and pungent, the seeds most pleasant and sweet. A spirituous extract of the seeds is an elegant aromatic sweet. See Lewis's *Materia Medica*.

SE'SELI PYRENEUM. See MEUM LATIFOLIUM ADULTUM.

SE'SELI MASSILIE'NSE; *feniculum tortuosum*; ITALIAN and FRENCH HART WORT, or HART WORT OF MARSEILLES; the *seseli tortuosum* Lin. Sp. Pl. 373, is perennial, and a native of the south of Europe, from whence the seeds are brought. They are aromatic and warm, more pungent than those of the common hart wort, but without their sweetness. See Lewis's *Materia Medica*.

SE'SELI ÆTHIO'PICUM. See LASERPITUM VULGATUM.

SE'SELI CRETICUM; *tordylium officinale* Lin. Sp. Pl. 345. The seeds are diuretic.

SE'SELON. See COCHLEÆ.

SESQUI; one and a half.

SETA'CEUM. A SETON; (from *setæ equinæ*, because horses' hairs were first used; but now thread or cord is preferred as less painful,) *perforatio*. Camanusalî, a physician of Bagdat, who lived previous to 1258, mentions a seton in the cure of a disorder in the eye. Rhazes also speaks particularly of this remedy. Originally it was made with a heated needle, but Holzerius substituted a cold one.

This operation is performed by raising the skin with the finger and thumb, while an assistant does the same at about an inch or two distant; and having armed a large, broad, crooked cutting needle, made for the purpose, with the necessary number of threads, pass the needle through the stretched skin, and bring the threads a little way through. They are left in the wound, and as much of the thread as will pass into the seton at each time of dressing must be rubbed with the unguentum resinæ flavæ, moved forward every morning and evening, and thus the discharge will be promoted, and continued at pleasure.

According to Mr. Bell, when tumours in some situations are large, the seton empties them, whatever their size may be, very gradually; and effectually prevents the admission of air. The operation is not so painful, the inflammation so great, nor the cicatrix so unsightly as after a large incision. When the patients are otherwise in good health, it commonly succeeds with this advantage, that a cure is frequently obtained in little more than half the time usually found necessary after incision.

Setons are commended in HYDROCELE, q. v., in complaints of the head and eyes; and all disorders where issues are recommended. They may be used where issues would be inconvenient, and the discharge, as it is deeper and more extensive, is often more beneficial. In many cases, however, issues or perpetual blisters are equally advantageous. Blisters are more

agreeable, and equally useful methods. See Heister's and Bell's *Surgery*, vol. iv. p. 382; Bell on *Ulcers*, edit. 3. p. 83, &c.; White's *Surgery*, p. 184.

SETA'CEUS, (from *seta*, a bristle,) leaves of plants, covered with a bristly pubescence.

SETA'NIUM, (from *σητανιος*, a year's growth, from the tenderness of the fruit). See AMAMELIS.

SEU'REN. See BOVINA AFFECTIO.

SE'VUM OVI'LLI. See PRÆPARATIO ADIPIS.

SE'VUM MINERALE. A bitumen found on the sea coasts of Finland in 1736, burning with a blue flame, smelling of grease, and leaving a black, almost incombustible, matter. It is lighter than tallow, and only 0.770, while tallow is nearly 1. It is partly soluble in alcohol, and wholly in boiling expressed oils. It is found also in Persia, at Strasburg, and some parts, it is said, of Lancashire.

SEXTA'NA, (from *sextus*, sixth). Erratic, intermittent fevers, which return every sixth day.

SEXTA'RIVS, (from the same). *Chist.* This term has been used both in liquid and solid measure, with numerous variations. Galen observes, that it was not formerly an Athenian measure, but received by the Greeks, though different from what it was among the Romans. Among the latter the sextarius included the pound, half pound, and a sixth, making together twenty ounces; the Athenians meant by it a pound and a half, i. e. eighteen ounces. It was sometimes only equal to three ounces. Rhodius distinguishes it into ponderal and mensural, adding that it contained two heminæ, or thirteen ounces. The same author asserts that the sextarius of dry ingredients was a pound; of liquid half a pound; the sextaria of two heminæ; the Arabian ponderal was half a drachm, the Italian eighteen ounces of oil, twenty of wine and water, seventeen of honey. The sextarium of wine was also sixteen ounces, and as many scruples; of honey five-and-twenty ounces, according to some others. Castelli. See CYATHUS.

SE'XTANS. See CYATHUS.

SEXUAL SYSTEM. The artificial system of Linnaeus, founded on the sexes of plants. See BOTANY.

SEYDSCHUTZ WATER. See SEDLITZ.

SHALE. A bituminous ore containing alum, or at least alum is formed during its calcination. It is chiefly found in coal countries, particularly in Derbyshire.

SHERBET. An acid perfumed drink, from Turkey and Persia. It is the origin by metaphrasis of shrub, and is often the name of the lemonade previous to its being formed into punch by the addition of spirit.

SHINGLES. See ZOSTER.

SIALOGO'GA, (from *σialον*, saliva, and *αγω*, duco). SIALOGOGUES comprehend all such medicines as produce a flow of saliva into the mouth. They have been divided by some authors into three classes; those which immediately act upon the salivary glands; such as occasion a flow of saliva into the mouth, by intercepting any discharge from other parts; and substances supposed to break down the mass of blood, and supply the mouth with too great a proportion of the dissolved fluid. At present they are divided into internal and topical. See MATERIA MEDICA.

SI'BENS. A name of the venereal disease in some parts of Great Britain. In the year 1773, Mr. Hill, a

surgeon in Dumfries, published his cases in surgery; to which he added an account of this disorder, in confirmation of Dr. Freer's thesis, where it was asserted that the sibbens was different from lues. It is generally agreed nearly to resemble the disease; but mercury is not equally effectual in it. The disease is now little known. See YAWS; Gilchrist's Observations, Physical and Literary, Edinburgh, vol. iii; Freer de Syphilitide Venerea, Appendix, 1707; Hill's Essays; Adams on Morbid Poisons.

SI'BCADI. See BULBUS VOMITORIUS.

SICILIA'NA. See ANDROSÆMUM.

SI'CULA, (from *sica*, a short sword, from the shortness of its root.) See BETA.

SICYE'DON, (from *σικυος*, a cucumber). A TRANSVERSE FRACTURE; broken like a cucumber.

SI'CYOS. SINGLE SEEDED CUCUMBER; *sicyos angulata* Lin. Sp. Pl. 1439; *cucumis Canadensis* a native of North America and the West Indies.

SIDERA'TIO, (from *sidus*, a planet, because it was supposed to be induced by the influence of the planets). APOPLEXY, q. v.; a sphacelus, or a species of erysipelas, vulgarly called a blast.

SIDERA'TIO O'SSIS. See SPINA VENTOSA.

SIDERIT'IS, (from *σιδήρης*, from its iron colour). See CHAMÆPITYS et MAGNES, SIDERATIS ANGLICA, and PANAX COLONI.

SI'DIUM. See GRANATA MALA.

SIGESBECKIA ORIENTALIS, Lin. Sp. Pl. 1269, a Chinese plant, of an ambrosial odour, and a bitter taste. It seems to have been useful in strangury; but in calculus, gout, and leucorrhœa, for which it has been recommended, it appears wholly inefficacious.

SIGILLA'TÆ TERRÆ, (from *sigillum*, a seal). SEALED EARTHS; BOLAR EARTHS, made into cakes, upon which is put some impress, differing according to their colour or titles. They are, however, essentially the same, factitious, and have been long neglected.

SIGILLUM HERMETICUM. AN HERMETIC SEAL. A glass vessel is said to be hermetically sealed, when the glass is melted, and the vessel by this means is closed.

SIGILLUM SOLOMO'NIS. See POLYGONATUM.

SIGILLUM BEA'TÆ MARIE. See BRYONIA NIGRA.

SIGMOIDES PROCE'SSUS. See PROCESSUS CO-RACOIDES; called *sigmoidal* from its resemblance to the Greek letter sigma. Three valves of the heart have this epithet, viz. those of arteriæ pulmonales, and aorta. The semicircular cavity of the cubit, at the articulation of the fore arm with the humerus, is sometimes called the sigmoidal cavity; the cartilages of the aspera arteria have the epithet sigmoidal applied to them by some authors; and the last curve of the colon before it terminates in the rectum is called the *sigmoid flexure*.

SI'GNUM. A sign. Symptoms are those particular appearances which, taken collectively, constitute what is termed disease, in general, as they indicate morbid changes, or a læsion of the functions. But there may be signs which are not symptoms, which appear without any previous complaint affecting the habit. A person having drank a large proportion of weak punch, will very often make a quantity of limpid urine, which cannot be considered as a symptom, as the person is in

perfect health; but a patient labouring under hysteria will do the same without drinking. This then is an indication of some morbid state, and as such may be denominated a symptom. All symptoms therefore may be signs, but all signs are not symptoms. Signs are in general declaratory of the state of the diseases, as well as of something which has happened, or may occur, in the machine; symptoms only of the presence and nature of the malady itself. They have been therefore divided into diagnostic, prognostic, and anamnestic. The first discovers the state of the disease, and enables us to define and distinguish it from others; the second gives information of the changes which will happen during its continuance; the third enables us to determine what disease has previously affected patients, from which they have recovered.

SILEX, one of the vitrifiable earths of the former mineralogists, found generally of a globular form in beds of chalk; but said to rise in Saxony in hexaedrons, composed of two low three sided pyramids, applied base to base. Its specific gravity is about 2.6; it is brittle, splitting into splinters in every direction, emitting, when two pieces are rubbed together, a phosphorescent light, and a peculiar odour. Its property of striking fire with steel is well known. When heated, it decrepitates, and when exposed to the air is soon covered with a whitish crust.

Water is essential to its nature, for when it is separated by heat, the stone loses its properties. It is dissolved by alkalis, and by the fluor acid. From its melting with alkali it forms glass, and the fluoric acid dissolves the silix in glass. Flint has been lately discovered in reeds and in the epidermis of many plants. In the tabisheer, a reed of India, it sometimes concretes near the joints in small nodules; and Dr. Gibbs discovered it in the waters of Bath. A small portion has been occasionally found in the animal fluids. It is very sparingly soluble in water, but seems to admit of being conveyed by it, or at least its elements are conveyed through passages wholly imperceptible.

SILI'CULA, (dim. from *siliqua*, a pod). A SILICLE, LITTLE POD, or POUCH; a two valved pericarp, having the seeds fixed along both sutures, and the transverse diameter equal, or nearly so, to the longitudinal. This pericarp varies in shape; and is orbiculate, ovate, or flattened, entire at the end, or emarginate.

SILICULO'SA, (from *silicula*). The name of the first order in the class *tetradynamiæ* of Linnæus.

SILI'GO. See SECALE.

SI'LIIQUA. An ancient weight, equal to three grains and one twenty-eighth. A POD, CARAB, or that kind of pericarpium which consists of two valvulæ, and in which the seeds are fixed alternately to each suture. Miller improperly applies this definition to the legumen.

SI'LIIQUA HIRSU'TA. The COWHAGE. See PHASEOLUS ZURRATENSIS, and STIZOLOBIUM.

SI'LIIQUA DU'LCIS, and SI'LIIQUA E'DULIS; *caroba*, *carantia*, *ceratia*, *ceratonia*. The CAROB TREE, grows in Sicily and Naples; the fruit called *ceratium* is cooling, and moderately laxative: the internal seeds of the fruit are named *xylococca*. At Venice they are much used.

SI'LIIQUA SYLVE'STRIS SPINO'SA ARBOR INDICA. See CORALLODENDRON.

SILQUA PURGATRIS, is from a large tree, a native of Guinea; the pod is much more purgative than that of the common carob. See Raii Historia.

SILQUA STRUM, (from its pods). **JUDAS TREE**. *Cercis, colytea, Judæ arbor, cercis siliquastrum* Lin. Sp. Pl. 534. *Ichthyeria*, a name given by Dr. Hill to the bony palates of fishes, frequently found fossile in strata of stone, have been called *siliquastra* by Mr. Lhuyd, from their resemblance in shape to the pods of lupines.

SILQUA STRUM PLINII. See **PIPER INDICUM**.

SILQUOSA, (dim. of *siliqua*, pod). The name of the second order in the class *tetradynamia* of Linnæus, containing those plants which have a proper siliqua for a pericarp.

SILQUOSAÆ. The name of the fifty-seventh order in Linnæus's fragments; of the thirty-ninth in his natural orders; of the twentieth class of Ray; the same with the cruciformes of Tournefort.

SILPHIUM, (from the Arabic word *zalaph*). **ASAFÆTIDA**, q. v., and the stalk of the plant which affords it. The root of the silphium is named *magudaris*; the leaves, or, according to some, the stalks, are called *masfeta*, *masfetum*.

SIMAROU'BA, (a patronymic name of America,) *cuonymus*, *simaruba*, and **GUIANA BARK**. *Quassia simaruba* Willdenow Sp. Pl. ii. 568, is brought to us in long pieces, of a yellow white colour, light, tough, and fibrous, resembling that which the ancients describe under the name of macer. It was brought into Europe in the year 1713; and is said to be a specific in dysenteries, particularly the seroso-bilious, bloody, and mucous kinds, removing these disorders when there is no fever, and when the stomach is unhurt, without the usual inconveniences of astringents; at the same time abating spasms and hysteric affections. It has been used in intermittents, but with little success: in fluxes it is said to restore the tone of the intestines, allay spasm, promote urine and perspiration, remove the lowness of spirits attending dysenteries, and dispose the patients to sleep. The tormina and tenesmus are said to be taken off, and the stools changed to their natural colour and consistence. In a moderate dose it occasions no disturbance or uneasiness, but in large ones produces sickness at the stomach and vomiting, by which its antidyenteric qualities are diminished. In this way, however, it is only successful in the third stage of the dysentery, where there is no fever, where the stomach is unhurt, and where the colic and tenesmus are only continued by the weakness. Old and obstinate dysenteries, and diarrhœas brought from warm climates, have been completely and speedily cured by it.

The *simaruba*, however, appears to be only a pure and simple bitter, possessing nearly the same qualities as the *quassia*. The powder is sometimes given; but the best preparation is a decoction. *Coquatur simarubæ crasse contus. 3 i. in aq. font. 3 xxiv. ad. 3 xij. et cola.*

See Lewis's *Materia Medica*; *Memoirs de l'Académie des Sciences*, 1729, par M. de Jussieu; Cullen's *Materia Medica*.

SIMPLEX O'culus, is a bandage for the eye, being only a single headed roller applied to the cheek, then passed over the eye, and the ossa parietalia, running down behind the head. From the nape of the neck, it rises to the place it began at, and is continued

till the whole is taken up. It is called *simplex oculus* even when longer, and made to pass over both eyes; but for this purpose it is rolled up into two heads, and the middle is applied to the nape of the neck.

SINA'NCHICA. **ITALIAN RUSHY HORSE TAIL**. See **JUNCARIA**.

SINAPELÆON, (from *σινάπι*, mustard, and *ελαίον*, oil). **OIL OF MUSTARD SEED**.

SINAPI, (*ὅτι σινί της ωπας*, because it hurts the eyes). **MUSTARD**; *eruca*, *napy*, *sinapis alba* Lin. Sp. Pl. 933, is an annual plant, with long rough leaves, divide to the rib into irregular segments, of which the extreme is the largest, producing at the tops of the branches tetrapetalous yellow flowers, followed each by a short, smooth, quadrangular pod, divided longitudinally by a membrane, which projects at the ends, containing small roundish seeds, of a reddish brown colour. The *sinapis nigra* Lin. Sp. Pl. 933, the plant, preferred in the foreign pharmacopœias, is a native of England, but commonly cultivated for dietetic and medicinal uses; what is called the *Durham mustard* is prepared by separating the husk.

Mustard seed yields, upon expression, an oil as insipid as that from olives, the pungency remaining entire in the cake. Spirit of wine takes up but very little of the pungency of this seed; but water extracts from the bruised seeds nearly the whole. If mustard be added to boiling milk, the whey will be separated from the curd, and possess much of its virtue. Distilled with water it yields a limpid essential oil, extremely pungent to the smell and taste, which sinks in water. The remaining decoction, on being inspissated, becomes a sweetish, brisk, mucilaginous extract.

Mustard is a very strong pungent stimulus, acting sometimes as a diuretic, without much heat. In paralytic, cachectic, and serous disorders, a large spoonful of the unbruised seeds has been taken two or three times a day; but in this way it acts only as an eccoprotic, without any stimulus. Bergius hath cured vernal intermittents with it, and has found the bark rendered more effectual by adding the powder of mustard. The bruised seed prepared as for the table is rubbed with advantage on parts affected with numbness, or with rheumatic disorders. As a condiment it assists digestion; mixed with horse radish, and infused in wine, it is an useful stimulant, often a diuretic, in constitutions where the circulation is languid. When beaten up with vinegar into a cataplasm, it is applied to the feet to remove delirium in fevers, and to bring down the gout from the head or the lungs to the feet; but in these circumstances it is a painful and troublesome application, with little adequate advantage. They are sometimes applied to the feet for raising the pulse in low fevers, and for relieving the head in those disorders. If mustard is mixed as for the table, and of this mixture a table spoonful or two is added to a pint of tepid water, and drank on an empty stomach, it operates as an emetic; and, if repeated once or twice in a week, is said to be of service in nervous disorders. Mustard whey is frequently ordered as a drink in all low fevers. (Lewis's *Materia Medica*.) The *rapistrum sisymbrium*, and *erysimum latifolium*, are distinguished by the same appellation.

SINAPI'SMUS, (from *sinapi*, mustard). **SINAPISM**

is made of powder of mustard seed and crumbs of bread, equal quantities, mixed up into the consistence of a cataplasm, with a sufficient quantity of vinegar. See EPISPASTICA.

SI'NCIPUT, (*quasi semi caput*). See BREGMA, and ARQUALIA OSSA.

SI'NE PA'RI. See AZYGOS. The eplastrum sine pari, or matchless plaster, is a pompous name for a composition now not noticed.

SINGU'LTUS, (*quasi singulatus, ad singula verba vocis interruptio*; an interruption to every word). *Lygmos*; the HICCUGH, is a spasmodic affection of the stomach and muscles subservient to deglutition. Hippocrates thinks the stomach its only seat; Hoffman, that the diaphragm is the part principally affected; but the stomach is the organ chiefly diseased. The disorder is primary or symptomatic. The immediate cause is that of spasm in general, either irritation or debility, inducing increased irritability. Inflammations of the stomach itself, or of the liver, probably of its convex portion, sometimes induce it. Inflammations of the diaphragm have with less reason been accused, and the poisons which have appeared to bring it on have been rather of the narcotic than the acrid kind. Flatulence of the stomach, cold drinks when the person is warm, acidity, repletion, suppressed diarrhoea, repelled gout, worms, excess of venery, and even the diaphoretic antimony, have been accused. These are all debilitating powers. Mechanical irritations are better established, and we find hiccough arising from a dislocated rib, a compressed cartilago ensiformis, a distorted or compressed rib. At the end of long fevers it is not an uncommon symptom, and it sometimes follows epileptic paroxysms.

Hiccough is a troublesome, but seldom a dangerous, complaint. Various cases are recorded where it has continued from eight days to four years. We once knew it to continue for a month, with scarcely any intermission, even by night. The sleep was at last so profound, that the convulsion scarcely awoke the patient. A case is recorded in the Edinburgh Medical Commentaries, where it was habitual. Bartholine, in the Copenhagen Transactions, mentions it as periodical.

The causes are so opposite, that a particular attention to them is requisite; and, when we can trace it to inflammation, or any of the mechanical irritations, our conduct requires no particular hint. When it arises, as is most frequently the case, from spasm induced by debilitating causes, the warm antispasmodics, as the fetid volatile spirits with camphor, often joined with ether, opium, mosch, or any essential oil, particularly of aniseed, will be useful. A blister, an acrid fomentation, or cupping glasses to the pit of the stomach, are particularly advantageous. Emetics are often useful, not only to excite the action of the stomach, but to discharge any irritating contents, and a tea spoonful of vinegar slowly swallowed has been strongly recommended.

As proceeding from debility, various tonics have been employed in the intervals. The bark is mentioned by many authors, as well as a great variety of bitters, either the amara calida, or the purer bitters with aromatics. In the Medical Commentaries the vitriolic

acid in peppermint water is recommended, and by Crell, the zinc. Sulphur has been advised, on what principle, or with what success, we know not.

Like other spasms, it is often stopped by strongly arresting the attention, whether by hope, fear, or terror. On this principle a deep continued inspiration often removes slighter degrees of the complaint, which is in many cases peculiarly troublesome and obstinate.

See Stoll Prælectiones; Bruning Dissertatio sistens Singultum Morbum Symptoma Signum; Sennertus de Singultu.

SINKO'O. See AGALLOCHUM.

SI'NON. SINNON. See AMOMUM.

SI'NUS, (from *κενός*, void). A CAVITY. In anatomy it is the cavity which receives the head of a bone; in surgery, a collection of matter with only a small orifice, not callous, for its discharge. (See FISTULA.) The vagina is sometimes called *sinus muliebris*, or *sinus pudoris*.

SI'NUS CEREBRI; the veins of the dura mater. (See CEREBRUM.) Ruysch found, on dissection, polypi in them, and a small bone has been taken from them. They offer no impediment to the operation of the trepan. Lassus Memoires de l'Academie di Chirurgie, v. 3.

SI'NUS CO'XÆ, i. e. ACETABULUM COXENDICIS. See ACETABULUM.

SI'NUS MAXILLA'RIS. See ANTRUM HIGHMORIANUM.

SI'NUS VE'NÆ PO'RTARUM. The trunk of the vena portæ hepatica superior vel minor.

SI'PHILIS, (from *σιφίλος*, filthy). The VENEREAL DISEASE. See LUES.

SIRACÔ'STUM. See ALSIRACOSTUM.

SIRE'NES. See BOVINA AFFECTIO.

SIRI'ASIS, (from *σείρας*, a cavity). *Des blattfallen, adustio*. A disease of children, consisting of an inflammation of the brain and its membranes, attended with a depression of the fontanelle, a hollowness of the eyes, a violent fever, with paleness, a dry skin, and loss of appetite. Dr. Cullen ranks it as synonymous with phrenitis. It is very indistinctly described, and it sometimes seems to be hydrocephalus. We shall add references to the best authors on the subject, and hope those who will examine them may be more fortunate in extracting a meaning than we have been.

Horstius de Siriasi; Mercurialis de Morbis Puero-rum; Forestus, xxviii. Obs. 82; Jacobi de Siriasi.

SI'RII BO'A. See BETLA.

SIRO'NES. See BOVINA AFFECTIO.

SI'SARUM, (from *sisa*, Hebrew,) *elaphoboscon*, *perdetum*, SCIRRETS, or their worts, well known in our gardens, and chiefly cultivated for culinary purposes: they are nourishing, not very flatulent, by boiling become very tender, and if plentifully eaten said to be diuretic. *Tordylium* seems to possess similar properties. See Raii Historia.

SI'SARUM MONTANUM. See GENSENG.

SI'SARUM PERUVIANUM. See BATTATAS HISPANICUM.

SI'SON, (*σιών*). See AMOMUM.

SISY'MBRIUM, (*σιςυμβρος*, from its fringed roots). A name of several species of mint, of water cresses, and some other plants. See BARBAREA, MENTHA AQUATICA, SINAPI, SOPHIA, NASTURTIUM AQUATICUM.

SISY'MBRIUM AQUA'TICUM; *raphanus aquaticus*, *armo-*

Y y

racia; WATER RADISH; *sysimbrium amphibium*, β Lin. Sp. Pl. 918, grows in marshy ditches, flowers in June and July, and is supposed to agree with the horse radish in its virtues.

SITIOLO'GICE, (from *σιτος*, *aliment*, and *λεγω*, *to speak*). That part of medicine which treats of ailments.

SI'TIS, (from the Hebrew *shatah*). THIRST, *polydipsia* of Cullen, consists in a sensation of dryness in the mouth and fauces, demanding a supply of fluid, generally cold. It arises partly from a diminished or an exhausted secretion of saliva, of the mucus of the mouth and fauces, frequently from the state of the stomach, from the presence of acrimony, and considerable, or even impending, discharges from other glands. Thus it is not only excited by an increased flow of urine, or discharge of halitus from the lungs; but the nurse feels the sensation of thirst, often in the moment the child's mouth is applied to the nipple. It sometimes occurs in circumstances, whose influence on this symptom we cannot explain, as it has been said to arise from a polypos of the heart, and becomes occasionally a disease peculiarly craving, without any evident cause, unless we suspect acrimony in the blood, which in some cases of this kind we have thought has been shown by the appearance of cutaneous eruptions. It is sometimes said to be epidemic among children, and it has been known to continue for a long period, especially in one instance, where it arose from the excessive indulgence of cold drinks in the hot fit of fevers. In severe operations, in the tortures, to the disgrace of humanity, formerly employed to extort guilt, and at present as the punishments of negroes, the thirst is said to have been even more distressing than the pain. If sweets produce thirst, it probably arises from the acidity which they excite in the stomach; and perhaps liquorice may have been exempted from the accusation of occasioning thirst, in consequence of its containing a larger proportion of mucilage than other vegetable sweets.

Thirst is not relieved by drinking water alone. This simple fluid is immediately absorbed, and, as we have already remarked, carried to the urinary organs. If ever useful, it is by rinsing the mouth, when the agitation assists the action of the salivary glands. Rolling a pebble, or the tongue, round the mouth is often equally effectual; for water alone, when it relieves thirst, must be taken slowly by sips only. The vegetable acids are more effectual, and the vegetable fruits particularly so, as the mastication adds to the power of the acid in restoring the secretion. Warm baths supply the fluid portion of the blood; and even cold sea water, in cases where fresh was wanting, has relieved thirst, when the seamen's shirts have been dipped in it. Analeptics, by giving a temporary stimulus to the circulation, relieve this troublesome complaint, and even a mouthful of brandy is at times highly useful. In general, during great fatigue, drinking should not be indulged, even though the weather be hot. The constitution is less injured by enduring the thirst than by gratifying it. In fevers the fluids taken to allay thirst should be impregnated by some of our indigenous aromatics, or by the farinacea, to subject them to the powers of digestion, as already explained. When thirst arises from the

state of the stomach, its contents should be diluted in the manner just mentioned, corrected by the appropriate remedies, or evacuated by an emetic. Bile and putrid suburrae are best corrected by the vegetable acids, an acid by alkalis or absorbents, both by bitters joined by slight laxatives. In general, thirst forms one of those claims of nature which may be most safely indulged, if copious draughts, at once, are avoided.

Adipsia, the want of thirst is often constitutional, and where fluids are not required, they need not be enforced. The only objection to this is, when the patient is insensible to the feeling, as often happens in fevers. Drinks then must be frequently offered, and their acceptance urged by every motive which can attract attention or ensure obedience.

SI'UM, (*σιω*, *to move*, from its agitation in the water,) LAVER. The root is like that of colewort, fibrous and ligneous; the leaves pinnated, growing by pairs to one rib, and ending with an odd one; the petals of the flowers bifid, the seeds roundish, gibbous, and striated.

SI'UM AROMATICUM. See AMMOMUM.

SI'UM ALTERUM, MAJUS, and ERUCE FOLIO. See CICUTA AQUATICA.

SI'UM ANGUSTIFOLIUM; *sium latifolium*, β . Lin. Sp. Pl. 361; *berula Gallica*, *laver verum Matthioli*, *apium palustre foliis oblongis*. COMMON UPRIGHT WATER PARSNIP, grows in moist wet places, and flowers in June. Its leaves resemble in their effects those of the great water parsnip.

SI'UM ANGUSTIFOLIUM, *pastinaca aquatica*. GREAT WATER PARSNIP, Lin. Sp. Pl. 361, α . grows in rivers and marshy places, and flowers in July. The leaves are said to be lithontriptic; but the whole plant is neglected.

SI'UM NODIFLO'RUM, Lin. Sp. Pl. 361. CREEPING WATER PARSNIP, an indigenous, perennial, wing leaved plant, growing in hedges and ditches; its leaf resembles the spring leaf of the hemlock drop wort, which is poisonous; it flowers in July and August. It was formerly considered as a lithontriptic, diuretic, and emmenagogue. It seems to correct acrid humours, when manifested by cutaneous eruptions, and tumours in the lymphatic system. Dr. Withering gives an account of a young lady, six years old, who was cured of an obstinate cutaneous disease, by taking three large spoonfuls of the juice twice a day; and he has repeatedly given to adults three or four ounces every morning, in similar complaints with the greatest advantage. It is not nauseous, and children take it readily if mixed with milk. In the dose which he gave, it neither affected the bowels nor stomach.

SMA'LTUM. See COBALTUM.

SME'CTIS, (*σμεω*, *to cleanse*, from its cleaning cloth). See CIMOLIA PURPURASCENS.

SMI'LAX A'SPERA, Lin. Sp. Pl. 1458, (*σμιλω*, *to cut*, from the roughness of its leaves and stalks,) ROUGH BIND WEED; *China orientalis* and *occidentalis*, is cultivated in gardens, and flowers in summer. The leaves, tendrils, berries, and roots, are used as diaphoretics, to cure cutaneous diseases and pains in the joints. It is sometimes a succedaneum for sarsaparilla, and celebrated in venereal disorders. See Raii Historia.

SMI'LAX CHI'NA. See CHINA ORIENTALIS.

SMI'LAX PERUVIA'NA. See SARSAPARILLA.

SMI'LAX HORTE'NSIS. See PHASEOLUS MAJOR.

SMI'LAX I'NDICA. See CHINA OCCIDENTALIS.

SMI'LAX VIRGINIA'NA. See SARSAPARILLA.

SMI'LAX UNIFO'LIA HUMI'LLIMA. See MONAPHYLLON.

SMY'RNION, (σμύρνα, myrrh, from its smelling like myrrh). See IMPERATORIA.

SMY'RNIIUM, (from the same). See HIPPOSELINUM.

SO'DA, (from the Arabic term *sodar*). A burning uneasiness in the throat, with rancid or hot eructations, synonymous with dyspepsia and pyrosis. (See CARDIALGIA.) A name for potash, and for the mineral fixt alkaline salt. See ANATRON, CLAVELLATI CINERES, CHERIA, and SAL.

SO'DA PHOSPHORATA; *alkali minerale phosphoratum*; *phosphas sodæ*, is a combination of the phosphoric acid with the mineral fixed alkali. We are indebted to Dr. Pearson for the introduction of this salt to the materia medica, as it is active and almost tasteless. In broth or gruel it may supply the place of common salt without suspicion. The other combinations of soda with different acids offer no particular subject of remark. See SAL.

SOL, (from *halal*, to shine). See AURUM.

SOL-LUNAR INFLUENCE means the influence of these luminaries, either when in opposition or in conjunction, on the human body. In this disquisition we do not include the insolation, *coup de soleil*, nor the effects supposed by the Italian authors to arise from the light of a full moon, but the influence of either on the human body from other causes.

From very early antiquity the sun and stars were supposed to influence the human frame, its diseases, and even its fortunes. The latter idea is now left to the tricks of pretended conjurers; but the former has continued to prevail, and at different periods has started into notice. Dr. Mead has collected, from practitioners of respectability and character, various facts which show that the sun and moon have some influence on diseases. Epileptic attacks, hæmorrhages, fevers, and a variety of complaints, have been said to occur in greater frequency, and more violent degrees, at times when the influence of the sun and moon was most considerable. Were such a connection well established, it might be of essential service in directing our remedies; but it seems to be either accidental, or other observations have not been directed with these views. The tract of Dr. Mead was written when the mind was dazzled by the splendour of Sir Isaac Newton's discoveries on attraction, and it was supposed that ærial bodies (for the atmosphere would obey the impulse of attraction as well as the water) must produce considerable changes in the constitution. The annals of medicine were ransacked by those to whom all the stores of antiquity were open, and it is not surprising that many facts could be adduced, especially from authors of a credulous and dark era. We know, however, that the foundation of the theory is truly ærial. The barometer shows little alteration in the real height of the atmosphere at those periods when the attraction is greatest, unless other causes concur; and we know that much greater changes in the weight of the atmosphere are borne without exciting any uneasiness, or producing any variation in the functions. The idea of an attraction of the nervous fluid is still a more baseless fabric. Yet the changes of epileptic

paroxysms during the moon's increase are apparently confirmed by vulgar observation, and we think there are some well founded facts of increased discharges at these times; but should these be established, the reputed cause must be fallacious, for it acts before it has reached its acmè, and at a period when the ærial tide must be inconsiderable.

More lately, however, Dr. Balfour has endeavoured to establish the sol-lunar influence in the attacks and crises of fevers by observations made in India. To these we cannot reply, but must leave the subject to future practitioners, who will not, we trust, suffer such a curious subject of inquiry to escape their attention. We shall add the summary of his remarks from his latest works, viz. his paper in the eighth volume of the Asiatic Researches.

"In prosecuting this analysis, we have obtained the knowledge of three very important principles in the pathology of fevers.

"1st. That the paroxysms of fevers are produced by the action of *sol-lunar influence*.

"2dly. That there is, however, a certain state of the human constitution, denominated the *paroxysmal disposition*, required to concur with the exacerbations of sol-lunar power in exciting and reiterating paroxysms, in such a manner as to form fevers.

"3dly. That in the course of the disease there takes place in the constitution a certain state, denominated the *critical disposition*, which, tending gradually to *maturity*, at length concurs with certain remissions of sol-lunar power in producing a crisis; by which salutary change the tendency to paroxysm is diminished or removed, so as to bring fevers to an end after certain intervals of time.

"In my explanation of this theory, I have hitherto confined myself as much as possible to examples of the typhus, and of the endemic, remitting, and intermitting bilious fevers of this country; particularly those without local affection; and such, therefore, as are strictly denominated fevers. I now mean to extend it to every disease that is distinguished by febrile paroxysms, returning in coincidence with the periods of increased sol-lunar power, whether with or without local affection; and as there is no disease of the numerous list detailed at the beginning of this paper, excepting the plague, catarrhal fevers, and one or two more, in which I have not myself distinctly observed the coincidence of concomitant fever with the exacerbations of sol-lunar influence; the whole of that catalogue, and many others, though not generally distinguished by the appellation of fevers, are to be considered as nothing more than so many different modifications of fever; in which the peculiar constitution of each is variously affected by the action of sol-lunar power, and in such a manner as to produce the great variety of febrile forms that daily appear.

"The exacerbation and remission of febrile paroxysm in coincidence with the rising and falling of sol-lunar power constitutes the general and distinguishing character of fever or febrile disease; and although the lowest degree of this power acting on paroxysmal dispositions in a high state of prosperity, may happen to produce febrile paroxysms at an unusual period, such instances, though apparently exceptions, are no argu-

ment against the truth or principles of the general law, but are consistent with it in every respect.

"Combining, therefore, the operation of the principles we have obtained from this analysis, we are enabled to construct a *theorem*, which serves to explain in a new, but satisfactory manner, the whole *class* of febrile diseases.

THEOREM.

"The fluctuating force of sol-lunar influence coinciding and co-operating in all its various stages and degrees, with the various modifications of the paroxysmal disposition, excites febrile paroxysms to attack on all the days of the neaps and springs, and supports and reiterates them, according to various types, until the commencement of different neaps; at which junctures the maturity of the critical disposition happening to concur with the periodical decline of sol-lunar influence, these paroxysms then subside and come to a termination or crisis: and thus form different successions of paroxysms constituting fevers of various length or duration.

"It has been observed, respecting the various forms of durations, that some are apt to occur more frequently than others. To search for a solution of this question amidst the chaos of the incorrect and mutilated history that has been accumulated on the subject of fevers, would be unsatisfactory and useless. It will be far more profitable to observe their course with attention in future, when the laws that direct it are explained and understood, and I have no doubt that any physician who will carefully attend to the diurnal and nocturnal returns of the tides, and will constantly hold before him the prevailing tendency of fevers to appear at the commencement, and during the period of the springs; and, on the other hand, their prevailing tendency to subside and terminate at the commencement, and during the period of the neaps; together with the observations that have been made respecting the propensity of the paroxysmal, and the maturity of the critical disposition, will soon obtain more information respecting the phenomena of fevers; and be able to form more just and certain judgments and prognostics respecting every event, than if he were to study the history of medicine, as it is now written, for a thousand years. In short, there is no revolution or change in the course of fevers that may not be explained by these general principles, in a manner that is consistent with the laws of the human constitution, and those of the great system of revolving bodies, which unite together in producing them."

The author adds in a note, that Dr. P. Russell observed the febrile paroxysms of the plague returned obviously every twelve hours in coincidence with the periods of the tides; and the author of the Natural History of Aleppo remarked, "that the generality of fevers there, and, indeed, almost all acute diseases, are subject to exacerbations once or twice in twenty-four hours." Millar's Observations on the Prevailing Diseases of Great Britain, p. 203.

Mead on the Influence of the Sun and Moon; Bal-four on Sol-lunar Influence, Asiatic Researches, vol. viii. art. 1.

SOLA'MEN INTESTINO'RUM. See ANISUM.

SOLANOI'DES, (from *solanum*, night shade, and

indus, likeness,) BASTARD NIGHT SHADE, hath a rose shaped flower, followed by a berry.

SOLA'NUM, (from *solar*, because it comforts by its stupefying qualities,) NIGHT SHADE, is a plant with a monopetalous flower, divided into five segments, having its cup divided in the same manner, with the same number of stamina in the middle, and followed by a juicy berry.

SOLA'NUM BARBADE'NSE. See PHYTOLACCA.

SOLA'NUM LETHA'LE; *belladonna*; *solanum maniacum*, *somniferum*, *furiosum*; DEADLY NIGHT SHADE; *Theophrasti strychnos*, *atropa belladonna* Lin. Sp. Pl. 260, is one of the indigenous poisonous plants of Great Britain; poisonous in all its parts. The root is long, large, and creeping; the stalks purplish, upright, firm, numerous, branched, and herbaceous; the leaves egg shaped, entire, very large, smooth at the edges, pointed a little at the extremities, and of a beautiful green colour, hairy and soft. The flowers stand on single foot-stalks; are formed of one petal; bell shaped, and very lightly divided into five segments at the edge. Their colour is a dark dead purple. The berries which succeed the flowers are globular, first of a red, afterwards of a black colour. This plant flowers in July, and its fruit is ripe about Michaelmas. It is found in woods and hedges, amongst lime stone and rubbish; and, where the ground is rich, from manure. The smell is faint, somewhat resembling the poppy, but lost when dry. It has no peculiar taste. When taken in too great a quantity, giddiness, like that of intoxication, comes on; thirst, pain in, and tightness across, the breast; difficulty of breathing, delirium, but with short intervals of relief, or, instead of delirium, a fatuity; strangury, painful deglutition, and retching, followed by stridor dentium, and convulsions. The eyelids are drawn down, the face becomes red and tumid, the mouth and jaws spasmodically contracted, the sensibility and irritability are so much diminished, that the stomach often bears large and repeated doses of tartarized antimony without any effect; the pulse is hard, small, and quick, and the tendons start; risus sardonicus, and coma, generally precede death. On dissection, inflammation has been found in the liver, intestines, and mesentery. The ancients called the disease brought on by eating this plant *strychnomania*. When adults have recovered from the effects of this poison, they have related that they felt themselves as if drunk, but saw and understood all that was doing, even when they gave the wildest answers. Some are said to have continued in a state of madness for several days; others lose their sight for a time, the iris being so much relaxed as to become paralytic, and dilated to a very considerable size. In children, to whom it is generally fatal, the belly swells, and convulsions sometimes follow. To adults it often proves fatal in less than twenty-four hours.

Vinegar, liberally drank, has been found very efficacious in obviating the effects of this poison; but its evacuation should always be first promoted: for the particular management, see AMANITA.

Notwithstanding these effects, a prudent use of this plant has been recommended. The leaves applied in the form of a cataplasm are supposed to relieve cancers: an infusion of the leaves is commended as in internal medicine in cancerous cases; but on trial does not appear to deserve the encomiums. The doses are very

small, and their effects various and uncertain. Sometimes it purges, at others runs off by the kidneys or through the skin, and often no evacuation takes place. Those who took the infusion suffered by giddiness, throbbing pains in the eyes, a discharge of tears, and a dilatation of the pupil. Mr. Gataker observes, that it is a medicine chiefly calculated for particular cases where the common remedies have failed, and where this seems, upon trial, to be free from the inconveniences which so often attend its use.

Dr. Cullen has seen a cancer in the lip cured, and a scirrhus in the breast removed, by it. Great service has also been derived from its use in a sore a little below the eye, which has resembled cancer. The first dose should be one grain or less, which may be gradually increased, six grains is considered a very large one.

See Gataker's Essays; Bromfield on Nightshade; Wilmer's Observations on Poisonous Vegetables; Withering's Botanical Arrangement; Cullen's Materia Medica.

SOLANUM HORTENSE; *solatrum*; *aguara quiya*; *solanum vulgare officinarum*, *nigrum* Lin. Sp. Pl. 206, α . COMMON OR GARDEN NIGHT SHADE. Its leaves are oval, pointed, and irregularly indented; the flowers white, and in clusters; the berries black. It is annual, grows in uncultivated grounds, and flowers in August.

This, as well as the former species, may be used in cancerous disorders, foul ulcers accompanied with pain, obstinate pains in particular parts, scorbutic and scrofulous disorders. This species is said to be particularly useful in carrying off bile, when taken in the form of an infusion. Externally applied in a poultice it is said to have abated the violence of inflammation in the eyes, headaches, pains in the ears, acrid defluxions, syphilitic inflammations, pains from scirrhus tumours; and to have relieved scrofulous and cancerous tumours.

The most common effects observed on taking the infusion of the leaves are, a general warmth, followed by a plentiful sweat, and a lax belly the next day. If sweat did not follow, a considerable discharge of urine, or loose stools, were the consequence; but without some increased secretion no benefit ensues. In sanguine habits bleeding and purging may precede its use; and, if the stomach seems loaded, an emetic may be premised. Feverishness will not preclude its use.

The leaves may be used either fresh or dry. Half a grain of the dry leaves may be infused in an ounce of boiling water, to be taken at bed time, gradually increasing the dose, which may be repeated every night. That quantity which produces giddiness, sickness, a gentle looseness, or some other sensible effect, should be continued. Sometimes one dose is sufficient for two or three days: it hath been gradually increased to twelve grains. See Storck on the Solanum.

SOLANUM LIGNOSUM; *dulcamara*, *glycyphicos*; *amara dulcis*, *solanum scandens*, BITTER SWEET, PURPLE FLOWERING, WOODY NIGHT SHADE, *solanum dulcamara* Lin. Sp. Pl. 264. Many of its leaves are deeply cut, or furnished with two small appendages at the bottom; the flowers in clusters, of a blue colour; the berries red. It grows on the sides of ditches, and in moist hedges, climbing upon the bushes with wind-

ing, woody, but brittle, stalks; is perennial, and flowers in June or July.

Its sensible operation as a medicine is by sweat, urine, or stool. A tincture may be made by digesting four ounces of the twigs, into two pints of white wine, and of this the dose will be from $\frac{3}{4}$ ij. to $\frac{3}{4}$ vi.

This species is not so deleterious as the two former, and it acts more uniformly. Decoctions of it have been serviceable in the rheumatism, in inveterate cases of scrofula; in cancer, lepra, and other cutaneous affections; and in local anomalous diseases arising from the lues venerea.

Decoctum dulcamaræ is prepared by boiling two drachms of the twigs of *dulcamara* in two quarts of distilled water to one. Dose half a pint in twenty-four hours, mixed with an equal quantity of milk. Dr. Hulse thinks it one of the most powerful discutients: he directs four handfuls of the leaves, and four ounces of lintseed, to be boiled together in wine, or in hog's fat, to a cataplasm, and to be applied warm.

SOLANUM ARBORESCENS INDICUM. See COLUBRINUM.

SOLANUM DULCAMARA and **SCANDENS**. See SOLANUM LIGNOSUM.

SOLANUM FURIOSUM, **MANIA-CUM**, and **SOMNIFERUM**. See SOLANUM LETHALE, and STRAMMONIUM.

SOLANUM LYCOPERSICUM and **POMIFERUM**. See AMORIS POMA and CACHOS.

SOLANUM MAGNUM and **RACEMOSUM**. See PHYTO-LACCA AMERICANA.

SOLANUM NIGRUM OFFICINALE, and **VULGARE**. See SOLANUM HORTENSE.

SOLANUM POMIFERUM. See MELONGENA.

SOLANUM QUADRIFOLIUM, **BACCI-FERUM**. See HERBA PARIS.

SOLANUM SOLATRUM. See SOLANUM HORTENSE.

SOLANUM TUBEROSUM, &c. See BATTATAS.

SOLANUM VESICARIUM. See ALKEKENGEL.

SOLANUM URENS. See PIPER INDICUM.

SOLDANELLA MARI-TIMA MINOR, (*à solidando*, from its use in healing wounds). See BRASSICA MARITIMA.

SO'LEN, strictly means a cradle for a broken limb, but is applied to any similar cavity.

SO'LIDA, **SOLIDS**. Physiologists, following Haller, formerly supposed that the solid elementary parts of our fibres are a calcareous earth kept together by a gluten; that in a natural state, when bones lose their gluten, this earth falls into powder; and that in this earth there is a portion of iron. Modern chemistry has, however, destroyed this system, and particularly the office of the gluten. Different solid parts are differently composed; and, as albumen or gluten forms a portion of each, it only concurs with the others in giving to the mixed that firmness which arises entirely from the force of their combined powers of attraction.

SOLIDA'GO VIRGA AUREA, (from *solido*, from its corroborant and astringent virtues). See VIRGA AUREA.

SOLE'US, (from *solea*, a sole). *Gastrocnemius internus*; a muscle, called from its resemblance to a sole fish. It is a biceps, rising on the outside from the

upper part of the tibia, internally from the outside of the fibula: leaving an aperture for the passage of the vessels, it joins the gastrocnemius to form the tendo Achillis.

SOLITA'RIÆ GLA'NDULÆ. See *INTESTINA*.

SOLITA'RII. Diseases affecting only one part of the body.

SO'LIS A'QUÆ. See *BATHONIÆ AQUÆ*.

SO'LIIUM, (from *solus*; because it is a congeries of animals, and consequently appears *alone*). See *TÆNIA*.

SOLSE'QUIA, (*quasi solem æqui*; because its leaves turn to the sun). See *CALENDULA*.

SOLSE'QUIUS, (from the same). See *TITHYMALUS HELIOSCOPIUS*.

SOLU'TIO, (from *solvo*, to *open*, or *dissolve*). SOLU'TION is the dividing of a solid body into particles so small as to disappear in the menstruum or solvent.

A solution, strictly speaking, is an union of the minuter parts of the solvent and solvend, where each retains its respective properties, or where, though combined, they may be recognized as distinct and unaltered. Such is the solution of sugar or salt in water, or of sugar dissolved in salt water. When an alkali is combined with an acid, the salt disappears in the same way, but the properties of the principles are changed.

Solution was formerly supposed to be only a very minute diffusion; but it appears to depend on a mutual action between the particles of the menstruum and the body dissolved; for it is not necessary that this should be a fluid. An essential oil, for instance, is dissolved in water, and solution in this case takes place in their state of vapour. In what is called, chemically, *deliquatio*, the water, dissolved in the air, is attracted by the salt.

As solution is then a combination, not essentially different from other chemical operations, so it is influenced by the laws of affinity. Almost every solution is accompanied by the absorption or separation of caloric; and almost every solution is of a greater specific gravity than the mean of its ingredients. Every added substance seems to lessen the repulsion of the fluid particles, and hence the solution is generally less in bulk than the separate ingredients. A phial full of kali, and as much water, will not fill the double space. Fire in melting bodies seems to become a menstruum, and when combined in a considerable temperature, it reduces the body to an aerial state, frequently giving it the form of a permanent gas. All solutions are assisted by heat, which seems to lessen the cohesion, so that the menstruum meets the solvend in a greater number of points. Powdering the solvend has a similar effect, for the same reason.

Medicines are often given in a fluid form, as their taste becomes less nauseous by solution, and they occasion less inconvenience to the stomach. The fluids of this viscus have, however, been supposed to possess peculiar powers as a menstruum, and many medicines have been given near the period of meals, that they may meet these fluids in a more active state. This idea, however, seems to have little foundation; for the advantages of giving medicines in a solid form seem chiefly to depend on their not having been changed by previous preparation. The extractive of bark, for instance, becomes, in part, resinous by boiling.

See Chaptal's Chemistry; the Bishop of Landaff's Chemical Essays.

See Table of Solubility of Salts, under *SAL*.

SOLU'TIO PER I'GNEM. See *FUSIO*.

SOLUTIO'NES, (from the same). Fresh wounds whilst yet bleeding. Sagar.

SOLUTI'VA, (from the same). LAXATIVES.

SOMNAMBULI'SMUS, (from *somnus*, *sleep*, and *ambulo*, to *walk*;) *hyfnobates*, *hyfnobataxis*, *noctambulatio*, and *somnambulatio*, a species of *oneirodynia*. See *SOMNUS*.

SO'MNIUM, (from *somnus*, *sleep*). A DREAM. See *INSOMNIUM*.

SOMNUS. SLEEP, "*tired nature's sweet restorer*," is essential to the existence of mankind; for those deprived of its necessary proportion most probably experience some abridgement of the period of their existence. In this regularly returning "*semblance of death*" the external senses and the voluntary motions are lulled into insensibility and a temporary quiescence, while the involuntary motions are carried on with steadiness, though with some relaxation of their activity. In other words, the functions of the brain are suspended, while those of the ganglionic system (see *NERVUS*), sharing a portion of the insensibility of the brain, from its slight connexion, enjoys with little change its own inherent power. We thus find that, in proportion to the bulk of the brain, or perhaps its activity, sleep is more necessary. Birds, which have a small brain, sleep very little in their natural state.

We find the recurrence of sleep necessary to recruit the faculties both of body and mind, to which authors have added, that during this suspension of sense, nutrition is probably carried on more perfectly and actively. This opinion rests chiefly, however, on the larger proportion of sleep which infants require, and those, who adopt it, forget that often in advanced age sleep becomes equally necessary, depending, in fact, merely on the state of debility. How sleep is induced, by what power the activity of the mind and body is restored during this state, and the causes which terminate the insensibility, are little understood. It has been supposed that the mental actions excite the arterial system, and that, in consequence, a greater proportion of blood is carried to the head, or to the exhalents, occasioning a greater discharge of their contents. This pressure is supposed to produce sleep, during which the veins or the absorbents carry off the superfluous quantity. In the same way sleeping after a full meal is explained, since the distended stomach presses on the descending aorta, which, of course, assists the circulation through the ascending branch. Each hypothesis is truly ideal; for, were it true, the previous appearances would be those of activity, since such are the effects of determination to the head, before the fulness produces compression. The stomach also, after a full meal, presses forward, and its greatest curvature, which in the empty state is below, when full projects against the parietes of the abdomen. This objection was apparently felt; for more lately the narcotic effect of the air, evolved in digestion, has been brought in aid of the system of compression, an effect which, at least in the stomach, is never experienced.

Sleep naturally comes on once in twenty-four hours,

usually at the accustomed period, generally in the natural state soon after the commencement of darkness. When the usual stimuli are withdrawn, if the temperature is moderate, and the posture easy, the usual train of ideas is interrupted; they are less regularly connected or associated, and a slight delirium ensues, previous to the sound sleep, which consists in a total cessation of the exercise of all sensation and thought; of all motion connected with volition, though volition seems sometimes imperfectly exercised, in changing, for instance, an uneasy posture. When this state has continued its due time, which differs in different constitutions, ideas occur with irregular associations, and occasional interruption, as when sleep came on. These become more regular and connected, till the labours of the ensuing day, or the anxieties of the past, occur to the recollection, and banish farther repose. The regular trains of sensation and motion gradually take place, at first less actively, but soon with the usual, or rather with renewed vigour.

Such is the history of the regular sound sleep of a person in perfect health; but the variations are infinite. The period, the duration of sleep, its degree of soundness, its occasional interruptions, and the fanciful images suggested to the mind, occasion a considerable variety, which it would be useless, and indeed impracticable, to detail.

The remote causes are whatever exhausts the vital energy, as constant action; intense thought, light, or noise; violent pain, or considerable mental distress. When the activity of the brain has been completely exhausted by the long continuance of any of these causes, neither silence, darkness, an easy posture, or a moderate temperature, are necessary to court sleep. It comes on in the most unfavourable circumstances, and continues till the brain has recovered some degree of activity. Every stimulus in excess, by exhausting the excitability, will induce sleep; but opium, wine, and spirits appear, as we have said, to be truly sedative powers, and to produce irregular instead of excessive excitement.

In the perfectly waking state the elastic fluid, on whose state all sensation and action seem to depend, is apparently active, and its communication through every part of the brain free. Delirium we have shown to be connected with an interrupted communication, or an unequal excitement; and palsy, in many instances, on what Dr. Cullen styles a collapse, or that state in which it is incapable of conveying impressions or volition. The collapse is, according to this respectable professor, less complete in sleep. We certainly perceive its commencement by the delirium, which shows an interrupted communication through the brain, and the collapse increases in the extreme case of sound sleep, till it is almost complete. When, however, no narcotic poison has been administered, the accumulated excitability begins to exert its powers, and rouse the mind to resume its functions. The powers of thought are at first more perfect, the communication becomes more free, till at last volition again renews its office. There may be some difficulty in conceiving how the accumulated excitability can take place from mere quiescence, and this difficulty would, it was supposed, be removed by supposing the brain a gland, which supplies the nervous fluid; but this opinion we found untenable,

and the difficulty must remain, though various collateral facts support the doctrine just mentioned. One of the most striking of these is the hybernation of animals, who remain torpid during winter. This is a state of a more perfect collapse than sleep itself, and requires some exciting power. (See *TORPOR*.) In cases of sleep no power is necessary but the circulation of the blood acting on an organ, which by rest has recovered its torpor, or has accumulated excitability.

We have said that sleep is more or less perfect, and that volition is, though obscurely, exercised. In the less perfect sleep the brain remains in the state described, when sound sleep is coming on, and various fancies, from the interrupted communication between the different parts of the brain, are presented to the mind (see *INSOMNIUM*); but there is also a state where volition remains more perfect, where persons *talk*, and even *walk*, during sleep. In such cases, however, caprice or fancy regulates the conduct; and the motions, though directed often to some end, are seldom under the guidance of reason and judgment; mental operations, which we have often shown, require the freest, most uninterrupted, communication through the whole brain. The utmost exertion of reason ever displayed in somnambulism is the extreme caution with which such persons walk in places by no means secure. In every such instance there seems to be an imperfect consciousness of the situation which they do not recognize when awakened.

Compression of the brain produces torpor; but scarcely in any instance sleep. Narcotic poisons lessen the energy of the brain, and produce a partial collapse, for we find that they always induce delirium; and so great is the power of opium, in particular, over the association of ideas, that those of duration are influenced by its operation. In general, opium acts as a narcotic only, and produces sleep indirectly by destroying the irritations which prevented it; and it is more successful when these irritations are peculiarly nervous, than when they have affected the sanguiferous system. The latter, we have said, are often injured by opium, as their best relief is by increasing the discharge from the neighbouring glands or exhalents, which is checked by its narcotic power.

The impediments to sleep are cold, light, noise, uneasiness of mind or body. Cold, in an extreme degree, produces sleep, or rather the torpor, which is the precursor of death. In a moderate degree it impedes sleep by the uneasy sensation which it produces. The other causes act as stimuli, preventing the collapse, till, by their degree or their continuance, the excitability is exhausted. Sleep is induced by avoiding these causes, by employing the attention on subjects which excite no emotion, by a monotonous sound of no great loudness, and by narcotics, sometimes narcotic gases. The hydrocarbonate seems to have some effect in this way. See *ANODYNA*.

Sleep is often a capricious visitant, flies the bed of down, while it seals the eyes of the sea boy in the rudest hour. It is often least frequent when most desired, and the apprehension of watchfulness is the surest means of precluding the access of this soother of our woes. A close attention to literary labours leaves also an irritability which equally prevents sleep, so that the student fears to leave his midnight lamp, which he must

exchange only for a state of uneasy restlessness. Yet, as we have said, these hours are borrowed only. Nature cannot be deprived of this interchange of rest, and we never yet knew a case where its period was greatly abridged but that the life was shortened, and the latter part of it spent in languor and distress. Tea, coffee, and those narcotics which give a cheerful hilarity, are often used to prevent the recurrence of sleep; but often with the worst consequences.

A contrary state is no less dangerous, viz. too great indulgence of sleep. Somnolency is generally the consequence of distended vessels; and, if indulged, ends in apoplexy, in dropsy, or fatuity. To indulge sleep after dinner is by no means dangerous or unsalutary; but it should be allowed only to the infirm; those whose rest at night is disturbed, or who cannot always command sufficient time for the necessary recruit. In other cases, if it does not render the sleep at night less sound, the usual consequences of somnolency follow.

The best time for sleep is early in the night, when the evening exacerbation has come on, to prevent its increase by the abstraction of all stimuli. Its greatest violence is from ten at night to one in the morning. This period should, therefore, be spent in sleep, and the two hours before twelve are by far more salutary than any other part of the night. The duration of sleep should depend much on the labours of the day. From six to eight hours are in general sufficient; but some constitutions require more than eight: few can continue healthy with less than six, though those accustomed to interruptions will be considerably recruited by four hours of rest. If, however, this becomes habitual, the constitution will eventually suffer. If the same hour of retiring to rest be observed, habit will concur with fatigue in inducing sleep.

See Fordyce's Elements, part i.; Cullen's Institutions; Cheyne on Health and Regimen.

SONCHUS LÆVIS, (*παρὰ τὸ σὺν χεῖρι*, from its wholesome juice). *Montanus purpureus* and *repens*. See *CHONDRILLA*, and *HIERACIUM MAJUS*.

SONUS, (from the Arabic term *sanah*, to cry out).

SOUND. Sound consists in vibrations of an elastic body, and are either acute or grave as the sounding body is longer or shorter; for a long string, which gives an acute sound, experiences different vibrations in its different portions. This is, however, scarcely a part of our present subject, which relates rather to the medium and communication of sound, as applicable to the organs appropriated to the sense of hearing. We shall therefore speak of each portion of the subject, and perhaps be able to correct some erroneous opinions too generally received.

Sound is supposed to be communicated by undulations of the air, resembling those of water when a stone is thrown into it; and if any body is interposed to check these undulations, a new centre is said to be formed, from which fresh undulations proceed. This is, however, an erroneous view of the subject, and wholly inconsistent with the phenomena of sound, whose intensity only, not its velocity, is diminished by interposing bodies. Sir Isaac Newton, who has been quoted as an authority on this subject, has expressly demonstrated, lib. ii. prop. 43, that "every tremulous body in an elastic medium will propagate the motion of pulses every where in a strait line; but in an inelas-

tic medium, will excite a circular motion." What, however, wholly contradicts the common theory of undulations of every kind is, that sounds are conveyed through bodies wholly inelastic, through timber, water, wool, and cotton threads; so that if vibrations only convey sound, it must be the vibrations of a body much rarer than air, probably a very rare ether; and these vibrations cannot be circular. Indeed the vibrations by which sound is conveyed through air seem not to be those of the air itself, but of a rarer medium, for the loudest sounds will not most slightly disturb the flame of a candle.

Dr. Franklin, who might have taken the hint from Kircher, first led us to suspect that air, though the common medium of sound, was by no means the best. When the sound, emitted by striking two stones against each other, was conveyed through water, they were much stronger than when conveyed through air. Dr. Franklin heard the sound of two stones, struck against each other, at the distance of a mile, as sharp as if near his ear; and the watermen on the Thames assert, that when the air is still, a small sound may be heard across the river. Bells of no large size may be heard at the distance of four or five miles, when water only is interposed; and we are informed that the explosion of a twelve pounder may be heard nine leagues, in calm weather, at sea. On experiment, a voice scarcely audible at the distance of seventy-six feet on land, was distinctly heard at the distance of one hundred and forty feet over water. Damp walls and houses have echos, which they loose when dried; and when a canal of water was carried under the theatre of Argentino, at Rome, a voice, on the stage, was heard distinctly at the extremity of the pit, which was scarcely audible before.

Another very powerful medium of the communication of sound is bone. Sounds are conveyed with particular distinctness, and increased intensity, through the bones of the head, particularly by the harder ones near the ear, as the os petrosus of the temporal bone. Some facts of this kind are mentioned by Haller (*Physiologiae Elementa*, v. 295), and were noticed by Dr. Monro so early as 1769; but the first account, though then abridged, was given by M. Perolle, in the third volume of the *Memoirs of the Society of Medicine*: some notice was taken of it in Rozier's *Journal* for 1773. From his experiments, the teeth seemed the most powerful medium, next the bones of the skull, particularly the temporal bones, and those on which the portio dura of the 7th pair of nerves was dispersed. His more particular experiments are recorded in the last volume of the *Turin Transactions*, the fifth of which we shall give a short account, as we do not recollect seeing them in our language.

M. Perolle begins with the fundamental experiment of hearing by means of the bones of the head, formerly mentioned. The sound, in the next experiment, was the vibration of a watch, and the communication was made with the meatus auditorius, by means of a small cylinder of wood, or of the substance to be tried; a method not perfectly correct, but sufficiently so for comparative experiments. The order in which woods and metals communicated sound was the following, beginning with the strongest, viz. fir, logwood, box, oak, cherry tree, chestnut, iron, copper, silver, gold, tin, and lead. Strings, extended with apparently little

force, propagated sounds in a still inferior degree in the following order; gut, hair, silk, hemp, flax, wool, and cotton. Zinc, antimony, glass, sal gem, gypsum, dried clay, and marble, were still worse conductors; but their order was not particularly ascertained, except that marble was the weakest, though still better than air. Fluids transmit sounds with different forces. Oil olive, and oil of turpentine, were nearly twice as good conductors as air; water and spirit of wine better conductors than oils. The proportions are 14 and 16; 20 and 21 to 8.

In all these experiments the nature of the sound (its "*timbre*") was altered: but M. Perolle adds that he had no means of ascertaining it. He could not, therefore, mean the tone, the acuteness, or gravity, for either, could have been easily ascertained. The sound of a tuning fork was fortified by the bodies in which it was placed, and, as might be expected, nearly in the orders recited; but the bulk of the body, when applied to musical instruments, seems to have had a considerable influence in increasing the sound.

From these results we find scarcely any clue to lead us to the principle on which the different substances act in conveying sound. One distinction will immediately occur, that a sonorous body must be very different from a conductor of sound, as the action of the former consists in rapid pulses, by which it strikes the surrounding medium, while the other is to the senses perfectly quiescent. Wood or metal will conduct sounds when surrounded with moist clay, and the water through which the vibrations of a watch are conveyed will not be most slightly agitated. In the experiments with woods and strings, their superiority, as conductors, seems to be connected with a fibrous structure, where the fibres are continued longest without interruption, or with an uniform texture. Specific gravity has apparently no influence, for water is perhaps the most perfect conductor of sounds hitherto known.

Future experiments will not probably confirm all M. Perolle's results, and indeed he speaks of them as not always uniform. We objected to their accuracy for this reason, that there was in reality three different media of a sound, the conducting body, the air of the meatus auditorius, and the bones of the head: so that the experiments could be styled comparative only. We were led to this objection, from having, many years before, made some similar trials in a manner apparently more unexceptionable. Having closed the ears, and swathed the head with numerous folds of flannel, we placed a watch on a cushion, touching the case or the glass, for we found the result the same, with a half penny, a new shilling, and a guinea, successively held between the teeth. The sound was certainly weakest when the copper was employed; and though there were some doubts respecting the power of the silver and the gold, the latter seemed the best conductor.

The course of our reasoning has led us to omit some facts respecting the progress of sound in the air. The experimentum crucis, which supported the claim of the atmosphere to the title of the chief conductor of sound, was that of Mr. Hawkesbee, in the Philosophical Transactions. He found that a bell sounded with diminished sharpness in vacuo, and with increased loudness in condensed air. In fact, momentum is in proportion to velocity and density; when the density is increased, the velocity given, the momentum will be proportionally augmented. To which we may add, that in vacuo

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the diminished momentum has to contend with increased pressure from without, while in condensed air the contrary circumstances take place. At best it is only comparing air in different degrees of density, and not comparing it as a conductor with any other substance.

Another circumstance, which has been misrepresented, relates to the power of winds in diminishing the velocity of sounds. Strong winds move about 90 feet in a second; and if they really impede the propagation of sound, they ought to diminish it about $\frac{1}{18}$. This determination from calculation I was happy to find verified by the experiments of the accurate Derham (Philosophical Transactions, No. 313). He found that storms really retard sounds, so that the sound which travels 571 feet in five seconds may be accelerated to 600 feet in the same time, or retarded to 560 feet, nearly $\frac{1}{18}$.

These facts will apply particularly to the function of hearing, which we omitted in the former articles, as the facts relative to sound were not before us. The meatus auditorius is, we know, terminated by an interposed membrane, the drum, which is kept tense by the handle of the malleus, while the vibrations are communicated by the other bones to another drum, which closes the foramen ovale. There is, however, still another drum closed, according to signor Comparetti, by the membrane of the foramen rotundum, and another at no great distance. The outer drum conveys sound without probably increasing its intensity; but from its numerous irregularities seems to render it less distinct. These are corrected in the small bones, and the sound is conveyed unbroken by the stapes to the foramen ovale. Into the cavity of the tympanum the Eustachian tube opens, and various uses have been assigned to it. In fact, it is an essential part to what we may style an *air drum*, for, without its assistance, no sound could be conveyed to the interior ear. The whole of the cavity of the tympanum is lined with a membrane, perhaps to deaden all the sounds except those conveyed by the little bones, which receive a tension, that from their attachment they give also to the tympanum, by small muscles, peculiarly adapted for this purpose. When the tympanum is broken, the sound is apparently conveyed by the Eustachian tube to the little bones; but when these most essential organs are destroyed, as is sometimes the case, by suppuration, the deafness is incurable; though when the stapes remains, a sense of sounds is not wholly lost. Mr. Home contends (Philosophical Transactions for 1800) that the membrana tympani is muscular, and that this structure concurs with the action of the little muscles in giving a delicacy of hearing, or what is styled a *musical ear*. We cannot deny the fact, but the consequences are not supported by observation, for those in whom the membrana tympani has been ruptured have retained their nice distinction of musical sounds. It has been designedly broken by Mr. Cooper and others, to restore hearing which was destroyed by the obstruction of the Eustachian tube; for in that case the tympanum cannot fulfil its office.

Minute anatomists, particularly Scarpa and Comparetti, have greatly added to our knowledge of the anatomy of the internal ear. It is of little importance to follow them minutely, and we shall only add the outline, where the structure is particularly connected with the function of the organ.

What we now style the *internal ear* is not the cavity immediately beyond the tympanum, into which the

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Eustachian tube enters; but that inclosed by the membrane, which covers the foramen ovale, connected with the stapes, and that of the foramen rotundum, which opens into one of the scalæ of the cochlea. This part of the ear is styled the *labyrinth*, and we shall not now be surprised to find it filled with water, though it appeared singular to the first discoverer, Cotunnio, and was contested by Meckel. The fact was, however, proved by freezing the water in the cavity, and then sawing through the bones.

A remarkable singularity, as we have said, occurs in the openings of the two foramina, for while one, the foramen ovale, opens into the vestibule of the labyrinth, the other communicates with one of the scalæ of the cochlea; and Comparetti observes, that another drum is thus formed, whose umbo seems capable of rendering the membrane tense, producing an effect similar to the action of the muscles on the handle of the malleus. The existence of the two tympana, and each communicating with different sides of the cochlea, has occasioned no inconsiderable difficulty to physiologists. Does each drum convey the same sounds, or different ones? If the former, why is no confusion produced? If the latter, to what sounds is each tympanum adapted? It has been observed, that an elastic membrane was necessary to admit, by its yielding, of the vibrations necessary for the perception of sound; but the authors do not recollect, that in an inelastic fluid no vibrations can take place; nor will the face of the question change if we refer the communication of sound to a very rare and highly elastic ether. Water, we have remarked, conveys sound without the slightest agitation of its surface, and the yielding of an elastic ether in one part would apparently produce only its condensation in another.

If the structure of the scalæ cochleæ be minutely examined, they will be found to be divided by the spiral lamina, but there is a distinct communication between them on the top: the structure is the same; they are supplied by the same fasciculus of nerves, and in no respect is there any real distinction. It is possible, therefore, that the fenestra rotunda may be a subsidiary tympanum, to prevent total deafness, should the bones be destroyed by suppuration; for in this case some sense of hearing appears to return; and this idea is supported by its convexity internally. It is, however, on the whole, more probable, that it is intended to yield in cases of violent shocks, to prevent any injury to the tender nerves by the concussion. To this opinion numerous objections may, indeed, be offered.

The peculiarly multiform and complicated structure of the human ear has occasioned some disquisitions respecting the peculiar utility of each part of the organ. As the cochlea was peculiarly minute in its structure, and singular in the arrangement of its nerves, it was supposed to be the seat of that acute and distinct perception of sounds which we style a *musical ear*. Unfortunately for this hypothesis, birds have no cochlea; but though they have minute perceptions of sounds, their scale is limited; while men can, according to Dr. Reid, distinguish four or five hundred variations of tone, and by combination an uncalculable variety. Some animals want many parts of this complicated organ; but no one animal wants a bone or a calculeous concretion. When we hear through the bones of the head or the teeth, the sounds are still probably conveyed to the internal ear exclusively by the little bones.

We have not, in this disquisition, noticed the form and situation of the different sacculi, or the direction of the minute foramina into which many of the bones surrounding the ear are hollowed. Both are designed to enlarge the organ, and consequently to render it more sensible. The sacculi are not in contact with the osseous case; and Scarpa, when he traced the nerves to them, found them fibrillous on the external part, but the fibrous structure was lost on the internal; and it there became a soft, apparently an inorganic, pulp. In this respect the organ of hearing resembles that of seeing. In each, when the nerve is fibrous, it is insensible; but when the coats are deposited it becomes a smooth acute organ of sense.

We are provided with two ears, as with two eyes, to prevent a total loss of the sense, should either be destroyed. We know, that if the axis of each eye is differently directed, we perceive for a time objects double; but it is not so generally known that by disease we hear sounds double. Two singular facts of this kind we shall, however, mention from Sauvages. A musician, blowing the flute, heard at the same time two sounds, viz. the proper sound, and another in the same time, but not in the same tone, and consequently not in harmony. On considering the subject, he found that, the day before he discovered this double sound, he had been exposed to damp, and felt a catarrh on his right side. On the cessation of the complaint the usual accuracy of hearing returned. In another case, a person heard the voice of one who spoke to him, and, at the same time, another sound, an octave higher; but it could not have been in unison, for the harshness attending it was intolerable. These facts, compared with the phenomena of sight, show that the sense depends on the coinciding impression, not on the visible image in the retina, or any undulations of a fluid; and these subjects considered in their analogous points will illustrate each other.

The diseases of the ear are not so peculiarly distinct and different as to occasion any very extensive disquisition. Of the morbid state of the internal ear we know little, except that it suffers with the brain from distention of the vessel, from active inflammation, or from palsy. There are, however, some local affections which dissection has traced; but, as usual, which previous observation has not connected with preceding symptoms. The Eustachian tube has been obliterated by inflammation, by ulcers, frequently syphilitic, or increased effusion from other causes. This disease impedes the vibration of the air and prevents hearing, which is restored by breaking the membrana tympani, and admitting the sounds through the bones of the ear and of the head, perhaps through the tympanum of the fenestra rotunda also; nor is it very unlikely that the latter conveys the vibrations from the teeth and bones of the head, while the malleus and its connections convey those through the tympanum.

External bodies passing into the meatus produce considerable pain; and the motions of a living animal, as a fly or insect, the most painful noises. These may be washed out or destroyed by the appropriate injections. Common soap and water is sufficient for the former, and oil or tobacco smoke for the latter. Inflammation of the meatus often occasions most violent pains, which often terminate in suppuration, the matter either passing externally between the lobe of the ear and the mastoid

process, or into the cavity itself. In a strong light we can, by pulling the lobe backward and downward, see the whole of the meatus, and the state of the ulcer will suggest the proper applications.

An herpetic eruption of the ear sometimes extends to the meatus, and the increased discharge closes the passage. This complaint yields readily to alterative mercurials internally, to mercurial applications with the strictest attention to cleanliness. The most useful application is the unguentum cerussæ acetatæ, with a small proportion of the unguentum citrinum. A fungus or polypus of the meatus requires no particular treatment. Mr. Sanders supposes that they most frequently occur when the tympanum has been broken.

Inflammation of the cavity of the tympanum often terminates in suppuration, which has been generally neglected from apprehension of injuring so delicate an organ, or transferring the matter to the brain. The former idea is visionary, and the latter absurd. If suppuration continues, the small bones will in time suffer, and the patient become irrecoverably deaf. Blisters behind the ear, gentle saline purgatives, solutions of the vitriolated zinc, injected into the ear, sometimes with a small proportion of the tincture of opium, will often remove the complaint. When polypi, which are not unusual in these circumstances, follow, they may be extracted by forceps, or sometimes destroyed, if soft, by puncturing. The base may be eroded by the argenti nitratum.

When the tympanum is destroyed, air may be forced through the meatus externus from the lungs, through the Eustachian tube, if the mouth and nostrils are closed; but if the membrane is sound, a distending force is felt against the tympanum. This experiment in each case will not succeed with every one. It shows, however, when the air passes, that the tympanum is at least in part destroyed, and the degree of injury is known by the quantity of air discharged through the meatus. In this case our plans should be actively pursued to prevent the exfoliation of the bones. When the tube is really obstructed by the effects of inflammations, polypi in the nose extending to the throat, or enlarged tonsils, Mr. Ashley Cooper's very judicious plan of puncturing the tympanum often succeeds. The part where the handle of the malleus is fixed should be avoided, and the aperture should not be very small, as it will in that case again close (Philosophical Transactions for 1802).

When the meatus is not diseased, when by the breath, on closing the mouth and nostrils the tympanum is inflated, and deep seated pain or noises in the ears are attended with deafness, the cause is inflammation, or what is styled nervous deafness. The pain distinguishes the former, and the noises the latter. Evacuations of the most active kind are necessary for the pain, and these may be general or topical. Leeches and blisters reach most nearly to the part, when applied near the mastoid process; but general evacuations and the most cooling medicines are chiefly effectual. The nervous deafness, which sometimes arises from palsy, is relieved by tonics; more often by small doses of alterative mercurials, and stimulating applications to the meatus. See TINNITUS AURIUM, and SURDITAS.

Sanders on the Human Ear; Scarpa Anatomice Disquisitiones de Auditu et Olfactu; Valsalva de Aure Humana; Home in the Philosophical Transactions for

1800; Perolle in the Turin Transactions, vol. 5; Monroe on Fishes.

SO'PHIA, (from σοφία, wise,) *chirurgorum sapientia*, *accipitrina*, *cardamines*, *thalictrum*, *nasturtium sylvestre*, *seriphium Germanicum*, *erysimum*, *sisymbrium*. FLIXWEED, or FLUXWEED, *sisymbrium sophia* Lin. Sp. Pl. 920, is a plant with a hard woody root, full of small fibres at the bottom; the leaves are long, winged, neatly divided, resembling those of Roman wormwood, and covered with short hairs; the flowers are at the ends of the branches, of a yellow colour, succeeded by slender seed vessels, about an inch in length; the seeds red. It grows in sandy ground, amongst rubbish, and bears flowers in June.

The seeds only are used; in Paris they are sold under the name of *talitron*. Boerhaave thinks them saponaceous and diuretic, adding that their inward use assists the healing of ill-conditioned ulcers. Their taste is somewhat astringent, but acrid like that of mustard.

SO'POR, (from ύπας, Scaliger.) See CAROS.

SOPORA'LES, (from *sopor*, sleep). The SLEEPY VEINS, because their compression produces sleep. See JUGULARES VENÆ.

SOPORA'RIÆ ARTERIÆ, (from the same). See CAROTIDÆ ARTERIÆ.

SOPORO'SI, (from the same). Diseases attended with a diminution of sense and motion.

SO'RA, (from the Arabic *sorah*, a humour). See ESSERA.

SO'RBUS SYLVE'STRIS, (from *sorbeo*, because its fruit stops fluxes,) *æa*, *ornus*, *cotonaster*; the SERVICE TREE; *sorbus aucuparia* Lin. Sp. Pl. 683, resembles the pear and the *cratægus* in all respects, except that the leaves are pinnated, as in the *fraxinus*. The fruit is astringent before it is ripe, but afterwards very agreeable. Raii Historia.

SORE, BAY. An ULCER, endemic in the bay of Honduras, which Dr. Moseley considers as a true cancer, not uncommon also on the Mosquito shore, supposed by the Indians to be produced by the eggs of a large fly deposited in the flesh. It affects every part of the body, and is fatal unless treated with propriety in the beginning. A gum plaster is sprinkled with muriate of mercury and applied to the cancer, on which it must be allowed to remain for forty-eight hours. About a scruple of muriated mercury is sufficient for a plaster as large as a crown piece. When taken off, a common poultice is applied, and repeated until the cancer comes out by the roots. The part is then cured like a common ulcer. A purge or two of calomel sometimes precedes the application. Moseley on Tropical Diseases.

SO'RGU, or SO'RGHUM. See MILIUM INDI-CUM.

SO'RY, (*soriach*, filthy, Arabic, because of its disagreeable smell,) is a mineral blackish, hard, heavy, of a cavernous spongy texture, a disagreeable smell, a nauseous vitriolic taste; in fact an argillaceous schistus filled with decomposed pyrites, found in Egypt, and used by the Greeks as a depilatory.

SOUDE; *soude blanche*. See ANATRON.

SPADANÆ A'QUÆ. WATERS OF SPA, in the bishopric of Liege. At Spa there are a number of different springs, but those of Pohun and Geronsterre are preferred.

Both are acidulous chalybeates, but the last is the

weaker in its chalybeate impregnation, but the most brisk and acidulous. It is alleged to have more of a sulphureous smell, to be brisker at the fountain, and more apt to produce giddiness than any other of the waters of this district.

According to Bergman a gallon contains, aerated iron, 4 grains and above $\frac{3}{4}$; aerated lime, 12 grains and above $\frac{1}{2}$; aerated magnesia, 20 grains; mineral alkali crystallized, 12 grains and above $\frac{1}{2}$; of common salt, $1\frac{1}{2}\frac{1}{4}$ gr. Dr. Higgins found, in the Winchester gallon of these waters, twelve grains of aerated lime; $17\frac{2}{10}$ grains of aerated magnesia; 16.8 of mild natron; 3.5 of acidulated iron; 7.8 of sea salt, and about 0.1 of a mineral oleaginous matter. They contain also 132 ounce measures of an uncombined carbonic acid, and $3\frac{1}{2}$ of common air. These waters are diuretic, sometimes purgative, and, like other chalybeates, impart a black colour to the stools. They exhilarate the spirits, and invigorate the system. A glassful is repeated several times in a morning. The Spa waters are esteemed the best chalybeates in Europe; and are also applied with success as injections in the fluor albus, ulcers as well as cancers of the womb, and in the gonorrhœa. They are useful for washing venereal aphthæ and ulcers of the mouth; phagedænic ulcers; as gargles for relaxed tonsils; for fastening the teeth when loose; and in other cases of relaxation. Complaints are said to have been relieved by bathing and washing, observing at the same time their internal course.

SPANOPOGON, (from *σπανος*, and *πωγων*). A THIN BEARD.

SPA'RAGUS. See ASPARAGUS.

SPARGANO'SIS, (from *σπαργω*, to swell). See ABSCESSUS PECTORIS, and MAMMÆ.

SPA'RTA POLIA. See AMIANTHUS.

SPA'RTIUM SCOPA'RIMUM, (from *σπειρω*, because it scatters its seed and sows itself). See GENISTA.

SPA'RTIUM ARBORESCENS, HISPANICUM. See GENISTA JUNCÆ.

SPA'RTIUM MAJUS. See GENISTA SPINOSA MAJOR.

SPA'SMUS, (from *σπασω*, to draw). A SPASM, CRAMP, OR CONVULSION. A *spasm*, strictly speaking, means a continued contraction of a muscle, or any portion of muscular fibres; but the term is often used more extensively, and applied to every irregular action of these fibres. This latitude is allowed when it includes only convulsive disorders, or, as called by Dr. Cullen *clonic spasm*, in opposition to the more fixed contraction, which is more truly spasmodic; but when, as in this author's nosology, increased actions are referred to the same head, as those which constitute cholera, diarrhœa, &c. it leads to confusion.

A still more erroneous language is that of some late pathologists, who speak of spasms of nerves or membranes. Haller attributed paleness to contractions of little nerves, which he supposed to exist, encircling the extreme arteries; and we often hear of spasms of the dura mater, of the medulla spinalis, &c. There is not, however, the slightest evidence of contraction but in muscular organs, if we except only that of the simple solid from cold or astringents, or, as has been said, of the fibrin by the galvanic stimulus.

The cause of spasm, as we have observed (see CONVULSIO, and NERVOI MORBI), is either irritation or

debility; most commonly the latter, though both are sometimes combined.

The particular irritations are numerous. In the London Medical Journal, vi. 36, we find spasm produced by a needle which was swallowed and returned by coughing; in the Memoirs of the Medical Society from the puncture of a needle, vol. ii. Saburra in the stomach, and worms in the intestines, have equally occasioned it; and we find an instance in Bartholine of its arising from a contusion of the eye; in Vater of its proceeding from hernia. There are numerous instances of spasm produced from a tumour on a nerve, irritation from distended vessels, or bony excrescences in the brain or cranium. Crell gives a case in which it was excited by the vitriolic acid; and to the head of irritation may be referred a very common cause, violent passions.

We need not repeat what we have said in the article CONVULSIO, q. v., respecting debility as a cause of spasm. It is common in hysteria, from inanition, from repelled small pox, or other eruptions, from obstructions of the viscera, and other causes of weakness.

The chief remedies of spasm are those which remove the irritating cause; such as excite any sudden and violent commotion; tonics or stimulants, and medicines styled, from this effect, antispasmodics. Of the latter we have already spoken, and indeed in a great measure included the former, so that we shall now only cursorily enumerate them.

When spasm depends on irritation, the cause must be investigated; and if possible removed by the appropriate remedies, if within their reach. If the cause cannot be ascertained, we must endeavour to lessen irritability by anodynes, of which the principal are camphor, hyoscyamus, and opium. A sudden terror, the apprehension of a severe operation, on the return of a fit, and unexpected surprise, have succeeded. Dashing water in the face, touching a person unexpectedly with something cold, or throwing up a cold clyster, have, from the same principles, been effectual. Electricity also probably acts by its surprise and the terror which it excites.

The tonics employed are cold bathing, the bark, the arnica, the viscum, and the cardamine, though the two latter scarcely deserve the appellation or the credit they have enjoyed. The metallic tonics are, iron, copper, mercury, arsenic, silver, and zinc. Each is often effectual, and each has had its temporary reputation. Arsenic, copper, and silver seem the most generally useful. The steady action of stimulants appears not to have been pursued, except so far as mercurials and some of the metallic tonics may produce this effect.

SPA'SMUS CLO'NICUS, (from the same, and *κλονω*, to agitate). CLONIC SPASM. In a morbid state, the contraction of the muscles, or of the muscular fibres, is involuntary. When the contractions are succeeded by a relaxation, but at the same time are repeated without the concurrence of the will, or the repetition of the natural causes, but more frequently, and often more violently, than in an healthy state, such diseases are called *motorii*; and this state of morbid contraction hath been named *clonic spasm*; by Dr. Cullen *convulsio*. See Cullen's First Lines, vol. iii.

SPA'SMUS CY'NICUS, (from *κυων*, a dog). See SARDONICUS RISUS.

SPA'SMUS TO'NICUS, (from *τεινω*, to stretch). TONIC SPASM. When the contractions are violent,

and are neither succeeded by a spontaneous relaxation, nor readily yield to an extension, either from the action of antagonizing muscles, or from other powers, this state of contractions is called a *tonic spasm*; strictly and simply a spasm. See Cullen's First Lines, vol. iii.

SPA'THA, (from *σπατος*, *corium*, a skin, from *σπαζω*, to draw round). The calyx of a flower which opens longitudinally resembling a sheath, and enveloping a spadix, which properly means the receptacle of a palm. The term is, however, generally applied to other plants whose flower stalks proceed from a sheath, as in the narcissus.

SPA'TULA FŒ'TIDA. See *IRIS FŒTIDA*.

SPECIES. **SPECIES**. The old pharmaceutical term for powders.

Species also means individual plants, agreeing in their appearances, and varied only by culture, temperature, &c. From *BOTANY* the term has been transferred to *NOSOLOGY* and *MINERALOGY*. Vide in verbis. See *CLASSIS*.

SPECIFICA, (from *speciem faciens*, peculiarly adapting). **SPECIFICS**. By specifics are meant such medicines as infallibly and in all patients produce given salutary effects; acting by some unknown power on the disease, without being directed by indications. Such was the bark supposed to be in intermittents, and mercury in lues: such are the boasted remedies of the quacks. In general, however, as sound science has increased, these vaunted specifics have disappeared, and we now find no remedy which does not by some action on the system point out the principles by which its salutary effects are produced. Even with respect to mercury we have shown that no inconsiderable steps had been taken to explain its action.

SPECIFICA GRAVITAS, **AREOMETRIE** of the French philosophers; **SPECIFIC GRAVITY**. This term implies the density of bodies, as well as the means of discovering it, and consists in comparing their weight with their bulk. The difference is ascertained by weighing, with great accuracy, the same bulk of different fluids, or weighing the same substance in air, and in any fluid which does not dissolve it. Another method, and that most commonly employed in practice, is immersing a graduated instrument, a ball of glass or ivory for instance, with a long neck, on which degrees are marked, and the denser the fluid the higher the instrument will float, or the greater weight be necessary to bring it to the same degree. For comparative expressions, distilled water is the usual standard; and as bodies expand with heat, or contract with cold, a mean temperature, has been usually chosen, very frequently 62° of Fahrenheit. The language of these tables has a reference to the weight of distilled water, which is styled unity or 1, with as many cyphers as the accuracy of the experiments require for comparison, as 1.000 or 1.0000. Thus, when we say that the specific gravity of any body is 5.246, it means that it is five times and a half heavier than water, with the addition marked by the two last figures, viz. four hundreds and six thousands. In some minute experiments we find seven or eight decimals.

This branch of philosophy is referred, with reason, to Archimides, who was indebted for it to his observing the water rise in the bath on his going into it, and he pursued the hint by ascertaining the proportion of gold

and silver in a crown; but the invention of the hydrometer has, by some late authors, been strangely referred to Hypathia, a female Platonic philosopher, of the sixth century; but the hydrometer was elegantly described by Rhemnius in a philosophical poem, *de Ponderibus et Mensuris*, an extract from which is usually printed at the end of Priscian's Works. Rhemnius lived under Tiberius and Caligula, three centuries before Hypathia.

It is not the object of the present work to pursue this inquiry minutely, and we shall, therefore, only observe that, from the time of Gethaldus, the first author expressly on the subject, we find some interesting remarks, with tables, of the specific gravities of bodies in Sir Isaac Newton's Optics; Martin's Philosophia Britannica; Davies, in the Philosophical Transactions, N°. 488; Muschenbroeck's Experimental Philosophy, § 1417, whose table is particularly full and exact; Brisson, on the specific gravity of bodies, whose experiments were singularly minute and accurate; Kirwan, in his Mineralogy; Bergman; and Hassenfratz, in the Annales de Chimie, tom. 27, and suivans. As we can neither engage in disquisitions on the comparative forms of instruments, or on the apparent accuracy of experiments, we shall add some tables of specific gravities; and the first which we shall select will be from Dr. Duncan's very useful Pharmacopœia, a work to which we have often been obliged. The capitals after the figures refer to the authors from whom the specific gravity is taken, viz. LAVOISIER, BRISSON, KIRWAN, CRUICKSHANK, and DAVIE.

Table of specific gravities at a medium temperature.

Distilled water,	-	1.0	
GASES.			
Oxygen,	-	0.0013562	L.
	-	0.00133929	B.
Hydrogen,	-	0.0001	K.
	-	0.00009911	B.
	-	0.000094671	L.
Sulphureted hydrogen,	-	0.00135	K.
Carbureted hydrogen,	-	0.000804	C.
	-	0.000787	C.
Light do.	-	0.00063	C.
	-	0.000554	C.
Nitrogen,	-	0.0012	K.
	-	0.00119048	B.
	-	0.001189	L.
Atmospheric air,	-	0.0012308	L.
	-	0.00123609	B.
Nitrous oxide,	-	0.00197	D.
Nitric oxide,	-	0.001343	D.
	-	0.00130179	B.
	-	0.0014631	K.
Carbonic oxide,	-	0.001167	C.
----- acid,	-	0.00186161	B.
	-	0.0018454	L.
Sulphurous acid,	-	0.00253929	B.
	-	0.0018856	K.
Muriatic acid,	-	0.00213482	B.
Ammonia	-	0.00065357	B.
	-	0.00073539	K.
Oxygenized muriatic acid gas, and fluoric acid gas,			
unknown.			

Sulphite of potash	-	-	1.58
— soda	-	-	2.95
— magnesia	-	-	1.38
— alumine	-	-	1.22
— barytes	-	-	1.69
— mercury	-	-	4.06
Nitrat of potash	-	-	1.93
— soda	-	-	2.09
— ammonia	-	-	1.57
— lime	-	-	1.62
— magnesia	-	-	1.73
— alumine	-	-	1.64
— barytes	-	-	2.91
— strontian	-	-	3.00
— zinc	-	-	2.09
— copper	-	-	2.17
— lead mercury	-	-	3.91
Oxygenated muriat of potash	-	-	1.98
Muriat of potash	-	-	1.93
— soda	-	-	2.20
— ammonia	-	-	1.54
— lime	-	-	1.76
— magnesia	-	-	1.60
— barytes	-	-	2.82
— strontian	-	-	1.44
— zinc	-	-	1.57
— copper	-	-	1.67
— lead	-	-	1.82
— mercury	-	-	7.17
— (oxygenated)	-	-	5.13
— tin	-	-	2.29
Tartrate of potash	-	-	4.55
— (acidulated)	-	-	1.91
— soda	-	-	1.74
Acetate of soda	-	-	2.10
— lime	-	-	1.00
— magnesia	-	-	1.37
— alumine	-	-	1.24
— barytes	-	-	1.82
— lead	-	-	2.34
— copper	-	-	1.77
— iron	-	-	1.36
Phosphat of potash (dried)	-	-	2.85
— soda	-	-	1.33
— ammonia	-	-	1.80
— ammonia and soda	-	-	1.50
— magnesia	-	-	1.54
— barytes	-	-	1.28
— copper	-	-	1.41
— mercury	-	-	4.98
Phosphure of lime	-	-	0.98
Borat of soda (of commerce)	-	-	1.72
— (saturated)	-	-	1.35
— lime	-	-	0.70
— and magnesia	-	-	0.99
— mercury	-	-	2.26
Carbonat of potash	-	-	2.01
— soda (in mass)	-	-	1.35
— (crystallized)	-	-	1.73
— ammonia	-	-	0.96
— magnesia (in powder)	-	-	0.29
— alumine	-	-	1.11
Tungstat of ammonia	-	-	1.93
Prussiat of mercury	-	-	2.76
Arseniat of potash	-	-	2.15
Camphor	-	-	0.99
Common sugar	-	-	1.40

In these experiments Hassenfratz agrees with Newton, Muschenbroeck, and Kirwan, so far as their experiments were made on the same bodies, if we except the sulphat of zinc. Newton styles it the vitriol of Dantzic, and the difference probably depends on its state of crystallization.

We shall add another table from Bergman, containing not only the specific gravities, but SPECIFIC HEATS, a subject on which we need not enlarge at present. See CALORIC.

TABLE of Specific Gravities and Specific Heats from BERGMAN.

SOLID.		Sp. Grav.	Sp. Heats.
Swedish glass	-	2.386	0.181
Flint glass	-	-	0.174
Agate	-	2.648	0.195
Ice	-	-	0.900
Sulphur	-	-	0.183
Gold	-	19.040	0.050
Silver	-	10.001	0.082
Mercury	-	13.300	0.032
Lead	-	11.456	0.042
Copper	-	8.784	0.114
Iron	-	7.876	0.126
Tin	-	7.380	0.060
Bismuth	-	9.861	0.043
Antimony	-	6.107	0.063
Brass	-	8.356	0.116
Calx of lead	-	-	0.086
— iron	-	-	0.320
— tin	-	-	0.096
— lead and tin	-	-	0.102
Diaphoretic antimony (washed)	-	-	0.220
FLUID.			
Distilled water	-	1.000	1.000
Vitriolic acid (pale)	-	1.885	0.751
— (dark)	-	1.872	0.429
Pale nitrous acid	-	-	0.844
Red smoking nitrous acid	-	1.355	0.578
Red wine vinegar	-	-	0.387
Purest concentrated vinegar	-	1.068	0.103
Oil of tartar per deliquium	-	1.346	0.759
Pure ammonia	-	0.997	0.708
Sal Glauberi pars 1. aquæ 2.9	-	-	0.728
Nitre, p. 8.	-	-	0.646
Sea salt, p. 8	-	-	0.832
Sal ammoniacum crudum, p. 1—5	-	-	0.798
Tartar, pure	-	237.3	0.765
Magnesia vitriolata, 2	-	-	0.844
Alum, p. 4.45	-	4.45	0.649
Green vitriol, p. 8	-	2.5	0.734
Brown sugar dissolved	-	-	1.086
Olive oil	-	-	0.710
Lintseed oil	-	-	0.528
Spermaceti	-	-	0.399
Oil of turpentine	-	-	0.472
Spiritus vini rectificatus	-	0.783	1.086
Hepar sulphurus	-	0.818	0.994
AERIAL.			
Alkaline air	-	-	0.068
Vital air	-	0.132	87.000
Common air	-	0.125	18.000
Carbonic acid air	-	0.181	0.270

There are some other applications of the term *specific*, of which we shall only mention SPECIFIC STIMULUS, by which is meant the peculiar sensibility of some substances to a particular organ. Thus the white of an egg will, in some stomachs, prove singularly offensive, though void of every irritation, even to the eye. On this principle, the action of some medicines on a particular secretory organ has been explained; for if any body be brought to glands not disposed to be acted on by them, they prove wholly inert. More attentive observation has, however, disproved many of the facts on which this opinion rested, and shown that the effects are produced by a very different action. Thus antimonials and opium produce perspiration by a relaxing power, and cold on the skin induces the action of the kidneys in consequence of altered determination.

SPE'CILLUM, (from *specio, quo aliquod specimus*).

A PROBE, said to have been invented by Æsculapius.

SPE'CULUM, (from the same,) *diastomotris*. An instrument for dilating the natural passages or cavities; also a name for the aranea tunica of the eye.

SPE'CULUM ANI, is highly useful in opening fistulous ulcers of this part, for even the director is not always a certain guide. The instrument invented under this name by Dr. Mudge is not unlike the gorget, but not so taper, and without the beak. The finger is introduced into the rectum, and the larger speculum on it, the concavity filled by the finger, and the extremity not carried beyond it. When the finger is withdrawn a considerable extent of the gut is seen, and the operation performed in the usual way. The smaller speculum assists in applying the dressings, as so considerable a dilatation is not necessary.

SPE'CULUM OCULI. A RING, adapted to a handle with a groove at its upper circumference to fix the edge of the upper eye lid. It is designed to keep the eye open in the operation of the cataract; but is now seldom found necessary.

SPE'LTA, (an Italian word, or *spelt*, German). See ADOR.

SPE'LTER. See ZINCUM.

SPE'RMACE'TI, (because it was supposed to be the seed of the whale). The species from which it is procured is the *physeter macrocephalus* Linnæi, whose enormous head contains in a triangular cavity an unctuous substance, from which a pure oil can be pressed, leaving the spermaceti in the form of a white unctuous substance. It is found in a small proportion in the fat of the rest of the body, and is deposited often from the oil. The spermaceti is at last purified by washing it in an alkaline ley.

Its colour is a pure silvery white, and it is composed of plates of a crystalline appearance, almost transparent. It is softer than wax, more brittle, and tastes and smells not unlike tallow, without any flavour. Its obvious properties distinguish it from other concrete oils, and it congeals at the 112th degree of Fahrenheit. Spermaceti makes very white candles, which burn with a clear white flame without any smell.

Spermaceti in distillation yields a fluid oil, which concretes in cooling, leaving in the retort a very small proportion of coal. If the distillation is repeated the oil becomes permanently fluid. It seems scarcely decomposed in the process, as the heat required is inconsiderable; and on that account probably there is no appearance of any acid. Crell, however, found the oil thus procured, partly white and partly brownish, yield-

ing by repeated distillations a yellowish acid, which was never permanently fluid. The acid carefully rectified is wholly colourless, and seems to resemble *his* sebatic acid. The oil unites with ammonia into a saponaceous emulsion.

This substance is slightly and with difficulty soluble in alcohol; the whole seeming to be deposited on cooling. Warm ether and oil of turpentine dissolve it copiously, but do not retain it when cold. With pure kali it forms a soap soluble in warm water. Fluid ammonia when cold has no action on it, but when warm unites with it, and does not separate on cooling, or on adding water. With concentrated sulphuric acid it forms a brown solution, which, when dropped into water, yields the spermaceti unaltered, and dissolves sulphur like other fat oils. By long exposure to the air it becomes brown and rancid.

On removing the bodies from a large burying ground in Paris, the animal matter was found to have assumed the appearance and properties of spermaceti. A long continuance in the earth seemed sufficient to produce this change; but it appeared to be greatly assisted by a current of water. This discovery Dr. Gibbes has attempted to render useful; but the fetor cannot be wholly expelled, except at very disproportioned expense. This substance, which has been called adipocere, melts in a less heat than spermaceti, and, on cooling, becomes more brittle. The adipocere is much more soluble in alcohol, and liquid ammonia also dissolves it. The difference is, however, inconsiderable, and adipocere has almost superseded the name of spermaceti.

This concrete is much used in coughs, dysenteries, erosions of the bowels, chiefly as a relaxant and a demulcent. It readily dissolves in oils, and unites with wax, by the assistance of heat, so as to form a convenient external remedy. For internal use it may be formed into an emulsion with water, by the intervention of the mucilage of gum arabic, the yolk of egg, or of almonds. It has been generally used in internal inflammations, as if its demulcent qualities could be conveyed through the circulating system; in inward bruises; and was for ages commonly given after delivery.

The College of London order an ointment to be formed of this, called *unguentum spermatis ceti*, spermaceti ointment, formerly the linimentum album, by melting six drachms of spermaceti, two drachms of white wax, and three ounces of olive oil, together, over a slow fire, and constantly and quickly stirring the solution till it cools. See Lewis's *Materia Medica*; Neumann's *Chemical Works*.

SPERMA'TICÆ ARTE'RIÆ, (from *sperma, seed*). THE SPERMATIC ARTERIES. Each rises from the anterior part of the aorta, between the emulgent and the inferior mesenteric arteries, passes obliquely downwards and outwards, runs upon the psoas muscle to the brim of the pelvis, and then through the aperture in the external oblique. They are behind and contiguous to the peritonæum, and do not lie in the cavity of the belly, are connected by the cellular membrane to each other, and their corresponding veins, all which run in a serpentine manner, form, with other vessels, the spermatic cord.

SPERMA'TICA CHO'RDA, the SPERMATIC CORD, *corpus varicosum, corpus pyramidale, plexus* and *corpus fampiniforme, vasa spermatica, præparantia vasa, capreolaria*, and *capreolaria*, is composed of the spermatic

artery and vein, of nerves, lymphatics, the vas deferens, the cremaster muscle, and aponeurotic membrane, derived from the opening of the external oblique, connected by cellular membrane.

SPERMA'TICÆ VE'NÆ. SPERMATIC VEINS. A little below the emulgent veins the vena cava sends out the right spermatic; but the left commonly springs from the left emulgent, for the sake, it is said, of avoiding the aorta in its passage, by which the motion of its fluid might be retarded. This is, however, improbable; for the motion of the fluids in the emulgent is not affected by the action of this artery.

SPERMATOCE'LE, (from σπέρμα, *semen*, and κηλη, *a tumour*), *epididymis distensa*, is a morbid distention of the epididymis and vas deferens, from a stagnation of semen, produced by tumours, too rigid continence, stricture, or inflammation, about the caput gallinaginis, or in the course of the vas deferens; but the last is the most frequent cause.

When from an inflammatory affection, general and topical blood letting, gentle laxatives, a low cooling diet, and rest, will commonly be found effectual; but when tumours are discovered to press upon the vas deferens, they ought either to be brought to suppuration, or their extirpation should if possible be attempted. Sometimes the tumours depend on a venereal cause; and a well directed course of mercury hath been known to remove them.

When all other means having failed, castration has at last, it is said, been found requisite. See Bell's Surgery, vol. i. p. 495.

SPHA'CELUS, (from σφάζω, *to destroy*). See MORTIFICATIO.

SPHA'CELUS O'SSIS. See SPINA VENTOSA, and CARIES.

SPHACELI'SMUS, (from σφρακίζω, *to destroy*). See PHRENITIS.

SPHENOIDAL SUTURE. This, with the ethmoidal suture, surrounds, and joins the irregular processes of these two bones with the contiguous ones.

SPHENOIDES OS, (from σφην, *a wedge*, and εἶδος, *likeness*), *cuneiforme os*; *azygos*; *papillare os*; *basilare os*; *polymorphus*, the SPHENOID BONE, is an irregular bone which runs into the basis of the skull, from one temple to the other. Externally it hath five processes, which are all subdivided. The first and second are the two lateral apophyses, called *laterales processus*, the upper part of each of which is called the temporal process; that part of them which projects towards the inside, lower than the temporal, and which makes up part of the orbit, is called the orbital process; the lowest and back part of these processes is called the spinous process. The two external processes which rise nearly perpendicular to the base of the cranium, with each a fossa behind, are called the pterygoid processes. The azygous process is that sharp middle ridge which is in the base of the bone. It has four foramina on each side: the first three are filled by the optic, the superior and inferior maxillary nerves, and the fourth transmits the largest artery of the dura mater. On each side is the superior orbital fissure, yielding a passage to the third, fourth, and sixth pair of nerves, with a branch of the fifth; and at the basis of each pterygoid process is a foramen styled *pterygoideum*, through which a branch of the external carotid passes. In infants it is composed of three pieces, the lateral processes being in se-

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parate portions. See CLINOIDES and SELLA TURCICA.

SPHÆRI'STICA, (from σφαῖρα, *a globe*). A game, played in the sphæristerium, or tennis court, supposed to be different from the modern tennis, but it is not known wherein the difference consists. The Milesians were particularly averse from this exercise; though the Athenians frequently gave the freedom of their city to the sphæristæ, or masters in this art: the ball with which they played was called *corycus*; and it was also the name for balls formed for different purposes, particularly of exercise. See CORYCUS.

SPHÆROCE'PHALA ELA'TIOR, (from σφαῖρα, *a globe*, and κεφαλος, *a head*). See ECHINOPUS.

SPHE'NO-MAXILLA'RIS ARTE'RIA, is the first branch of the maxillaria interna arteria: it goes to the inferior orbital, or spheeno-maxillary fissure, and to the orbit, through the foramen spheeno-palatium.

SPHE'NO-MAXILLA'RES FISSU'RÆ, (from σφηνοειδής, *and maxilla, the jaw*), *inferiores orbitaris fissuræ* are formed by the edge of the maxillary notches in the os sphenoides, continued in the maxilla superior, and there called the inferior orbital fissures.

SPHE'NO PALA'TINI, (from the same, and *palatum, palate*). These muscles rise, one on each side, from the os sphenoides, and are inserted into the sides of the glandula palati, and back part of the uvula.

A name also of a lower maxillary branch of the fifth pair of nerves, distributed to the musculus pterygoideus internus, the back part of the nares, the sinus sphenoidal, and the Eustachian tube.

SPHE'NO PHARYNGÆ'I, (*pharynx*). These muscles rise, one on each side, from the alary processes of the sphenoid bone, and run to the sides of the pharynx.

SPHE'NO PTERYGO-PALA'TINUS. Valsalva discovered that this muscle does not belong to the uvula, but to the tuba Eustachiana. It rises from the os sphenoides, and is inserted into the fore part of the palate.

SPHE'NO SALPINGO-PHARYNGÆ'I are muscles fixed by one extremity partly to the sphenoidal side of the bony portion, partly to the nearest soft portion of the Eustachian tube; running towards the external wing of the apophysis pterygoideus, into which one portion of the muscle is inserted: the other portion runs to the end of the wing, and turns round its forked extremity as over a pulley, and is inserted in the septum palati near the uvula.

SPHE'NO SALPINGO-STAPHYLINUS. See CIRCUMFLEXUS PALATI.

SPHE'NO SPINA'LIS. See DURE MATRIS ARTERIA.

SPHI'NCTER A'NI, (from σφινγω, *to constrict*). *Orbicularis*; *aspidiscos*; *constrictor ani*; *cutaneus*; *cuticulosus*, a circular muscle, or rather an enlargement of the circular fibres of the muscular coat of the rectum, for the purpose of closing the gut which surrounds the extremity of the anus.

SPHI'NCTER LABIO'RUM, *constrictor labiorum*, *orbicularis*, *osculatorius musculus*, surrounds the lips with orbicular fibres, and by its action corrugating them. It is an antagonist to all the other muscles of the lips.

SPHI'NCTER ŒSO'PHAGI, and GU'LÆ. The SPHINCTER OF THE ŒSOPHAGUS, or GULA. See ŒSOPHAGUS.

SPHI'NCTER VAGI'NÆ. This muscle placed just

within the vagina, consists of two planes of circular fibres, coming partly from the perinæum, and partly from the sphincter ani; they surround the vagina, and are lost in the fibres of the crura clitoridis. The existence of this muscle is denied by some anatomists.

SPHINCTER VESICÆ, is a series of transverse fibres running crosswise under the straight fibres of the neck of the bladder in a circular direction. The office of all the sphincters is to contract passages and prevent involuntary discharges.

SPHONDILIUM. Probably the *BRANCÆ URSINÆ*, q. v.

SPI'CA. A SPIKE, (from *σπῆκος* *Æol.* *σπῆκος*, an ear of corn;) a species of inflorescence, resembling an ear of corn. Linnæus defines it alternate sessile flowers on a simple peduncle. When the flowers have the same direction it is termed *spica secunda*; when different ones, *disticha*.

SPI'CA MAS. See *LAVENDULA LATIFOLIA*.

SPI'CA FÆ'MINA, et *VULGARIS*. See *LAVENDULA AUGUSTIFOLIA*.

SPI'CA I'NDICA, et *NA'RDII*. See *NARDUS INDICA*.

SPI'CA CE'LTICA. See *NARDUS CELTICA*.

SPI'CA HORTULANA. See *STÆCHAS*.

Spica is also the name of a bandage, which is of three kinds, called from their resemblance to an ear of corn; viz. *spica descendens* (see *DELIGATIO*); *spica inguinalis*, used for the cure of an intestinal hernia, a dislocation of the thigh, and a fracture of the os ilii. It is either single or double headed; the single is twenty-four feet in length, and three fingers broad; the end is placed on the os ilii of the sound side; hence the head of the roller passes round the bottom of the belly and the hip, then to the back part of the thigh; comes up between the thighs, is conveyed to the groin, and thence over the back where it began. The bandage is pinned to the compress on the groin, and finished by a turn or two round the belly. When applied to one groin only, it is called *spica inguinalis simplex*; and when this bandage hath two heads, the middle part is placed at the perinæum, whence the heads ascend obliquely to the hip, passing behind and before to the other hip.

The *spica inguinalis duplex* is applied to both groins, and is twenty-four feet in length, and three inches broad. Its middle is fixed on the perinæum, and brought round the belly, where the ends are changed; they then pass round the outside of the thighs, under the buttocks, and ascend on each groin. Having secured the dressing, they ascend from thence over the ossa ilii to their beginning, where the heads are again changed and brought round to the belly, where they are once more changed, descending on each side of the scrotum, going round the buttocks to each groin, and so to the belly. They are then again changed, and they ascend to the ossa ilii. This direction must be repeated often.

The *simple spica*, sometimes called *geranium*, is a common roller, about five ells long, and three fingers in breadth, rolled up with one head. When rolled up with two heads, it is called *spica duplex*.

SPIGE'LIA, (from its spicated top). See *ANTHELMIA*.

SPI'LUS. A genus of the eighth order of Dr. Willan's system including natural marks. See *NÆVUS*.

SPI'NA. See *PROCESSUS*.

SPI'NA, (*quasi spiculina*; dim. of *spica*, a thorn,

from the thorny appearance of the vertebræ of the back;) *rachis*; is divided into true and false vertebræ. The true are twenty-four in number, viz. seven of the neck, twelve of the back; the first of which is called *lophadia*, or *lophia*; the second *maschalister*; and five of the loins. Each vertebra is composed of its body and processes. The body is the thick anterior part, convex before, concave behind, and nearly horizontal and plain both above and below. The surfaces of two contiguous vertebræ are covered with a cartilage; and there is a ligament, composed of concentric curved fibres, firmly attached to the horizontal surface of the vertebræ, as well as a strong ligament, which lies between the edges of the vertebræ, whose fibres decussate each other in the form of an X. From each side of the body of each vertebra a bony ridge is produced backwards and to a side, from the posterior extremity of which one slanting process arises, and another descends; the smooth side of each of these four processes, called oblique, is covered with a cartilage, and the two inferior oblique processes of each vertebra are articulated with the contiguous ones of the vertebra below. From between the superior and inferior oblique processes of each side, the vertebra is stretched out laterally, and forms a process called transverse. From the posterior root of the two oblique and of the transverse process on each side, a broad oblique bony plate is extended behind; and where these meet, the spinal process rises, and projects backwards. These seven processes form the posterior parts of the vertebræ, and are hollow at their anterior middle part: the cavity, joined with that on the back part of the bodies, makes a great canal which answers to another in the vertebræ above and below, for the medulla spinalis. There are two semi-circular notches belonging to each vertebra, which coincide with two similar notches in the adjoining vertebra; and through these foramina, placed immediately behind the body of the vertebræ, the spinal nerves pass out.

The cervical vertebræ are concave above and convex below; flat forward and behind. Their spinal processes are bifid, to allow a more convenient insertion for the muscles. The transverse processes are short and generally bifid, the root having a hole for the secure passage of the vertebral artery and vein: the oblique processes are horizontal. The rotatory motions of the head are not entirely performed by the first and second vertebræ, but with the assistance of the rest of the spine; for the rotation of any two vertebræ is inconsiderable, and if this rotation, which nearly equals a quarter of a circle, was betwixt the first and second only, the spinal marrow of that part might have been injured.

The dorsal vertebræ are of a middle size between the cervical and lumbar, and are flattened laterally by the pressure of the ribs, which are inserted into small cavities in their sides. The ribs are articulated between two vertebræ, except in the first, eleventh, and twelfth, where the cavity for their reception is entirely formed in the respective vertebræ.

The lumbar vertebræ are the largest; the cartilages thicker, the spinal and oblique processes stronger, as their motion is more extensive, and they are most exposed to injury.

The false vertebræ are divided into two bones, viz. the os sacrum and os coccygis.

On the internal side of the spine are found a number of lymphatic vessels and glands.

SPINA ALBA, the WHITE THORN TREE, *acanthaleuce, oxyacantha, mespilus aphii folio sylvestris spinosa calcitrapa* HAWTHORN, *cratægus oxyacantha* Lin. Sp. Pl. 683, is common in hedges: its flowers have an agreeable fragrance, and the infusion is used as a tonic in dyspepsia.

SPINA ACIDA. See *BERBERIS*.

SPINA ARA'BICA. See *CARDUUS SPINOSISSIMUS*.

SPINA ÆGYPTI'ACA. See *ACACIA*.

SPINA CERVINA, *SOLUTI'VA INFECTO'RIA*, *PUR GA'TRIX*. See *RHAMNUS*.

SPINA HI'RCI. See *GUMMI TRAGACANTHÆ*.

SPINA SCAPULÆ. See *SCAPULA*.

SPINA SOLSTITIA'LIS. See *CALCITRAPA OFFICINALIS*.

SPINA BI'FIDA, *hydrophs medullæ spinalis; hydrocele spinalis; hydrorachitis spinosa*, is a tumour of the colour of the skin, seated upon the vertebræ of the neck, back, or loins, receiving its name from the processes of the spine being wanting, where it appears. It is congenital, known by its situation, its watery contents, and the palsy of the parts below, which usually attends it. Dr. Cullen names it *hydrorachitis*, defining it a soft small tumour above the vertebræ of the loins, the vertebræ opening beneath.

This disorder is incurable; and the children on whom these tumours are found die in a few days. If the tumour is opened, death is more speedy. Dr. Mackenzie saw a case of this kind, with which the child lived four months, but at length died in convulsions. Mr. Warner records an instance of it in a young man of twenty years old. (See his Cases in Surgery. Bell's Surgery, vol. v. p. 502.) The disease, in its most fatal form, consists of a deficiency of the vertebræ in that part, and the place of the bone is filled by an accumulation of fluid. An unossified portion of the skull is sometimes filled by a similar tumour. Where the patient has lived for some years, the vertebræ cannot be wholly defective, and if the following remarks of Mr. Abernethy are applicable, it can only be in these less perfect cases. The reason, he observes, of the accumulation of fluid in those diseases beneath the dura mater is not very apparent; nor does the cause producing the secretion appear to be powerful or constant: for the water collects very slowly at first; and, in some cases, none has ever been effused, and the child has grown up without experiencing any inconvenience. When once the collection has begun, the cause of its continuance and increase is evident: the collected fluid irritates and distends the membranes which secrete it, and thus augments the disease. Besides, he has seen very healthful infants who have been very imperfectly formed with respect to the vertebræ whence this disease originates, whose health hath sustained but little derangement until the tumour has burst, when they have perished from the inflammation of the medulla spinalis, which inevitably ensues. To remedy all which, he proposes that a gentle degree of pressure should be made on the tumour from birth, or at its commencement, which might produce the absorption of any deposited fluid, and thus prevent the distention of the unsupported dura mater. But should this have no effect, and should the accumulation of fluid continue to increase, as the death of the patient would

be inevitable on the spontaneous rupture, he thinks it would be vindicable to discharge the fluid, by a puncture with a finely cutting instrument, and endeavour to heal the wound immediately; and, should this be accomplished, to repress a future collection, by bandage, and by those topical applications which appear best adapted to this purpose.

SPINA CERVINA. See *RHAMNUS*.

SPINA VENTO'SA, *osteo sarcoma; spinæ ventositas; sideratio; cancer; gangræna et sphacelus ossis; teredo; fungus articuli; arthrocase; exostosis*; and when children are the subjects *PÆDARTHROCASE*, q. v. Dr. Cullen makes this a variety of the phlogosis phlegmone, from its situation, and leaves it to the judgment of the more experienced to determine, whether this complaint, with some others he has there enumerated, should be considered as a species of this genus.

Spina seems to have been a term applied by the Arabians from its occasioning a pricking in the flesh, and the epithet *ventosa* is added, because it seems to be filled with wind. The *spina ventosa*, according to Mr. Sharp, is a caries of a bone, attended with an internal corruption of its whole substance, generally from putrefaction of the marrow, by which the periosteum and ligaments, as well as the bone, are wholly destroyed. See *CARIES*.

Mr. Pott divides this disorder into the *hydrophs articuli*, and the *fungus articuli*, or thickening of the ligaments of the joint, and the enlargement of the bone. The first often comes on suddenly, is of short duration, and rapidly recedes. It often happens in a relaxed habit, from a want of lymphatic absorption, from relaxation, from an obstruction in the circulation in the joint, or from rheumatism. The second is generally known by the uniform swelling of the parts, by their hardness and inflexibility: it usually ends in amputation.

The bone affected is often converted into a soft, homogeneous, sebaceous substance, resembling a cancerous gland; at other times filled with fungous flesh, covered externally by a thin, compact plate, minutely perforated: sometimes the whole becomes gelatinous. The first kind is styled *osteo sarcoma*, though improperly, as the substance is rather glandular than fleshy, and by no means organized. The soft parts often experience some, frequently a similar, disease, attended with great pain.

The second species is more properly the *pædarthrocase*, or *spina ventosa*, consisting in a swelling of the body or head of a long bone, so that its cancelli are much enlarged. The medullary membrane of the cancelli is thickened, and granulations sprout from it, which destroy the substance of the bone, leaving an external perforated shell. To this head must be referred the enlargement of the phalanges of the extremities from scrofula.

Dr. White observes, that this disorder is generally understood to be a tumour in the internal parts of the bone, gradually enlarging its substance. It is frequently hard, and without much pain; sometimes appearing as if puffed up with air, attended at first with a dull, afterwards with shooting, pricking pains, gradually extending itself to the periosteum and integuments which cover or lie near the part affected, and, in the end, producing an ulcer of the most stubborn kind. It is not confined to the cylindrical bones; it affects also

all those of the head, face, neck, back, and chest, though the former are the most frequent seats of the complaint. It is most injurious when fixed on the heads and processes of bones.

It may be caused by a scorbutic, scrofulous, or venereal acrimony, affecting the lamellæ or medullary substance of the bone; or by injury done to the corresponding vessels between the periosteum, lamellæ, and medulla, from external violence.

When mild and in the early stage, proceeding from external injury, cold applications, with Goulard's extract in the water of acetated ammonia, have been of great service. When from acrimony in a moderate degree, an alternative course, with mercurial ointment, decoction of sarsaparilla, or of the woods, together with an acescent and milk diet, will restrain its progress. Accidents are generally confined to the external lamellæ, and seldom produce diseases of great depth in the cylindrical bones, without some predisposing cause in the habit, which it is the business of the surgeon to examine. When the superincumbent parts begin to be discoloured, and suffer pricking pain and burning heat, an ulcer is certainly forming on the outside of the bone. At this time the diseased part should be laid bare by a sufficient opening, with a caustic or the knife. Perforation, as directed in the carious ulcer, then becomes expedient; with such dressings as will tend to absorb the discharge, and restrain the flesh from growing over the denuded bone, until the diseased part is separated, or the discharge dried up. When the whole of the substance is diseased, particularly in or near a joint, amputation is the only remedy; but it is justly observed by Mons. Le Dran, that the operation should not be performed upon that part of the bone which is diseased.

Amputation is seldom necessary in the swellings of the phalanges of the fingers and toes; but bathing the parts in soap and water, or a diluted solution of potash, will be often useful. It is, on the other hand, peculiarly necessary when a large portion of bone is affected; when fever, colliquative sweats, and diarrhœa have come on. The real osteo-sarcoma, however, participates of the nature of cancer, and is apt to return after amputation, particularly if the lymphatic glands are affected. Bark, hemlock, and mercury, have been recommended as internal remedies, though practitioners seem to depend little on them. Muriated lime, muriated barytes, or arsenic will probably be more successful. The actual cautery has been used, it is said, with success; and issues, in the neighbouring parts, seem to have assisted the cure.

See Boyer on the Diseases of the Bones; Severinus de Recondita Abscessum Natura; Hamberger de Spina Ventosa; Senac Præfatio ad du Verney de Morbis Ossium; Ruysch, Epist. xiv.; Suede Spina Ventosa.

SPINA' CIA, (from *Hispania*, its native country, supposed to be *olus Hispanicum*). COMMON SPINAGE, *spinacia oleracea* Lin. Sp. Pl. *æ*. 1456, is only used at the table, and considered as containing only a small portion of nutritious matter; but if freely eaten, it is laxative, diuretic, and cooling. See Raii Historia.

SPINÆ CURVATURA, a DISTORTED SPINE, is not an uncommon complaint in early youth. It arises often from debility, in consequence of a variety of previous diseases, sometimes from blows, from indulging an inclined posture, occasionally from the weight of the

superincumbent parts, when the height increases in a degree disproportioned to the strength. The first and last cause are nearly allied, and the effects are removed by tonics, by the cold bath, and frequently resting in an horizontal position. When local injury has occasioned the complaint, or when connected with a scrofulous habit, a different treatment is necessary; for which we are indebted to the judgment and sagacity of Mr. Pott: nor is this method exclusively confined to the scrofulous species; but may be often applied with success to that from debility.

The disease often begins with general languor, listlessness, and want of appetite; no particular part is apparently affected; but general debility is accused, and the common remedy is the bark. At different periods from the first appearance of languor, in the greater number of instances, the legs begin to fail. On standing the knees involuntarily bend forward, and in walking the legs cross. If the patient is then examined he complains of cramps occasionally in the thighs, of uneasy sensations, scarcely amounting to pain, in the legs, and at the pit of the stomach; the legs in sitting down are drawn up, and the power of motion and the sensation are soon lost. We say, "in the greater number of instances;" for these complaints occur only when the lumbar vertebræ are affected; but this, the most frequent and most important form of the disease, we shall first notice.

When the symptoms just described have assumed an alarming appearance, anxiety is usually alive to trace every concomitant circumstance, and some distortion is noticed in the spinal column. The curvature is most commonly, from within, outwards, but sometimes on one side. In the latter case, however, there is generally a double curvature; for if the first deviation is unnoticed, the patient, to relieve himself from an uneasy position, rests chiefly on the opposite side, and this posture produces the second curvature. Sometimes only a single vertebra starts from its place, sometimes two, but seldom a greater number.

The complaint originates from a disease of the cartilages and ligaments communicated to the bones; it appears to be the languid inflammation of scrofulous habits, and to terminate in caries. The starting of the vertebræ from their proper line seems to be owing to the unequal erosion, and, of course, to the want of an uniform support.

While the state of the general health is attended to by general remedies, not only with a view to the debility, but to the scrofulous habit, the particular care of the surgeon must be directed to the curvature; and the best means of relieving it is the plan suggested by Mr. Pott, in procuring a considerable local discharge on each side, as near the curvature as possible, but beyond the spinal processes of the protruded bone. Tenderness in this case is cruelty, and the issue made either with the knife or the caustic should be large enough to contain a horse bean. If the curvature is considerable, the size of the issue should be increased. The discharge should be continued till the complaint is in a great measure relieved, and the degree of amendment may be judged of by that of the general health. During the continuance of the discharge, the complexion becomes clearer, the appetite is improved, the general strength is increased, sensation and motion are gradually restored. It has been supposed that the

curvature may be reduced by this measure; we dare not deny that it will not be lessened; but we have never found it so in any considerable degree. The chief effect is to relieve the inflammation of the bones and cartilages. We have indeed often seen palsy of the lower limbs recovered without any remedy, and we think that nature, by her own powers, may restore the sensibility and irritability, if not sunk by the languor and debility induced by scrofulous inflammation. The curvature may be prevented from increasing during the action of the drains, and possibly, at last diminished by the ingenious machines of Mr. Sheldrake and Mr. Jones, which are constructed on the justest principles, and will not, like the former stays, swings, &c. add to the complaint. After the inflammation is checked, we have ordered, we think with success, the sea bath, covering the issues with leather, secured by a margin of sticking plaster.

When the curvature is in the cervical vertebræ it is soon discovered, though it produces no very appropriate symptoms, as will be obvious when we recollect, that the cervical nerves are intimately united with the other nerves of the brain and spine in the ganglionic system. When the dorsal vertebræ are affected, besides the former symptoms, a dry cough, hectic fever and pain, dyspnœa, irregular or obstructed alvine discharges, are said to supervene. It must be recollected, however, that in this case the ribs and sternum, wanting their due support, fall down and contract the chest; nor will it escape the attentive observer, that the scrofulous habit which induces the curvature, may also affect the conglobate glands of the lungs.

We have observed that the utility of issues is not exclusively confined to curvatures of the lumbar vertebræ, connected with scrofulous habits. We have found them useful in cases of debility, where no such habit was discoverable, and if weakness and languor, connected with any curvature does not soon yield to common remedies, the caustics should be employed; we have reason to think that any obstinate pain, or other complaint, which can be traced to any part of the spinal chain, may be relieved by the same means. We once attended a person who was said to labour under a lumbago; but the pain, on examination, appeared to be in the sacrum, where no curvature could, of course, be expected. It did not yield to any remedy, and the person, a robust farmer, could not at last turn in bed from debility. The caustics soon gave relief, and at last completed a cure, which might have been more readily obtained if he had sooner submitted to the plan, which was very early recommended. See Pott's Works; Earle on Distortion of the Spine.

SPINÆ in botany are the arms of plants to keep off cattle. They are supposed, but with little reason, to be abortive leaves. (See *PLANTA*.) We find them on the branches of thorns, on the leaves of the aloe and holly, on the calyx of the carduus, and on the fruit of the datura and chestnut.

SPINA'LES CO'LLI MINO'RES. See *INTER-SPINALES MUSCULI*.

SPINA'LES LUMBORUM are some fasciculi which run up from the superior false spines of the os sacrum to the lower spinal apophyses of the loins, which may be styled *spinales lumborum majores*. The *spinales minores* lie between the spinal apophyses of the loins

and transversales minores, between the transverse apophyses, which are sometimes of a considerable breadth.

SPINA'LES ARTE'RIÆ, anterior and posterior on each side, are produced from the vertebrales; each of which, as soon as it enters into the cranium, sends out a small branch, forming by its union the posterior spinalis. Afterwards the vertebrales advancing to the apophysis basilaris of the os occipitis, detach backwards two other small branches, which likewise meet, and, by their union, form the spinalis anterior. These spinal arteries run down on the fore and back sides of the medulla spinalis, and by small transverse ramifications communicate with those which the intercostal and lumbar arteries send to the same part.

SPINA'LI CO'LLI rises, one on each side, from the spines of the seven uppermost vertebræ of the back, and is inserted into the spines of the five lower vertebræ of the neck. See *SPINALIS MUSCULUS*.

SPINA'LES DO'RSI MINO'RES are of two kinds: some go laterally from the extremity of one spinal apophysis to another, being often mixed with the short fasciculi of the spinalis major; the rest lie directly between the extremities of two neighbouring spinal apophyses, being separated from their fellows on the other side by the spinal ligament. See *SPINALIS MUSCULUS*.

SPINA'LI DO'RSI MA'JOR, *semispinalis*, is a long slender muscle lying on the lateral part of the extremities of the spinal apophyses of the back.

SPINA'LI MUSCULUS, and its fellow on the opposite side, rises tendinous from the spinal processes, and run to be inserted into the transverse processes. It is distinguished into *spinalis colli*, and *spinalis dorsi minor*; and goes in this manner as high as the spinal process of the second vertebra.

SPINO'SA. See *SPINA BIFIDA*.

SPINO'SUM SYRI'ACUM. See *ALHAGI*.

SPIRÆA FILIPE'NDULA, Lin. Sp. Pl. 702; DROP WORT, grows wild in fields and marshy grounds: the root consists of a number of tubercles, fastened together by slender strings; its taste is rough and bitterish, with some pungency. It has been recommended as an astringent in dysenteries, immoderate uterine fluxes, &c.; as a diuretic, an aperient, and deobstruent, in scrofulous habits. At present it is totally disregarded in practice.

SPI'RITUS, *SPIRIT*; any attenuated volatile substance which exhales from bodies in a given degree of heat; and by an imaginary analogy, the nervous fluid hath been styled the *animal spirit*; a term which we may admit while it implies no peculiar qualities.

In botany it is that volatile part of the essential oil of plants to which their peculiar smell and taste are owing, and called *rector spiritus*.

In pharmacy, the name is only, with propriety, given to the spirits obtained by fermentation, the general dangers of which, as indirect stimuli, have been sufficiently exposed. The same term is, however, also applied to oils, combined either with alcohol or water, in a state of vapour, by distillation. Different vegetables impregnate water and alcohol with different degrees of strength, and generally the watery spirits, as they are styled, are strongest, as the water admits of a greater heat before it rises; but, on this account, they have often a nauseous empyreumatic flavour.

The term *spiritus* is also added to many products.

SPI'RITUS ÆTHEREUS, OF VINI ÆTHEREUS. See ÆTHER.

SPI'RITUS CAMPHORÆ TARTAREUS, vel VINI CAMPHORATUS. See CAMPHORA.

SPI'RITUS COCHLEARIÆ. See COCHLEARIA.

SPI'RITUS CORNU CERVI; SAL AMMON, *cum calce viva*; SAL AMMONIACUS COMPOSITUS; VOLATILIS AROMATICUS. See ALKALI VOLATILE.

SPI'RITUS VINI; *tenuis*, vel *rectificatus*. See VINUM ADUSTUM.

SPI'RITUS SALIS MARINI; *coagulatus*, vel *Glauberi*. See MARINUM SAL.

SPI'RITUS NITRI; *Glauberi, dulcis, et ætheris nitrosi*. See NITRUM.

SPI'RITUS VOLATILIS FÆTIDUS. See ASAFÆTIDA.

SPI'RITUS ÆTHEREUS VITRIOLICUS COMPOSITUS. See LIQUOR MINERALIS ANODYNUS HOFFMANNI.

SPI'RITUS MINDERERI, *aqua ammoniæ acetatæ*. See ALCALI VOLATILE.

SPISSAMENTA. See STYMMATA.

SPLA'CHNON. See BRYON.

SPLA'NCHNICA, (from *σπλᾶγχνον*, a bowel). Medicines appropriated to the diseases of the viscera.

SPLANCHNOLOGIA, SPLANCHNOLOGY, the doctrines respecting the different viscera.

SPLEN, vel LIEN. The SPLEEN, LEFT LIVER of Hippocrates; BASTARD LIVER of Aristotle; *fomes ventriculi* of other ancient authors, implying that it warms the stomach; is situated in the left hypochondrium laterally, in the cavity between the false ribs and the spine. It is of a long oval figure, about seven fingers' breadth in length, and four or five in breadth, generally of a livid or black red colour, and very lax, covered by the peritonæum. Its convex side is next the diaphragm; the concave broken by a longitudinal sulcus where the splenic vessels enter, dividing the spleen into an under anterior, and upper posterior part. The superior side is broader and more concave than the inferior, and is proportioned to the greater curvature of the stomach. The side below lies backward on the left kidney, and forward on the colon. The convex side of the spleen is turned towards the concave side of the diaphragm. The spleen has naturally two fissures, and these are often so deep that this viscus is said to be divided into two or three. Its bulk differs in different persons, wholly independent of disease; and the colour, which in adults is purple, is of a brighter red in infants.

The spleen consists almost wholly of blood, and it is apparently cellular, at least it appears so, when injected from the veins; but this structure is not perceived when the injection is thrown into the arteries. The variation has led to a suspicion that the seeming cellular structure is owing to extravasation; but it takes place regularly in the freshest spleens with very moderate force, and the artery may perhaps divide too minutely to admit of the passage of the injection. If this, however, be true, it will afford another instance besides the corpora cavernosa penis, where the office of absorption is performed by red veins, though their function is here also unnecessary, as no viscus is more plentifully supplied with lymphatics. In brutes they are particularly numerous and large. In oxen and sheep there are no venal ramifications, but only branching sinuses, except a small portion of venal trunk, perforated on all sides at the extremity of the spleen.

The aorta, when it has passed into the abdomen,

sends off the celiac artery, from whence the *splenic* proceeds. This artery is much larger than appears to be necessary for the nutrition of the viscus, and it wanders a little eccentrically over the pancreas, to which it gives branches, and behind the stomach, sending off branches to the latter, which, from their short course, are called *vasa brevia*. It then enters the concave surface of the spleen, dividing very minutely, most probably, as we have said, discharging its contents into cells from whence the blood is taken up by the splenic vein, and carried to the vena portæ. The nerves of the spleen are small, and come from the plexus, formed of the posterior branches of the eighth pair and the great intercostal.

The spleen is connected with the stomach by a ligament and the *vasa brevia*; with the omentum and the left kidney; with the diaphragm by a portion of the peritoneum; with the beginning of the pancreas by the branches of the splenic artery; and with the colon, by a ligament. From these connections it is apparently much influenced. It rises and sinks in some degree with the diaphragm, is raised in its concave portion upwards and forwards, so that from a perpendicular it has almost a transverse direction, by the distention of the stomach, and varies also in its situation by different states of the colon. When the splenic vein is tied it is greatly enlarged, and the same distention is obviously apparent when the stomach is empty. On the contrary, when full, the spleen is small, and is found so in those who die sudden and violent deaths; while in persons sinking under lingering diseases it is unusually large. This organ has no excretory duct.

The use of the spleen has perplexed physiologists of every era, nor, after the inquiries of two thousand years, are we much nearer to the solution of the problem. Not to dwell on ancient fancies, that it was an equipoise to the liver, designed to keep the blood warm and fluid, or to assist in the generative function, we shall step on to the more modern ideas. We must premise, however, that it has been extirpated by Ruysch, Valisnieri, and others, without producing any inconvenience; that it has been found hardened, scirrhous, ulcerated, &c. with few morbid symptoms, except dyspeptic ones. Even in the case recorded by Dr. Drake, in Dr. Duncan's Medical Journal, the cause of death was the compression of the spleen on the colon.

Mr. Hewson, who supposed the red particles to be flattened, and to consist of a solid nucleus and a vesicular part, supposed that the thymus gland furnished the central part, and the spleen the vesicular. In support of this opinion, he asserted that the blood in the splenic vein had a smaller proportion of coagulable lymph than other venous blood, and that the red particles of the splenic artery contained no central nucleus. The whole system, as well as its supports, are visionary, and contradicted by the observation of others. It would indeed appear, that, as we had no laboratory for the red particles, they might probably be formed in a viscus, where their proportion is so considerable; but it would seem very singular, that they should be elaborated merely to be sent to the liver, and we find no duct by which they can be conveyed.

Another, and a generally prevailing, opinion has been that it assists the liver in the secretion of bile. This is indeed highly probable; but it is no exclusive assistant;

for all the vessels of the abdomen may be supposed to have a similar office, since, like the spleen, they send their fluids to the vena portæ. When these authors add, that the blood from the spleen is more alkaliescent or putrescent, they assert boldly, instead of cautiously inquiring. Neither is true. The blood, from its colour, is more carbonated than the common arterial blood, and this may probably arise from its stagnation, in consequence of its slower circulation through the cells; but how the excess of carbon fits it for the better secretion of bile, those must explain to whom the mystery of this function has been revealed. We believe the principle to be true, though we doubt the elucidation, particularly as Dr. Babington, we are informed, has found that the bile formed, after the spleen has been removed, differs in no respect from that fluid in its usual state, notwithstanding the assertion of Morgagni and others to the contrary.

Others have asserted that the pressure of the full stomach on the spleen accelerates the circulation through it, supplying the liver with fluids when most wanted; and this opinion is supported by the fact formerly mentioned, that in those who do not die of a lingering disease the spleen is small. On examination, however, by experiment, every kind of compression was found to retard the motion of the fluids in the spleen, and this has suggested the more modern opinion, which we shall briefly explain.

We have before mentioned that the splenic artery, before it enters the spleen, sends off arteries to the pancreas, and to the stomach; the latter called, from their short course, *vasa brevia*. If then the motion of the blood be retarded in the spleen, a larger proportion will be conveyed through these vessels, and the stomach rather than the liver supplied with an additional quantity of blood. This opinion is, at the first view, attractive; but, on reflection, it must appear a very circuitous mode of supplying the stomach with blood, when the cæliac and the aorta are so near. The construction also of a complicated organ to give blood to different branches, merely in consequence of its compression, is by no means suitable to the usual simplicity of nature. If, too, the spleen is raised by filling the stomach, the course of the blood to it would be more direct, and the circulation through the *vasa brevia* less ready; to which we may add, that, in considering the process of digestion, we found no necessity for a considerable supply of fluids in the stomach itself. The food only undergoes in that organ a preparatory process, and the chyle is formed in what we have considered as a supplementary stomach, the duodenum. While the means of the supply are, therefore, objectionable, the supply itself appears to be without an object.

Dr. Rush's late opinion is apparently more visionary; but it gains force on reflection. He thinks that the spleen is a receptacle for an over proportion of blood, to preserve more important organs from too great distention or rupture. He supports his opinion by various arguments: 1. *The size and strength of the artery*, which is much larger than the hepatic, though the liver is four times larger than the spleen, and stronger than the aorta, in the proportion of 1212 to 1000. It has only a single artery, and not, like the liver and other organs, one for its nutrition, and another for its secretion. The organ is also highly distensible, and Dr. Baillie found it to weigh eleven pounds thirteen ounces,

without any deviation from its usual texture, figure, or colour. 2. *The situation of the spleen* near the heart, and in a part of the abdomen, where it may be, for a time, greatly enlarged without doing any injury to the neighbouring organs. We have added, "*for a time*," since, in the case quoted from Dr. Drake, death seemed to ensue from its pressure on the colon. 3. *The phenomena that take place in running, laughing*, from the shocks of a hard trotting horse, &c. seem, in Dr. Rush's opinion, to support the same idea. The pain is commonly called the *spleen*; and if, in these circumstances, it is most commonly on the left side, it will be a strong confirmation of this doctrine. 4. *The quality of the blood*, which Dr. Rush contends is less coagulable than the rest of the circulating fluid, which is, he thinks, owing to the feeble action of the veins; but the premises have been denied, and the conclusion is evidently fallacious. 5. *The nature of the diseases* which produce obstructions of the spleen. These are intermittents and remittents of every kind, particularly, according to Morgagni, chronic fevers; to Proust, maniacal persons; and, as we have already remarked, all who die of lingering diseases. But these facts give only a feeble assistance to his opinions; for we have observed, that the pressure of the stomach diminishes the size of this viscus, and in all these cases the stomach is seldom distended, except with flatus. 6. *The diseases which most commonly follow* an enlarged or an obstructed spleen, viz. hæmorrhages. From Hippocrates to Lieutaud this connection has been observed, and it merits particular notice. 7. *The diseases which follow* the loss of the spleen, viz. flatulency, indigestion, headach, and an increased secretion of saliva, urine, and semen. These facts are, however, by no means well supported; nor, if admitted, would the consequence follow that these diseases are exclusively owing to fulness. Comparative anatomy does not afford Dr. Rush much assistance; for in animals the spleen is smaller, and of a more simple structure; yet their motions are more rapid. On the whole, however, this system seems more probable than any other, and may hold its place till superseded by that of a more enterprising theorist. We have not noticed one other office assigned to this organ by the same author, that of absorbing and suffocating undue impressions on the nervous system, as it has not the slightest support from argument or analogy.

Numerous diseases of the spleen have been discovered by dissection; but few, if any, have been connected with the previous symptoms. Of inflammation and enlargement of the spleen we shall soon speak, as well as of its hernia (SPLENALGIA and SPLENOCELE). It has been found peculiarly small, suppurated, gangrened, cartilaginous (Columbus), ossified (Borelli), adhering to the liver or bladder, deeply indented, divided into two, sometimes three, distinct organs; in many instances wholly wanting (Hollerius and Kerkringius), occasionally filled with flatus, or quite empty. Had the previous circumstances of these cases been better known, the use of this organ might have been more completely ascertained.

SPLENA'LGIA, vel SPLENITIS, (from σπλήν, *spleen*, and ἄλγος, *pain*). PAIN in the SPLEEN. We have included both diseases in one article, as the splenalgia, in its usual acceptation, is only a more languid inflammation of this organ, or the effects of it.

Splenitis is characterized by pain, tension, heat, and

tumour in the region of the spleen, with pyrexia; the pain increased by pressure; and it is said by the authors of the Stahlian school, who have been most attentive to the disease, to be ushered in with peculiarly violent shivering, succeeded by a most intense heat and intolerable thirst; the paroxysms generally assuming a quartan form. In general, however, inflammation of the spleen is attended with little distress, and is terminated often by hæmorrhage, frequently, it is said, from the left nostril.

The cure of the disease, if peculiar, has not been generally described. It must be treated, say authors, like hepatitis; but we are left uncertain how far laxatives, or how far mercury, may be employed. Blisters are indicated by the pain and tension; but as the spleen has no excretory duct, we can produce no discharge from it, and any discharge of bile will relieve the inflamed spleen only in proportion to the share which it has in filling the vena portæ.

The SPLENALGIA is the more languid chronic inflammation of this organ, often degenerating into a hard scirrhus tumour, frequently of an enormous size, sometimes into a vast purulent or watery sac. It is called an *aguecake*, from its following intermittents, and is common in South America and India, from the bilious remittents of these climates. The general symptoms are, an uneasy, dull, tensive sensation on the left side, without fever. It is discoverable by a hard tumour occupying the seat of the spleen, and resembling its figure, attended with a sense of weight. The tumour is sometimes very large, often succeeds a quartan intermittent, and frequently terminates in ascites. The complexion is of a lead colour; the bulk, with atrophy, dyspnoea, a sense of weight drawing downwards towards the left side, and oppression at the stomach after eating, sufficiently distinguish it. At last their feet become anasarca, and ulcers of the legs frequently supervene.

A variety of remedies have been proposed for this disease, which we can scarcely suppose to have ever been essential. Nature has relieved it by a discharge of what was styled black bile; but more probably by the spleen concreting with the colon, and discharging its contents into that intestine. Pregnancy, and a purulent discharge from the uterus, it is said, have also relieved it.

The other remedies are purgatives, chiefly saline ones, hemlock, arnica, steel, mercury, which we can, however, find recommended by one author only; leeches applied to the anus, and a plaster composed of bryony. In one of the late volumes of the Asiatic Researches there is a curious account of the remedies employed by the native practitioners of that country. If we mistake not, the actual cautery was the remedy employed, which is mentioned by Hippocrates, and was successfully employed by Zacutus Lusitanus.

SPLENA'LGIA SUPPURATO'RIA. Inflammation of the spleen, tending to, or ending in, a suppuration.

SPLE'NIA, (from *splen*, the *spleen*). COMPRESSES, resembling the spleen in shape, made of lint, tow, and folded rags. Their principal uses are to guard against cold, to secure dressings under them, to convey and to continue the action of embrocations; to fill up inequalities and depressions; and to prevent the skin from being irritated by the stricture of the bandages.

SPLE'NICA. See SPLENALGIA.

SPLE'NICA ARTE'RIA. The SPLENIC ARTERY passes downwards, and to the left side, behind the upper edge of the pancreas, to which it gives branches: afterwards it divides into several branches, which enter the fissure on the inside of the spleen. Before they enter the spleen they give off the vasa brevia, the epiploica, sent to the omentum, and the gastrica sinistra, which is the largest of the vasa brevia.

SPLE'NICA VE'NA. The SPLENIC VEIN is one of the divisions of the vena portæ ventralis, running transversely from the right to the left, first under the duodenum, and then along the lower side of the pancreas near the posterior edge; in its course giving off several branches. It terminates after a winding course, and sending off several branches in the fissure of the spleen, where it divides nearly in the same manner as the splenic artery.

SPLE'NICA VE'NA BRA'CHII. See BASILICA VENA.

SPLENI'TIS, (from *σπλην*, the *spleen*). See INFLAMMATIO SPLENIS, vel LIENIS. (See SPLENALGIA.) The name also of the vein in the left hand, called *salvatella*, while its fellow in the right hand is called *jecoraria*.

SPLE'NIUM, (from its efficacy in the disorders of the *spleen*). See ASPLENIUM.

SPLE'NIUS, (from its resemblance to the shape of the spleen,) *triangularis* and *mastoidæus superior*, rises from the ligamentum colli, a little below the first transverse line of the os occipitis, from the lower vertebræ of the neck, and five upper dorsal vertebræ, and is inserted into the posterior part and whole length of the mastoid process, and into the transverse process of the atlas and dentata, serving to bend the neck backwards. Albinus divides this into two muscles, viz. the splenius capitis, and the splenius colli; but this division is apparently unnecessary. See MASTOIDEUS MUSCULUS.

SPLENOCE'LE, (from *splen*, and *κελε*, rupture). A HERNIA OF THE SPLEEN, in which it passes through the relaxed divided parietes of the abdomen on the left side, or through the inguinal ring of the same side. It is discovered on the left side of the abdomen under the navel, the protuberance appearing to extend itself to the inguinal ring, and the spleen is perceived to extend itself from the region of the left hypochondrium into this tumour. It is distinguished by the parenchymatic firmness of the protuberance, and from the want of the signs which accompany an enterocæle, epiplocele, and more particularly a hysterocæle. These different situations constitute the two species of *splenocæle*. See Nosologia Methodica Sauvagesii, vol. i. p. 209.

SPLINT. A scale of flexible wood, or pasteboard, used by surgeons to support a fractured bone. The best are made of long narrow pieces of wood, glued on leather, which gives flexibility without injuring its firmness. The whalebone, sometimes used, is less convenient, as it is softened by the perspiration or the discharges.

SPO'DION. See SACCHARUM.

SPO'DIUM A'RABUM, (from *σποδος*, ashes,) BURNT IVORY, *cinerulum*, *ebur*. Ivory is the substance of the tusks of elephants, which often grow to seven feet in length, and are of a proportionate thickness; one of them will sometimes weigh one hundred and sixty pounds. The African ivory turns yellow with keeping; the Ceylon ivory preserves its whiteness longer. The shavings are boiled in water, to form a jelly, which

resembles the jelly of hartshorn: the African ivory abounds most with oil and salt, the qualities of which are not different from those obtained from hartshorn. When ivory is burnt to blackness, it is called ivory black and velvet black.

Spodium abasir is a term also applied to burnt ashes, metalline calces, and a composition of white lead and oil, called *putty*.

SPODIUM GRÆCO'RUM. See ALBUM CANIS.

SPOLIA'RIUM. See APODYTERIUM.

SPONDYLIUM, (σπονδυλος, *vertebra*, from the shape of its root). See PASTINACA.

SPO'NGIA, (σπγγια). SPONGE, *besacher*, is a very bibulous, soft substance, full of perforations, and elastic, brought from Smyrna and Aleppo. Those pieces which are full of fine perforations are called *males*, and of these the hardest are styled *tragi*, the others *females*. See BESONNA.

The spongy mass is occasionally turbinated or tubular, lobated or branched, and the foramina are of an irregular figure. Its substance consists of horny or coriaceous, flexible fibres, crossing each other in a network, agglutinated together, covered in its natural state with a gelatinous matter, which appears sensible or irritable, and which soon disappears. It was the general opinion, from the time of Aristotle, that this was a vegetable substance, though previous to his era its animal nature was suspected. When corals were supposed to be animal, the analogy transferred the sponges to the animal kingdom also; an opinion confirmed by the odour exhaled in burning them. They are at present supposed to be the habitation of an animal, styled *polypus polymorphus*.

The perforations of a sponge are unequal in length and depth, and these, which are covered in their natural state with a gelatinous matter, are apparently the mouths of the animal, in which Mr. Ellis, so early as the year 1763, saw evident contractions and dilatations.

They are chiefly found in the Mediterranean, at considerable depths, fixed to the rocks, and are separated by divers. A man in those islands, the Archipelago, is not permitted, as Tournefort informs us, to marry till he has shown his skill in diving; but this occupation does not preserve them from the most abject poverty. When taken up, they are carefully washed in fresh water, and this is their only preparation.

The reproduction of sponges is very rapid, since rocks which have been exhausted are replenished again in two years. The finest sponges are the youngest, though some spots are supposed to furnish them of a superior quality. About fifty species are enumerated; but the characters of many are very uncertain. The common sponge is described by Mr. Ellis in the *Philosophical Transactions*, vol. iv.

The river sponge, found in the stagnant lakes of Europe, is brittle, without any of the qualities of the former. It is supposed to be formed also by a polypus.

Sponges are preferred to flannel, in applying fomentations, as they retain the heat longer; for tents to dilate wounds, for which purpose they are dipped in hot bees' wax, pressed until cold, and then cut into proper sizes; for pledgets to be applied over the lint which is laid on the stump after amputating a limb. It adheres strongly to the mouths of wounded vessels, and when retained

by proper compression, has been more efficacious in preventing hæmorrhages than agaric or puff ball. It is useful also in scrofulous complaints, when reduced by lightly burning it to a black powder, which is given in doses from gr. x. to ℥ i. two or three times a day; and its virtues seem to depend on a volatile alkaline salt, with which it abounds, joined with the oil of the sponge; but as the advantages have appeared wholly owing to the natron, this salt is generally preferred in the present practice. It has been particularly celebrated for removing that large swelling of the neck termed BRONCHOCELE, q. v.

If this remedy is preferred, to obtain it in the most active state, the sponge is cut in small pieces, freed from the stony matters lodged in it, burnt in a close earthen vessel until it is black and friable, powdered in a stone or a glass mortar, and kept in a close phial for use. During the incineration it should be constantly agitated.

Except the bags of the silk worm, more volatile alkaline salt is obtained from sponge than from any other matter. By boiling the sponge in water, it gives out a portion of sea salt; by burning it to ashes, it yields a large quantity of natron. See Lewis's *Materia Medica*; Neumann's *Chemistry*.

SPO'NGIA SOLIS. See BONONIENSIS LAPIS.

SPONGIOSUM OS, (from its resembling sponge,) the *os ethmoides*. The *ossa spongiosa inferiora* are two oblong bones lying loose between the anterior and posterior nostrils, glued to the upper maxillary bones, and convex towards the septum nasi, and concave on that which faces the sinus maxillaris. Each has two processes on their upper edge; the posterior covers part of the maxillary sinus; the inferior joining with the os unguis composes part of the ductus lachrymalis.

OSSA SPONGIOSA SUPERIORA. See ETHMOIDES OS.

SPO'NSA SOLIS. See ROS SOLIS, and CALENDULA.

SPORA'DICI, (from σπειρω, *to scatter*). SPORADIC DISEASES are opposed to epidemics as accidental scattered complaints, neither general nor contagious.

SPRUCE BEER. An antiscorbutic drink, highly esteemed by the northern sailors, particularly the Newfoundland men, and esteemed useful in many cutaneous complaints of this climate, chronic rheumatism, &c. It derives its whole virtue from the turpentine. (See TEREBINTHINA and ABIES.) An extract of the black or white spruce is imported, two or three table spoonfuls of which added to sixteen gallons of water, in which as many pounds of molasses have been previously dissolved, is fermented with a due proportion of yeast. When the fermentation is a little abated it is bottled for use, and, as this process still goes on, it soon becomes a very brisk, and not an unpleasant, drink. In America, Newfoundland, Sweden, Denmark, and Lapland, the branches of the spruce fir are boiled in the water previous to the fermentation.

SPU'MA ARGE'NTI, (from σπυω, *to spit up*). See CATHMIA.

SPU'TUM, (from the same,) whatever comes from the mouth by coughing. The sputum is sometimes tinged only with blood, sometimes wholly bloody, with at least an almost imperceptible mixture of mucus.

In chronic diseases of the lungs this sputum is highly dangerous, as it shows an impending hectic, or, in the

last stages of that complaint, a fatal debility. In *PERIPNEUMONY*, q. v., we have found it by no means dangerous, except perhaps in very old people; and the various changes of the sputum in that disease we have already mentioned. A salt sputum shows considerable debility, as the serum probably exudes unchanged. A bitter sputum seldom occurs but in jaundice; for this must be distinguished from a bitter taste in the mouth, which often arises from bile in the stomach. A sweet sputum is uncommon, if distinguished from the sweet taste in the mouth, already mentioned (see *SALIVA*), the purulent and fetid both arise from purulent matter (see *PHTHISIS*). Portal has observed the sputum sometimes black, which he attributes to a stain from the bronchial glands, or from their substance. It is sometimes calculous; occasionally worms have been discharged with it; polypous or membranous substances have been also evacuated in this way.

See Weber de Signis ex Sputo; Rinck de Sputo ut Signo; Oribasius; Hebenstreit de Sputo Critico.

SQUA'LOR. See *AUCHMOS*.

SQUA'MÆ, (from *σκαπλω*, to excavate). *SCALES*. Laminæ of morbid cuticle, hard, thickened, whitish, and opaque. They have at first the figure and extent of the cuticular lozenges; but afterwards often increase into irregular layers, denominated crusts. Both scales and crusts repeatedly fall off, and are reproduced in a short time.

In botany it means a narrow pointed leaf, at the base of the calyx of some flowers, resembling a scale.

SQUILLA CRA'NGON. See *CRANGON*.

SQUINA'NTHUM, (from its use in *quinsy*). See *JUNCUS ODORATUS*.

STA'CHYS, (*σταχυς*, a spike; from its spicated stalk and seed). See *MARRUBIUM VERTICILLATUM*.

STA'CHYS FÆTIDA. See *GALEOPSIS*.

STA'CHYS PALUSTRIS. See *PANAX COLONI*.

STA'CTE, (from *σταζω*, to distil). See *MYRRHA*.

STA'CTICON. See *ENSTACTON*.

STA'GMA, (from *σταζω*, to distil). A liquor exposed to distillation; as well as a name for the *acidum vitriolicum*.

STAHLIAN SYSTEM. If any medical author possessed, in a very superior degree, an acuteness of perception, extensive knowledge of his own science, an imagination and fancy peculiarly active, discovering the most distant and unsuspected relations, it was George Ernestus Stahl. His name is now confounded with the visionary philosophers, by those to whom his fancies alone are known, or to whom his metaphysical writings only are familiar; for he was an acute but an eccentric metaphysician, and his language is peculiarly intricate, often unintelligible. This, however, arises from the minute accuracy of his distinctions, and from the strict logical form of his reasoning. He first pointed out the phenomena of a living organized machine, distinct from a series of tubes propelling fluids mechanically; or, in other words, the peculiar laws of animal life. He first showed how health or diseases depended on a due balance of the several movements of the living machine, or a disturbance of the equilibrium: in fact, he laid the foundation of the nervous pathology of Cullen, who, however, we suspect, received it at second hand from Hoffman.

When the university at Halle was founded, in 1694,

he was chosen professor there at the age of thirty-four, and was a colleague with the laborious Hoffman. The brilliancy of his genius soon enlightened every branch of science which he undertook to teach; and though rivalled in industry by Hoffman, and confuted in the field of metaphysics by a philosopher, to whom it was no discredit to yield, Leibnitz, he continued his brilliant career to the seventy fifth year of his life. His chemical labours we have already appreciated, and of his metaphysics it is not our province in this place to speak. But a pleasant outline of his whole system may be found in a highly humorous little work, entitled "The Vision," appended to the chapter on "the Mundane Soul," in the "Light of Nature pursued," by Mr. Abraham Tucker, under the assumed name of Edward Search. His medical works are a Collection of Theses in six volumes, quarto, which, as we have often had occasion to remark, are in the foreign universities, the work of the masters. In these he displays his system in distinct disquisitions; but the chief foundation is contained in those entitled *De Motu Tonico*, et *Æstus Maris Microcosmici*. It was our intention to have given an abstract of these two theses; but the labour and space would, we found, have been misapplied. We have indulged in subjects of curiosity; but these, we fear, would not have been considered as such. The outline of the whole is published in a work well known, his "*Theoria Medica Vera*," which appeared in 1734; and in his "*Negotium Otiosum*," published at Halle in 1720.

It does not appear that there was any great cordiality between the rival professors, Hoffman and Stahl; but a studied civility seems to have prevailed, and Hoffman, in more than one instance, copies from Stahl. Indeed, whatever relates to the living principle in the works of the former is evidently borrowed from his colleague. The *spasmus periphæricus* is only another term for the *motus tonicus*.

The leading principle of the "*Theoria Medica Vera*" is the superintending power of the immaterial principle, which he carried so far that he almost leaves it in doubt whether the fœtus does not form itself by its own volition. At least he contends that the mind actuates the body not only by willing the end, but the means, so that not only every distinct muscle is moved by the particular volition referred to that muscle, but that digestion, the peristaltic motion, and the several secretions, are influenced by the same will, especially directed to the respective organs. He certainly was goaded on by his controversy with Leibnitz, whom he never condescends to name, to this absurd extent; but that the superintending power of nature is directed to remedy any deviation from a state of health, or to restore any injured part, is generally acknowledged. The difference, however, is, that modern authors consider these efforts, which they style the *vires medicatrices naturæ*, as the effect of organization, or of pre-established associations, while Stahl contends that they arise from the immediate influence of mind conscious of the error or defect, and willing the motions necessary for the correction or supply. We certainly have no evidence of such mental exertion, and in the simplest cases of volition we see this principle directed only to the end, apparently without any view to the means.

While nature was thus constituted the presiding

power, art must be apparently useless. It were presumptuous to attempt assisting a principle so sagacious and powerful; and indeed the practice of the Stahlans, directed to allure or appease this "divinity that stirs within us," was peculiarly inert, and often absurd. The state of the abdominal viscera they particularly attended to, and to prevent infarctions they were anxious to promote the discharge of the hæmorrhoids. From this fancy of Stahl the practice extended to Germany, and was too popular to be overlooked by the celebrated eclectic Boerhaave.

The opinions of Stahl have been long neglected in this country, and the few facts which we have here collected may now appear to wear the garb of novelty. The language, however, of this system has unfortunately become fashionable. Its era commenced with Mr. J. Hunter, to whom anatomy and physiology are greatly indebted, but who has considerably injured both by the most unscientific expressions. To take on diseased action, as we have already remarked, can mean no more than to be diseased, unless we adopt the principles of Stahl; and many such expressions are common in his works. His followers have assumed a more extensive liberty, and it is not very uncommon to hear of the exertions of the constitution "alarmed" by some impressions, *taking on* actions in consequence of such alarm; and even the blood coagulating from some supposed sense of the necessity of the change. A late work of merit, Adams on Morbid Poisons, contains much of this exceptionable language.

The followers of Stahl have been peculiarly happy in their arrangements, and Juncker and Nenter have given tabular views of diseases and remedies, according to the views of their master, which may still be consulted with advantage. The last English work, according to this system, if we except those of Mr. Hunter and Mr. Adams, was Dr. Nichol's *Anima Medica*, though several traces of the same doctrines may be discovered in the Edinburgh Medical Essays.

STA'MINA, in botany, (*sto, to stand*, from their upright posture,) *chives*, are those upright filaments which, on opening a flower, we find within the corolla surrounding the *pistillum*, said by Linnæus to be the male organs of generation, whose office it is to prepare the pollen. Each stamen consists of the filament and anthera.

In medicine *stamina* mean the degree of strength and vigour in the constitution; a term often confined to the primordial fibrous structure.

STA'NNUM, (from its resembling *στίμμι*, *antimony*.) Tin, *plumbum, candidum, diabolus metallorum*, because when incorporated with other metals, they are not reduced but with the greatest difficulty; *Jupiter, acalcum, acazdir, allence, alnec; caldar; cydar; dikalegi*; is the lightest of all the metals, less fixed in the fire, soft, flexible, and malleable, though it increases the elasticity and sound of other bodies. Its specific gravity, when hammered, does not exceed 7.299, and its hardness 6. It has a strong disagreeable taste, and emits a strong odour when rubbed.

Tin is very malleable, and capable of being hammered into leaves of which two thousand would only be an inch in thickness; but it is not required of such tenuity in the principal manufacture in which it is employed, silvering looking glasses, and the foil seldom exceeds

$\frac{1}{1000}$ part of an inch. It is extremely ductile and tenacious; for a wire $\frac{2}{3}$ of an inch in diameter will support thirty-one pounds. It melts long before ignition, at a heat of about 416° of Fahrenheit, and in melting it crackles.

Tin, exposed to heat in an open vessel, is soon covered with a grey oxide: in a more continued heat it becomes white, and is then styled *putty*. The metal ignites in a very high temperature, if exposed to the air, and becomes a fine white powder, which may be obtained in crystals. The metal itself, carefully cooled, crystallizes in the form of a rhomboidal prism. M. Proust, in the *Annales de Chimie* xxviii. 213, has shown, that tin can combine with two different proportions of oxygen, forming the yellow and white oxides. The yellow, formed by a precipitation from its solution in dilute nitric acid, by pure kali, contains twenty parts of oxygen in one hundred. The white is procured by heating tin in concentrated nitric acid, and contains twenty-eight parts of oxygen. It is the same also apparently with the white oxide procured by heat. Tin combines with sulphur and phosphorus; but not with carbon, hydrogen, or azot. The sulphuret of tin is the *aurum musivum*, sometimes applied to the rubber as an assistant in exciting electricity. Neither the sulphuret nor phosphorat of tin is used in medicine.

The combinations of tin with other metals produce some unexpected consequences. It increases the hardness, tenacity, and fusibility of copper, while it diminishes its ductility. The specific gravity of the alloy is greater than the mean density of the two metals, and the specific gravity increases with the proportion of tin. Cannon and bell metal, bronze, and the mirrors of telescopes, are made with different proportions of these metals, as well as the cutting instruments of the ancients, which rendered tin so particularly valuable to them. This metal is also used to defend the copper vessels from the action of corrosive fluids; but it is so thin, that it soon wears off, and its state should be from time to time examined. A vessel nine inches in diameter, and three inches three lines in depth, was found by Bayen to retain only twenty-one grains of tin. Pins, tenter hooks, and various iron and brass instruments, are whitened by tin. The English tin is yet unrivalled; that of Malacca comes next to it.

Sulphuric acid, when heated, does not dissolve tin; but forms a peculiar substance styled an oxy-sulphat, from which the oxide is soon precipitated. If not heated, or if tin with a minimum of oxygen be used, a sulphat of tin is formed, which crystallizes in needle-like crystals. With the sulphurous acid it is partly precipitated, in the form of a sulphuret partly dissolved.

Nitrous acid oxydates tin; but forms with it a very slight union. When the solution is concentrated, the oxide separates. The nitric acid will not dissolve it.

The muriatic acid dissolves tin freely; and Proust has shown that the water of the acid is decomposed in the solution, the oxygen combining with the metal, and the hydrogen flying off in a fetid vapour, which he thinks owing to the arsenic. The rest of the arsenic is deposited in the form of a black powder. This acid combines with both oxides of tin. Muriat of tin is a yellowish fluid, yielding, on evaporation, small needle-like crystals, soluble in water, slightly deliquescent, and of a specific gravity of 2.29. The salt attracts oxygen from almost every body.

The oxymuriat of tin has been long known by the name of the *smoking liquor of Libavius*. When an amalgam of tin, consisting of two parts of this metal and one of mercury, is triturated with equal parts of an oxymuriat of mercury, and distilled with a moderate heat, some water first comes over, and then a white vapour rushes at once into the receiver, condensing into a transparent liquid, which smokes only when the bottle which contains it is opened. The smoke is occasioned by this volatile salt combining with the air. When it stands over water it crystallizes on the side of the jar. When thrown into water, it produces heat and dissolves, if the quantity of fluid is sufficient: seven parts of water, mixed with twenty-two of fuming muriat, condenses into a solid mass. Oxymuriat of tin dissolves an additional quantity of the metal, and thus becomes common muriat as the additional oxygen is seized by the metal. It is the oxymuriat of tin which is used in dying scarlet, or tin dissolved in the nitromuriatic acid.

The other acids have no particular action on tin, or the compounds have not been sufficiently examined. At least, with the exception of the acetous, they form no part of our present object. The acetous acid acts slowly on tin, oxydating and dissolving, even when assisted by heat, only a small portion of it. When this acid is in the state of vinegar, it was supposed that it might dissolve a portion of the lead usually contained in tin, and some experiments were made by Vauquelin, directed to this purpose. (*Annales de Chimie*, xxii. 343.) He found that the acid, only where with the metal it was in contact with the air, dissolved a small portion of the tin; but if the latter exceeded the lead in the proportion of one sixth, none of the lead was dissolved. The acetous acid, boiled with tin, dissolves it (Morveau), and forms crystals, though the experiment has not succeeded with other chemists.

Tin seems to have very little action on the human body, though there is reason to suspect that, like other metals, it possesses a tonic power. It has been given in chorea and epilepsies; but later authors have limited its effects to those cases which apparently depend on worms. The justice of this decision we cannot appreciate. In diseases of the lungs and uterus it has been also recommended, chiefly, we believe, from the high commendations of the *antihectic of Poterius*, which contains a calx of tin, with a very inert oxide of antimony. This boasted remedy is said by Vogel, Hoffman, and others, to be highly serviceable as a diaphoretic, and antiscorbutic; to be useful in malignant fevers, hysteria, and chincough. It is certainly a medicine of little active power, and has been long neglected. The *magisterium jovis* is a calx of tin, precipitated by an acid. It has been given in a dose of four grains in hysteria; and applied externally in cancer, foul ulcers, and fistula.

The *bezoardicum joviale* is a most complicated, but inert, formula, and seems in the result to be only a calx of tin, as, during the deflagration, the mercury will be dissipated, and the antimony rendered wholly inert. It is, however, highly commended in disorders of the lungs and of the womb: but, like every other preparation of tin, strongly reprobated by Stahl, Boerhaave, and others. (*Trilleri Dispensatorium Universalis*, vol. ii. p. 11 and 116).

The *crocus jovis* is an amalgam with mercury, from which the latter metal is expelled by heat, leaving apparently the tin partly oxydated. It is used externally in cancers and foul ulcers; internally it is recommended in lues, the plague, as a diaphoretic in gout, &c.; but, like the former preparation, suspected, and often reprobated.

The *sal stanni* or *jovis*, is an acetite of tin, to which nitre is sometimes added, and it is recommended in diseases of the uterus. The *pillule dominarum*, used for the same purposes, contain also this salt. The *sudorificum magnum Fabri* is only a calx of tin.

We have pursued this subject more minutely than its importance merits, and have followed the praises and censures of this remedy in the original authors to some extent. We will not employ the time of our readers to so little purpose as we have done our own. The result is, that tin, as a remedy, is commended or reprobated rather from prejudice than experience, and that its admirers and enemies have, in few instances, spoken from observation of its real effects. It appears to us a tonic of no considerable powers, and we find little real support of its uterine or diaphoretic virtues. Its sensible effects are inconsiderable.

In later periods filings of tin have been recommended by Dr. Alston for destroying worms, particularly the tænia, in doses of from two drachms to an ounce, in treacle. It was suspected that these act by the arsenic often contained in tin; but the purest metal is equally effectual, and it is now supposed that their power is wholly mechanical.

Tin, when heated, becomes so brittle, that by agitation, when just ready to melt, it may be shaken into a fine powder. The *pulvis stanni* is made by first melting the tin, then pouring it into a box, and agitating it violently till cold; part of the tin becomes a fine gray powder, and by a repetition of the process the whole of the metal is thus changed; but the tin is more easily powdered by triturating three parts with one of coralline. Doses of this, from ten to thirty grains, may be given twice a day, and, after repeating it for six or seven days, a brisk purge may be administered with great advantage in worm cases. If this remedy be again tried, the *pulvis stanni*, or the *acetis stanni*, appear to be the most promising preparations, and we have great reason to suspect that either would be a valuable medicine in those states of irritability which constitute what are styled nervous diseases. See Lewis's *Materia Medica*; Neumann's *Chemistry*; Albrecht de *Medicamentorum Saturninorum et Jovialium Natura et Usu*.

STA'PEDIS MU'SCULUS, (from *stapes*,) lies in a little cavity of the os petrosum, and is inserted into the head of the stapes.

STA'PES, (*in quo pes stat*, because it resembles a stirrup,) stands with its bases upwards and inwards upon the fenestra ovalis, and at its narrower part is articulated with the inside of the long process of the incus. See *AURIS*.

STAPHISA'GRIA, (*σταφισαγρία*, from its leaves resembling the wild vine,) *alberas, pedicularis, pedicularia, phtheiroctonon, delphinium plantani folio, aconitum urens ricini fere foliis flore cæruleo magno*, STAVES-ACRE, LOUSEWORT, PALMATED LARK SPUR, *delphinium staphisagria* Lin. Sp. Pl. 750, is a plant with large

leaves, and blue flowers, followed by pods containing large, rough, triangular, dark coloured seeds; a native of the southern parts of Europe, from whence the seeds are brought to us.

The seeds have a disagreeable smell, a nauseous, bitter, burning taste; and if taken in doses from ten grains to a scruple, they purge and vomit roughly, inflaming often the throat and stomach; but they are chiefly used to destroy lice. Their acrimony is partially extracted by water, totally by rectified spirit, though not raised by either in distillation. Neumann obtained from 480 parts 45 of alcoholic extract, with 90 parts of fixed oil, and 44 of an insipid watery extract. Inversely he obtained 95 watery and only one part of spirituous extract, with 71 of oil. Decoctions of the seeds have been used for curing the itch; but for destroying lice, &c. the fine powder is strewed on the part, and secured with a proper bandage. If the decoction is more convenient, an ounce may be boiled in a pint of water for a few minutes. The powder may be mixed with oatmeal to kill mice and rats. See Neumann's Chemistry. Lewis's Materia Medica.

STAPHYLINI, (from *σταφυλη*, the uvula,) *azygos Morgagni*, divided by Winslow into *staphylini* and *epistaphylini*, as in some subjects they are distinguished by a very fine white line, but in general they form only one muscle, which is fixed by one extremity in the common point of the posterior edges of the ossa palati, and from thence run downwards and backwards along the middle of the septum, and also along the middle of almost the whole uvula, adhering to the tendons of the circumflexus. It is inserted into the tip of the uvula, which it contracts or raises upward and forward.

STAPHYLINUS EXTERNUS. See **CIRCUMFLEXUS PALATI**.

STAPHYLINUS GRÆCORUM, and **SYLVESTRIS**. See **DAUCUS VULGARIS**.

STAPHYLO'MA, (from *σταφυλη*, a grape,) comprehends two disorders of the eye; one in which the cornea is gradually rendered protuberant; the other, when the iris bursts through the tunica, deforming it with a tumour, like a grape, and destroying the sight. These tumours, from their different forms and sizes, are styled *margarita*, *myocephalon*, *clavus*, *mylon*, *pomum*, *uva*, or *acinus*. The cornea is rendered protuberant by a thickening of its coats, or by a collection of water behind it, and in the former case the staphyloma is either total or partial, and in the latter it is transparent. The protuberance is sometimes owing to little fleshy tubercles about the size of a pin's head, and occasionally this species is combined with ulcers, ectropium, &c. There is sometimes a dark blue tumour on the sclerotic, which arises from a prolapsus of the choroid, which penetrates through the laminae of the sclerotic when the constitution is greatly debilitated. The sclerotic is also sometimes swelled, with great pain and violent inflammation, which frequently ends in a suppuration, or a cancer. Mons. St. Yves proposes to extirpate the tumour, and then dress with lint dipped in brandy and water; after which the artificial eye may be fixed. If the case is slight, compresses of alum water may be laid on, and the patient should lie continually on his back. More active stimuli have been applied to excite absorption, or to destroy the tumour. Janin mentions the butter of antimony, soothing the pains by alternate bathing with milk in which

saffron had been previously dissolved; another author has advised a ligature previously impregnated with arsenic. Archigenes, as we are informed by Galen, recommended the juice of cantharides; Richter the lapis infernalis; Rowley the spiritus nitri fumans. A thread has been passed through it by Fabricius; and issues have been recommended in the neighbourhood. Celsus observes that the species of staphyloma called *clavus* is a callous tubercle on the white of the eye, and takes its denomination from its figure. He advises it to be perforated to the bottom of the root with a needle, to be cut out, and then dressed with lenients. Compression is generally injurious. The cure is not in general undertaken to recover the sight, but only to remove the deformity and the bad symptoms. See **OPHTHALMIA**; Bell's Surgery, vol. iii. page 313, &c.; White's Surgery, p. 232.

STAPHYLO'SIS. A protuberance or protrusion of the choroides of the eye. See **STAPHYLOMA**.

STATICE, (from *στατική*, to stop, from its astrigent properties). *Statice limonium* Lin. Sp. Pl. 394. See **BEHEN RUBRUM**.

STATIONARIA FEBRIS. Sydenham applies this epithet to fevers which owe their origin neither to heat, cold, dryness, nor moisture, but rather depend, as he supposes, on a certain secret and inexplicable alteration in the bowels of the earth, impregnating the air with deleterious effluvia, but which after a certain period of years declines and yields to another. Each of these general constitutions is attended with its own proper and peculiar kind of fever, which never appears in any other. A late author, Dr. Webster, with more industry than judgment, has endeavoured to show that all extensive epidemics are owing to such effluvia in consequence of earthquakes, volcanos, &c.

STAXIS, (from *σταξω*, to distil). See **APOTAXIS**.

STEATITES, (from *σταίρ*, fat). See **POLYSARCIA**; and **CIMOLIA ALBA**. In modern systems of mineralogy it is a magnesian earth, though it contains 0.80 of flint, and only 0.17 of magnesia, with two of argillaceous earth, and one of iron.

STEATOCE'LE, (from *σταίρ*, suet, and *κλη*, a hernia). See **HERNIA SCROTALIS**.

STEATO'MA, (from *σταίρ*, suet). A **WEN**. (See **NEVUS**.) Its contents resemble suet; it does not yield to escharotics; but if inconvenient must be removed with a knife.

Steatoms are found in almost every part of the body. Fabricius describes one of twenty-six pounds on the scapula, and Rhodius one of sixty pounds between the scapulae. In the Medical Commentaries, i. 219, and in the Philosophical Transactions, No. 61, are instances of similar tumours adhering to the stomach and liver: Dr. Parsons, in the Philosophical Transactions, also describes one of a considerable size attached to the head. A case is recorded where such a tumour grew so large as to obscure the sight, and considerably distort the features. It is unnecessary to pursue the enumeration farther, nor can we take one step in the pathology. The matter is the sebum, and the tumour apparently originates in the sebaceous glands. Yet we can scarcely believe it possible for them to admit of such considerable distention; nor can we trace any remote causes by means of which the accumulation of such a quantity of this secreted fluid can be collected. The only one which has been noticed is a blow, which, we know,

may produce languid inflammation, and increase secretion in general. (See TUMOR.) Extirpation is the only effectual remedy, though a curious case is recorded by Kaltschmid of one having been diminished by a deficiency of food. Mercury is recommended by Bartholine.

The sebaceous humour of the steatom, according to Mr. Hill (Cases in Surgery, p. 56), generally undergoes no alteration for a great number of years, except a gradual increase in size. In general, all encysted tumours, when small and properly situated, may be turned out entire, without opening the cyst, by a cross cut through the teguments, and by raising up the four corners. In another case he made a circular incision to the cyst, round the body of the tumour, and gradually raised it up, while he dissected it out of the teguments below. Notwithstanding this precaution, the skin and flesh retired further than he intended; so that when the dressings were taken off, he put two or three stitches into the teguments, which hastened the cure, although the lips were not brought fully into contact. Hence we may learn, he adds, "that it is not sufficient to make the incision some way up on the body of the wen; but it should be pressed down, and the teguments pulled back as far as possible, before the incision be made, as is practised in amputations; otherwise they will not cover the wound. I have had the satisfaction to digest out some wens, when so situated as not to be extirpated, by running a seton cord through the length of them, and continuing it many months. But care must be taken to pierce the cyst at the bottom, otherwise the seton may cut through the top of the wen, and leave the under part untouched." See Bell's Surgery, vol. v. p. 457, &c.

Richter endeavours to show that complaints of this sort may sometimes be occasioned by the deposition of morbid matter from within, and that their extirpation in such cases is often productive of bad consequences, occasioning a translation of the morbid matter to other parts. "A patient had her hand taken off on account of a very large steatomatous tumour which had rendered the bones carious; when the wound was almost healed, one of the axillary glands, from the arm from whence the hand was amputated, swelled, and became very painful. About three weeks after, though the wound was healed, the tumour burst, and the patient was affected with violent rheumatic pains, particularly in the thighs. An issue was made in the same arm, and the internal use of aconitum and antimony recommended. The patient, however, grew worse; an uninfamed indolent tumour appeared about the clavicle, and another on the upper part of the arm. The patient became hectic, with incipient blindness and frequent cold sweats, and died very soon after, emaciated and exhausted."

STE'LLA. A STAR. The name of a bandage used in arteriotomy, so called from its numerous crossings on the temples: it should be twenty or twenty-four feet in length, two fingers broad, and double headed. When this bandage is used, the wound must be covered with proper compresses, the middle of the roller placed on the sound temple, one end brought round the occiput, and the other round the forehead, until they meet at the part affected. They there in crossing form a kind of knot; one end is then carried over the vertex, the other under the chin; and crossing again, over the

sound temple, they are carried round the forehead and occiput, to the compresses on the wound, &c. until all the bandage is taken up.

STE'LLA MARI'NA. See ASTER THELASSIUS.

STE'LLA TE'RRÆ. See CORONOPUS.

STELLA'RIA, (from the *star like* disposition of its leaves). See ALCHIMILLA.

STELOCHI'TES. See OSTEOCOLLA.

STEPHYLA; the husks of grapes, which remain after pressing out the wine; and the olive cakes when the oil is separated by expression.

STERILITAS, (*sterilis, barren*), is that state of the female constitution which prevents conception, or soon destroys the connection between the mother and embryo; for in man it is styled IMPOTENTIA, q. v. The second effect is, we think, the most common, though it has seldom been considered as a part of the subject: it is certainly that which is chiefly within the reach of medical assistance.

It is unnecessary to observe, that, for the continuation of the species, the female organs, particularly the ovarium and uterus, must be perfect, that no obstruction either take place from the labia to the uterus, or from the latter through the Fallopian tube. The vessels of the uterus must also admit of their menstrual dilatation, and be capable of yielding readily to the impulse. It must be obvious that a defect in either portion of this series of organs will prevent conception; but such is the anxiety of nature for the continuation of the species, that any organical imperfection is comparatively rare. In other respects conception is apparently prevented by the want of that excitement which is necessary to raise the fimbriæ of the Fallopian tube in order that they may grasp the ovarium, and convey the embryo to the uterus. This perhaps is a more common cause than is suspected. It certainly is the reason why common women, whose passions are rarely excited, do not usually conceive; and it is the reason why forced violations are seldom fruitful, sometimes perhaps why the offspring of forced marriages are seldom numerous. When from a peculiar conformation, the sexual connection is attended with violent pain, conception, as may be expected, seldom follows.

The causes, however, which soon destroy the connection between the mother and the embryo most commonly occasion sterility, and they are referred to this head, because it is not ascertained that conception has taken place. A profuse leucorrhœal discharge is one of the most frequent causes of this kind; and we mention it in the first place because it sometimes occasions the deficient excitement just described. It does not, however, always produce this effect; for women subject to considerable and constant leucorrhœal discharges have had, within our own observation, numerous families. A more frequent cause is mænorragia, where the discharge, recurring in great violence after a short period, destroys any connection that may have been formed. Women in general reckon about the midway between the last evacuation and the period of the expected return; and if the return is slight, short, and without pain, they consider impregnation as having taken place about six or eight days only before the period of this short appearance, which they style a *show*. In this climate the menstrual discharge is by no means inconsistent with impregnation; but it is only the short imperfect evacuation, which apparently comes only from some portion

of the uterus: every considerable discharge destroys the newly animated embryo by separating it.

Painful menstruation is another cause. The pain we have found to be occasioned by a spasm on the vessels of the uterus, which is often communicated to the uterus itself. It will be obvious that the commotion excited by these spasms must separate the weak attachment so newly formed.

A nervous irritable woman, subject to agitation from common accidents, is seldom known to conceive; for the embryo is soon separated in the first periods of its existence. But when we consider all the causes just mentioned, we sometimes find sterility where neither is known to exist, and we believe it more often depends on impotence than female diseases or defects. The mode of treatment in these various circumstances has been explained under the proper heads. See *MENSES*, *LEUCORRŒA*, and *HYSTERIA*.

There is no subject on which authors of every age have been more fertile; and having given this general abstract of the subject, we shall shortly notice some of their opinions, perhaps their fancies.

Besides the causes we have enumerated, we find sterility attributed to hard and to chalybeate waters; to the topical uses of aluminous embrocations; to diseases of the spleen and omentum; to poisons; premature venery; to the use of paint, and the immoderate drinking of coffee. These may be admitted as remote causes when they injure the state of the general health. The remedies particularly mentioned are truly ridiculous, and we can select only, as general ones, change of air, mineral waters, and perhaps occasionally bleeding.

For the organical effects, see Morgagni de *Sedibus et Causis Morborum*, Ep. xxvi. 13, xlv. 4, &c. lxvii. 9, 11, &c. xlv. 14, 15, 16, 17, 19, 20, 23, 24, 25, 26; Walter de *Morbus*, perit. 9, 11; Fabricius Hildanus, cent. i. obs. 65; Mauriceau, ii. 345, 366, 484; Bosc de *Scrophulis Uteri*; Peyer *Mericologia*, p. 48; Buckner *Miscellanea*, 1727.

Mercatus de Morbis Mulierum; *Eyselius de Sterilitate Sequioris sexus*; *Stahl de Sterilitate Mulierum*; *Ætius*, *Tetrabib.* iv. *Serm.* iv. c. 16, 26, 56.

STERNO-CLEIDO-HYOIDEÆ'US. This and the following terms of muscles are derived from *sternum*, and the places of their insertion. See *STERNO-HYOIDES*.

STER'NO-COSTA'LES. See *TRIANGULARES STERNI*.

STERNO-CLEIDO-HYOIDEÆ'US; because it arises also from the clavicle.

STER'NO HYOI'DEUS, is a long, flat, thin muscle placed obliquely between the sternum and os hyoides, behind the lower part of the mastoidæus, and covering the sterno-thyroidæus and hyo-thyroidæus. It rises from the inside of the sternum and clavicle, and by short tendinous fibres, from the cartilaginous part of the first rib; ascends along the fore part and side of the neck, where it unites with its fellow in a white line. Each then runs over the thyroid cartilage, is inserted into the base of the os hyoides to pull it down.

STER'NO MASTOIDÆ'US, **MASTOI'DES.** See *MASTOIDÆUS*, and *STERNO-HYOIDES*.

STERNO THYROIDÆ'I, rise between the cartilages of the first and second rib; run before and close to the thyroid gland and the trachæa; and are inserted into

the knobs of the thyroid cartilage, pulling the whole larynx down.

STER'NUM, (*στέρον*, Greek,) *pectoris os*, is the broad flat bone, at the anterior part of the thorax. In adults of a middle age it is composed of three bones, but frequently the two lower bones are ultimately united; and sometimes all the bones are united, showing by lines the former separation. The first bone is the thickest, to which the clavicles and the first ribs are articulated, and half the cavity for the reception of the second. It is heart shaped, but does not end in a point. The second bone is longer, narrower, and thinner than the first: and in the sides of it are complete cavities for the third, fourth, fifth, and six ribs, and half of the cavity for the second and the seventh. The third bone is the least, having only half of the cavity for the seventh rib. The lower part of the sternum is called *ensiformis cartilago*. It is of different shapes, sometimes bifurcated, and almost always in part so, and in young subjects always cartilaginous.

Near the middle in the prepared bone a perforation is discovered, filled in the recent one by cartilage and ligament; and in this part is a transverse line, which has led authors to divide the bone into two imaginary portions; but in young subjects some motion between these parts is observable. When we look at the different parts in their united state, we find this bone broadest and thickest above, concave within, but flatter in front, from the sides being pressed outwards by the ribs. The cartilages, which terminate the ribs, often shoot into the sternum, and are joined by a suture. The cavities which receive the ribs approach as they descend.

The substance of this bone is cellular, with a very thin external plate, especially on its concave side, where it is covered with a thin cartilage. The cells are, however, small, and the bone is strengthened by strong cartilages.

The sternum is occasionally subject to inflammation, to suppuration, caries, pain, fractures, and tumours. When carious, a part of it has been taken out with a trepan, and Linquet has recommended this operation in abscesses of the mediastinum; but these are too obscurely marked by their symptoms to admit of a hazardous operation. Pain of the sternum has been described by Mr. Cheston as arising from polypus of the heart; and it has been found, by Bellonius and others, connected with different diseases of the thorax. In the angina pectoris, which we have styled syncope angæus, it is the most striking symptom. The other diseases of the sternum, which we have mentioned, do not require any appropriate management.

STERNUTA'TIO, (from *sternuto*, to sneeze). **SNEEZING.** A convulsive motion of the respiratory muscles by which the air is forced violently through the nose, as the lower jaw is closed at the same moment. It is occasioned by a stimulus on the membrane of the nose, and its final cause is to discharge acrid extraneous bodies from that organ.

The benediction commonly bestowed on those who sneeze is said to have been occasioned by its dangerous violence. Forestus, Horstius, and the Ephemerides *Naturæ Curiosorum*, record numerous cases of its great violence, and in the latter collection a case is mentioned in which it was periodical. Hildanus, Lancisi,

netus, and Morgagni, mention it occasionally proving fatal; the last author, on dissection, found the vessels of the brain remarkably turgid. De Sedibus, &c. xiv. 27.

The most common causes seem to be irritations on the lungs, or on the stomach and bowels communicated to the lungs. It has been produced by carbonic acid air, by fermenting beer, by a leaden ball remaining in the region of the diaphragm (Richter's Bibliotheca, vi. 730), by eating crabs, and by worms. Sometimes by more distant irritations, as injuries in the head, pregnancy, repelled itch, &c.

The remedies are few and uncertain. It has been relieved by a bleeding of the nose, by bags, *it is said*, filled with aromatics fixed to the vertex, and by rubbing the gums. The only effectual remedies are, however, opium and camphor in large doses. These will probably be particularly useful when sneezing is a symptom of putrid fever, a circumstance recorded in the Acta Naturæ Curiosorum.

STERNUTATORIA, (from the same). See ERRHINA and PTARMICA.

STERNUTATORIUS PU'LVIS, (from the same). See ASARUM.

STERTOR, (from *sterto*, to snore). See RHENCHOS.

STHENIA, (from *σθένος*, strength). A term introduced by Dr. Brown, and now generally adopted by pathologists. It consists strictly speaking, in increased tone, and is what Dr. Cullen styled inflammatory diathesis, opposed to *asthenia*, or debility. Brown, however, or rather his followers, have not strictly confined themselves to this meaning, but rather imply what we have styled accumulated excitability. The effects are perhaps in part the same; but much confusion has arisen from confounding an original constitutional sthenia with the temporary effects which arise from excitability retained and accumulated. Want of accurate distinction is indeed the error of the Brunonians; for Brown himself was satisfied if he was in opposition to Cullen.

STIBII ESSE'NTIA. See ANTIMONIALE VINUM.

STIBIUM, (from *στιβίω*, to shine,) see ANTIMONIUM. A term sometimes exclusively applied to the *vitrum antimonii*.

STICADO'RE. See STICHAS.

STICHOS. The ancient name of a pectoral confection containing horehound.

STIGMA, (from *στιγμή*). SCARLET COLOURED SPOTS similar to those occasioned by a blow. (See SUGILLATIO.) It sometimes means particular marks in the face, or any part of the body, commonly called moles (see NÆVUS); at other times *vibices*, or a small red speck in the skin, occasioning no elevation in the cuticle. Stigmata are generally distinct, and when they are, sometimes assume a livid colour, and are termed *piletechiæ*.

In botany it is the top of the pistil, which is pubescent and moist, to detain the pollen.

STILLICI'DIUM, (from *stillo*, to drop, and *cado*, to fall). In pathology it is synonymous with *stranguria*; in the practice of medicine, with an instillation of fluid upon some part of the body, called by the French *la douche*; by us pumping.

Pumping is in general more effectual than immersion from the momentum, and in other respects does

not differ from it. The momentum increases equally the effect of both hot and cold water. Pouteau mentions a singular stillicidium of warm sand and gravel.

Le Dran, in his 93d and 94th Obs. gives some account of this operation in the ankylosis, and attempts to account for the action of the pumping, in a way rather specious than satisfactory.

STILLICI'DIUM URI'NÆ. See DYSURIA.

STIMMI. See ANTIMONIUM.

STIMULA'NTIA, (from *stimulo*, to irritate). STIMULANTS. While we are ignorant of the manner by which impressions on the extremities of the nerves are conveyed to the brain, or how the different motions subjected to volition are influenced by this principle, we cannot expect to know how this power is augmented, or by what immediate change the motions are increased in energy or rapidity. If it be admitted that impressions are conveyed by the vibrations of an elastic fluid, these vibrations may be more rapid or more violent, the former depending on the mobility, the other on the momentum; and a fanciful theorist may pursue this view in explaining the increased mobility of the nervous temperament, and the increased vigour of the inflammatory diathesis. We must return to the more sober path of observation, and, by following its tract endeavour to establish some useful practical distinctions.

The simplest idea of a stimulant is that of a rubefacient. Mustard, for instance, rubbed on the hand will induce heat, pain, and redness, with no change in any other part or any function. In this case a power acts on the nerves of the part, and, through their influence, on the circulating system; but when withdrawn, every increased action ceases. If we proceed farther, and continue the friction, or extend its application, the heart and arteries act more vigorously, the heat is more general; and, though the cause be withdrawn, the effect will continue for some time. If the action be still farther continued, the heat, and what may now be styled the fever, will be more considerable, and of a still longer duration. In the whole of this progress we see an effect, at first purely local, become general, perhaps only from the pain it excites, and durable in proportion to the extent or degree of the change. If the external stimulus is applied more generally, the constitutional effects are produced more quickly, and continue longer. If the stimulating power be applied to an organ more acutely sensible, as to the eye or nose, the effect will be still more rapid: if to an organ whose connection with the system is more immediate, as the stomach, the consequences will be sooner obvious. In all these cases, however, we see only a simple action, viz. an increased activity of the nervous influence. Whether any of the powers, already alluded to, will change its nature, is a question which we shall soon consider.

There is, however, another medium by which the action of the heart and arteries, perhaps the energy of the brain, may be excited, viz. through the medium of the excretory ducts. Cantharides will produce strangury and fever, by acting on the urinary organs, without showing any primary effect on the stomach and the action of the heart. Mercury will have no apparent influence till it has affected the salivary glands. Whether there be still another way, viz. by stimulants entering the blood vessels and acting on the heart we know not.

Many experiments have been made with this view; but they are by no means conclusive; and, in general, we find no peculiar effect from any medicine but from its action on the stomach or the glands, chiefly their excretory ducts.

In each of these ways the topical action of stimuli becomes general, apparently by increasing the activity of the nervous energy; but it remains to examine whether its nature may not be sometimes changed. In this inquiry, we allude to the effects of heat, breathing oxygenous gas, of electricity, and galvanism. These are more general stimuli, which produce appropriate changes in neither of the ways mentioned, and which may, therefore, be supposed to change in some degree the nature of the nervous fluid. To this action of the two first, some objection may probably be made, and it may be alleged that they are strictly stimulant. The two latter may, however, be so conducted as not to give the slightest topical irritation; and the suspicion is corroborated by finding that their influence pursues the course of the nerve, and by reflecting on the affinity of their power to the nervous energy. *Vide in verbis.*

There is yet another class of stimulants, which the Brunonians call *indirect*. Without engaging in their distinctions, we may observe that we have separated these from the other stimulants, and included them in our list of the *materia medica* in a separate order. They are so arranged, that the shades are almost imperceptible between what are called the most diffusible stimuli and the most deleterious narcotics. From hence we began to perceive the nature of those most commonly called stimulants, viz. wine, alcohol, &c. and for this reason we have explained their action in a different way, and considered the apparent stimulus as owing to unequal excitement. The nature of all these substances is sedative. In Dr. Cullen's system, the term *indirect* stimulants has a different meaning, and implies those medicines which influence the sensorium commune through other organs.

It has been doubted whether there were any peculiar stimulants which affect only the muscular fibres, while powers of a different kind influence, exclusively, the nerves. Such, undoubtedly, is the case with those organs where the stimulating power is communicated to the nervous fibrils, deprived of their coats, in consequence of a peculiar organization, as in the eye and ear, for neither light, simply as such, nor sounds are stimulants on any other part. On the other hand, the rube-facients seem to act on the arterial system as muscular organs, and the pain to be chiefly felt from increased tension. The latter opinion receives additional support from a practical fact, we believe, well established, that the energy of the brain is not excited by sinapisms to the feet. The only effect, so far as we have been able to observe, is an irritation from an uneasy feeling; but neither increased nervous energy, nor, except from the restlessness, increased action of the heart and arteries. It is not easy to pursue this subject farther. We see, indeed, that some stimulants are quick and transitory in their effects, others permanent; that some warm the stomach without greatly increasing the action of the heart, while others stimulate the latter organ almost exclusively. The quick transitory stimulants are styled *analeptics*; and those which stimulate almost exclusively the stomach are the *aromatics*. We found, how-

ever, the limits too uncertain to enable us to arrange medicines of this kind into such orders with advantage: the clue soon disappeared; yet perhaps in the *analeptics* we see the purely nervous stimuli; in the *aromatics*, the muscular.

If we pursue these views, we shall find some support for them from practice. The spirit of lavender or ether is not given to restore lost tone in the stomach, nor the serpentary, contrayerva, and cascarilla, to relieve a fainting fit. The arum will be found beneficial in paralytic complaints; but be of little service in the cure of hysteria. In short, the whole of this class requires some revisal, with more correct and systematic views than it has yet received, and we have thrown out these few hints to direct the attention of therapeutical writers. But where shall we look for them? They are unknown in our language, if we except the general remarks in Dr. Cullen's *Materia Medica*; and we trust the disquisitions of this kind are not among the least useful parts of the present volumes.

See Cullen's *Materia Medica*; Douglass de Stimulis; Haertel de Stimulantium et Excitantium Effectu Sedativo.

STIZOLOBIUM, *phaseolus*, *cadject*, COWHAGE, or COWITCH; *dolichos pruriens* Lin. Sp. Pl. grows in great abundance in warm climates, and on account of the spiculæ, which covered its pods, hath been long used in South America, and lately much employed in Britain, to kill worms. (See *PHASEOLUS ZURATENSIS*.) The worms are said to appear with the second or third dose, and the stools procured by cathartics to have consisted entirely of worms: in cases of lumbrici, it is considered as a safe and effectual cure, without the slightest inconvenience. The spiculæ of one pod, mixed with syrup or molasses, and taken in the morning, fasting, is a sufficient dose for an adult. Mr. Chamberlayne, however, used to administer it in the form of an electuary, mixed with honey, molasses, or syrup, without observing any exact proportion of the quantity of setæ. Of this electuary a tea spoonful was a dose for young children; and to adults, one or even two table spoonfuls, in a morning, fasting, which were repeated two or three mornings, followed by a gentle purgative. We have used this remedy, we think, with advantage, and the setæ or spiculæ seem to act mechanically on the animals, without in the slightest degree affecting the intestines. See Chamberlayne's *Treatise* on this subject; *Medical Commentaries*, Edinburgh, vol. ii. part i. N° 4, p. 82.

STŒCHAS, (from *Στοιχάδες*, the islands). FRENCH LAVENDER, CASSIDONY, *spica hortulana*, *stucadore*, *lavendula stachas* Lin. Sp. Pl. 800, is a low shrubby plant with small, oblong, narrow leaves, bearing on the tops of the branches short thick spikes, or scaly heads, from which several small purple labiated flowers, followed each by four seeds inclosed in the cup, issue: it is a native of the southern parts of Europe; but, with a little shelter, bears our severest weather, and flowers in May and June. The flowers brought from France and Italy are not superior to those of our own growth. The heads should be gathered when firm and hard, usually about the end of July.

Distilled with water the flowers yield a considerable quantity of a pale coloured fragrant essential oil, though little with rectified spirit. Its virtues agree with those

of, but are inferior to, our lavender. Neumann's Chemistry; Lewis's Materia Medica. See LAVENDULA.

STOLO'NES, (from the Hebrew *stlla*;) the SUCKERS OF PLANTS; shoots from the roots of vegetables, by which they may be propagated.

STOMACA'CE, (from *στομα*, the mouth, and *κακος*, evil,) an erosion of, and spontaneous hæmorrhage from, the gums, with usually a fœtor of the mouth, is a common symptom of scurvy, and is sometimes the appellation of this disease. See SCORBUTUS.

STOMA'CHICA, (from *στομαχος*, the stomach.) Medicines which excite and strengthen the action of the stomach. They include stimulants and tonics; but the association is undoubtedly too general, and should be rejected. See Cullen's Materia Medica.

STOMA'CHICA PA'SSIO. This term is now obsolete, and the disease is usually comprehended under the term DYSPEPSIA, q. v. The industry of our predecessors should not, however, go without its reward, and we shall add their description, as well as their pathology and treatment of the disease, in their own words.

"In this disorder there is an aversion to food; even the thought of it begets a nausea, anxiety, cardialgia, an effusion of saliva, and often a vomiting; fasting is more tolerable than eating; if the patient is obliged to eat, he must endure a pain that is worse to him than hunger itself; he is troubled to chew, but more so to swallow his food; there is an aversion to common food, and a desire to what is unusual: often a pain is complained of between the shoulders, and it is increased after eating; restlessness, dimness of sight, a noise in the ears, a heaviness in the head, numbness in the limbs, a palpitation in the hypochondria, and a spitting of cold watery phlegm: the patient imagines that the spine of his back moves towards his legs, and, whether standing or lying, he seems to be moved like a reed shaken by the wind; though not thirsty, he desires to drink after eating; though drowsy, he keeps waking; is lean, pale, feeble, faint, timid, silent, but soon angry; he is much disturbed with black bile, and falls into fits of melancholy; the symptoms during a fit are, fainting, a cold numbness of the joints, an unusual heat which runs through the members, and most perceived in the palms of the hands, with a dewy sweat, restlessness, jactitation, anxiety, despondency, a change of colour, a small, swift, weak pulse, a wasting of the body,—or, on the contrary, an immoderate appetite, with indigestion, and an acrid, acid, or nidorous quality in the contents of the stomach; sometimes the patient is speechless, grinds and clenches his teeth; there is always a cold in the head, with a ringing in the ears; sometimes, though rarely, there is great thirst; a pain in the præcordia, which extends between the scapulæ; and when the inflammation is considerable, there is a difficulty of swallowing, and a strangulation, which some have called a *stomachic quinsy*; a hardness of the stomach without pain, with other symptoms, as windiness, inflation, borborygmi, &c.

"The causes are a discharge of pus from the belly upon the stomach, intense thinking, a neglect of proper nourishment and rest, sorrow, taking cold, continual indigestion, vomiting, &c.

"In order to the cure, the patient's inclinations must be complied with; the juice of quinces is recommended; warm stimulants, such as pepper and ginger, with

aloes and other such like bitters, are found to be useful. See Aretæus de Causis Signis, lib. ii. cap. vi.; Cœlius Aurelianus de Morbis Chronicis, lib. iii. cap. ii.; Aretæus de Curatione Chronicorum Morborum, lib. ii. cap. iv."

STOMA'CHICA TINCTU'RA. See CARDAMOMUM.

STOMA'CHICI NE'RVII. See PAR VAGUM.

STOMA'CHUS, (from *στομα*, a mouth, and *χασω*, to pour, because the food is poured into it as into a mouth,) *ventriculus*, *anocalia*, *gaster*, *nedys*, is situated under the left side of the diaphragm, just below the lesser lobe of the liver, from which it passes down a little way, and then crosses the spine towards the right side, in shape resembling the pouch of a bagpipe. It lies, therefore, in an oblique direction from left to right, and hath a substance called *mesogastrium* in its concave part, between the orifices, attaching it to the subjacent parts. Its superior orifice is called the *cardia*, and is on the left side, the inferior toward the right side is called *pylorus*.

The stomach is not equal in its bulk; but the larger part is on the left, contiguous to the upper orifice the *cardia*, which is immediately under the diaphragm. The smaller extremity on the right is lower, and more inclined than the former. For this reason Dr. Monro contends, with great propriety, that they should be called the superior and inferior orifices. The superior orifice is turned backward, where the œsophagus enters. The small extremity and the inferior orifice bend obliquely backward towards the upper, so that the two orifices are not distant, and when the stomach is full they are less so.

When the stomach is distended it does not press downward; but its greatest curvature is raised against the parietes of the abdomen, though it sinks somewhat lower, and the smaller curvature is against the spine. The contraction of the long fibres also brings the orifices nearer together, and these changes contribute to detain the food longer in the stomach for the purposes of digestion. It is necessary also to remark, that the two orifices are not in the same plane. If a plane passes through both curvatures the superior orifice is in the portion behind, and the inferior in that before; for the *cardia*, so far from lying in the plane of the œsophagus, is turned backward. (See Plate.) This appears to be contrived for the purpose of preventing the contents of the stomach from being too easily discharged, and, in the act of vomiting, an obstruction is felt, in consequence of this structure of the *cardia*.

The stomach is composed of four coats, the outer peritonæal, the muscular, the nervous, and the villous. The muscular coat is composed of two planes of fibres, external and internal: the former is longitudinal, following the curvatures and convexities; and it is this plane which contracts the stomach, drawing its orifices nearer to each other: the latter is transversely circular. Their united or opposed action presses on the food, assisting its union with the different fluids, and shifting it by a kind of peristaltic motion from one side to the other.

More minute anatomists, by coagulating the fluids, have rendered the muscular fibres more conspicuous, and they find the fibres of the external plane not wholly longitudinal, but occasionally oblique. The fibres of the internal plane are, as may be expected, stronger,

since these chiefly propel the food. They are not, as in every hollow muscle, entire circles, but segments of circles, the joint action of which is obviously more considerable than the action of a larger portion of, or an entire, circle, and these segments are connected by ligamentous fibres, which give a fixed point for their separate action. We say separate action; for we shall find that different portions of this viscus often act independent of the rest. When these segments reach the great curvature, they diminish gradually, leaving a point, which they seem to surround.

Round the cardia there are two distinct planes of muscular fibres crossing each other obliquely, intersecting others, where they meet on the sides. These form a kind of sphincter, which gives an additional obstruction to the discharge of food upwards. There is no such guard to the pylorus, but a ligamentary band runs along the middle of each side of the small curvature, ending in the pylorus. The cellular substance connecting the peritonæal with the muscular coat, is, in some places, very loose, and this has occasioned anatomists to describe a tunica cellulosa. It is, however, only common cellular membrane.

The *nervous coat* is composed of vessels and nerves, connected by cellular substance, and supported by ligamentary filaments, intersecting each other obliquely. It is of a loose spongy texture, swelling in water, and resembling fine cotton. The last is the *villous coat*; because its internal surface, when seen in water, resembles the pile of velvet. The ancients called it *tunica fungosa*. These two coats are of a much greater extent than the containing ones, so that they are raised in rugæ, or plaits, chiefly transverse and waving; but at the pylorus becoming longitudinal. At the cardia, they appear radiated, and seem to be continued from the œsophagus; but they are thicker, and surround the cardia like a crown. The design of this structure is to enlarge the surface, and increase the exhalation from the arteries, and the mucus from the glands. The interstices of the rugæ are usually filled with mucus, which is the matter styled the *gastric fluid*.

The stomach is supplied with arteries from the two coronaries and the vasa brevia, already mentioned in the article SPLEN. Its veins contribute to form the vena portæ. The nerves arise chiefly from the eighth pair, the middle sympathetics, which run down in cords upon the œsophagus, under the denomination of *nervi stomachici*, and are expanded on a plexus, termed *coronarius stomachicus*, to which the intercostal nerve contributes by filaments from the plexus splenicus, and the semilunar ganglions of the plexus hepaticus. (See DIGESTIO.) We thus perceive that the action of the stomach is not wholly involuntary. Many persons can excite vomiting, for instance, at will. See NERV.

The bulk of the stomach varies considerably from the portion of food usually swallowed. From inanition it has been contracted almost to the size of a small intestine (Ruysch, Obs. 68), and, in the famous stone-eater, it almost filled the abdomen. An instance also of its extending to an enormous size occurs in Morgagni de Sedibus, &c. xxxix. 15. The situation is often altered, and it is displaced by a variety of causes. Garengéot (Memoires de l'Academie de Chirurgie, vol. i.) describes a hernia of the stomach from violent exertion in dancing, and in this, as in other cases, he

remarks, that it protrudes by the side of the ensiform cartilage, through a triangular space formed between the sheath of the rectus. It is generally, however, protruded through the muscular fibres of the diaphragm, either by steatomata or enlarged viscera, particularly the liver. In many instances this has occurred in consequence of a wound in the diaphragm. (Morgagni de Sedibus, &c. xxxix. 15, 16. lxx. 15; Parey's Works, ix. 30.) It has been occasionally forced through the parietes of the abdomen, covered with the peritonæum, and sometimes pressed wholly into the left side.

Of the principal function of the stomach, DIGESTION, we have already spoken, and, from its structure, we see that the whole viscus admits of contraction in different directions. When living animals have been opened, it appears to have a peristaltic motion, similar to that of the intestines. When vomiting comes on, this motion is inverted; but some resistance is felt at the cardia, from the angle which it makes. We must consider this operation on another occasion (see VOMITUS); but must now observe, that, from the tendinous lines interspersed, the whole stomach does not always act together. The motion of the upper part is often inverted, without any affection of the other portions, and one half of it frequently, when the greater curvature is wholly uninfluenced. Thus eructations bring up often only the oily matter which swims on the surface; spontaneous vomiting the fluid portions exclusively, while active emetics discharge the heavy mucus; and calomel, which, from its weight, descends, often escapes the common exertions of vomiting. Bile also, which is heavy, is not discharged without violent straining. These circumstances, in all their bearings, are not considered in practice so much as they deserve, and we have, therefore, more fully enlarged on them.

The function of the stomach is digestion; but from whence does it arise that the cauldron itself is not affected by the fire which acts on its contents? The reason is simple; but it has not been sufficiently considered in its consequences; that nothing, which possesses life, is subject to this process. The conclusion is, we think, obvious, that it is not wholly a chemical operation; and, when we pursue this view, when we perceive that whatever weakens the vital power impedes or prevents digestion, we shall see that it is rather connected with the nervous system than the nature of any secreted fluid. This argument, at the first view, will not appear to militate against the digestion of the stomach itself by the solvent power of its fluids after death. If, however, digestion depends on the activity of the vital power, we should scarcely expect it to go on, when that power is extinct; but admitting the activity of the solvent, and the capacity of the solvent, were the fact true, it must have been long since placed beyond doubt. Few, however, are the instances where it has occurred; and, though limited to cases of violent death, how numerous are the victims of the laws subjected to the knife of the anatomist? Even the eager panegyrist of Mr. Hunter, Dr. Adams (Essay on Morbid Poisons, Ed. 2d.), admits that the stomach is not often found in this imperfectly digested state. Were the power equal to the effect, it would be incumbent on the advocates of this opinion to show, why the solution does not always take place. The original question will, however, recur, and we think every

sagacious physiologist will agree that digestion is not a purely chemical process: it cannot be imitated out of the body; it will not proceed while the vital power is injured.

Erosions of the stomach are not uncommon; and, in the agitation of a violent death, the process of digestion may be disturbed, and an acid produced. This we know is effected in a moment, during life, by distress, by terror, by apprehension. We find, however, no instance in the records of medicine of this effect by acids, though it has been produced by arsenic, by corrosive sublimate, and even *quod miremur*, by the *nux vomica*. Murray *Bibliotheca Practica*, ii. 429.

Other causes of wounds and perforations in the stomach have been shocks from falls, abscess of the neighbouring organs, increased force of the absorbents (Cruikshank), worms, repletion, sharp stones of fruit, black bile, &c. Several instances are mentioned where a portion of the liver and omentum had accreted to and filled the aperture. Sandifort found the stomach ruptured in a new born child, and in Haller's Collection of Chirurgical Dissertations is the history of a young woman with a perforation in the stomach, through which she was nourished for twenty-seven years. Instances of fistulous ulcers occur also in the Medical Facts and Observations, v. 17; and in the Irish Transactions, iv. 12.

Wounds in the stomach, supposed by some authors to be always fatal, have in many instances been cured. (Morgagni de Sedibus, xxxvi. 31. liv. 8. 12, &c.; Histoire de l'Académie des Sciences, Année 1723, 39, and De l'Académie de Chirurgie, i. 591.) Even when the stomach was full of food art has equally succeeded; and in such cases Morand has told us to evacuate the contents by an emetic. While wounds, however, are easily healed, blows, and often slight ones, are soon fatal (Lancisi de Subitanea Morte), though we are informed by a German author, that a gun shot wound in the stomach has been cured. The effects of blows are on this organ singular and unaccountable.

Abscesses and cancers of the stomach are not uncommon. Of the latter we have different instances in our own language. (Medical Communications, i. 28, 29. ii. 31; Philosophical Transactions, xlii. 2.) The symptoms of these disorders, are commonly, however, vague and uncertain. A general pain, not always confined to the organ, but apparently wandering to different sides of the thorax, without any marked shivering or nocturnal exacerbation, point out general disease, without fixing any particular seat of the complaint. When suppuration has arisen from common inflammation, the disease has been confounded often with inflammation of the lungs; but the quantity and nature of the discharge are different. Pus from the stomach is copious, its discharge free, and its appearance, not curdly, but truly laudable. It might be a mark of distinction, whether it is brought up by coughing or vomiting; but that either sometimes produces the other, and common people either cannot or will not distinguish. As they are always apprehensive of pulmonary complaints, they will always contend that matter comes from the lungs.

The very extensive sympathy of the stomach renders all distinction of its diseases a task of peculiar difficulty. It is the centre of almost the whole nervous system, and aptly chosen by Van Helmont as the residence of

his archæus, the *anima medica* of Stahl and Nichols. Its chief connection is with the head, with the uterus; probably from a striking fact recorded by Van Helmont, and the common symptoms of gout, with the joints, and apparently with the testicles; for a slight bruise on these will produce both sickness and syncope. Bartholine mentions a sympathetic connection between the stomach and face; Percival (*London Medical Journal*, iv. 10), with the lungs.

The chief disease of the stomach is debility, occasioning indigestion, cardialgia, flatus, eructations, &c. Of these we have spoken under the articles *APEPSIA* and *DYSPEPSIA*, q. v.; but these symptoms sometimes arise from defective or injured organization, particularly scirrhus hardness or callosities in the stomach itself, the pylorus or cardia: the last, however, is seldom affected, though a case of this kind is described by Triller. This disease is often attributed to the abuse of spirituous liquors; but Haller (*Pathology*, Obs. 26) found it to arise from the abuse of acids; and Plater, from healing an ulcer. We think we have observed it from the use of cosmetics. Bruner mentions dyspepsia as arising from obstructions of the glands of the duodenum; Bonetus from a relaxation of, or a mucous crust on, the internal surface of the stomach, sometimes from a disease of the omentum. Among the remedies we omitted to mention one that has become fashionable since the translation of Daubenton's tract, viz. small doses of ipecacuanha. We perceive also the magistery of bismuth, recommended by Carminati, in his *Opuscula Therapeutica*.

Substances of very different kinds have been found in the stomach, and even grain rejected in a germinating state. Numerous instances, too numerous to detain us, have been recorded of substances retained in the stomach for a long period with little inconvenience. Derham, if we recollect rightly, mentions some grape stones retained ten years; and Hildanus speaks of the discharge of a piece of bacon which had been eaten two years before. The Medical Transactions, the Medical Commentaries, the Journal de Médecine, and the Journal des Savans, record a variety of similar instances.

Calculi have been sometimes found in the human stomach, which, in a paper in the Philosophical Transactions, have been attributed to the excessive use of absorbents. Scirrhus glands, infarcted vessels, hydatids, and steatoma, are not uncommon appearances on dissection: unfortunately they have not been connected with the symptoms. The stomach is sometimes divided into cells, in one instance from the pressure of a diseased pancreas.

A singular instrument for clearing the stomach, styled a *brush*, has been mentioned by different authors, and it seems to have varied in its construction. It is styled by Wedel *excusia ventriculi*, and is mentioned by Scribonius Largus, by Bartholine, by Teichmeyer, and even by Tacitus, *Annal.* xii. 13. It is now wholly disused.

STO'RAX, (στοραξ). See STYRAX.

STO'RAX RUBRA. See THURIS CORTEX.

STRABISMUS, (στραβισμός, *to squint*). SQUINTING, *distortio* and *illosis*. Dr. Cullen places this disease among the class *locales*, and *dyscinesia*, defining it the optic axes of the eyes not converging. The species are, 1. *habitualis*, from a custom of using only one eye; 2. *commodus*, when, from greater weakness or mobility, one

eye cannot accommodate itself to the other; 3. *necessarius*, from a change in the situation or figure of the eye, or a part of it.

This enumeration of species affords, however, but a partial view of the subject. Squinting depends certainly on the optic axis not being directed to one object, and it will be necessary to examine the sources of this deviation from their uniform direction. If both eyes, as Dr. Cullen has remarked, are not of equal powers, the person accustoms himself to see with one only, and the other frequently wanders in different directions. This is, however, by no means a frequent cause, for in that case every very near-sighted person would squint; but those who read or work with one eye only, when looking at a distant object, direct both to it. In the few instances which we have observed of squinting, combined with near sight, we have rather suspected that the disease was independent of it.

When any affection of the brain occasions double vision (Boneti Sepulchretum, lib. i. Sect. xviii. Obs. 28), squinting often follows; for to remedy the defect the person distorts one eye, and before the cause is removed the disease becomes incurable. Sometimes a disorder of the muscles of one eye prevents its easy action in different directions, and Morgagni (de Sedibus, &c. xiii. 20), found it to arise from inflammation of the muscles of the bulb; Pellier, in another case, from the muscles ruptured; and an author in the Journal de Médecine, whose name has escaped us, discovered them in a state of great relaxation. Diseases of the cornea and lens have also occasioned strabismus. If there is any obfuscation of the latter, the eye will be differently directed to see with greater clearness, and Du Hamel found the lens drawn into an oblique position, as he supposed, by the ciliary processes. An oblique position of the cornea is mentioned as a cause of squinting; but it is not easy to separate this appearance from too great convexity, the cause also of myopia, which we have already mentioned. Tumours within the eye pressing it on one side, are causes of double vision, and a preternatural adhesion of the eye lids, which admits only of sight in one direction, must obviously produce strabismus.

A more general cause is, however, a great irritability in the muscles of the eye, occasioning irregular contraction. This often arises from nervous diseases, in one instance it originated from terror, sometimes from epileptic paroxysms, and in a single case, it is said, from fever. A paralysis of one of these muscles may also occasion the disease, or a general relaxation, producing spasm in the manner before explained, may have the same effect.

When the causes can be traced, they will often suggest the remedy; but, in general, the mechanical contrivances only succeed. (See Darwin, Philosophical Transactions, 1778; Pressavin Nouveau Traité des Vapeurs.) An object fixed on the temple on that side of the eye turned from its natural direction inward, and to the nose, when directed outward, will sometimes attract the attention gradually, and restore it to the natural direction. Goggles have been also recommended which admit only of vision in the same line; but these often fail, as the child, in whom any remedy will only succeed, contents himself with seeing with one eye. In a child who began to squint visibly we directed a servant

appointed to watch him with the strictest care, to put her hand immediately before his eyes, and at the same time to direct his attention to distant objects. This plan succeeded in a great degree; for, though his squinting is visible to its parent, no one, though apprised of it, can perceive the different direction of the axis.

See Camper de Regimine Infantum; Mémoires de l'Académie des Sciences, 1742, p. 93; 1743, p. 321; Pellier Recueil des Mémoires, &c.

STRA'MEN CAMELO'RUM. CAMEL'S HAY. See JUNCUS ODORATUS.

STRAMO'NIUM, (from *stramen*, from its fibrous roots). THORN APPLE, *dustray*, *barryococalon*, *stramonium spinosum* of Girard; *solanum maniacum* of Dioscorides; *datura stramonium* Lin. Sp. Pl. 255.

The root is long, large, and fibrous; the stalk of a pale green colour, strong, and near three feet high; the leaves large, of a lively green, placed on strong peduncles, broad, pointed at the extremity, beautifully indented, and placed without any regular arrangement. At night the leaves, particularly the upper ones, rise up and inclose the flowers. The flower is monopetalous, funnel shaped, tubular, and folded at the border in five parts, growing at the bifurcation of the branches, large, of a milk white colour, though sometimes with a tinge of purple or violet. The seed vessel is oval, large, and covered with short, sharp, and strong thorns; the seeds brown; a native of America, flowering in August.

The seeds and leaves produce a vertigo, and afterwards delirium. Some boys who had eaten the seeds of thorn apples, were seized with giddiness, horrible imaginations, terrors, and delirium; and those who did not soon vomit died. (Boerhaave.) A man, sixty years old, by mistake drank a decoction of the capsules of the stramonium in milk, which was followed by vertigo, dryness of the fauces, anxiety, loss of voice, and sense: the pulse became small and quick, the extremities cold, the limbs paralytic, the features distorted, accompanied with violent delirium, continual watchfulness, and a total suppression of all evacuations: in a few hours these symptoms disappeared.

This plant hath a disagreeable nauseous smell, when rubbed between the fingers; the leaves are said to be cooling, and the seeds narcotic, producing a kind of delirium, which continues twenty-four hours. See Edinburgh Medical Commentaries.

For the treatment of those affected by the stramonium, see AMANITA and VENENUM.

Dr. Storck found the expressed juice to be singularly efficacious inspissated to an extract, in doses from gr. ss. to 3 i. in twenty-four hours, in epileptic disorders, convulsions, and madness. With other practitioners it has not been equally successful. Though the extract has been usually given, the powdered leaves seem to be a preparation more certain and convenient. The leaves of the stramonium have been used externally in inflammatory tumours and burns. Storck on the Stramonium; Withering's Botanical Arrangements; Medical Museum, vol. i. p. 448, &c.; Wilmer's Observations on Poisonous Vegetables; Cullen's Materia Medica.

STRANGA'LIDES, (from *σπρηνγνν*, to torment). Hard tumours in the breasts from milk.

STRANGULA'TIO. See SUSPENSIO

STRANGURIA, (from *στραγγε*, a drop, and *super*, urine). A **STRANGURY**, a discharge of urine by drops, attended with pain. See **DYSURIA**.

STRATIO TES, (*στρατες*, an army, from its virtues in healing fresh wounds). See **MICRO LEUCO NYMPHÆA**, **MILLEFOLIUM**, **ALOIDES**.

STREATHAM WATERS, rise about six miles south of London Bridge, in the county of Surry: a gallon of this water yielded forty grains of calcareous earth; sixty of a salt compounded of vitriolated magnesia, and sea salt, according to Dr. Rutty. It is a weak purging water, taken from one to two pints in a morning, but now neglected. See **AQUÆ MINERALIS**.

STRE'MMA, (from *στριφω*, to turn). A **STRAIN**, by the ignorant and illiterate **SPRAIN**, or the stretching of a membranous or tendinous part beyond its proper limits of motion. This accident happens chiefly about the joints, occasioning weakness and pain, with swelling, and often a total inability to move. A strain approaches very nearly to the nature of a contusion, for the very violent tension of the fibres weakens their tone. Inflammation and swelling soon follow, not without some suspicion of a rupture of the absorbents, or of the exhalant arteries. The swelling is certainly at first elastic, and the inelastic tumour which follows is the effect of weakness only. As in contusions, warm spirituous applications in the earliest periods are effectual; but less so after the inflammation has come on. Immediately after the accident also, pumping on the part is highly beneficial. If these applications are delayed, topical inflammation follows, and in that state leeches, with the application of warm vinegar, three or four times a day, will be proper; or the *cataplasma aceti*, made of vinegar, oatmeal, and crumbs of bread, may be applied cold. When the inflammation has abated, camphorated spirit of wine may be added to the vinegar, or the volatile liniment applied, and a bandage used to support the weakened part, often wetted with a solution of vitriolated zinc, until the natural degree of strength returns. Dr. Lobb advises the use of vinegar, and rectified spirit of wine alternately, at the distance of two or three hours. Saturnine water is useful; and in the early period the effusion of water as hot as it can be borne, has been recommended. The leeches, when the inflammation has come on, must be repeated in proportion to the degree and the frequency of the returning pains. *Bell's Surgery*, vol. v. p. 446.

STREPSI'CEROS, (from *στριφω*, and *κερας*, from his twisted horns). See **ANTILOPUS**.

STRI'CTURÆ, (from *stringo*, to bind). Constrictions in nervous passages, arising either from organical disease, from spasms, or obstructing bodies. The first is our chief object in this place. Strictures from organical disease, which are the objects of our practice, occur in the urethra, the œsophagus, and rectum. Those of the urethra are particularly troublesome; and though they seem occasionally to arise from spasm, and this preternatural contracted state often impedes the best concerted measures, yet spasm is seldom, if ever, a permanent cause of stricture. It has been doubted whether the urethra is muscular: muscular fibres cannot certainly be traced in it; but we have long since learnt not to deny their existence, because they cannot be demonstrated; and every one accustomed to introduce the

catheter must have experienced the very great inconveniences which the occasional contraction of this canal produces. See **CATHERISMUS**.

It may indeed be doubted whether this contraction arises from the urethra itself, or from the muscle which embraces it at the part where the contraction usually takes place; but this would lead us into a disquisition of no little intricacy, and wholly inapplicable: it is sufficient to observe, that there is the greatest probability that the urethra itself is muscular, since it is subject to spasm very nearly through its whole course. At the same time, as already hinted, it is highly improbable that permanent strictures are owing to this preternatural state of contraction.

A common cause of strictures is inflammation, or previous ulcerations, which occasion a thickening of the canal, from exudations in its substance, or cicatrix. From this circumstance it is often the consequence of gonorrhœa; but, independent of inflammation, strictures more commonly arise from plaits or duplicatures of this membrane, which take place on either side, or, in some cases, through the whole circumference. When from inflammation, it is styled the *cord* stricture; if surrounding the canal, and if extended in width, the *ribbon* stricture. When it arises from duplicatures of this membrane, which may be easily conceived if its various states of distention and relaxation are considered, as well as the difficulty which must attend its accommodating itself to their rapid successions, these may arise on either side, or, like the former, surround the whole canal. Strictures of this kind are rarely single, except when found below the bulb, and from hence it has been concluded that all others are of secondary formation. In this part of the urethra there is indeed a natural contraction, probably intended as an obstacle to the discharge of the semen, for the purpose of exciting the action of the acceleratores, and here, from the causes of duplicatures just mentioned, we may naturally expect to find their effects.

In this view of the causes of stricture we have omitted that insisted on by Mr. Hunter, debility; but it probably acts as the cause of duplicatures, while inflammation as constantly produces strictures from exudation. Constant irritation may produce both; for a membrane when weakened by repeated stimuli, does not readily adapt itself to the different states of relaxation. The contractile power is diminished by repeated exercise. From these different causes, however, strictures are common complaints; but we by no means find them more frequent since injections have been more freely employed; nor have we any reason, from experience, to accuse this remedy as a cause.

The effects of strictures are various and extensive. We have already mentioned a regular feverish paroxysm as the consequence of introducing the catheter; and, on the contrary, an obstinate intermittent has arisen from a disease of the urethra. Pruritus and leucorrhœa in the softer sex, nocturnal emissions and blennorrhagia in men, have equally proceeded from this apparently unsuspected cause; and to the same effect may probably be attributed the advantages, if any, of the savine candles in *tabes dorsalis*.

The only effectual remedy is the bougie, an instrument which is usually conical at its extremity, and acts mechanically in dilating the strictured portion of the

canal. It is made of rolled plaster, of elastic resin, of metal, and in considerable strictures a piece of catgut is sometimes employed with success. The stricture is, however, frequently too considerable to yield to such measures; sometimes the canal is almost wholly closed. The improvers of surgery have, therefore, substituted the caustic. The plan was suggested, and, we believe, employed, by Wiseman, and afterwards described by Petit (*Memoires de l'Academie de Chirurgie*, i. 439), but neglected till again revived by Mr. J. Hunter. Each adopted measures neither safe nor convenient; for the portecrayon of the latter is scarcely superior to the ruder method of the former. The armed bougie is a more convenient instrument, viz. a bougie to the end of which a caustic is fixed, covered, in the more improved forms, with a coating of wax, to prevent its action till it reaches the strictured part, near which it is retained for a short time, till by the warmth the wax dissolves, and the caustic acts with scarcely diminished powers. Both the *argentum nitratum* and *kali purum* have been employed; but the former seems to deserve the preference. The caustic has, however, been sometimes, we fear, employed unnecessarily, and the introduction of this instrument, as well as the common bougie, is, in unskilful hands, often dangerous: in the most skilful it is frequently difficult. The management can scarcely be detailed: it must be learnt from practice.

Strictures in the œsophagus have been combated with bougies, like those in the urethra, but seldom with advantage. Dr. Andrews, in a late work, has recommended the armed bougie for this purpose, and given some instances of its success. The only other stricture is that in the rectum; but for this we believe no measure similar to the bougie has been adopted, though, as it is within the reach of the finger, we suspect that the savine candle may prove advantageous.

Wiseman's Surgery; J. Hunter's Works; Jesse Foot's Critical Inquiry into the ancient and modern Manner of treating Diseases of the Urethra; Home's Practical Observations on Strictures; Whately on Strictures; Andrews on the Application of Lunar Caustic to Strictures; Wolf de Morbis Urethræ apud Eyerell *Dissertationes Medicæ*; Stoll iv. i.

STRI'DOR, (from *strideo*, to gnash or grind). GRINDING OF THE TEETH. In acute diseases this symptom is usually fatal if the patient has not been accustomed to it in his childhood. (Hippocrates.) It is usually accounted a symptom of worms in children; but is owing to irritation on the bowels from any cause.

STRI'GILIS, (*quòd eo equi, et in balneis homines, stringuntur*). A HORSE COMB OR SCRAPER. An instrument to scrape off the sweat during the gymnastic exercises of the ancients, and in their baths, made of metal, horn, ivory, or linen. They were sometimes curved.

STRIGME'NTUM, (*à strigendo, from scraping*). The *SORDES*, scraped from the skin in baths, and places of exercise; consisting of the oil employed in anointing the bodies of the *athletæ* and the sweat mixed with the dust raised in the place of exercise, or purposely strewed on the bodies of those engaged. Strigments sometimes consisted of oils and dust scraped from statues,

combined with verdigris, from the oil dissolving the copper.

STROBILUS. A CONE, a species of pericarpium, formed from an amentum, as in the fir trees.

STRO'NGYLUS, (from *στρογγύλος*, cylindrical). See *VERMES*.

STRO'NTIA. AN EARTH. (See *CHEMIA*.) Though we have introduced this earth in our list of the *materia medica*, its medical virtues are doubtful and suspicious. In moderate quantities it is not injurious to animal life.

STRO'PHULUS, a papular eruption peculiar to infants, of a variety of forms, which Dr. Willan has divided into five species.

1. **STRO'PHULUS INTERTINCTUS**, (from *intertingo*,) usually called the *red gum*, in Scotland the *redgown*, in France *efflorescence benigne*. The papulæ rise sensibly above the level of the cuticle, are of a vivid red colour, commonly distinct from each other, though sometimes in large patches, appearing most commonly on the cheeks, fore arm, and back of the hand, occasionally diffused over the whole body. This complaint rarely becomes pustular, and, when it does so, the fluid is usually absorbed, leaving in almost every instance a scurf. The duration is various, and sometimes there are successive crops. It is seldom preceded or accompanied by any constitutional disease, though supposed by some authors to be connected and to alternate with aphthæ. This connection is, however, scarcely supported by observation. It has been ascribed to acid acrimony in the stomach; but is more probably owing to an irritable state of the skin; though, if repelled, diarrhœa and other complaints of the bowels, sometimes even with convulsions, follow.

2. **STRO'PHULUS ALBIDUS**, a variety only of the former, having a number of minute whitish specks a little elevated, sometimes, though not constantly, surrounded by a slight redness, not discharging any fluid, on separating their tops. They appear chiefly on the face, neck, and breast, and are more permanent than the red gum. Either seldom requires any thing but keeping the skin clear from sordes, and promoting an equable perspiration, by washing the surface of the body daily with tepid water. But should these eruptions be attended with a morbid state of the stomach and bowels, the aliment must be proportioned to the strength of the digestive powers; and such exercise employed as can be conveniently borne to invigorate their system. If from exposure to cold, or from any other cause, a repulsion takes place, producing some internal disorder, a warm bath is the most effectual remedy.

3. **STRO'PHULUS CONFERTUS**, (from *confercio*, to crowd together). TOOTH RASH. About the fourth or fifth month after birth, nearly at the period of dentition, an eruption of numerous papulæ, irregular in size, appears on different parts of the body in infants, which chiefly affects the cheeks and sides of the nose, extending sometimes to the forehead and arms, but rarely to the trunk. On the face they are more crowded, smaller, though not of so vivid a colour as in the red gum; but on the back and loins they are much larger, and somewhat more distant from each other than on the face. They are often surrounded by an extensive circle of inflammation, and some few of the papulæ contain a

semi-pellucid watery fluid, which is absorbed on the inflammation subsiding. About the seventh or eighth month one or two large irregular patches arise on the arms, shoulders, and neck; the papulæ are hard, large, and crowded together; and the whole surface is of a high red colour. In about a fortnight these papulæ become flat at the top, the cuticle exfoliates, and the skin below remains rough, irregular, and discoloured for a fortnight. A painful and obstinate modification of this complaint occasionally takes place from the calves of the legs to the navel; for the papulæ are numerous and crowded, producing a continued redness. During the course of three or four months the eruptions recede, and again return; nor do they finally yield till the child is one or two years old. The skin shrivels and cracks; but the fresh papulæ rise from under it; but, though troublesome, the general health is generally good while the eruption continues on the surface. This complaint is considered as symptomatic, arising from the inflamed and painful state of the gums during dentition, as it always occurs at that period, and disappears soon after the first teeth have cut through. It has been attributed to acid, to indigestion, or some feverish complaint of the mother or nurse, but is more probably the irritation from the teeth communicated to the skin. Its appearance is, however, favourable; for convulsions scarcely ever occur while it continues on the surface. The remedies are those described in dentition. See DENTITIO.

4. STRO'PHULUS VOLATICUS, denominated from its transitory appearance, arises in different parts of the body in small circular patches, or clusters of papulæ, the number in each cluster being from six to twelve: both the papulæ and the interstices are of a high red colour, and continue red, with a little heat and itching, for about four days, when they turn brown and begin to exfoliate. They arise in succession, at a small distance from each other, gradually creeping over the face, body, and limbs, and terminating in three or four weeks. Though in many cases the eruption takes place without any symptoms of internal disorder, sometimes the patient has a quick pulse, a white tongue, and seems uneasy and fretful. This is the *ignis volaticus infantum* of authors, though Astruc and Lorry have given this term to one of the forms of crusta lactea, in which successive eruptions of pustules are observed, chiefly about the mouth. The *maculæ infantum volaticæ* of the German authors are erysipelatous efflorescences on the genitals of infants, which often prove fatal by supervening mortification. The present usually appear between the third and sixth months; but no external application seems necessary. As there appears some disorder of the stomach and bowels connected with it, an emetic, succeeded by some laxative medicines, and afterwards a decoction of Peruvian bark, will be advantageous.

5. STRO'PHULUS CANDIDUS, (from the smooth shining surface of this eruption, without inflammation round the base, so that the spots appear of a lighter colour than the adjoining cuticle). The spots are larger than any of the foregoing species, diffused at a considerable distance from each other, over the loins, shoulders, or upper part of the arms; and seldom seen in any other situation. This species affects infants of about a year

old, and most commonly succeeds some of the acute diseases to which they are subject. These papulæ continue hard and elevated for about a week, and then gradually disappear. See Willan on Cutaneous Disorders. Order 1st. ed. 4to. London.

STRU'MA, (from *στρενω*, to heap up). See SCROFULA. The term is sometimes confined to the induration of the thyroid gland; endemic of Switzerland.

STRU'THIUM, (*στραθος*, a sparrow, from the resemblance of its flowers to an unfledged sparrow). See SAPONARIA LUTEA, IMPERATORIA, and LUTEA.

STRYCHNOMA'NIA, (from *στρυχνης*, night shade, and *μανια*, madness). See SOLANUM LETHALE.

STRY'CHNOS, (*στρυχνης*, vel *τρυχνης*, from *τρυχω*, to torment). The deadly night shade of Theophrastus. In Linnæus's system it is a genus of plants comprehending three species, the *s. nux vomica*, *colubrina*, and *volubilis*. See COLUBRINUM, NUX VOMICA, FABA INDICA.

STUM. See MUSTUM.

STU'POR, (from *stupéo*, to astonish). LOSS OF FEELING. (See ANASTHÆSIA.) Sometimes the transitory numbness, occasioned by accidental pressure, on a nerve.

STU'POR DE'NTIUM. An affection of the teeth, in which a painful numbness is felt in the membrane which surrounds them, produced by taking acid and austere substances into the mouth.

STU'PA, (from *στυπω*, to bind). A STUPE, a piece of cloth, usually of flannel, dipped in a fluid, and applied to an affected part.

STYE, or STIAN. A small tumour on the edge of the eye lids. See CHALAZA; CRITHE, and HORDEOLUM.

STY'GIA A'QUA. See Aq. REGIA, under NITRUM.

STYLIFO'RMIS PROCE'SSUS, (from *stylus*, a hadkin, and *forma*, likeness). See STYLOIDES PROCE'SSUS.

STYLO-CERA'TO-HYOIDE'US. (Stylo, from the styloid process, and *κερατα*, horns of the hyoides.) STYLO-HYOID PROCESS. See STYLO-HYOIDES.

STY'LO-CHO'NDRO-HYOIDE'US. The name assigned by Douglas to one of the muscles called stylo-hyoidæus, because it is inserted into the cartilaginous appendix of the os hyoides.

STY'LO-GLO'SSI, (from *stylus*, and *γλωσσα*, a tongue,) muscles which rise from the inner part of the styloid process, and go the whole length of the tongue, serving to expand it.

STY'LO-HYO'IDES, vel CERATO-HYOIDE'US, rises by a long thin tendon from the basis and posterior edge of the processus styloides, and runs to the cornu and basis of the os hyoides. Generally its fibres pass on each side of the tendon of the digastric muscle. Sometimes another smaller muscle has the same origin and insertion.

STYLOIDES PROCE'SSUS, (from *στυλος*, a pencil, and *ειδος*, form,) *belemnoides*, *stiliformis processus*. The STYLOID PROCESS stands out obliquely forward from under the craggy part of the temporal bone, resembling in shape the ancient *stylus scriptorius*. Several muscles, rising from this process, borrow one half of their name from it; STYLO-GLOSSUS; STYLO-HYOIDEUS;

STYLO-PHARYNGÆUS, q. v. This process, even in adults, is sometimes ligamentous at its root, and occasionally composed of two or three distinct pieces. See **TEMPORUM OSSA**.

STYLOIDES RADIALIS LIGAMENTUM, is fixed round the neighbouring tuberosity of the os scaphoides.

STYLOIDES ULNÆ LIGAMENTUM, is fixed in the os cuneiforme, and then in the os unciforme, from whence it is a little stretched over the fourth bone of the metacarpus.

STYLO-MASTOIDEUM FORAMEN, *mastoidæum foramen*, is the orifice of the passage for the portio dura of the auditory nerve, which runs behind the tympanum.

STYLO-PHARYNGÆI, rise from the base of the styloid processes, and are inserted into the side of the pharynx, and the back part of the thyroid cartilage. They raise the pharynx and thyroid cartilage. See **PHARYNX**.

STYLUS, (from *στυλος*, a column). The style or shaft of a plant, or, in botanical language, that part of the pointal which supports the summit.

STYMATOSIS, (from *στυω*, to have a priapism). A bloody discharge from the penis, with violent erection.

STYMMATA, (from *στυφω*, to thicken,) *spissamenta*. Fluids or other substances added to oils, either on account of their odour, or for their preservation; and from thence the name was applied to the thicker, more solid odorous ointments. The *hedysmata*, similar in other respects, were liquids. Linden informs us, that the *stymmata* gave consistence or body to ointments; but that *hedysmata* were the juices from whence those were made. Schroder describes *stymmata* to be the *spissamentum* or sediment of flowers, &c. remaining, after maceration in oils and subsequent expression.

STYPSIS, (*στυψις*, *astrictio*, from *στυφω*, *astringo*). This general term might have included strictures, and every coarctation of natural passages; but as the German authors confine it to constipation, and other strictures might not have been readily sought for under this term, we preferred the more limited signification. We have indeed mentioned the disease under **CONSTIPATIO** and **OBSTIPATIO**, q. v.; but were not then aware that our limits would admit of a more extensive range. We, therefore, omitted the organical causes; an omission which, with some others, we shall now endeavour to supply. We have already observed, that constipation is relative, and it is inconceivable with how little injury to the general health a long continued obstruction can be borne. There are well recorded instances of its having continued many weeks, and scybala, as well as other substances, have been retained many years. Thinner fluids have, however, in this interval been discharged. In the scirrhus-contracted rectum, and some other cases of unconquerable, though not perfect, obstruction, a diarrhoea is apparently the real disease. (Callisen *Acta Hafniensia*, ii. 94.) Cleghorn mentions constipation as endemic in Minorca; and it is not uncommon in warm climates, from excessive perspiration; nor in melancholic temperaments, from defective irritability.

The intemperate and continued use of astringents has been accused as a cause of stypsis, particularly the

acacia; and when oak bark has been employed in putrid fevers, instead of the cinchona, we have found costiveness peculiarly obstinate. In drinkers of spirits it has occurred with almost unconquerable violence.

The organical causes have been hæmorrhoids, a luxation of the coccyx, herniæ of different kinds, and, more internally, hardened scybala, and various foreign bodies, as beans, the stones of fruit, the seeds of grapes, convoluted worms, &c. Sometimes the intestines themselves have been organically diseased by cartilaginous hardenings, polypi, sarcomata, or scirrhi. The lists of authorities for each cause would fill a page. Tumours, foreign bodies, displacements of the adjoining organs, a retroverted-uterus, a steatoma of the bladder, a calculus pressing on the rectum, an enlarged prostate, the gravid uterus, a tumour between the vesica and rectum, a large placenta, a pessary, a scirrhus, or an abscess between the vagina and rectum, and a scirrhus uterus, have been all found to have occasioned obstinate, often fatal, constipation. Different parts of the intestinal canal have also coalesced, and occasioned, as may be supposed, unconquerable obstructions.

In many of these cases we cannot expect to be able to afford relief, and the common medicines have, in the articles referred to, and in many others, been mentioned with particular remarks. We may now add, that we perceive the authorities in favour of cold, particularly cold applications to the breast and extremities, numerous and highly respectable. Crude mercury and balls of lead have had their advocates, and fomentations of senna leaves to the bowels are recommended by Petit. (*Memoires de l'Academie de Chirurgie*, i. 239.) The most curious remedy is broth made of a whole fowl, not plucked. *Acta Naturæ Curiosorum*, vii. 27. ix. 111.

STYPTICA, (from *στυφω*, to astringe,) *constrictiva*, *styptics*, or medicines which stop hæmorrhages. Few of these are to be depended on, and they can be only trusted in very slight cases: the best is the lycoperdon, the agaric, or lint impregnated with the powder of vitriolated copper. Turpentine, alum, and vitriolated iron, are also employed.

The *pulvis stypticus Helvetii*, *pulvis febrifugus Germanorum*, consists of six parts of roch alum, and one of the dragon's blood. This form indeed differs from that prescribed by Helvetius; but it is more convenient, and more effectual. A somewhat larger proportion of gum kino is now substituted for the dragon's blood, which is known to be useless. The present form is, however, objectionable, as Tromsdorff has remarked that the kino decomposes the alum. Perhaps the catechu might be more conveniently substituted.

Solutio sulphatis cupri, in the Edinburgh new dispensatory, consists of sulphat of copper and sulphat of alumine, of each three ounces, dissolved in a quart of water and strained, to which an ounce and half of diluted sulphuric acid is added.

The action of *styptics* resembles that of **ASTRINGENTS**, q. v. In stopping bleedings they not only constringe the open mouths of the arteries, but they seem also to coagulate the blood.

STYRACIFLUA, (from *styrax*, and *fluo*, to flow). See **LIQUIDAMBRA**.

STY'RAX, **STORAX**, (from *στυραξ*, a reed; be-

cause it was exported in reeds or canes,) *styrax calamita*, an epithet chiefly confined to the dry storax: *styrax folio mali cotonei* of C. Bauhine; *styrax officinale* Lin. Sp. Pl. 635.

The fine sort, called the *red storax* very rarely met with, is the pure native juice which flows from incisions made into the trunk of the tree in masses, sometimes composed of whitish, and pale reddish brown, lumps, sometimes of an uniform reddish yellow, or brownish colour, unctuous and soft like wax, and free from visible impurities. The common storax is supposed to be the thinner juice thickened with saw dust, for it is more fragrant than the pure sort, both while mixed with the saw dust, and when separated by means of alcohol: its flavour is of the same kind. It is now brought in large pieces of a reddish brown colour, softish, unctuous to the touch, but brittle and friable, and is the kind ordered by the London college. Storax, in the lump, or in the tear, is in masses of uniform texture, and of a yellowish red or brownish colour, sometimes interspersed with whitish grains.

It is the produce of Syria, Cilicia, and Pamphylia, according to some authors of Italy and the Levant, and indigenous in several of the southern parts of Europe; yet the resinous drug is only to be obtained in perfection from the trees growing in Asiatic Turkey. The American kind is greatly inferior.

An ounce of common storax, according to Neumann, yielded to rectified spirit of wine six drachms of resinous matter, to water half a drachm of gum, and the remainder was saw dust. On heating another ounce first with water, he obtained two drachms of gummy, then with spirit half an ounce of resin. Pure spirit raises but little from the storax by distillation, but water takes up much of its flavour; and when nearly drawn off, a fine subtile essential oil rises, in the proportion of about $\frac{3}{4}$ ii. from $\frac{3}{4}$ xvi. The residuum, urged with a due degree of heat, afforded $\frac{3}{4}$ ix. of an empyreumatic liquor, followed by $\frac{3}{4}$ ii. $\frac{3}{4}$ i. of thick butyraceous oil; and afterwards $\frac{3}{4}$ ii. $\frac{3}{4}$ i. of an empyreumatic oil, which had nothing of the smell of the storax, with $\frac{3}{4}$ v. of an acid spirit. On washing the butyraceous oil with warm water, and setting the water to cool, a small portion of saline matter separates, resembling the flowers of Benjamin, and supposed to be of a similar nature. The same matter is obtained from the pure resin, by boiling in water. Though spirit carries but little from the storax in distillation, yet if twice its weight of the salt of tartar be added, a spirit is obtained strongly impregnated with both the taste and smell of this resin. The strongest and the most fragrant principle, separable from storax, is the subtile, slightly empyreumatic oil which arises first in distilling it.

It is chiefly used as a perfume, sometimes as a medicine, both externally and internally. It has been styled a resolvent and corroborant, and given in catarrhal complaints, coughs, asthmas, menstrual obstructions, as well as in ulcerations of the lungs, and other pulmonary diseases, from its affinity to the balsams, formerly so much esteemed. In nervous debilities, from its sensible qualities, it might be apparently of service, but it is now almost totally rejected from practice. The pil. è styrace was an opiate formerly much valued, but now expunged from the pharmacopœia of all British

colleges, though those of London and Dublin retain the purified storax, and the medicine is still directed as one of the ingredients in the tinctura benzoes compo-sita. See Lewis's Materia Medica. Neumann's Chemistry.

STY'RAX LI'QUIDA, *liquidambar*, is a resinous juice obtained from a tree in Virginia and Mexico, which Ray calls *styrax aceris folio, liquidambar styraciflua* Lin. Sp. Pl. 1408. The juice is said to exude from the leaves of this tree spontaneously, but more freely from incisions made in its trunk; and sometimes obtained by boiling the bark and the small branches in water. It is at first of the consistence of thin turpentine, but by long keeping grows hard and brittle; of a yellow colour, inclining to red, a hot aromatic taste, and a fragrant smell, not unlike that of storax, heightened with a little ambergris. Formerly it was used as a perfume, but is now scarcely known in the shops. That most commonly met with is of a weak smell, a gray colour, and supposed to be artificial, for four drachms of common liquid storax yielded, with rectified spirit of wine, three drachms and one scruple of resinous extract; of the remainder, water dissolved only a few grains; and on distillation with water, its essential oil resembled oil of turpentine: in a stronger fire, the empyreumatic oil which came over was mere pitch. The London college orders it to be purified by straining after solution in spirit of wine, and then distilling it until reduced to a proper consistence. Dr. Cullen says, that mixed in the proportion of one part of styrax to two of unguentum basilicon nigrum, it has been of remarkable service in paralytic cases, and particularly in debility of the limbs following rickets; but this he obtained from an empirical practice. See Neumann's Chemistry; Philosophical Transactions, N° 313; Lewis's and Cullen's Materia Medica.

STY'RAX A'LBA. The WHITE PERUVIAN BALSAM.

SUBALA'RIS VE'NA, (from *sub*, and *ala*, the arm *fit*). The AXILLARY VEIN.

SUBCLA'VIÆ ARTE'RIÆ, (from *sub*, and *clavicula*, the clavicle). The SUBCLAVIAN ARTERIES arise from the arch of the aorta, on each side of the left carotid, which commonly lies in the middle between them. The origin of the left subclavian artery usually terminates the aorta ascendens; and the right subclavian arises from the arteria innominata. These arteries on each side terminate at the upper edge of the first rib between the lower insertions of the first scalenus muscle, and as they go out of the thorax they are styled *arteriæ axillares*: in their course they give out the internal mammary, the cervical, the vertebral, and the superior intercostal arteries.

SUBCLA'VIUS MU'SCULUS, (from the same,) rises by a small tendon from the anterior part of the cartilage of the first rib, close to the strong ligament which connects this rib to the clavicle, and runs along the whole under side of the clavicle into the coracoid process, where it is articulated to the clavicle. Its use is to bring the clavicle downwards and forwards.

SUBCOSTA'LES, (from *sub*, under, and *costa*, a rib,) are situated more or less obliquely on the insides of the ribs near their bony angles, and run in the same direction with the external intercostals. They are fixed by both extremities in the ribs; the inferior being always

at a greater distance from the vertebræ than the superior, and several ribs lying between the two insertions.

SUBCUTA'NEUS, (from *sub* and *cutis*). See **PLATYSMA MYOIDES**.

SUBER. The external bark of the *quercus suber* Lin. Sp. Pl. 1413. **CORK**. When burnt it is used as an application to internal piles, and it makes a part of a remedy, formerly kept secret, for bronchocele, as it is said to contain an oil and salt, not very dissimilar to those procured from animal substances. In its unprepared state it is used for pessaries, and is an useful assistant in many mechanical contrivances of the surgeon; as, when properly chosen, it is soft and elastic.

Cork, from swelling in the stomach, is said to be poisonous; but its expansion is not sufficiently great to be dangerous.

SUBHUMERA'LIS VE'NA, (from *sub*, and *humerus*, the shoulder). See **ARTICULARIS VENA**.

SUBLIMAME'NTUM, (from *sublimo*, to lift up). See **ENEOREMA**.

SUBLIMA'TIO, (from the same). **SUBLIMATION**, *elevatio*, the condensing and collecting in a solid form, by means of vessels aptly constructed, the fumes of bodies raised by the application of a proper heat. Fluids are said to distil, and solids to sublime.

The design of sublimation is to separate the more volatile, and often the purer, portions of a mixed body from the remainder, often to combine bodies while in a state of vapour, which will not admit of union in a solid or even in a fluid form. When the body sublimed is compact it is styled a *sublimate*; when loose and light, *flowers*. When the substance is not peculiarly valuable the sublimate or flowers are received in an inverted crucible, sometimes in a paper cone. The necessary heat is various; but seldom much below a red heat.

SUBLIMA'TIO URI'NÆ, (from the same). See **ENEOREMA**.

SUBLIMATUM, (from the same). See **MERCURIUS COROSIVUS ALBUS**.

SUBLINGUA'LES GLANDULÆ, (*sub*, under, and *lingua*, the tongue,) vel *Bartholiniânæ*, vel *Riviniânæ*. See **SALIVARES GLANDULÆ**.

SUBLINGUA'NIS ARTE'RIA, *ranina*, is the second branch from the external carotid, rising a little above the superior guttural artery, running forwards, upwards, and over the cornu of the os hyoides, and sinking into the tongue to supply all the adjacent muscles.

SUBLUXA'TIO, (from *sub*, dim. and *luxo*, to dislocate,) *subluxation*. Some authors extend the use of this term to violent strains, (see **STREMA**.) where the head of a bone is not quite out of its socket, but rests upon the brim.

SUBMER'SIO, (from *sub*, under, and *mergo*, to plunge,) **DROWNING**, a variety of the *apoplexia suffocata* of Cullen, *asphyxia immersorum* of Sauvages. Drowning, since the institution of the Humane Society, has engaged the attention of numerous practitioners; attention, however, which has not been rewarded by proportional improvement; for we believe the practice of the French guards on the Seine, described by Pia, is fully as judicious, and we think more successful, than that suggested by the refinements of Dr. Cullen, J. Hunter, and their minor satellites. We are indebted

to Van Helmont for the first hints respecting recovery; as, in the cure of hydrophobia, he immersed his patients in water so long as was sufficient to repeat the psalm, "Miserere." He owns that they were often taken up apparently dead; adding, that there was not much real danger in these appearances. The subject recurred to various authors who followed him; but has only within these thirty years claimed general attention. Persons immersed in water for five minutes are often recoverable, unless in their falling some blow has concurred in producing the event, or some sudden attack has occasioned their immersion. Even these considerations will not, however, always account for the want of success, and we are compelled to admit that irritability is not in every person again recalled with equal ease. Beyond this time, the hopes of recovery are less, in proportion to the time a person has been immersed, and after remaining twenty minutes in the water there are slender hopes. Instances are indeed recorded where recovery has followed after the immersion for sixteen, eighteen hours, three days; and, when the water has been frozen, even after fifteen days. Medical records are full of surprising stories, which require more than common faith to admit. It may be alleged, that the foramen ovale may continue open; and it has been said that negroes plunge their newly born infants in water, that they may become good divers, without knowing that such a foramen exists. Anatomy has indeed observed this passage pervious in the adult; but the event is too rare to explain the facts, and recovery, after twenty minutes immersion, is no common event.

The signs of drowning are those of death in general (see **MEDICINA FORENSIS**), with a darker livor on the countenance, and an absence of the marks of compression on the neck. Suffocation from deleterious gases is marked by a pale complexion. The reader who wishes, however, to acquire more minute information on this subject, may find it in Roderer's *Opuscula de Submeris, et Colle Cosmitor Medicinæ Triplex*.

The immediate cause of death from drowning has occasioned much controversy. The most obvious idea was, that the lungs were filled with water, which suffocated by preventing the access of air. De Haen supported this opinion by drowning cats in coloured fluids, when he found the lungs tinged by them. Many other authors, with Faissolle and Champeaux, enlisted on the same side; but Dr. Cullen soon suggested doubts against the conclusion, though he allowed the fact; and it is now, we believe, admitted, that when water is discovered in the lungs, it passes in after death, since animals, taken immediately from the water, are seldom found to have received any. The slightest irritation of any fluid, it is said, produces a stricture in the trachea, and prevents the access of the fluid; and though Morgagni (de Sedibus, &c. xix. 44), and others, found the epiglottis raised, this may have readily happened in the relaxation that occurs after death.

The other appearances, on dissection, are a collapsed state of the lungs, the heart on the right side turgid with blood, the left side and the venal system empty; water sometimes in the stomach (Morgagni de Sedibus, &c. xix. 41, 43); but the vessels of the brain are certainly not in every instance distended.

The immediate cause of death from drowning has

not been completely ascertained. From the time of Walter it has been supposed to be apoplexy (De Apoplexia, p. 56), and more lately from an accumulation of carbone in the lungs, which the air usually carries off. Both causes concur; and the spasm, probably induced on the glottis by the access of the fluid preventing respiration, accumulates the blood in the right side of the heart, and consequently prevents the return from the veins. If the stoppage of respiration soon produces death, and we have said that the time is various from the different irritability of different persons, no considerable accumulation will probably take place in the vessels of the head; but, if life continues for any period, such may occur. We have remarked that after about a quarter of an hour's immersion recovery is improbable, and after twenty minutes all exertions are usually unavailing. We mean not, however, to preclude attempts while recovery is possible; and within the periods mentioned, we are often obliged to continue our exertions with great perseverance for several hours before life returns. If the signs of death do not increase; if, on the contrary, a slight glow comes on; if the features recover their fulness, though in the most slight degree, it will be sufficient to urge the continuance of our efforts. Mr. Kite has recommended electricity as a means of ascertaining whether any irritability, in other words whether life, remains. But we had reason to believe, when in that article we noticed the subject, that though electricity excited, it also exhausted irritability.

Numerous useless refinements have been introduced into the science of resuscitation, as it has been quaintly called. The body, when taken up, should be wiped dry, covered, and carried, in at least a semi-erect posture, to a room where there is a large fire, and the necessary attendants only admitted. Warmth is most quickly administered, and warm flannel should be immediately applied, warm bricks to the feet, and warm sand to the pit of the stomach. Yet these applications should be conducted with some reserve: the colder the body, the slower should be the approaches of heat. We suspect that this caution has not been sufficiently kept in view; and, on this account, the warm bath so highly commended by some has not succeeded in the experience of others.

The chief change produced by drowning, we have seen, consists in the stoppage of respiration, and the consequent distention of the right side of the heart. Mr. Hunter considers that all our efforts should be directed to restore the action of the lungs, which will alone relieve the over distended ventricle. There may be some doubts from the arguments already used, whether taking a little blood would not assist by unloading the heart; but, when the circulation is wholly stopped, blood will not flow, or the only effect will be to empty the veins around. Perhaps, therefore, Mr. Hunter has decided properly in forbidding *venesection* in the first instance, as not likely to be useful in lessening the load, and very certainly injurious in depressing the vis vitæ. *Inflating the lungs* is of the utmost importance, and this is effected by bellows, communicating with a pipe introduced into the larynx, or sometimes through an aperture between the rings of the trachea. The breath of a healthy person is occasionally substituted, closing the nostrils; but what would appear the most effectual is,

the introduction of *warm* atmospheric air of a somewhat higher quality by a mixture of oxygenous gas. We should object to the air being *heated*, as well as to the introduction of pure gas, for the reason which led us to object to a higher temperature. While air or gas is introduced, the thorax should be pressed, and the abdominal viscera raised against it, to change, in some measure, its capacity; for we have already observed, that, when a train of associated motions has begun, they are often continued, from whatever point the series has commenced. Bronchotomy, we think, has been too rarely employed; for in almost every other way the thorax is imperfectly dilated. Mr. Hunter supposes that the stimulus of the volatile alkali may be advantageously combined with that of warm air. In each case the accumulated froth often offers a powerful obstacle; and the bellows recommended by Gren (Physical Journal i.) and Hunter (Philosophical Transactions) is the best method of overcoming it.

While the lungs are thus stimulated, the stomach, with which the whole system so evidently sympathizes, should not be neglected. By means of a flexible canula any stimulating fluid may be injected, and spirits, as well as volatile alkali, have been this way thrown in. The practice has not, however, been so common as from its obvious advantages may have been expected. The stomach brush, *ventriculi excutia* (see *Stomachus ad finem*), is, we observe, recommended in the Berlin Transactions.

A more ready access to the intestines is through the rectum; and the ease of the operation has apparently compensated for the less degree of sensibility of this extremity. Clysters have been very commonly employed, and they have been various in their nature and objects. Acrid purgatives thrown into the rectum was a measure of obvious utility; and other stimuli, as ammonia, mustard, rum, and brandy, have been added to water for this purpose. (Cullen, Currie, &c.) We find also, what appears more singular, that air alone injected as a clyster has been useful (Leipsic Commentaries, iv. 56); and Michaelis mentions the salutary effects of a clyster of vinegar and water. We have already spoken (see *RESUSCITATIO*) of the disadvantages of clysters of tobacco smoke, and on examining the most approved authors, we find them generally reprobated in these cases.

Other obvious stimuli are ammonia, applied to the nose, and sometimes injected into the nares; external frictions with salt, with mustard, &c.; a strong light directed to the eye, or harsh sounds to the ear; and an electrical shock applied to the spine or the pit of the stomach. The first only appears to be useful, as the stimulus is conveyed to the lungs, and excites a convulsive action in them. (See *STERNUTATIO*.) The others are of a more doubtful nature, or evidently injurious. A singular irritation is mentioned by Charde-non, in the Dijon Memoirs, viz. irritating the lungs themselves, through an incision made into the thorax. In the Gazette de Santé we are directed to lay bare the lungs; but we need not add a remark on either plan.

When life begins to return we are directed to persevere in, or even increase, our efforts; but slight irritability, thus restored, would be soon exhausted by excess of stimulus. In this state there will be no objection to a slight bleeding; and it is often useful to

prevent determinations of the newly restored circulation to different parts before the equilibrium is properly established. Light, warm, nourishing food, perfect tranquillity, with some easy motions, procured by laxatives or clysters, very slightly stimulating, will be necessary. Patients in this state must be carefully watched; for the latent "scintillula" will often quickly disappear. What, however, will appear of more importance is, that after life is fully returned, the accumulated irritability often brings on the most active inflammations, which we can venture only to relieve by topical bleedings, diluting liquors, opiates, gentle laxatives, and rest. They are sometimes so violent as to demand general, and even active, venesection.

Notwithstanding, however, the minute and scientific investigations of the ablest authors, the success of resuscitation is scarcely advanced. If a person is recoverable, common and obvious methods will succeed. If irrecoverable, all the efforts of the most refined science will fail. We have scarcely advanced farther than in destroying the popular prejudices of agitation, rolling on barrels, &c. The records of the Humane Society tell, however, a different story; nor should we doubt the results if the same plans in the same circumstances had not so often failed under our own eyes. The cause of humanity, however, prevents us from adding a word which would repress or chill any charitable exertion. Let every attempt be made; and should every thing fail, let the practitioner at least deserve success.

In the first volume of Dr. Fothergill's Works, we find the following popular detail of the method of treatment approved of by the Humane Society, which we shall for general information add.

I. The body should not be rolled on the ground, or over a barrel, nor lifted up by the heels, or be any other way roughly handled, or violently shook; but be removed to a convenient place, lying as on a bed, with the head a little raised, in as natural a position as possible.

II. The body, well wiped with a cloth, should be placed in a warm bed or blanket; but not too near a large fire. Bottles of hot water should be laid to the bottoms of the feet, joints of the knees, and under the arm pits. A warming pan moderately heated, or hot bricks wrapped in cloths, should be rubbed over the body, particularly along the back. The natural warmth of a healthy person, especially a child, lying close to the body, hath been found very efficacious. The room should be kept open and airy, with few persons in it. The shirt of an attendant, or skin of a sheep fresh killed and warm, may be used to advantage. Should the accident happen in the neighbourhood of a warm bath, brew house, bake house, glass house, saltern, soap manufactory, or any fabric where warm lees, ashes, embers, grains, sand, water, &c. can be easily procured, it will be very proper to place the body in any of these, moderated to a degree of heat very little exceeding that of a healthy person.

III. The body being placed in one or other of the above advantageous situations, various stimulating means should be immediately employed. The most efficacious are, blowing with force into the lungs, by applying the mouth to that of the patient, closing at the same

time his nostrils; throwing the smoke of tobacco up the fundament into the bowels, by means of a clyster pipe or fumigator; a pair of bellows may be employed until the others can be procured; rubbing the belly, chest, back, and arms, with a coarse cloth, or dry salt, so as not to rub off the skin, or with a flannel dipped in brandy, rum, or gin; applying spirit of hartshorn, volatile salts, or the like, to the nostrils, and rubbing them on the temples frequently; tickling the throat with a feather, to excite a propensity to vomit, and the nostrils also with a feather or snuff to provoke sneezing. The body should at intervals be shaken, and varied in its position.

IV. If there be any signs of returning life, such as sighing, gasping, twitching, beating of the heart, return of natural warmth or colour, a spoonful of water may be administered, to try if the power of swallowing be returned; if it be, a spoonful or two of warm wine, or of brandy and water, may be given to advantage, but not before.

Early bleeding has been found pernicious, and even fatal; it is not always applicable, though it may sometimes be employed by a person of skill, to remove or prevent symptoms of inflammation.

The above methods of restoring life are applicable to various other cases of apparent sudden death, whether from hanging, apoplectic and convulsive fits, cold, suffocation by damps or noxious vapours, proceeding from coal mines, confined air of wells, caves, cisterns, or from the must of fermenting liquors.

See Tissot's Advice to the People; Medical Museum, vol. iii. p. 376, &c.; Dr. Cullen's Letter to Lord Cathcart on this subject; Roderor de Suffocatis; Goodwyn's Experimental Inquiry, apud the Connection of Life with Respiration; Kite's and Coleman's Essays; De Haen Ratio Medendi, xv. 161; *ibid.* Continuat. iii. 129; Gehler cur rarum sit Submersos, &c. Vitæ reddi; Vogel de Causis cur tot Submersi in Vitam non revocantur Pia Detail des Succès de l'Établissement à Paris, 1774; Hunter in the Philosophical Transactions, vol. lxvi.

SUBOCCIPITA'LES NE'RVÆ, (from *sub*, and *occi-pit*), the tenth pair of nerves (see **NERVÆ**). They are small, pass out at the foramen magnum, between the basis of the skull and the transverse process of the atlas, where they form a ganglion, and give branches to the adjacent muscles. After forming a sort of arch with an ascending twig of the first cervical pair, a branch is sent off, called the occipital nerve.

SUBORBITA'RIUS, (from *sub*, and *orbita*, the ball of the eye). A twig of the upper maxillary branch of the fifth pair of nerves, running on the lower part of the orbit of the eye, &c.

SUBPOPLITE'US, (from *sub*, and *poples*). See **POPLITEUS**.

SUBSCAPULA'RIS MU'SCULUS, (from *sub*, and *scapula*). See **INFRA SCAPULARIS**.

SUBSIDE'NTIA, (from *subsideo*, to subside). See **EPISTASIS**.

SUBSULTUSTENDINUM, (*sub*, under, and *salio*, to leap;) a spasmodic or clonic convulsion, chiefly perceptible in the tendons of the wrist, but applied to any involuntary twitching, or spasmodic contraction of muscular parts. It is a common symptom of long

protracted fevers, generally an unfavourable one, as it shows considerable debility, and is a frequent prelude to more general convulsions.

SUCCA'GO, (from *succus*, juice). See SAPO.

SUCCEDA'NEA, (from *succedo*, to supply). See ANTEMBALOMENOS.

SUCCENTURIA'TI MU'SCULI, (from *succenturio*, to supply). See PYRAMIDALES MUSCULI.

SU'CCHAR, and SU'CHAR. See SACCHARUM.

SU'CCI SCORBU'TICI. See COCHLEARIA BRITANNICA.

SUCCI'NGENS MEMBRA'NA, (from *succingo*). See DIAPHRAGMA.

SU'CCINUM, (from *succus*, because it was supposed to exude from a tree). AMBER; Bernstein of the Germans; *electrium*, *carabe*, *ambar*, and *amhar*, of the Arabians; *harpax*, of the Greeks; *harpago* of the Scythians; *glaura* of Paracelsus; *berenice*, *carabe*, *ambra*, *electrum*, *edets*, *aurum*, *elimptum*; is found in the Prussian dominions near the shores of the Baltic, and accidentally in other places, in considerable quantities.

The source of the amber was anciently little known. It was supposed to be a production of the black poplar, of which the name was *haurus*, corrupted to *hambrus* and *ambram*; but the resemblance between the gum of the poplar and amber produced the fable. When Leo Africanus tells us that the name of the whale, in the language of Morocco, is *hambara*, from whence he deduces amber, he evidently refers to *ambergris*.

Ancient mythology referred the origin of amber to the tears of the sisters of Phryxion, on the banks of the Po; and, as usual, fable and tradition form the foundation in history. Reinhold Forster has come to the conclusion that Pytheas of Marseilles had sailed to the Baltic, because amber was known to the ancients; but, in fact, the Baltic was only known to the ancients by the name of *Germanicum mare*. "Et ab adverso, in Germanicum mare sparsæ glessariæ, quas electrides Græci recentiores appellavere, quod ibi electrum nasceretur." (Plinii, lib. iv. cap. 16). These glessariæ, from the German, *glass*, amber, are called in another place *austrania* and *actania*, the Oeland and Gothland of modern geographers, which still furnish this curious mineral.

Amber also was never dispersed by naval conveyance. Affertur (says Pliny, lib. xxvi. cap. 7.) a Germanis in Pannoniam, maxime proximam: inde Veneti primum, quos Græci Henetos vocent, rei famam fecere, proxime Pannoniæ id accipientes, circa mare Adriaticum. It is expressly said to have been brought down the river Rhadun, in which we clearly perceive the etymon of Eridanus, the Po, and the source of the Grecian fable.

The colour of amber is yellowish, with often a shade of reddish brown, sometimes green, or of a yellowish white, usually semitransparent, but when green or whiteish, opaque. It is brittle, its fracture conchoidal, and its specific gravity 1.078. It is found in nodules, sometimes, though rarely, of a considerable size; in alluvial districts, mixed with pyrites, and the remains of trees and other vegetables. Amber does not melt in fire, and inflames: it is thus distinguished from copal and honey stone.

When amber is powdered, the smell is slight and not unpleasant, but increased on heating. When it begins

to melt, a part of its acid separates: if exposed to the air, it takes fire, and burns with a yellowish flame, exhaling a dense, pungent, aromatic odour. Its coal is black, light, and shining, with difficulty reduced to ashes. From half a pound of amber the greatest quantity of ashes was twelve grains.

Water at any temperature does not affect amber. Alcohol, by long digestion, or repeated distillation, dissolves a portion of it, and the colour of the tincture is a reddish brown. Proof spirit has no action on it. Levigated amber, slowly digested with a pure alkaline ley, forms a thick saponaceous mass, soluble both in water and alcohol, depositing needle form crystals of a bitterish taste. This is the *tinctura succini tartarizata* of former pharmaceutical authors. When amber has been roasted or melted it is soluble both in expressed and volatile oils, forming *varnishes* of different kinds; and Hoffman found it soluble in oil of almonds, forming a gelatinous mass, when mixed with water. In Papin's digester ether acts on amber imperfectly.

Amber is not affected by diluted acids. With concentrated vitriolic acid it forms a dark coloured resinous mass, exhaling a large quantity of volatile sulphureous acid. Nitrous acid converts it into a friable resin, producing large quantities of nitrous gas. The resin is soluble in the diluted nitric acid. Amber detonates with melted nitre, leaving a soft slimy substance mixed with prismatic crystals, probably the succinated kali.

Alone in close vessels, exposed to heat, it discharges a large quantity of carbonic acid, and carbonated hydrogen, with a clear fluid, whose odour is peculiar, and not disagreeable, containing a little acetic acid. This is styled the *spiritus succini*. It is followed by a thin, clear, yellowish oil, smelling like petroleum, containing, either in a state of mixture or solution a crystalline salt, the *Succinic acid*, q. v. The oil becomes thicker and darker, and the remainder is a thick black shining coal.

Oil of amber is separated from the acid by repeated washing, and purified by distillation with carbonated soda or kali.

From these facts there is great reason to suspect that amber is a vegetable oil, mineralized by the vitriolic acid; for, contrary to the opinion of Lewis, it is acted on by alcohol, and the tincture becomes milky by the affusion of water. It has, however, been the subject of some surprise how this vegetable juice is found in climates so distant, and of such varied temperature; for amber is found, it is said, from the gulph of Bothnia to Numidia; nor is the size of the masses, sometimes found, less inconsistent with its being a vegetable exudation. Patrín cuts the knot, and supposes in its natural history that it may be *honey*, mineralized by the vitriolic acid; for he adds, where bees are found amber may be discovered. The electric quality of amber is sufficiently known, and insects are found in it in their natural state, as if in a moment killed or unwilling to escape. This has furnished Patrín with a strong argument in favour of his hypothesis; for insects are not found, he observes, except in substances on which they feed.

In Holland, a vegetable resin, called *GUMMI DE LOOK*, q. v. is sold under the name of American amber;

but it is less electric than amber, wants its peculiar smell when burning, dissolves readily in spirit of wine; and, when distilled, it does not afford the principles which distinguish amber.

To procure the salt, amber is powdered and mixed with three times its weight of white sand; the retort is half filled, and the fire gradually increased to near the boiling point. The heat is then farther increased, and the receiver, left unluted, may be occasionally removed, to sweep out the salt and prevent its melting with the oil that rises: the distillation is continued until no salt is seen to arise, and that which is obtained must be dried by pressing it gently between some sheets of spongy paper. It is purified by boiling in common water, and crystallizing repeatedly until sufficiently freed from the oil. When pure, it is of a white colour, of a pungent, penetrating, grateful, acid taste; dissolves in rectified spirit of wine with difficulty, though assisted by heat, but readily in water.

The salt of amber is often adulterated with sal ammoniac; but this is discovered by an urinous smell arising on rubbing it with the salt of tartar; and with nitre, which is discovered by the nitrous taste. When mixed with cream of tartar, on adding water, the salt of amber is readily dissolved.

Amber itself was formerly commended in hysteria and menstrual obstructions, but from its chemical qualities it seems incapable of producing any change in our constitutions; nor when combined with pure kali (Hoffman *Observationes Physico-Chemice*, ii. 202), or with sweet spirit of vitriol (*Essentia Succini Pharmacopœiæ Witteburg*), with alcohol (*Essentia Ordinaria*, *ibid*), or with salt of tartar previously digested and distilled, does it seem to have been more effectual.

The fumes of burning amber have been employed to correct bad smells, and when received on cloths been supposed to assist the effects of friction in rheumatic and paralytic cases; but in this form the remedy has been long disused.

The salt given in doses from gr. iii. to ℥ i. is extolled by Boerhaave as an antihysterical, and styled a diuretic and sudorific. Alston thought that when divested of the oil it was not superior to common salt; and Dr. Cullen, that when genuine and purified, it was little better than a vegetable acid. At present it is used to render the operation of aloëtic and resinous purges more mild, as well as more certain, and as antihysterical and sometimes as a diuretic. Dose, five to fifteen or twenty grains.

The *rectified oil* hath a strong bituminous smell, and a pungent acrid taste; it increases the heat, and promotes the fluid secretions. It is chiefly used as an antihysterical; an assistant to emmenagogues; in epilepsy; whooping coughs; and other convulsive complaints, in doses, from five to twenty drops. Externally it is applied to weak, rheumatic, and paralytic limbs, and as a warm stimulant to the spine, mixed with a moderate portion of sweet oil. Obstinate intermittents are said to have been cured by it. The Swedish College directs one ounce of amber to be digested in four ounces of vitriolic ether, and given from twenty to sixty drops in the complaints for which the *oleum succini* is prescribed. But this formula we have said is useless. The London College order the salt and oil to be obtained

from two pounds of amber placed in a sand bath, and gradually increasing the heat, whence an acid liquor, oil, and salt mixed with the oil, will come over. To purify the salt, half a pound of it is boiled in a pint of distilled water, and set to crystallize. The oil is purified by three distillations. Its dose is from five to thirty drops; and it has been found extremely useful in epilepsy, hysteria, and other spasmodic affections; tetanus (Rush in the *Memoirs of the Medical Society*, London, vol. i.) whooping cough, particularly when rubbed on the spine.

Several preparations have been made from amber, but they are rarely used. See Neumann's *Chemistry*; Tournefort's, Lewis's, and Cullen's *Materia Medica*.

SUCCINUM CINE'REUM GRISE'UM. See AMBRAGRISEA.

SUCCINIC ACID; ACID OF SALT OF AMBER, (from *succinum*,) rises, we have seen (see SUCCINUM), in the distillation of amber in the form of a crystalline salt, of a dark, yellowish brown colour, from some admixture of oil. It is purified in the manner already described, or more readily by the process described by Lowitz of passing a saturated solution of the salt through a filter of charcoal (Crell's *Chemical Annals*, 1793). The German chemists obtain about one-thirtieth of the amber in this form; the French about half the quantity. It is very acid to the taste, though not soluble in very cold water, requiring at the temperature of 50° nearly thirty times its weight, though of boiling water only four times. Its crystals are truncated three-sided prisms; but when prepared in Lowitz' method, thin four-sided tables. It is volatile in a gentle heat, but neither efflorescent nor deliquescent. It burns when exposed to the blow-pipe, and detonates with nitre, leaving, when heated in close vessels, carbonated potash, mixed with charcoal; thus affording a strong presumption of its vegetable origin.

Alcohol in a boiling heat dissolves this acid in nearly the proportion of one fourth; but almost the whole is deposited on cooling. If the acid, combined with its oil, is dissolved in alcohol, and six times the quantity of water added, the whole becomes milky, and the water will then carry the acid through a filter in a pure state. Nitric acid dissolves the succinic, without converting it into the oxalic as Westrumb supposed.

SUCCINATS. Salts formed by the succinic acid, with alkalis and earths. They are little known, and not employed either in medicine or the arts. The affinities of the succinic acid are greatly disturbed by any admixture of the oil of amber. The carbonic, boric, the benzoic, and acetic acids certainly rank below it.

SUCCI'SA, (from its being indented, or cut into small notches,) *morsus diaboli*; *scabiosa folio integro* COMMON DEVIL'S BIT, *scabiosa succisa* Lin. Sp. Pl. 141, grows in meadows and pasture grounds, and flowers at the end of summer. The roots are said to be alexipharmic; the leaves, which are nearly similar in their virtues, are often sold for those of common scabious; they are bitter, and, as it is said, resolvent. See SCABIOSA.

SUCCUBUS, (from *succubo*, to lie under). See INCUBO.

SUCCUS INDICUS PURGANS. See GAMBOGIA.

SU'CTIO, (*a sugendo*). In sucking, children surround the nipple with their lips, and applying the tongue to its point, form a vacuum by drawing it back. The milk consequently flows into the mouth. Too great confinement of the tongue, by too short a frænum, will, of course, prevent this operation. A similar effect will follow when the tongue from its size does not move readily over the palate; but we have introduced this article to remark, that we perceive numerous instances where sucking was difficult or impossible, from a defect of the uvula. *Acta Eruditorum*, 1710, p. 408; *Salmuth Observationes*, cent. iii. obs. 6. See also *Memoires de l'Academie de Chirurgie*, iii. 9.

SUDA'MINA, (from *sudor*). **HEAT PIMPLES**, or an eruption of pustules, which succeed violent sweats. Also a kind of symptomatic miliary fever. See **BOA**, **DESUDATIO**, and **PHLYCTIS**.

SUDATO'RIUM, (from *sudo*, to sweat). See **ACHICOLUM**.

SU'DOR, (from *ὕδωρ*, moisture). **SWEAT**, is that fluid which transudes through the skin after much exercise, or any cause of increased heat. The discharge is almost wholly serous, with a small proportion of animal matter, and sometimes an increased one of gluten and the usual saline contents of the serum.

This evacuation is sometimes wanting, and persons enjoy good health whose linen is scarcely soiled after wearing many days: in many no art can excite it; in others it is free, particularly when the heat is most slightly increased, or after very inconsiderable exercise. In many diseases it is excessive, and, as it is styled, colliquative, since it melts down the bulk and the strength. In some cases it has been described as sweet; and we have found, in the course of this work, instances of almost all the serous evacuations becoming sweet. (See **DIABETES** and **SALIVA**.) We ought perhaps to add, that Rhodius, one of the authors who mention this change, attributes it to eating honey. When cold, it arises from relaxation of the exhalents, and it is a symptom of extreme danger. Partial sweats also in acute diseases are dangerous symptoms; but are sometimes constitutional; and, if no disease concurs, of little real importance.

The sweat is sometimes highly fetid, and this is no uncommon circumstance in the feet, though it is sometimes exhaled from every part of the body; and an instance of this, recorded by De Montaux, is said to have arisen from a suppression of the milk. It has sometimes been described as resembling in smell garlick, musk, and sulphur: if received in linen, which is afterwards confined, the smell of musk is very obvious. In suppressions of urine it occasionally partakes of its smell; and in ileus it has been found stercoraceous. The colour is also various. It is described by Borelli and Paulini as green; in bilious cases it is said by Bianchi to be yellow; in persons of a dark complexion we have seen it brown, and it has been spoken of as black. In collections of no great credit there are cases of its being red; but we greatly doubt if, without a miracle, or in the fictions of the poet, it has ever been found bloody.

It is occasionally milky, sometimes gelatinous or oily; in calculous cases it is said to be sandy, in arthritic ones it is more certainly so, or rather tophaceous, and we have suspected that the scurf in cases of syphilis is not merely a cutaneous change.

SU'DOR A'NGLICUS, *hydronosus*, *hydrophoretos*, *gargatio*, the **SWEATING SICKNESS**, included by Dr. Cullen under typhus. (See **HELODES**.) When Henry VII. first landed with his army at Milford Haven, in the year 1483, it appeared amongst them. In 1485, it occurred in London, but soon disappeared, though it returned five or six times: the last return was in 1551. It was said that Englishmen, whether they resided at home or fled into other countries, were attacked, whilst foreigners in England were unaffected. The disorder attacked with a pain in the neck, scapula, legs, and arms: sometimes a kind of warm vapour, or flatulence, only seemed to run through those parts, succeeded by a profuse sweat, for which the patients could not account. The internal parts became first warm, and soon after incredibly hot, the heat diffusing itself to the extremities. An intolerable thirst, restlessness, and sickness, were the next symptoms, succeeded by an excessive headache, delirium, excessive debility, and an irresistible necessity of sleeping. The sweat ceased early, and the limbs became moderately cool; but when this evacuation was afterwards promoted, the smell was disagreeable, the discharge, as is said, coloured, and of an unusual consistence. Some were seized with a nausea, others with vomiting; all, without exception, were afflicted with a difficulty of respiration. The urine was of a thicker consistence, and tinged with a fainter colour than usual. The pulse was rather quicker than natural. Those who breathed the purest air, and had the best constitutions, escaped most easily. The disease was undoubtedly an ephamera of the most asthenic kind, and, if we can discern the truth in the heterogeneous mixture of fable, which arose from the terror this fever excited, there will be little doubt of its having arisen from specific contagion, which at last lost its effect by the constitutions being habituated to it. The contagion was undoubtedly produced by confinement in the close ships. The records of medicine offer nothing analogous, *nihil simile aut secundum*, except the extension of this epidemic to the continent within the period assigned.

The means that were found to be the most salutary, were to keep up the sweat, after it began, at least for twenty-four hours, for by that time the disease terminated. During the sweat, no more aliment was taken than the strength required; sleep was forbidden; and when the sweating was over, the patient was to be cautious in going abroad. Caius and Willis de *Ephamera Britannica*.

SUDORI'FICA, (from *sudor* and *fo*). **SUDORIFICS**; *hydrotica*; *hydrotopsea*; medicines which excite sweat. See **DIAPHORETICA**.

As the sweating point was found by Dr. Alexander to be very little above that of animal heat, and as the heat of different persons varies, or as the disease may occasion some variety also in our conduct of this evacuation, we must raise or depress the temperature according to the circumstances. There are, however, few diseases, except rheumatism, where active sudorifics are now recommended.

SUFFIME'NTUM, (from *suffimen*, a perfume). A **FUMIGATION**; *hyfiocapnisma*. Those prepared for pleasure are generally formed of such sweet substances as are usually agreeable, and those which are formed for health generally calculated to affect the mouth,

throat, or other part to which they are to be applied, in such manner as to produce some important alteration for the removal of some disease. They are generally stimulant or antiseptic; sometimes expectorant.

SUFFOCA'TIO, (from *suffoco*). **SUFFOCATION**. We described shortly in our first volume the different kinds of *Dyspnœa*, *vide in verbo*, but our practical remarks were confined to that species which arises from spasm, and a subsequent accumulation of mucus. The terms *submersio* and *suspensio* reminded us of that greater degree of *dyspnœa*, arising from other causes, which often terminate fatally.

The symptoms of suffocation are described by Dr. W. Musgrave in the *Philosophical Transactions*, N^o. 240; but they are sufficiently known; nor need we repeat what we have already observed on this subject, in the article *MEDICINA FORENSIS*. The most frequent cause is deleterious vapours, and of these the chief is the carbonic acid gas, either from fermentation, the fumes of charcoal, or of a lime kiln. Other gases are the choke damp of mines, probably hydrogenous gas, and one that proved extensively fatal in France some years since, the gas from vaults, probably hydrocarbonate with hepatic gas. In all these cases the vessels of the brain are found to be turgid, the stomach filled with a frothy fluid, the right ventricle of the heart, with the *venæ cavæ*, and pulmonary artery, distended with blood (Portal *Memoires de Paris*, 1775); agreeing with the appearances after drowning.

Suffocation sometimes occurs from a wound in the lungs, and the consequent effusion of air, an instance of which occurs in Bromfield's *Chirurgical Operations*. Morbid organic affection of the trachea, as abscesses; caruncles; polypi; watery tumours; the broken rings of the *aspera arteria*, pressed inwards; scrofulous tumours; scirrhi; and sphacelus of the cricoid cartilage, have been the causes of death by suffocation. Various foreign bodies, purulent matter, a part of the lungs themselves, worms (Haller, *Opuscula Pathologica Obs.* 10.), flies, a blade of grass (Lower and Clark, *Philosophical Transactions*, N^o. 5.), blood and pus (Morgagni de *Sedibus*, xix. 49—51; Wathen, *Memoirs of the Medical Society*, i.; Wilmer's *Cases and Remarks*), have produced suffocation. A singular case is recorded, in the *Acta Naturæ Curiosorum*, of suffocation following the distention of the *œsophagus*, by attempting to swallow the yolks of ten eggs.

Diseases of the lungs themselves, as an effusion of water (Smyth, in the *Medical Communications*, ii. 31), broken ribs (Cheston), a fleshy mass adhering to the pleura (Bonetus), are obvious causes of suffocation. Serum in the mediastinum, a polypus or aneurism of the heart, or even a distended stomach, have been enumerated as sources of death. Substances stopping in the back part of the fauces are sufficiently known; but even the tongue itself, when the frenum is loose, may be swallowed, or at least turned back so far as to produce suffocation. This is said sometimes to happen to infants, and it has been the instrument of the suicide. Suppressed gout and suppressed evacuations produce *dyspnœa*; but are seldom immediately fatal by inducing suffocation.

When the causes are such as will admit of relief, they must of course be attended to; but in other cases, the means mentioned under the article *RESUSCITATIO*,

q. v. are the most promising. Pure air, and oxygenous gas, somewhat diluted; applications of vinegar, and ammonia; dashing cold water; and Bucquet adds, in the *Memoires de la Societè de Médecine*, 181, smoking spirit of salt and volatile spirit of sulphur.

SUFFOCA'TIO STRI'DULA, (from *suffoco*, to choke, and *strideo*, to make a noise,) the CROUP; *angina interna, latens et difficilis, angina membranacea, perniciosa et polyposa, asthma infantum spasmodicum, cynanche stridula, morbus strangulatorius truculentus infantum*, is a disease that chiefly attacks children, rarely if ever any one after twelve years of age. Dr. Cullen names it *cynanche trachealis*, defining it a tracheal quinsy, attended with difficult respiration, ringing sound in inspiration, clangous cough, no tumour commonly in the throat, deglutition a little impeded, and inflammatory fever. See *ANGINA STRIDULA*.

Winter is the season in which this disease chiefly occurs: long continued catarrhs from the measles, whooping cough, or the small pox, are predisponent causes; cold and moist weather is supposed to contribute, for it is most common about the sea coast, and in low marshy situations; though sometimes met with in midland countries, and its attacks are sometimes repeated in the same child, if it should have the good fortune to recover.

The seat of the disorder is the cavity of the wind pipe, from a little below the glottis downward; and the disorder itself, as we have seen, consists of the fibrin separated there, and becoming so thick that the air can no longer pass freely into the lungs. The back part of the trachea, where there are no cartilages, seems, from the inspection of those who die of this disease, to be its first and principal seat; as this morbid membrane is often found exclusively there. It is not evidently contagious.

The croup must be distinguished from the catarrhus suffocativus of Etmuller; from a severe cold; from peripneumonic complaints; and from such symptoms as arise from extraneous bodies lodged in the trachea: an instance of which Dr. Home mentions in his *Enquiry into the Nature, &c. of the Croup*. In general the harsh sound of the breath, not of the cough, will point out the disease.

The inflammatory affection of the early stage usually passes off with little notice, as it is not distinguishable from a common cold. The croupy breathing then comes on suddenly, often in the first sleep, and the disease appears in all its violence before it is apprehended. The remedies we have already enumerated in the article referred to, and have added the little expectation to be entertained from the best concerted plans.

See Cullen's *First Lines*, edit. 4. vol. i. p. 292; an *Enquiry into the Nature, &c. of the Croup*, by F. Home, M. D.; *London Medical Journal*, vol. i. p. 217, 226; *Edinburgh Medical Commentaries*, vol. v. p. 6, 7; Alexander on the Croup.

SUFFU'SIO, (from *suffundo*, because the ancients supposed the opacity proceeded from something running under the crystalline humour). See *CATARACTA*, *GLAUCOMA*, and *PSEUDOBLEPSIS*.

SUFFU'SIO AURIGINO'SA, (from *the yellow colour*). A JAUNDICE.

SUGILLA'TIO, (from *sugo*, to suck). An inflammation of any part; used as synonymous with *ecchymoma*,

or ecchymosis; but by this word a different cause is expressed: an ecchymosis is occasioned by extravasation; suggillation by suction; as when cupping glasses are applied to a part, which, by removing the pressure of the air, distend the vessels with red blood, even those which do not usually receive it.

Morgagni de Sedibus, &c. iii. 16, styles red spots on the brain *sugillatio cerebri*, and employs the same term to express red spots over the whole body, iv. 9.

Considering suggillation as synonymous with ecchymosis, this disorder, when seated in the eye, takes the name of blood shot; when the skin is livid it is termed *pelitoma*; if black, *melasma*. Bell observes that in blood-letting, a small tumour is often raised immediately above the orifice in the vein, by the blood insinuating itself into the cellular membrane of the neighbouring parts, which, when round and small, is termed a *thrombus*; when more diffused, an *ecchymosis*. Linnæus names it *sugillatio*. See ECCHYMOSES.

Sugillatio sometimes proceeds from apoplexy, occasionally from epileptic paroxysms, sometimes even from vomiting.

SULPHAS, (from *sulphur*). SULPHATES. Salts formed by the combination of the sulphuric acid with different bases.

SULPHIS, (from the same). SULPHITES. Salts formed by the combination of the sulphureous acid with different bases.

SULPHUR, (Hebrew *goprith*). BRIMSTONE; *abric*; *alcubrit*; *anpater*; *aphebric*; *agula*; *chibur*; is a solid brittle concrete, of a yellowish colour, inclining a little to green, and in some degree glossy; sometimes found native, in the earth, in pure bright yellow, semitransparent masses; but more commonly in opaque ones, of a greenish or grayish colour, intermixed with various earthy or stony matters. Its primitive form is a very acute octohedron, composed of two tetrahedral pyramids, with scalene triangular faces, joined base to base: the common base of the two pyramids is a rhomb, the two diagonals of which are in the proportion of five to four. From this form different crystals are derived, but, except those from Sicily, they are small and ill defined, though externally brilliant. The fracture is fine grained, uneven between the conchoidal and splintery. It is soft, brittle, and of a specific gravity of 2.0 nearly.

Sulphur by friction acquires a negative electricity, and the transparent crystals are in a high degree doubly refractive.

The impure sorts are called SULPHUR VIVUM, and ALKIBRIC, q. v.

The native sulphurs are met with chiefly in the neighbourhood of volcanos in Italy, and in some of the German, Hungarian, and Swedish mines.

Sulphur rarely occurs in primitive mountains, but is chiefly found in nodules, in beds of secondary gypsum, sometimes in beds of indurated marl, or more compact lime stone. Native sulphur contains a mixture of earth only: the sulphur procured from copper ores has usually a small proportion of arsenic, and on this account the Sicilian sulphur is preferred as a medicine.

The largest quantities are brought into England from Saxony in irregular masses, which are afterwards melted and cast into rolls, being first mixed with coarse resin, flour, &c., which render its colour lighter. The red sulphurs contain a portion of arsenic; and sulphur

is an ingredient in most kinds of ores. The mineral from which the greatest quantity is extracted is the yellow pyrites, and the sulphur is separated by means of heat, falling as it melts, into proper vessels. It is purified by sublimation, and then called the *flowers of sulphur*. In this form sulphur becomes an article in medicine; but it must be washed frequently with water, and a very dilute solution of kali, to separate the superfluous acid adhering to it. When perfectly prepared by a process described in the *Theatrum Chemicum*, it is called *foliata terra*.

Sulphur was supposed to be composed of the vitriolic acid and phlogiston; but is now considered as a simple body, forming vitriolic acid by the addition of oxygen. To the taste it is insipid, though gritty between the teeth, inodorous unless when rubbed, but it then exhales a slightly fetid odour. When a roll of sulphur is held in the hand, it soon cracks, with a sound not unlike that of an electrical spark, and at the same time contracts for a short period a disagreeable smell. It melts at 224° of Fahrenheit into a transparent brownish red fluid. When the heat is increased it sublimes, and at about 300° becomes viscid like treacle. The vapour then takes fire, and the flame spreads to the rest of the mass. When this viscosity takes place, the sulphur may be again rendered fluid by lowering the temperature, but if poured in this viscid state into warm water, it will be brown, soft, and considerably plastic; and in this form it is highly useful to modellers, as it soon resumes its hardness. Fourcroy calls it an *oxide of sulphur*.

Water in a state of steam is partly decomposed by melted sulphur; and an inflammable gas, supposed to be sulphuretted hydrogen, is the result.

With oxygen, as we have said, sulphur forms an acid, called *sulphureous* or *sulphuric*, from the different proportions of this principle. The former seems to contain some sulphur in solution, and is less oxygenized. Nitric acid is decomposed on sulphur, forming sulphuric acid, while it yields nitrous gas. With alkalis, sulphur forms *alkaline sulphurets*; with most metals, *metallic sulphurets*; with hydrogen, *sulphuretted hydrogen*, formerly styled *hepatic air*.

Sulphur is sparingly soluble in alcohol by digestion, more copiously by exposing them to each other in a state of vapour, though the whole of the sulphur may be precipitated by the affusion of water. Oil of turpentine and essential oils dissolve it when hot, and the sulphur separates on cooling. Fat oils unite with sulphur, forming a deep yellowish brown fluid, with a strong fetid smell, and are styled *balsams of sulphur*. By long rest, in a cool place, they deposit the sulphur in octohedral crystals.

The flowers of sulphur are used in cutaneous eruptions, particularly the itch; and from its utility in some disorders of the lungs it has been called *anima pulmonum*. Pure sulphur loosens the belly, in doses of from ʒi. to ʒiii.; and from its gentle action on the large intestines is useful when the piles are troublesome; but its action is slow. It promotes perspiration, passes readily through the whole habit, and transpires through the skin, giving an hepatic smell to the sweat. In old gout and rheumatisms, coughs, catarrhs, and asthmas, it is said to be useful.

Sulphur, though an active medicine, restrains the

activity of some other very powerful ones; quicksilver, the regulus of antimony and arsenic it renders inert.

Various are the preparations of sulphur; but, for internal use, none excels, nor even equals, the flowers, which may be taken with mucilage, without disgust to the palate. Among other modes, the troches, directed in the dispensatory of the London college, is an elegant one, and are thus made. Take of flowers of sulphur, two ounces; clarified sugar, four ounces; rub them together, and by the mucilage of quince seed added gradually, let them be formed into troches. Ph. Lond. 1788.

Sulphur has been used for fumigations to prevent infections, and from thence, perhaps, was employed in malignant fevers, and even the plague. We can scarcely account for the very exaggerated commendations of this medicine in such complaints from authors of character, and even also with vinegar it is said to be a certain prophylaxis. Rosenstein not only recommends it in cutaneous eruptions, but adds, that when these are repelled, they are again brought to the surface by this remedy, which relieves also epilepsies from the same source. Grainger has informed us that if two drachms are given in brandy an hour before the attack of a paroxysm of an intermittent, the fit will be prevented (*Historia Febris Anomalæ Batavæ*). Its effects in diseases of the breast are attributed also to its diaphoretic power, but we have not perceived this effect until it has been for a long time employed; and it is probable that in Grainger's formula, the brandy was the most active ingredient. It has been recommended in ulcers of the breast and whooping cough; but is at present employed in neither disease. From its power of rendering metallic substances inert, it has been given to repress excessive salivation from mercury, though with little advantage; and Navier thinks he found it highly useful as an antidote in a case where verdigrise had been swallowed.

The *tincture of sulphur* is a solution of the alkaline sulphuret in spirit of wine, and is highly recommended in rheumatism gout as well as cutaneous affections, in a dose of from forty to sixty drops. It must, however, be recently prepared, as on keeping the sulphur is deposited.

The *symplicum sulphuris*, *arcatum bechicum* of Willis, a syrup prepared from an aqueous solution of the alkaline sulphuret, has been celebrated in phthisis, in doses of half an ounce to an ounce; and in cases where the secretions from the bronchiæ have been languid.

Hepar sulphuris ceratum is the common hepar sulphuris dissolved in distilled water, to which so much wax is added as will bring it to the consistence of a soap. It is used as an antidote to arsenic and mercurial poisons.

Hepar sulphuris martiale is composed of one part of salt of tartar, as much sulphur, and half a part of the filings of steel, and is a powerful antidote, according to Navier, in cases where preparations of mercury, copper, or lead, have been swallowed as poisons.

Sapo veneris lunæ and *solaris* are prepared by forming soaps with hepar sulphuris, dissolved in a caustic ley, with the oil of white poppies. The proportion of copper and silver are about $\frac{1}{12}$; of gold $\frac{1}{16}$. The first is

said to be an active diuretic; the others both diuretic and laxative: the last is said to be particularly useful in gout. (Bucholtz de Saponibus quibusdam Mineralibus.)

The only other preparations of sulphur are the *Liquores Probatorii*, v. *Plumbum*. See Lewis's *Materia Medica*; Neumann's *Chemistry*.

SU'LPHUR AURA'TUM ANTIMO'NI. See ANTIMONIUM.

SU'LPHUR PRÆCIPITA'TUM. See ANTIMONIUM.

SU'LPHUR VITRI'OLI ANO'DYNUM MARTIA'LE. See FERRUM.

SU'LPHUR VI'VUM. See SULPHUR.

SU'LPHUR A'LBUM. See ETHEL.

SU'LPHUR PRÆCIPITA'TUM; *lac sulphuris*; *magistery of sulphur*; PRECIPITATED SULPHUR. Take of sulphurated kali six ounces; distilled water, one pound and a half; vitriolic acid, diluted, as much as is sufficient; boil the sulphurated kali in distilled water until it be dissolved; filter the liquor through paper; to which add the vitriolic acid; wash the precipitated powder till it becomes insipid, by pouring on fresh portions of water. (Ph. Lond. 1788.) This preparation differs but little in quality from pure sulphur, to which it is preferred only on account of its colour in unguents, &c. It acquires a more yellow colour from the light, and seems from some of its properties to contain a portion of hydrogen. See SULPHUR.

SULPHUREOUS, and SULPHURIC ACID, as already explained, sulphur with a less or greater proportion of oxygen, generally spoken of as one of the mineral acids, and agreeing with the rest in its power as a tonic, though sometimes supposed to excel the others in this respect. It is used externally as a rubefacient, and internally also as a remedy for itch. See PSORA and CHEMIA.

It is seldom found pure in the shops, as it contains some sulphat of lead and of potash; but the proportion of either does not render it inconvenient as a medicine, though the chemist may find a redistillation necessary if used as a reagent.

SULPHUREOUS ACID GAS, is the sulphur, with a less proportion of oxygen than is sufficient to form an acid. It is chiefly used in fumigating vessels to prevent fermentation.

SULPHU'RES, or SULPHURE'TS; LIVERS OF SULPHUR; combinations of sulphur with different alkaline, earthy, and metallic bases.

SULPHURETTED HYDROGEN; the modern appellation of hepatic air, the chief ingredient of the Harrogate water. This gas is composed of 70.857 of sulphur, and 29.143 of hydrogen. Its specific gravity is 1.106, and it possesses the property of an acid uniting with metals, alkalis, and earths. These combinations are distinguished by the names of *metalline*, *alkaline*, or *earthy hydrosulphurets*.

SULPHU'RIS BA'LSAMUM. *Petroleum sulphuratum*. Take of flowers of sulphur, four ounces; oil of olives, sixteen ounces by weight; boil the flowers with the oil in a pot, slightly covered, until they unite. Ph. Lond. 1788.

According to the oil employed, it has acquired the appellations of *succinatum*, *terebinthinatum anisatum*, and *amygdylatum*.

SU'MACH, (from *samack*, to be red, Arabic). See RHUS.

SUPE'RBUS MU'SCULUS, (as expressive of pride). See ELEVATOR OCULI.

SUPERCILIA, (from *super*, and *cilium*, the eye lid). See PROCESSUS.

SUPERCILIA'RES MU'SCULI, (from *supercilia*), are fleshy fasciculi, which arise from the synarthrosis of the ossa nasi with the os frontis, run along the direction of the eye brows, and are lost in the middle. They depress the eye brows, and contract the skin over the nose.

SUPERCILIUM. See VALLUM.

SUPERCILIUM VE'NERIS. VENUS'S EYE BROW, (from the disposition of its leaves). See MILLEFOLIUM.

SUPERFŒTATIO, (from *super*, above, and *fœtus*, an offspring,) *epicyesis*. SUPERFŒTATION, or the existence of two fœtuses of different ages in the womb at the same time. In the natural structure this probably never happens, as the os uteri is soon agglutinated; yet a possible case has been stated, viz. that a second impregnation may take place, soon after the first, by the same or a different man, which cannot be denied. Some appearance of probability has been given to this opinion by finding in the uterus two children of sizes considerably different; but in this case, one has been constantly dead, and the time of its death could not of course be known.

Haller, however, in his *Opuscula Pathologica*, mentions a lady who died, and was found to have two uteri, each of an oval shape, and furnished each with its own peculiar vagina. A woman so formed, he adds, might be liable to one conception subsequent to another. Similar remarks are made by Dr. Purcell, in his account of a double uterus, published in the *Philosophical Transactions*, vol. lxiv.

A case of superfœtation occurred to Dr. Lobstein, professor of anatomy and surgery at Strasburg, in a woman who was delivered of two children, one a month after the other; and he was able to convince himself that this circumstance is owing to her having two uteri, each of which has a distinct vagina. *London Medical Journal*, iii. 425.

SUPERSCAPULARIS INFERIOR, (from *super*, upon, and *scapula*, shoulder blade). See INFRA-SCAPULARIS.

SUPERSCAPULARIS SUPERIOR. See SUPRA SPINALIS.

SUPINATOR RADII BREVIS; MINOR SUPINATOR, (from *supinus*, placed upwards, because it turns the palm upwards,) rises tendinous from the outer condyle of the os humeri, tendinous and fleshy from the external and upper part of the ulna, adhering firmly to the ligament which joins these bones; passes over the capsular ligament, and under the longus, and is inserted into the internal anterior part of the tubercle of the radius.

SUPINATOR RADII LONGUS; major supinator longus of Albinus; rises fleshy from the outer edge of the os humeri, above the external condyle, twists round it, goes down the fore arm all along the radius, covering the artery, and becoming tendinous where we generally feel the pulse: it is inserted into the anterior internal parts of the radius.

SUPPLETA ISCHURIA, (from *suppleo* to supply).

A SUPPRESSION OF URINE, from excess of other evacuations. See ISCHURIA.

SUPPOSITORIUM, (from *suppono*). A SUPPOSITORY; *prostatæ*, *hyphotheton*, *balanos*, and *balanocastanum*, from the similitude of form to an acorn. A long cylindrical body introduced into the rectum to procure stools when clysters cannot be administered. The most gentle are made of common salt and honey, which may be boiled to the consistence of a soft pill, and then rolled to the thickness of a goose quill, and an inch or little more in length; these are to remain until they are dissolved or discharged by the effect they produce: aloes, colocynth, and other ingredients, may be added according to the intention of the prescriber. A common or wax taper is equally convenient and useful; but this form is now disused.

SUPPRESSIO MENSIUM, (from *supfrimo*, to withhold). See MENSES DEFICIENTES.

SUPPRESSORII. Diseases arising from or attended with impeded excretions.

SUPPURANTIA, (from *supfuro*, to form pus). SUPPURATIVES, *diaphymata*, *diaphytica*, *maturantia*. Suppuration is one of the terminations of inflammation, and is announced, we have said, by a less violent, more throbbing pain, with frequent but irregular shivering. The over distended vessel yields, but instead of exhaling a glutinous fluid, a purulent matter is secreted. Effusion is the consequence of a less, suppuration of a greater, degree of inflammation, which increases the tension of the arteries so far as to destroy their contractile power. *Supfurants* are consequently applications which either increase inflammation or relax the inflamed parts, inviting a large proportion of fluids. Of the latter kind are the simple poultices of bread and milk, with oil; of oat or linseed meal. Sometimes a slight stimulant, as the basilicon, is added. When, however, the tumour cannot be discussed, and the inflammation is not so considerable as to induce this necessary change, the applications are more warmly stimulant. The gum plaster is sometimes applied, and onions, or any stimulating, or as it has been styled *resolvent*, body is joined to the simple cataplasm. The bark has been useful as a suppurant, on the obvious plan of supporting the general strength. See INFLAMMATIO, and PUS.

SUPPURATIO, (from the same). *Purulentia*; SUPPURATION. See SUPPURANTIA.

SUPPURATORIA. The fever, which attends suppuration.

SUPRA, (*ὑπέρ*, *super*). When joined to other words it means above, or upon. E. G.

SUPRACOSTALES, (from *supra*, and *costa*, a rib). See LEVATORES COSTARUM.

SUPRASCAPULARIS. See SUPRASPINALIS.

SUPRASCAPULARES SEMI-ORBITALES, are fibres which increase the breadth of the muscles of the upper lip.

SUPRASPINALIS, and SPINATUS; *superscapularis inferior*, and *suprascapularis*, arise from each side between the upper edge of the scapula, its spine, and the superior costa, run under the acromion and extensors of the scapula, go across, adhering to the capsular ligament, and are inserted into the inner tubercle, near the head of the humerus. It raises the arm

upwards, and pulls down the capsular ligament to secure it from injury.

SUR'RA, (from the Arabic term, *sur*, to walk). A name for the fibula, and for the gastrocnemii muscles. Sometimes the term implies a particular kind of wine.

SURA'LIS ARTE'RIA, (from *sura*). See **TIBIALIS**.

SURA'LIS VE'NA, is a branch from the beginning of the tibialis posterior.

SUR'DITAS, (from *surdus*, deaf). *Dyseceæ*, *baryceceæ*, *cophosis*, *paracophosis*. **DEAFNESS**. We have anticipated in part this subject, **DYSECÆA**, and **SONUS**, q. v. It will, however, be useful to bring all the facts into one view, which we shall attempt in the present article.

The ear, whether we consider its functions or diseases, may be divided into three parts, the external, the middle, and the internal chambers. Each of these may be the subject of diseases, which Dr. Cullen somewhat carelessly, "perfunctorie nimis," has divided into organic and atonic. To this may be added diseases arising from a want of elasticity in the organs, in consequence of effusion, and others which produce no change in the organization.

Before, however, we mention the particular diseases of each part of the organ, we must speak of the more general ones, where the ear suffers as a portion of the nervous system. In palsy, in fever, from blows, concussion, and tumours on the brain, deafness is common. From continued headachs, from loud shrill sounds, and from thunder, this organ is often injured. Each portion of the ear sometimes experiences injury from inflammation, in consequence of repressed eruptions, repelled gout, the incautious use of mercury, suppressed hæmorrhages (Hoffman and Wepfer), even suppressed tears, and sometimes, we fear, from the imprudent use of cosmetics.

Hearing is greatly injured by the loss of the external ear; but more so from diseases of the meatus auditorius. The passage is sometimes imperforated, and it has happened that it has been closed, not only by a membrane, but a more solid body extending some way down the meatus, or a polypus sprouting from its sides. An accumulation of cerumen in the meatus has destroyed the sense of hearing, and a want of it is equally injurious: numerous instances also occur of a gypseous substance, and various foreign bodies, as well as insects, having produced the same effect. It does not appear that inflammation of this passage produces deafness; nor is it evident that the meatus has any effect in increasing sounds except from its shape; but accumulations of purulent matter often produce deafness, and abscesses are not uncommon in scrofulous habits. The membrana tympani may injure the sense of hearing, if it be diseased; but, in general, its rupture, if the connection of the ossiculi is not destroyed, will not be injurious to it. This membrane, we are informed by Morgagni (*De Sedibus*, &c. xiv. 10.), may be again repaired when broken. The membrana tympani has been found in a sheep covered with tubercles, and, in the human subject, deafness has followed the thickening of its substance (*Bonetus*). The same author records an observation of *Laurenti*, that it has been found covered with flesh. *Lib. i. sect. xix. obs. 1. and 5.*

The diseases of the cavity of the tympanum are ac-

cumulations of mucus, of sanies, or of water (*Morgagni de Sedibus*, &c. xiv. 9). This author adds also (*Art. xv.*) the intersection of innumerable preternatural membranes which he found on dissection. The Eustachian tube is sometimes obstructed by inflammation; and a catarrh, in this way, produces deafness. The same effect arises from its ulceration (*Halleri Elementa Physiologiæ*, v. 286), sometimes from the accumulation of mucus in it. (*Wathen, Philosophical Transactions*.) When deafness arises from obstruction of this tube, Dr. Sims supposes that persons can hear better in a carriage, or where there is any considerable general sound; but this often happens when deafness proceeds from other causes. To the diseases of this part of the organ we may add a relaxation of the small muscles, which give tension to the tympanum, the want of the incus or an anchylosis of this bone with the stapes. *Petit*.

The diseases of the internal chamber are little known; but we can easily perceive that the membranes of this part may be inflamed, or covered with mucus, and it is possible that the quantity of the fluid may be lessened or its quality depraved; but this is suspicion only. We sometimes find, on dissection, the auditory nerve extenuated or degenerated. (*Hoffman de Auditus Difficultate*.) *Sylvius* mentions also its atrophy, and *Litre* (*Académie des Sciences*, 1705, p. 53), an injury of the neighbouring nerves. *Sandefort* observed deafness arising from a hard body, pressing on the auditory nerve, and *Severinus* from an accumulation of serum near it.

In the more general affections of the head, the treatment must be regulated by the causes, and will, of course, depend on the management of each disease. Inflammation, from repelled eruptions, will require topical discharges, saline purgatives, diaphoretics, and rest. To restore the discharges is often beyond our power, and we must, after these medicines, endeavour to support the general health. Eruptions naturally returning have, however, we find, restored the sense.

The deafness which arises from the injuries to the meatus, or to accumulations in this passage, is more readily relieved. Warm water, or warm soap and water, will remove accumulated wax, and the frequent injection of watery fluids will be useful in cases of supuration, to keep the wound clean. In scrofulous inflammations, every attention should be paid to establish an external drain, as the abscess will extend, and a caries come on, not only in the bony canal, but in the small bones of the second chamber, producing incurable deafness. Drinking salt water, sea bathing, and injections of sea water, are also necessary. Small doses of calomel seem peculiarly useful in such cases. *Hoffman* recommends an alkaline ley, and *Schneider* a solution of sea salt, as injections.

When the cerumen is deficient, the circulation also is peculiarly languid, and we have reason to suspect the tone of the muscles impaired. Numerous stimulants are in these circumstances recommended, as essential oils of different kinds, particularly turpentine, oil of amber, squills, roasted onions, garlic, galbanum, an oily infusion of cantharides (*Hoffman*), juice of the sedum, the axunge of a serpent or an eel. Epithems of a similar kind are also often applied to the temples.

When the Eustachian tube is inflamed, and from this

cause no longer pervious, electricity has been sometimes recommended (London Medical Journal, x. i.); but this remedy has often failed, particularly in the hands of De Haen and Haller. Busson, in Haller's *Disputationes Chirurgicæ*, ii. 41, has proposed to force fluids into this tube by holding liquids in the mouth, and breathing with the whole force of expiratory muscles. Portal, Leske, and many others, deny the possibility of thus forcing the tube; and a bent canula, may, it is supposed, be introduced so as to throw fluids into the second chamber. Innumerable difficulties, however, attend the attempt, particularly when the tube is closed by inflammation; but forcing the smoke of tobacco through it may be more easy. (Morgagni *Epistolæ Anatomicæ*, vii. 4.) As the processus mastoidei terminate in the concha, it has been supposed that fluids may be thrown into this cavity by perforating them, or the discharge of matter assisted; but we cannot perceive that this method has succeeded, and it certainly has not been extensively practised. Murray, in the *Memoirs of the Swedish Academy*, remarks, that these cells frequently pass into the external meatus. We have already remarked (see *Sonus*), that Mr. Astley Cooper has successfully relieved cases of deafness from this cause by perforating the membrana tympani, at one side of its connection, with the handle of the malleus, in which he has been since imitated with equal success. We perceive the same operation proposed in Trnka's *Historia Cophoseos*. In less desperate cases masticatories, to increase the discharge of saliva, are recommended by Stahl, Wepfer, and Morgagni (*Epist. Anatom.* vii. 14). Salivation is recommended probably with the same views, and may have been particularly suggested by the Eustachian tube being so often closed in consequence of a venereal affection of the throat.

The mezereum, the hemlock, the belladonna, and similar medicines seem to have been recommended on the vague grounds of obstruction, when deafness might be supposed to proceed from a thickening of the membranes, or perhaps the pressure of scirrhus tumours. We need not add that the greater number of causes mentioned are wholly beyond the reach of medicine.

Deafness in old people is sometimes attended with tinnitus aurium, and is then generally owing to debility. Every evacuation, even topical ones, increase it, and warm tonics, with a generous diet, are the best remedies.

In the *Edinburgh Medical Commentaries*, vol. iii. p. 80, is a case of deafness from bathing, which first produced a violent pain in the patient's head, and a hissing noise in his ears. After various trials, without success, his hearing was restored by a mercurial course. His mouth was not affected with the mercury until he began to hear.

Bell's *Surgery*, vol. iv. p. 343, 362; *Memoirs of the Medical Society of London*, vol. i. p. 94.; Trnka *Historia Cophoseos*, &c. Vindobonæ, 1778; Stahl *Collegium Casuale*; Sanders on the ear.

SURENGIAN. See *HERMODACTYLUS*.

SU'RI. See *PALMA COCCIFERA*.

SURQUISSE. See *INDICUM*.

SUS, (from *ὑς*). See *PORCUS*.

SU'SINUM, (from *Susan*, a lily). See *CRINOMYRON*.

SUSPE'NSIO, (from *suspendeo*, to hang). Hanging is the usual mode of putting criminals to death, and, if dexterously conducted, attended with very little pain. By the rope the circulation in the carotids is immediately stopped, and the passage of the trachea closed. As the jugulars lie more superficially than the carotids, it has been supposed that the blood is retained in the head, and that the victim dies apoplectic. The appearance of the face, which is swollen and livid, seems to confirm this idea; it is highly improbable that this change takes place. In the dogs hanged by De Haen, who were suspended only till they were dead, no apoplectic symptoms were observed, and such appearances are not, we believe, commonly found in the victims of the law. Besides, that death is too sudden to admit of such accumulations as its cause.

On the other hand, we know that a very short stoppage of the respiration proves fatal, and we find a case in Bonetus where a person escaped from the trachea having ossified; lib. vii. sect. xii. obs. 11. It is said that the introduction of a silver pipe will save the person from death, and it has been asserted that this plan was in contemplation to preserve the unfortunate Dr. Dodd. At all events, it is certain that the morbid changes are most conspicuous in the lungs, and the best remedy has been free venesection, to this De Haen adds rubbing the neck with warm oil. Dr. Plot informs us that a person was recovered after thirty-six hours. Frictions, and all the plans mentioned in the articles *RESUSCITATIO* and *SUBMERSIO*, have been found useful.

We have not mentioned a more modern idea, that the death, in hanging, is owing to the luxation of the vertebra; for though the hardened criminal jumps from the gallows to shorten his pain, the timid suicide, to whom hanging is equally fatal, has scarcely in any instance equal resolution.

SUSPE'NSOR, (from *suspendeo*,) *La bourse*, a bandage to suspend the scrotum. It is a cloth large enough to contain the scrotum and the dressings, with a fillet on each side to suspend it about the waist, and one before to fasten it to the other two in the fore part of the belly.

SUSPENSO'RIMUM HE'PATIS, (from the same). See *LIGAMENTUM LATUM*.

SUSPENSO'RII TE'STIUM, (from the same). See *CREMASTER*.

SUSURRUS, (from *susurro*, to murmur). See *PARACUSIS*.

SU'TTER. See *SACCHARUM*.

SUTU'RA, (from *συνω*, to join together). A *SUTURE*; *clavata*, *commissura*. In anatomy it is the particular articulation by which the bones of the head are united, divided into common and proper. The former are those which join the bones of the cranium with those of the face; the proper are those which connect the bones of the cranium, viz. the coronal, the sagittal, the lambdoidal, and the two squamous (*lepidoides*) sutures.

The sutures in infants sometimes remain open for a considerable time, and in those subject to hydrocephalus they seldom close, or again open in the progress of the disease. It is said that they again open from intemperance, as they certainly may from violence. Hippocrates mentions their opening in consequence of inflammation of the brain. (*Epidemicorum*, lib. vi.) It is now agreed that the sutures,

even the squamous, are no impediments to the application of the trepan.

In SURGERY it is the uniting the lips of a wound by means of thread.

The *dry suture* is made by two pieces of sticking plaster, each the length of the wound, to which very narrow tapes are fixed at due distances. One is applied near either edge of the wound, and the other on the opposite side. The two sides of the wound are then drawn together, and the tapes are tied by slip knots. Or, take a slip of plaster the length of the wound, and cut longitudinal holes in it; then apply one side to near the edge of the wound, bring the lips close, and apply the other. After it is applied, the uniting bandage is convenient to support it.

The twisted or circumvolut suture is used for the harelip, and in a few other instances. It is performed by introducing two or more pins through the whole substance of the lips of the wound, which must be previously brought close together; a waxed thread must be then twisted about them in the form of the figure 8, to retain them in contact.

The interrupted or knotted suture is performed with any needle armed with a waxed thread, by thrusting it through both lips of the wound, then tying the thread in slip knots, making a number of stitches according to the length of the wound, at an inch from each other. From the distance of the stitches it is styled *interrupted*. The needle should go to nearly the bottom of the wound. Mr. Justamond advises a more particular regard to the direction of the longitudinal fibres of muscles in forming this suture than to the direction of the wound; for it will be otherwise a continual stimulus, and occasion a perpetual straining of the ligature, producing pain, inflammation, &c. Mr. Bell advises us, in forming this suture, to carry the needle and ligature to the bottom of the wound, so as to afford but little chance of matter collecting under it, and *both* ends of the thread to be passed from within outwards, which is readily done by using two needles upon each thread. The needles are then to be taken off, and the threads allowed to remain till as many ligatures are passed as the extent of the sore requires. In passing the ligatures the skin should be pierced about half an inch from the lips of the wound, though at a greater distance in large wounds. When the threads are passed, the lips of the wound must be pressed together, and supported by an assistant, till the ligatures are firmly tied.

In the quilled suture the knots are tied upon quills laid over the dressings that immediately covered the lips of the wound.

The glover's the uninterrupted, the spiral, or continued suture, is used in wounds of the intestines, and consists in a series of stitches connected with one another, and continued in an oblique or spiral direction along the course of the divided parts.

See Barkhausen de Suturis siccis and cruentis; Parrey's Works, lib. ix.; Bissett's Medical Essays and Observations; Heister's Surgery; Le Dran's and Sharp's Operations; Bell's Surgery, vol. i. p. 1—26; White's Surgery, p. 109.

SYCO'SIS, (from *συκη*, a fig,) *marisca*, a tumour on the anus, which only differs in size from the thymus. (See CONDYLOMA.) Sycosis is also the name of an ulcer mentioned in Celsus, lib. vi. c. 3, and, in Vo-

gel's Nosology, of one which is fungous. See also TRACHOMA.

SYMBLEPHARUM, (from *συν*, and *βλεφαρον*, the eye lid). Conglutination of the lid to the sclerotica, chiefly of the superior eye lid. It happens most frequently from inflammations, whatever be the cause, if the eye is kept too long closed, and can only be remedied by an operation.

SYMBOLO'GIA, (from *συμβολος*, and *λογος*,) that part of pathology which treats of the *signs* and symptoms of diseases.

SYMPA'SMATA, (from *συμπασσω*, to sprinkle over). See CATAPASMA.

SYMPATHE'TICI NERVI MAJO'RES, (from *συμπασκω*, to suffer with). See INTERCOSTALES NERVI.

SYMPATHE'TICI MI'NORES. See AUDITORIUS NERVUS.

SYMPA'THIA, (from *συν*, together, and *παθος*, suffering). SYMPATHY, *compassio*. Our bodies are so constructed that one part seldom suffers alone, and sometimes the most inconsiderable organs, when injured, excite the most violent general affections. (Abernethy.) If there are any two portions of the body less connected than the others, they will be found to be the two sides, supplied by the nervous in opposition to the ganglionic system. One may be diseased, be weakened, and scarcely alive, without any considerable change in the other.

The great link of sympathetic connection is the stomach: with this organ, the brain, the liver, the organs of deglutition, the intestines, the urinary bladder, the testicles, the joints, and the extreme vessels of the whole system sympathize. This is the most extensive sphere; but there are many inferior ones, viz. those which we have mentioned (see NERVUS), as arising from the nervous connections in the brain, or its vicinity; the particular sympathy between the liver and stomach, the uterus and the breasts of the female; the testicles and urinary organs. In general these less extensive sympathies are in a great degree owing to motions usually associated. Many of the more extensive ones, of which the stomach is the centre, may be attributed to the same source; but it is not easy to extend this principle to the whole, though, if the particular connection of associated motions is strictly examined, it will carry us farther than we should at first suppose.

A late author has distinguished a *sympathy of equilibrium*, in opposition to sympathy in its more general sense; by which he means the diminished action of parts adjoining those where the action is increased, as in the constipation, when the stomach is inflamed, the want of irritability in the skin when an organ below is inflamed, &c. This, however, cannot be properly styled sympathy; for though the parts *suffer together*, yet the effects are of opposite kinds. The usual sympathies are not always of the same kind, though most frequently so.

SYMPHYSIS, (from *συν*, with, or together, and *φωω*, to grow). In anatomy, a kind of articulation, divided into four species: 1. Syneurosis, or syndesmosis; 2. Synchondrosis; 3. Sysarcosis; 4. the symphysis of ossification, to which epiphysis belongs. Vide in verbis.

In surgery it is a coalescence of the natural passages.

as the anus, vagina, nostrils, &c. It also expresses the first intention of cure, viz. to bring together the separated parts of wounds, in order to their reunion without suppuration.

SYMPHYTUM, (from *συμφύω*, to conglutinate). COMFREY. (See **CONSOLIDA**, and **PEPLION**.) It is a name also for several species of pulmonaria, for the yellow alkanet, a species of bugle, of saxifrage, &c.

SYMPHYTUM MINIMUM. See **BELLIS MINOR**.

SYMPHYTUM PETRÆUM. HEATH PINE, *frunella vulgaris* Lin. Sp. Pl. 837, a plant ranked among the astringent and conglutinant medicines, and may be of service in diarrhœas and dysenteries, as its root yields a large proportion of mild mucilaginous juice. See Cullen's *Materia Medica*. A name also for the *santivula*, *virga aurea*, *coris*, *hyssopus vulgaris*, and several other plants.

SYMPHYTUM MEDIUM. See **BUGULA**.

SYMPTOMA, (from *συμπίπτω*, to happen together,) *casus*; *accidens*. See **SIGNUM**.

SYNA'NCHE, (*cynanche*). See **ANGINA**.

SYNA'NCHICA, (from *συναγχή*, the quinsy). See **RUBIA SYNANCHICA**.

SYNARTHRO'SIS, (from *συν*, and *άρθρον*, a joint,) that species of articulation in which there is no motion: it is of three kinds; the *sutura*, the *harmonia*, and the *gomphosis*. See **ARTICULATIO**.

SYNCHONDRO'SIS, (from *συν*, and *χονδρος*, a cartilage,) that species of symphysis in which the bones are connected by a cartilage, and are either movable or immovable: the first is instanced in the vertebræ of the neck, back, and loins; the second in the os pubis, the two sides of which are commonly immovable. See **SYMPHYSIS**.

SYNCHONDROTO'MIA, (from *συνχονδρωσις*, a connection by cartilage, and *τεμνω*, to cut). The section of the symphysis of the os pubis. Siebold. See **PUBIS OSSA**.

SY'NCHYSIS, (from *συνγχυνω*, to confound). A disease of the eye, consisting in a confusion of the humours, generally proceeding from a violent blow; sometimes from an inflammation of the uvea, occasioning a rupture of the vessels, and the escape of the humours. Castellus.

This term is also employed, when, from the violence of an ophthalmia, the transparent cornea is left opaque or corroded, and the humours of the eye are apparently confounded. In Cullen's *Nosology* it is a variety of the *caligo pupillæ*. Kirkland, in his *Inquiry*, vol. i. p. 473, defines it a confusion of the humours of the eye from a violent inflammation, the chemosis, leaving the cornea opaque, or corroded.

SYNCOMI'STON. See **COLIPHUM**.

SY'NCOPE, (from *συνκοπτω*, to cut down). See **LIPOTHYMIA**.

SYNCRI'MATA, **SYNCRI'SIS**, from *συνχρίνω*, to concrete). See **METASYNCRISIS**.

SYNDESMOLOGIA, (from *συνδεσμος*, a ligament, and *λογος*, a discourse). An enumeration and description of the ligaments. Vide **LIGAMENTUM**.

SYNECHIA, a concretion of the iris with the cornea, or the capsule of the crystalline lens in consequence of inflammation. It arises from a collapsus of the cornea, prolapsus of the iris, a tumefied cataract, an hypopium, or an unnatural formation.

SYNDE'SMO-PHARYNGÆ'US, (from *συνδεσμος*, a ligament, and *φάρυγξ*, pharynx). See **PHARYNX**.

SYNDE'SMOS, (*συνδεσμος*). See **LIGAMENTUM**.

SYNDESMO'SIS, (from *συν*, with, and *δεσμος*, a chain). See **SYNEUROSIS**.

SYNDRO'ME, (from *συντρέχω*, concurro,) a word introduced by the empirical sect, to express a concurrence or congeries of symptoms: when, for instance, the disease arises from plethora, the collected symptoms are called a *plethoric syndrome*. The term has since been more limited, but is now disused.

SY'NECHES, (from *συνίχω*, to continue,) was a term used by the Greeks to signify remitting fevers in general. Later writers have collected under this title those instances of remittent fevers obscurely described, of whose mode of relief we have no satisfactory account. Dr. Cullen places it amongst the tertian intermittents.

SYNGENE'SIA, (*συν*, and *γενεσις*, congeneration). The name of the nineteenth class of Linnæus's artificial system, comprehending those plants which have the *antheræ* united into a cylinder. The orders are six, *polygamia æqualis*, *superflua*, *frustranea*, *necessaria*, *segregata*, and *monogamia*. The five first contain the compound flowers, and form a class truly natural. Smith's *Introduction to Botany*.

SYNIZE'SIS. Blindness from an obstruction or a contraction and coalition of the pupil, as the *caligo pupillæ* of Cullen. It is known by the absence of the pupil and loss of sight. The most remarkable species is from the secession of the iris or cornea, which deprives the longitudinal fibres of their support, and the orbicular ones close the aperture. See **IRIS**.

SYNEURO'SIS, (from *συν*, and *νευρω*, to bind). That species of symphysis in which the bones are connected by ligaments, as in all the joints designed for motion. See **SYMPHYSIS**.

SY'NOCHA, (from *συνίχω*, to continue). See **INFLAMMATORIA FEBRIS**.

SY'NOCHUS, (from the same). A CONTINUAL FEVER; *synochus* of Sauvages; *febris lenta* of Linnæus; *phrenitis* of Vogel; *febris continua putrida* of Boerhaave; *febris anabatica*, *acmastica*, and *continens*. Dr. Cullen places this disease in the order *febres*, defining it a contagious disease; a fever composed of a synocha and typhus, in the beginning a synocha; in its progress and towards its termination, a typhus. "Since many fevers," he adds, "are neither altogether inflammatory, nor nervous; neither, therefore, can they be referred to the synocha nor typhus: the genus of synochus, whose type is frequently seen in this country, I have here inserted; still between the typhus and synocha I cannot place any accurate limits; and I doubt whether they should, in fact, be deemed different genera, or placed differently: to each of them the synonymes of authors are to be referred." The necessity of introducing the synochus is the strongest proof of the simple nature of fever; for, in fact, this may be truly styled fever, while the others are varieties only. In this climate, ninety-nine of a hundred fevers, independent of topical inflammation, are synochi. See **FEBRIS**.

SY'NOCHUS PLEURI'TICA, **HIEMA'LIS**, and **RHEUMATIZANS**, fevers more strictly inflammatory.

SYNOSTEOGRA'PHIA, (from *συν*, *οστειον*, and

γραφή). **SYNOSTEOGRAPHY** treats of a bone, its parts, and articulations; the nails, and the number and uses of the bones.

SYNO'VIA, (a word coined by Paracelsus,) *hyarthros*, *mucilago*, is a gluey transparent fluid, which readily mixes with water, and partly jellies when exposed to cold, secreted from glands in the joints, to preserve their motions easy and free. It does not coagulate in any part of a joint, however long the bone may have been displaced; but when deficient, the joint crackles on moving it.

SYNO'VIE GLANDULÆ. **SYNOVIAL GLANDS**, are small conglomerate glands, seated in the outer lamellæ of the capsular ligaments of the joints, and so as to be more or less pressed, according to the degree of motion. They are also called **HAVERS' GLANDS**, because first discovered by him. See **GENU**.

SYNTE'NOSIS, (from *συν*, and *τενω*, a tendon). That kind of articulation where bones are connected by tendons.

SY'PHILIS. See **LUES**.

SY'RIÆ O'LEUM. See **MELISSA**.

SYRI'ACUM UNGUE'NTUM. See **COMMA-GENUM**.

SYRI'GMUS. See **PARACUSIS**.

SYRU'PUS, (from the Chaldean word *sirpi*, or the Arabic word *serab*, a *portion*;) a **SYRUP**; *julapium*, is a watery liquor, boiled with such a proportion of sugar, that a drop let fall upon a marble will not spread. If the quantity of sugar is not sufficient, the syrup will soon ferment, and if in excess the overplus will crystallize. An acid fluid, those whose colour or flavour must be preserved, are best prepared by a heat below the boiling point. This form is now seldom used, except for children, and for this purpose we retain the syrup of squills, of rhubarb, and a few others. The *syrupus e spina cervina* is now almost obsolete, and the principal syrup of activity employed is that of the white poppy. The form was chiefly introduced by the Arabians. See **MEDICINA**.

SYSSARCO'SIS, (from *συν*, and *σαρξ*, *flesh*;) the connection of the bones by muscular flesh, as in the connection of the os hyoides to the sternum. In surgery, it is the method of curing wounds by the growth of new flesh; and consists in promoting digestion for the purpose of regeneration. See **SYMPHYSIS**.

SY'STOLE, (from *συστελλω*, to contract). See **DIASTOLE**.

T.

T A B

TABA'CUM, (from *Tobago*, the island from whence it was first brought). See NICOTIANA.

TA'BAUDE. See BRASSICA ITALICA.

TABE'LLA, (dim. of *tabula*, a table). See TROCHISCI.

TABERDI'LLO. See PETECHIE.

TA'BES, (from *tabesco*,) is often with little reason confounded with phthisis and atrophy. In the system of Dr. Cullen it is a genus in the order *marcores*, defined a wasting with extreme debility and hectic fever. The species are: *tabes purulenta*, from an ulcer either external or internal, independent of a vomica; *t. scrofulosa*, when it happens in scrofulous habits; *t. venenata*, when from poison.

The various causes of *tabes*, however, cannot be comprehended under these few heads. Whatever prevents the digestion or the assimilation of the food, as well as every cause which checks the progress of the chyle to the circulating system, must produce the complaint. This must include obstructions of every class, and debility from all its variety of causes. Excessive evacuations of every kind, whether bloody, from the secretory organs, or of chyle, as has happened from a wound, (Collingwood in the *Edinburgh Medical Commentaries*,) will have a similar effect. Repelled eruptions, and gout, diseases of the heart, liver, and diaphragm, disappointment, jealousy, love, and vexation, have equally induced *tabes*. Glandular tumours on the brain (Huber, in the *Leipsic Commentaries*, ix. 594.) and a depression of the xyphoid cartilage, probably from injuring the stomach, have been equally accused. The poisons particularly pointed out as its source are, mercury, lead, and copper; but we find tobacco (Triller), burnt sponge (Vicat), the absorbents, formerly given with so much freedom to children (Bonetus), and even a large proportion of sea salt, equally reprobated.

In the cure, free air, with a milk diet, and occasionally bark and steel, are chiefly employed. The arnica has been recommended by the German physicians, particularly in the *Berlin Transactions*; and the cold bath is often an useful remedy. The different causes must be of course investigated, and corrected, previous to the more general remedies.

TA'BES COXA'RIA, vel PHTHISIS ISCHIADICA. A

T A B

wasting of the thigh and leg from an abscess in the hip joint. See MORBUS COXARIUS.

TA'BES DORSA'LI, *lordosis*, is often the consequence of a gleet; ranked by Cullen as a variety of the *atrophia inanitorum*. Hippocrates calls it *tabes ossis sacri*. What the ancients supposed to be a wasting of the spinal marrow, was only a gonorrhœa simplex, without any virulence: and as the pain affected the loins, they supposed it to be a disease of the marrow. At present, by *tabes dorsalis* is understood a wasting of the body, attended at first with pain in the back and loins, and afterwards also in the neck and head, caused by a too early, a too frequent, use of venery, or, more commonly, secret indulgences.

It arises, says Hippocrates, from a disorder in the spinal marrow, and it is principally incident to persons of a salacious disposition, or such as are newly married. The patient is free from fever, eats and digests well; when asked respecting his state, he says he perceives as it were ants falling from the superior parts of his body, his head for instance into the spine of his back, and when he discharges his urine or excrements, there is at the same time a copious evacuation of liquid semen, in consequence of which he is incapable of propagating his species, or answering the purposes of marriage. He is generally short breasted and weak, especially after exercise. He perceives a sense of weight in his head, and is affected with a ringing in his ears. The patient is in process of time seized with various species of violent fevers, and at last dies of that kind of fever called *lityria*.

The matter which Hippocrates mentions as discharged with the urine and stools, is mucus. Besides the symptoms already mentioned, there is considerable irritability and apprehension, with little sleep, the memory and sight fail, the spirits are greatly dejected, and an incurable gutta serena sometimes comes on. See MASTURBATIO.

In the general conduct we may remark, that the air should be pure and cool; the diet light, moderately cordial, not highly nourishing, and frequently supplied in small quantities; the hours should be regular, the apartments well ventilated; and exercise in a carriage or on horseback cautiously used. Bark, steel, dilute vitriolic acid, bitters, and cold bathing, are often useful.

But unless the excesses which occasioned the disease are avoided, no remedy will succeed.

Mr. Neale, who some time since published a work on this complaint, remarks that there is often a considerable accumulation of mucus in the urethra, about the caput gallinaginis, and that bougies are frequently useful to remove the obstruction. He chiefly recommends the savine candle, probably a bougie prepared with the savine cerate, which may have some effect by acting as a topical stimulus. The grey nicker, which this author advises as a powerful restorative, is a nut whose kernel resembles in flavour the bitter almond, and, when dried, more nearly the nux vomica. It does not seem from its sensible qualities to possess any very active tonic powers. Hippocrates recommends the actual cautery on each side of the spine, from the loins to the neck. *Περὶ τῶν ἐν τοῖς πλάτοις*, p. 539, l. 28; Severinus de Efficacia Medicina, 223.

If application is made before the febrile symptoms come on, the cure may be attempted by a course of asses' milk, with chalybeate waters, and the cold bath; but after the hectic heats and colliquative sweats have actually taken place, there is little prospect of a recovery.

See Hippocrates de Morbis, lib. ii. and vi.; Baldwinus Rosseus in Tract. de Scorbut. epist. 4.; Sennertus, vol. ii.; Lommius's Medicinales Observationes; Morton's Phthisiologia.

TA'BES NUTRI'CUM, SUDATO'RIA, et A. SANGUIFLU'XU; *atrophia inanitorum*. See ATROPHIA.

TA'BES O'SSIS SA'CRI. See TABES DORSALIS.

TA'BES RENA'LIS. See ABSCESSUS RENIS.

TA'BES SIPHYLI'TICA, et AB HYDRO'PE; *atrophia caco-chymica*. See ATROPHIA.

TA'BES PULMONA'LIS. See PHTHISIS.

TACAMAHA'CA. (Indian.) A resin obtained from a tree resembling the poplar. *Fagara octandra* Willdenow, vol. i. p. 668 (Jacquin), or the *populus balsamifera* Lin. Sp. Pl. 1464; a native of the temperate parts of America, and bearing, if sheltered, the cold of our climate. The best resin collected in gourd shells, though rarely met with, is unctuous, softish, of a pale yellow or green colour, a bitterish aromatic taste, and a fragrant smell. The common sort is in transparent globes, of a white, yellow, brown, or green colour, and less grateful than the former. The first is said to exude from the fruit of the tree; the latter from incisions in the trunk. It is now chiefly used in fumigation and plasters, to warm, irritate, and gently blister; but was formerly styled a corroborant. It dissolves in rectified spirit of wine, and yields to water its smell and taste. The Indians use it for maturing tumours. See Lewis's Materia Medica; Neumann's Chemistry.

TA'CHE BLA'NCHE. See ALBUGO OCULORUM.

TACT, is a term sometimes employed to express a more acute and delicate perception of what is elegant and beautiful; *touch*, also, among the magnetical physicians, is a means of curing diseases. Their great prototype Greatrakes (see Boyle's Works), used his fingers as a means of discovering and curing disorders. His followers chiefly employed gesticulations, not without occasionally supplying their defect by actual contact.

TA'CTUS, (from *tango*, to touch). The *touch*; *aphassomenos* of Hippocrates, when employed to discover any diseases of the pudenda; and the term is pec-

uliar to the practice of midwifery, when the state of the os tincæ and the parts of the child which present are examined. In *PHYSIOLOGY*, the sense of touch is, in the proper acceptation of the word, that change arising in the mind from external bodies applied to the skin, but more especially at the ends of the fingers; for by the fingers we more accurately distinguish the tangible qualities than by other means or organs.

The organs of touch are apparently papillæ, erected when the attention is excited, like those of the tongue, defended by the epidermis from acrimony, too great heat, and the more active causes of sensation. See Haller's Physiology, lect. xiv.

TADO'RNA. See VULPANSER.

TÆ'DA, (*δαΐδα*). DAS, (from *δαΐς*, à *δαω*, to burn). This is an equivocal term, and in botany means a species of pine; in pharmacy a certain paste prepared for fumigations, or some composition to be used as a pessary to support the uterus. The term is also applied by some authors to certain compositions in the form of torches; and to torches made by cutting the wood or branches of mountain pine in proper lengths. See also CANDELA FUMALIS, and PINUS.

TÆ'NIA, (from *atan*, a fillet, Hebrew). We have noticed at sufficient length the natural history of this worm, in the article *HYDATIS*, under which it is arranged by the title of *tænia hydatigena*. It remains now to speak of the different remedies ordered for it. Among these we find the filings of tin, and have seen the most happy effects from the coarse raspings of a pewter plate. Mercurial preparations of different kinds, particularly the more drastic ones, as calomel and turpeth mineral, have been used with success. The preparations of copper and zinc have also had their patrons; but the remedy of madame Nouffler, which has stood the test of great experience, and the advantages of which we have more than once witnessed, seems to have eclipsed the credit of the others. We shall abridge Baumé's account from the *fifth* edition of the *Elemens de Pharmacie*, where it is more fully detailed than in the former editions.

After a light supper, if the patient has had no motion, a common clyster is given, and about eight or nine hours afterwards the remedy is taken. Three drachms of the root of the male fern, the polypodium filix mas of Linnæus, reduced to a fine powder, is mixed with any simple water and swallowed at a dose; but infants take only one third of this dose. After taking it, any confect may be allowed, or the mouth rinsed with any fluid, but nothing should be swallowed. Should it rise on the stomach, the greatest care must be taken to keep it down; and should it be returned, when the sickness has ceased a similar dose must be swallowed. Two hours after taking the powder, twelve grains of calomel, as much resin of scammony, finely powdered, with five grains of gutta gamba, must be taken in a bolus. If the patient is of a strong constitution, or been used to violent purgatives, this dose may be increased. To infants, and weaker patients, the dose is lessened, and sometimes the gutta gamba is omitted: occasionally it is divided into two doses.

Immediately after the bolus the patient must take a cup or two of weak green tea, and this may be repeated during the evacuation, till the worm is discharged. After that he will take some good broth, and manage

himself as usual during the exhibition of a laxative. If, however, the bolus has been rejected, or stools do not follow in sufficient quantity, he should take from two to eight drachms of Sedlitz or Epsom salts.

If the worm is not discharged in a mass, but a part only appears, while the rest is entangled in mucus, the patient should sit on the stool, and take some green tea. Should its discharge be still delayed, or the stools not follow copiously, the salts should be repeated, and the patient continue sitting on the stool. Should it not appear till dinner-time, and the whole medicine have been retained, his meal may proceed as before directed; for sometimes, though rarely, it does not appear till after dinner. If it does not appear through the whole day, which scarcely ever happens, except when either of the medicines has been, in part, discharged, or operated insufficiently, he will sup as on the preceding evening. Should it not appear during the night, the remedy must be repeated the next morning, and only the salts, without the bolus, given afterwards.

When the patient is on the point of discharging the worm, or after a violent evacuation, he sometimes feels a sense of heat round the heart, with fainting or anxiety. This sensation is not dangerous, but soon ceases on rest, or breathing the vapour of vinegar. If the worm is discharged by the powder, only one half of the bolus or the salts should be given; and if after the discharge of the first, a second worm should be found to remain, the treatment should be repeated. This remedy is chiefly useful in the jointed tæniæ.

The conduct may appear scrupulously minute, but we have carefully abridged into this compass more than three full large octavo pages, and were unwilling to omit the slightest circumstance of importance; nor indeed have we omitted any thing but rinsing the cup, the conserve employed in making the bolus, the receipts for the panada, the clyster, and similar trifles.

We have tried this remedy not in the form above mentioned, but in the more common methods of this country. Without attending to the supper or breakfast, we have given a drachm of the root three times a day, and followed it, every other day, by a similar active laxative. We have thus occasioned the discharge of tænia; and though portions had been previously discharged in a living state, after taking the medicine they have appeared in larger quantities without signs of life, and when a worm has been apparently discharged, the disagreeable symptoms have ceased.

These symptoms we have not mentioned, as they are equivocal and uncertain. They are, in general, a load in the abdomen, with atrophy, and marks of irritation. The only certain sign is the appearance of portions of the worm in the stools. These, however, require minute examination; for we have, more than once, seen hardened mucus moulded on the intestine, described as a portion of a tænia. See VERMES.

TA'HOW. See *ŒNANTHE CHÆROPHYLLI*.

TALPA'RIA, (from *talpa*, a mole,) *topinaria*, an atheroma on the head, named from its resembling a mole in creeping under the skin. It is sometimes the appellation of tumours on the face, &c. called *testudo*. Moles (see *NÆVUS*) are rather derived from *mucor*, mouldy.

TALU'KGHAGHA. See *ESULA INDICA*.

TA'LUS. The ANKLE BONE. See *ASTRAGALUS*.

TAMALAPA'THRUM. INDIAN LEAVES. See *FOLIUM*, and *MALABATHRUM*.

TAMARÆ'A ZE'CLA. See *TAMARINDUS*.

TAMARINDUS, (from *tamar hindi*, Arabic, the Indian palm, or date,) the TAMARIND TREE; *tamaræa zecla*, *oxyphænicon*, *balampulli*, *tamarindus Indica* Lin. Sp. Pl. 48; lately, on the authority of Schreber and De Loureiro, transferred to the class *monadelphia*, and order *triandria*. See Wildenow, vol. iii. p. 577; Woodville's Medical Botany.

The fruit is a pod like that of a bean, including several hard seeds, together with a dark coloured viscid pulp. The East India tamarinds are longer than those of the West, and darker coloured; the former contain six or seven seeds in each, the latter only three or four. It is a native of Arabia and India, but we now exclusively receive it from the American islands.

The pulp, with the seeds, are brought into England without the shell or pod; the oriental have the largest quantity of pulp, the occidental of sugar.

At Jamaica, tamarinds are prepared for exportation in the following manner: the fruit, or pods, are gathered in June, July, and August, when full ripe, which is known by their easily breaking on pressure between the finger and thumb. The fruit, taken from the pod, and cleared of the shelly fragments, is placed in layers, in a cask; and syrup, just before it begins to granulate, is poured in till the cask is filled; when cool, it is headed for sale. Long, who gives this account, recommends preserving this fruit with fine sugar to preserve their flavour; but Dr. Cullen advises them to be imported in the pods, as their principal medicinal purpose depends upon their acidity.

The pulp is an agreeable, cooling, acid laxative, first introduced into practice by the Arabians; useful in inflammatory and putrid fevers; abating thirst and heat, and correcting putrefaction. As a laxative, the dose is two or three drachms; as a purgative, one or two ounces. If the pulp of tamarinds is mixed with cassia and manna, it increases their action, and prevents in a degree the flatulence which they occasion. It is an ingredient in the electarium e cassia, electarium e senna compositum, Ph. Lond. See Tournefort's, Lewis's, and Cullen's *Materia Medica*.

TA'MARIX, TAMARI'SCUS, (*tamarisk*, Hebrew, *abstersion*, from its properties of purifying the blood,) *myrica*; TAMARISK; *tamarix gallica* Lin. Sp. Pl. 386, is plentiful in France and Germany, and used formerly as an astringent, and sometimes supposed to be a deobstruent and resolvent. It has been given in obstructions of the liver, in jaundice, and hæmorrhages. The bark seems to have been chiefly valued as an aperient; but is not noticed in the present practice. See Raii *Historia*.

TA'MUS, (from the place where it flourishes.) See *BRIONIA NIGRA*.

TANACE'TUM, (*tanasia*, corrupted from *athanasia*,) *parthenium mas*, COMMON TANSY, *tanacetum vulgare*, a, Lin. Sp. Pl. 1184, is a plant with large leaves, divided to the rib on both sides into deeply indented segments: on the tops of the stalks are many gold coloured discous flowers, in umbel-like clusters; the seeds are small and blackish. It is perennial, grows wild by road sides, and about the borders of fields; flowers in June, July, and August. The leaves and flowers have a strong, not a disagreeable smell, and a bitter aromatic

taste: the flowers are stronger, though rather less unpleasant than the leaves. The curled leaved and the striped leaved sorts are varieties only. They yield their virtue both to water and to spirit, most perfectly to the latter. Distilled with water, they afford a greenish yellow essential oil, which smells strongly of the herb; the remainder is a strong, bitter, subsaline extract. The spirituous tincture gives over part of the oil on inspissation, a part remaining with the extract.

It is a warm deobstruent bitter, useful in cachectic disorders, and weakness of the stomach, expelling worms from the intestines, for which the seeds are generally used. Many other virtues are attributed to tansy, such as its curing spasmodic colics, and gout, or at least diminishing the frequency of the fits, as well as hysteria from menstrual obstruction. Dose, in powder, \mathfrak{z} i. or more; but it is more commonly taken in infusion. See Lewis's and Cullen's *Materia Medica*.

TANA'SIA. See TANACETUM.

TAPIO'CA. See CASSADA.

TA'RACHON. See DRACO.

TARA'NDUS. See CERVUS RANGIFER.

TARANTI'SMUS. A DESIRE OF DANCING, said to be produced by the bite of a tarantula. It is, however, one of the autumnal fevers of Apulia. Menzies, in the *Edinburgh Medical and Physical Essays*, vol. iii.

TARA'NTULA, (from *Taranta*, a city in Naples). A species of spider met with in Apulia, is said to produce by its bite a species of madness, cured only by music; but Dr. Cirillo declares that he never could make the tarantula bite him, nor any other person, though provoked. See TARANTISMUS.

TARA'XACON, TARA'XACUM, (*ταραξων*, from its moving the blood and humours). See DENS LEONIS.

TARA'XIS, (from *ταρασσω*, to disturb). A smarting of the eye, as if offended by smoke, attrition, dust, or other slight stimuli. Galen, in *Epid. vi. 5*, thinks it a morbid disposition of the eye, preceding an inflammation. Paulus, lib. iii. cap. 22. defines it heat and humidity of the eye, attended with a preternatural redness, proceeding, not from the body, but some external cause, and very speedily remedied. Perhaps the following observations of Mr. Ware, in his *Remarks on the Ophthalmia*, &c. may be included under this title. He says, it frequently comes on in the most sudden and unexpected manner, without any preceding or concomitant illness. The common people call it *a blast in the eye*; and it seems to proceed from some peculiar property in the air: like other epidemic diseases, it often affects the whole neighbourhood at the same time; as was the case during the summer 1778, at Newbury, in Berkshire, and in several of the camps, where it was known by the name of the *ocular disease*; and is an instance of epidemic ophthalmia previous to the Egyptian expedition, though very inconsiderable in degree. In Dr. Cullen's arrangement of the species and varieties of the ophthalmia, he places this as the least violent, and calls it *ophthalmia taraxis*. (See OPHTHALMIA.) This kind of inflammation yields to the gentlest remedies used against inflammations of the eyes.

TA'RCHON, (*ταρχων*). See DRACO.

TARO'LI. See CRYSTALLINE.

TA'RSI, (from *ταρσος*). The CARTILAGINOUS EDGE OF THE EYE LIDS. The edge of each eye lid is

principally formed by a thin cartilage, called *tarsus*, adapted to the shape and roundness of the eye. The lower edge of the superior cartilage and upper edge of the inferior meet, and are termed the ciliary edges; for these cartilages do not terminate in a line like the sharp edge of a knife, but form two edges, one external, the other internal. When the eyes are shut, the external edges meet; but the internal are preserved at a small distance from each other, leaving a gutter, or groove, through which the tears are supposed to pass from the lachrymal gland to the puncta lachrymalia, while we sleep. The cilia, or eye lashes, which, when too short, are called *rodatio*, arise out of the external edge of the termination of this cartilage; and on the internal, at an evident distance from them, is a line of small orifices, which are the excretory ducts of small glands, that lie in the inner surface of the tarsus, called *ciliares glandulae*.

TA'RSUS, (from the same). The space between the bones of the leg and the metatarsus, composed of seven bones; the astragalus, os calcis, naviculare, cuboides, and three ossa cunifformia. See PES.

TA'RTARUM, (from *tartarus*, the sediment or dregs,) ARGOL, ARGAL, GIRMER, TARTAR, WINE STONE; *anolithum* of Black, *crepinum* of Paracelsus, is an essential acid concrete salt of grapes, thrown off from wines after fermentation, and deposited on the sides and bottoms of the casks. It is of a red or a white colour, and more or less pure according to the quality of the wine, consisting of the vegetable fixed alkali, super-saturated with a quantity of the tartarous acid. That which is clean, sound, somewhat transparent, and hath its outside covered with small shining crystals, is preferred. The Rhenish white wine tartar is the most pure; but the best is debased by much colouring and extractive matter, separated by boiling it with argillaceous earths, and afterwards crystallizing. This is the cream of tartar, the super-tartrate of potash.

If tartar is dissolved in water, it effervesces with fixed alkaline salts, and saturates of the vegetable alkalis near one third of its own weight; the neutral salt formed by this union is more purgative than the tartar itself.

It is prepared by adding one pound of kali to three pounds of crystals of tartar in three gallons of boiling distilled water. The liquor when cold is filtered through paper; and after due evaporation a part selected to crystallize. Pharm. Lond. 1788.

The soluble tartar is a mild, cooling aperient in doses from \mathfrak{D} i. to \mathfrak{z} i.; laxative in doses of ij. or iij. drachms, and purges in one of \mathfrak{z} i.; it promotes the operation of resinous purges, prevents their griping, and has been particularly recommended as a purgative for maniacal and melancholic patients.

Crystals of tartar are very difficultly soluble in water, requiring twenty times their weight of boiling water, and about ten or twelve of cold; prepared by dissolving tartar, filtering the solution, and crystallizing the salt. They are generally sold in the form of a powder; but as a bell metal mortar is commonly used, they retain a slightly nauseous taste. The crystals are therefore preferable, though not so quickly soluble. These are laxative and refrigerant, and may be given from \mathfrak{z} i. to \mathfrak{z} ij. according to the constitution of the patients, or the effects

required. In large doses, applied to the intestines, they act as a purgative, exciting the action of the absorbents in every part of the system. Either in small or large doses this medicine is diuretic, and sometimes promotes the secretion of urine very copiously, particularly if accompanied by a quantity of watery fluid: hence the crystals are best administered in a liquid form. See ANASARCA; Home's Clinical Experiments; Neumann's Chemistry; Lewis's and Cullen's Materia Medica.

TARTARUM EMETICUM, (from *εμεω*, to vomit).

EMETIC TARTAR, *antimonium tartarizatum*, *stibiated tartar*, is made by boiling one pound and a half of crocus of antimony, powdered, in two gallons of distilled water, in which have been dissolved two pounds of crystals of tartar in a glass vessel, for about a quarter of an hour; then filtered through paper, and the strained liquor set by to crystallize. Ph. Lond. 1788.

This preparation also forms a medicated wine, called *vinum antimonii tartarizati*. A more certain preparation is probably obtained by the following process.

Take of powdered mercurius vitæ, wash it with a little fixed alkali to separate the marine acid, then gradually throw it into a glass vessel, containing a boiling solution of the cream of tartar; continue the boiling and the addition of the mercurius vitæ, until there is no longer any fermentation from the mixture; filter the liquor, and set it to cool and crystallize. See ANTIMONIUM; Neumann's Chemistry; Lewis's Materia Medica.

In preparing the tartarized antimony, vessels of earthen ware or glass should be used; for iron, tin, lead, and copper, decompose it, by attracting the acid more strongly than the antimony.

In the History of the Royal Medical Society at Paris, for the year 1776, M. de Lassone prefers the mode of preparing the tartarized antimony with the mercurius vitæ (*pulvis algaroth*); but states an objection to it, as well as to all other methods of preparing it, which is, that when dissolved in a very diluted aqueous vehicle, part of the medicine is constantly precipitated. This often happens in practice, so that when the phial containing the solution has been often opened, the strength is unequal. He, therefore, recommends the mixing equal quantities of tartarized antimony and pure sal ammoniac, and, after rubbing them together in a mortar, adding a small quantity, three parts or less, of distilled water. Thus the two salts unite, and are completely dissolved.

Tartarized antimony, according to its dose, is an emetic and diaphoretic. It is a medicine both safe and convenient, with little taste. The dose, as an emetic, is from one grain to five, though even children will sometimes bear six or eight grains, and adults, in a few instances, double the dose. To children it is generally given in solution, in the proportion of one or two grains to an ounce of water, and sweetened with sugar: a tea spoonful or two may be taken every half hour till the patient vomits, and it should be repeated according to the necessity of the case and the strength of the patient. As a diaphoretic, the dose is from one eighth to one half grain, given repeatedly in the beginning of remittent fevers, joined with a few grains of sugar, and some testaceous powders, and with four or five grains of nitre in inflammatory fevers. It is given

by the French physicians in moderate doses, largely diluted in some aqueous liquid, every half hour, till it acts by vomiting or purging, styled *l'emetique en lavage*, particularly at the attack of bilious fevers. At this period they most commonly join some mild purgative, as tamarinds, manna, or purging salts, dissolved in barley water; and from this mode the disease is frequently removed in its first stage. See FEBRIS.

TA'RTARUM SOLU'BILE. See KALI.

TARTAR, SPIRIT OF, the pyrotartarous acid, prepared by distilling the crystals of tartar with a strong heat. The acid is highly empyreumatic, followed by a very fetid oil. In the coal that remains, there is a large proportion of kali, without earth or any neutral.

TARTAROUS ACID: *acidum tartari essentiale*, is made by saturating two pounds of the crystals of tartar with chalk, and adding to it nine ounces of sulphuric acid with five of water. The tartarous acid is thus set at liberty, and may be cleared of the sulphat of lime by means of pure water. It is similar in its medical virtues to other vegetable acids, and with borax forms the powder which extemporaneously prepares an acidulous water.

TA'RTARUM VITRIOLA'TUM. See NITRUM VITRIOLATUM.

TA'RTARUS REGENERA'TUS. See DIURETICUS SAL.

TA'RTRIS, (from *tartarum*, tartar). TARTRITES. Salts formed by the combination of the tartarous acid with different bases.

TA'RTRIS AMMONIÆ, *alkali volatile tartarizatum* of Bergman, *sal ammoniacum tartareum*, is, as its name imports, the union of the tartarous acid with ammonia. It is more sudorific than the tartrites of potash or soda, but scarcely superior to the muriated ammonia. It has been lately used in fevers, in exanthemata not completely thrown out, in catarrhs, in chronic rheumatisms, &c.

TA'XIS, (from *ταξω*, to station). The reducing a hernia by the hand. See BURNOCELE.

TE'GULA GA'LLIS. See HIBERNICUS LAPIS.

TE'LA CELLULO'SA, (from its likeness to a web of cloth). See CELLULOSA MEMBRANA.

TELE'PHIUM, (because it heals old ulcers, like that of *telephus*). See CRASSULA, FABAGO.

TELE'PHIUM CHIRONIUM. See ORNITHOPodium.

TEMPERAMENTUM, (from *tempero*, to mix together,) TEMPERAMENT, OR CONSTITUTION. The temperaments, as described by the ancients, depended on the proportions of different fluids. When the yellow bile was in excess it was styled the *choleric* temperament; when black bile, the *atrabilious*; when blood, the *sanguineous*; when phlegm, the *phlegmatic*.

More attentive observers added the consideration of the solids also, and observed, that in a person of a choleric temperament warm blood flows in vessels distinguished by a superior tone in the sanguineous temperament, that they flow in relaxed vessels, &c. Other authors have been more diffuse, and Boerhaave has described eight temperaments, the warm, the cold, the dry, the moist, the bilious, the sanguineous, the phlegmatic, and the melancholic.

The warm temperament is characterised by a profusion of thick yellow hair; a florid complexion; blood shot

eyes; a thin, active, robust body; a full, quick pulse; a temper irascible, but soon appeased. In this temperament the viscera are strong, the vessels tense, the fluids dense. A mild diluent diet is supposed to be best adapted to such constitutions.

The *cold temperament* is distinguished by a smoothness of the skin, thin hair, a pale complexion, a cold, weak, languid habit, a small slow pulse, and a cautious timorous mind. In this temperament the solids are lax, the fluids watery, and a warm corroborating diet is most useful.

The *dry temperament* is similar to the warm; but the vessels are contracted, the body small. The *juvantia et lædētia*, of an opposite tendency to those mentioned under the hot temperament, are useful.

The *moist temperament* differs only in the bulk of the body from the dry.

The *bilious temperament* is distinguished by a profusion of black curly hair, a hard, lean, slender body, a brown complexion, large veins, a full, quick, strong pulse, obstinacy and violence. In this temperament the excess appears to be in the solids, and it agrees in general with the hot and dry.

The *sanguineous temperament* is distinguished by thin auburn hair, soft flesh, a full habit, blue, full, large veins, a florid complexion, by a temper passionate, though readily yielding. Evacuants and a temperate diet are adapted to it.

The *phlegmatic temperament* is distinguished by a greater smoothness of the skin; white thin hair, growing sparingly; a white, full, soft, plump body; small and almost imperceptible veins. It agrees with the cold temperament, and is benefited by warm tonics.

The *atrabilious or melancholic temperament* is distinguished by a smoothness of the skin, black hair, extreme leanness and dryness, dark complexion, languor, perseverance, a disposition resentful but penetrating. The vessels in this temperament are firm and strong, but small; the fluids thick, but tenacious, neither separating nor changing readily. Warm, dry, acrid food is highly injurious; and melancholic persons are benefited by what is refrigerent, relaxant, and emollient.

Such are the distinctions of Boerhaave, who, with due allowance for his attachment to the humoral pathology, has given a clear and distinct view of the different constitutions. By others, temperaments have been divided into the *sanguine*, where the habit is full of good blood; the *serous* or *phlegmatic*, when the proportion of serum is too great; the *temperate*, when the blood and serum are in due proportions; and the *cachymic*, when the juices are depraved. Dr. Cullen thinks that the temperaments consist in the state of the simple solids, in that of the fluids, in the proportion of the solids and fluids, in their distribution, and in the state of the nervous power. These last arrangements include morbid states, and should, therefore, with many others, with which it is unnecessary to fill our pages, be rejected.

These disquisitions are certainly of no great practical use, and in describing a complaint, the state of fulness or of defective fluids, of mobility or torpor, the facility of bearing, or the inconvenience induced by different evacuations, are points of the greatest importance; nor is it of consequence by what name these states of the constitution are distinguished. Dr. Trotter has

lately introduced a new term, the *nervous temperament*, the irritable temperament of Kite, or that peculiar state of irritability which predisposes to nervous diseases. It is the female temperament, and comes nearest the phlegmatic of Boerhaave.

Boerhaave's *Institutiones*; Cullen's *Materia Medica*; Wernischeck *medendi norma*; Stahl *Dissertatio qua Temperamenta, &c. enucleantur*; Hoffmann *de Temperamento morum et morborum in gentibus*.

TEMPERANTIA, MEDICAMENTA, (from *tempero*, to moderate). This term is sometimes used for refrigerants, at others for demulcents, and sometimes for evacuants; but, from the want of precision attending such unlimited associations, it is now disused.

TEMPLINUM OLEUM. A turpentine from the *pinus munghos* of Scopoli. See **ABIES**.

TEMPORA, (*à tempore*, denoting a person's age). The **TEMPLES**; *corre, corsæ, crotaphi*.

TEMPORALIS ARTERIA, (from *tempora*, the temples). The **TEMPORAL ARTERY** lies behind the meatus auditorius externus, covered by the parotid, and, emerging from it, comes immediately under the skin to the zygomatic process of the os temporis; in its passage upwards it divides into two branches, one of which goes to the frontal, the other to the parietal bone. The frontal part anastomoses with the internal carotid, and the other portion with the occipital artery. From the root of the temporal an artery passes up to the scalp behind the ear, and is sometimes opened instead of the temporal.

TEMPORALIS MUSCULUS, *crotaphite* of Winslow, rises broad from the region of the temples, particularly from the ossa frontis, parietalia, temporalia, and sphenoida, where it spreads like a quarter of a circle; and, forming a tendon, passes under the jugum, to be inserted into the coronoid process of the under jaw. A ligament from the processus zygomaticus confines this tendon, and seems to give it some of the internal fibres. It is covered with a strong tendinous sheath, which is lost in the epicranium; and when matter is formed under it, the fever and pain are so considerable as to occasion delirium. The thickness of this tendinous part prevents the matter from pointing outwards, and, if left, it runs in the direction of the temporal muscle, opening into the mouth by the coronoid process of the lower jaw. It is usual, therefore, not to wait for its pointing outwardly when first formed, but to make an opening directly into it. (See **ABSCESS** of the **TEMPORAL MUSCLE**.) We were formerly forbidden to apply the trepan to the temporal bone; but the operation has been performed with success by Gooch and Pott, and all apprehensions have now vanished.

TEMPORUM OSSA, *arcualia*, vel *nervalia ossa*, are bones of a very irregular shape, divided into two parts, the squamosa, and the petrosa, or *lithocidea*. Three external processes arise from each; on the posterior part the *mastoideus*, *mammiformis*, or *mammillaris*; a little more forward the *zygomatic*, joining the os malæ, and from the inferior craggy part the styloid process, or *pictrum*, projecting obliquely forward. A little below the mastoid process there is a cavity, whence the digastric muscle of the lower jaw arises; and at the inner side of the root of the styloid process another, where the internal jugular vein is lodged. Between the mastoid and zygomatic processes the meatus auditorius externus is seated, and between the

mastoid and styloid processes is the aqueduct of Fallopius, through which the portio dura of the seventh pair of nerves passes. Before the styloid process is a glenoid cavity for the reception of the condyle of the lower jaw, and near it an eminence, upon which the condyle sometimes moves. In the pars petrosa, near the styloid process, is a canal through which the carotid artery enters. Near the last foramen, on the anterior edge of the bone, is the tuba Eustachiana. The internal foramen is the meatus auditorius internus.

TENA'NCHILES. See PIPER INDICUM.

TENDINO'SA TU'NICA, (from *tendo*, a tendon). See ALBUGINEA TUNICA.

TE'NDO, (from *τενω*, to stretch,) *chorda*, a TENDON. See MUSCULUS.

TE'NDO ACHI'LLIS, *chorda magna*, (from its contributing to velocity, the characteristic of the *ποδας οκνος Αχιλλεύς*). This tendon, formed by the union of the soleus and gastrocnemius, is inserted into the os calcis.

Tendons are subject to inflammation, yet they inflame slowly, though the complaint continues with peculiar obstinacy, and is frequently terminated by suppuration. An injury of the tendon, however, seldom produces those symptoms of irritation which have been attributed to it. Dr. Brocklesby, Caldani, Tozzetti, and many others, have found tendons injured and torn in different ways without any bad symptoms coming on; and Camper (*Dissertationes Anatomicæ*, lib. i.) has rendered it highly probable that the irritation proceeds from the wounded or injured nerve. We have, however, spoken on this subject. See PHLEBOTOMIA, p. 390. When, however, inflamed from distention, which particularly happens when an abscess is confined by a tendinous fascia, the pain is excruciating, the irritation and the fever peculiarly violent.

The tendons are often ruptured; but no one is so subject to this accident as the tendo achillis. It is, however, seldom wholly fractured. The sheath, or at least some few of the fibres, have been only broken. Le Blanc, in his *Opera Chirurgica*, vol. i. has taught us how to distinguish the two cases; but it is immaterial to dwell on the subject, as the treatment will be the same.

The most common application to wounded tendons is the balsam of Peru. It has been sanctioned by the experience of ages, and we have no foundation for controverting its efficacy. Mr. Kirkland prefers unctuous applications, and thinks oil of turpentine injurious. When tendons are broken they were formerly united by a suture; but this has been long found useless; and if the broken ends are laid contiguous they usually unite, or at least unite so firmly to the neighbouring parts, that the use of the muscle is completely restored. The long continued suture is at least a proof that punctures of the tendons are not dangerous, and the enemies to this plan contend only that it is unnecessary. See GASTROCNEMIUM.

TE'NDRIL. See CIRRHUS.

TENE'SMUS, (from *τενω*, to stretch). A tenesmus is a continual painful urging to go to stool, while a mucous substance, sometimes bloody, is only discharged. The causes are, a stone in the bladder, an inflammation in the neck of the bladder, a catarrhal defluxion, ulcers or excrescences in the rectum, long continued diarrhoea, a dysentery, accumulations in the colon (Morgagni), worms, pregnancy, hæmorrhoids, &c. It ge-

nerally arises from too violent and irregular action of the rectum, independent of the motions of the colon.

If a stone in the bladder is the cause, an alteration of the posture will often remove it; but, should this fail, the position of the stone may be altered by introducing a catheter. If an inflammation in the neck of the bladder occasions it, fomentations, or a blister to the perinæum, will be useful. (See INFLAMMATIO VESICÆ.) If acrid humours affect the rectum, they should be gently evacuated, and emollient or balsamic clysters injected: the ol. ricini is particularly useful in each way. That kind of tenesmus which affects pregnant women is relieved by clysters of sweet oil, with a little of the tinctura opii. In general, opium is the most certain remedy, combined with absorbents, or with soap and wax, to prevent its too quick solution. Leeches have been sometimes applied, and fumigations with the smoke of cones of fir recommended. See Lommius's *Med. Obs.*; Lobb on Painful Distempers.

TE'NGA. See PALMA COCCIFERA.

TENONTA'GRA, (from *τενω*, a tendon, and *αγρυ*, a seizure). See ARTHRITIS.

TE'NSOR FA'SCIÆ FE'MORIS, (from *tendo*, to stretch). See FASCIÆ LATÆ MUSCULUS.

TE'NSOR MEMBRANÆ TY'MPANI, *mallei musculus externus vel superior*, lies on the upper part, above the bony portion of the canal that goes to the nose, and is inserted into the inside of the malleus. It draws the membrana tympani inwards, and makes it more tense.

TE'NSOR PALA'TI. See CIRCUMFLEXUS PALATI.

TE'NTIGO, (from *tendere*, to stretch). See PRIAPISMUS.

TE'PIDUS, (from *tephor*, warmth). TEPID. Warm as milk from the cow, about 96°.

TEREBE'LLA, (a dim of *terebræ*, a gimlet). See TREPANUM.

TEREBI'NTHINA, (from *τερεβινθος*, the turpentine tree). TURPENTINE; *albotim*, *butino*. The produce of the different species of pine, and the pistachia. See ABIES.

TEREBI'NTHINA CHI'A, vel CY'PRIA, from the *pistachea terebinthus* Lin. Sp. Pl. 1455, is generally about the consistence of thick honey, very tenacious, clear, almost transparent, of a white colour, with a cast of yellow or blue, a warm, pungent, bitterish taste, a fragrant smell, more agreeable than that of any other turpentine. It is said to be the least subject to adulteration.

TEREBI'NTHINA VENE'TA, from the *pinus larix* Lin. Sp. Pl. 1420, a native of France and Germany, is usually thinner than the other sorts, of a pale yellow colour, a hot, pungent, bitterish taste, and a strong smell, without any of the fine aromatic flavour of the former.

TEREBI'NTHINA ARGENTORATE'NSIS, from the *pinus picea* Lin. Sp. Pl. 1420, is of a middle consistence between the two former, more transparent, and less tenacious than either, of a yellowish brown colour, more agreeable to the smell, but to the taste the bitterest and the least acrid. It is extracted in Germany by incisions through the bark: when the resinous juice is collected from knots under the bark, it is called *lacryma abiegna*, and *abietanum oleum*.

TEREBI'NTHINA COMMUNIS. COMMON TURPENTINE, of the London and Edinburgh Pharmacopœias,

from the *pinus ficca* Lin. Sp. Pl. 1420; the SILVER FIR TREE; is nearly of the consistence of honey, of an opaque brownish white colour; the coarsest and heaviest, and most disagreeable both in smell and taste.

Turpentine dissolves totally in rectified spirit of wine, but not at all in water, though by the mediation of mucilage, the white of egg, or of gum arabic, they mix with it into a milky liquor. Distilled with water, they yield a large quantity of a subtle, penetrating, essential oil, viz. the oil or spirit of turpentine. The oil is more difficult of solution in spirit of wine than the turpentine, but if it be redistilled without addition, with a gentle heat, it becomes more subtle, and is called ethereal oil of turpentine: the thicker part which remains is called balsam of turpentine, *botin*, and *butino*.

All the turpentine is hot, stimulating, detergent, and corroborant: they stimulate the primæ viæ, and prove laxative; and Dr. Cullen observes that $\frac{3}{4}$ ss. or $\frac{3}{4}$ i. of Venice turpentine, triturated with the yolk of an egg, and diffused in water, may be employed in the form of injection, as the most certain laxative in colics, and other cases of obstinate costiveness. When carried into the blood vessels, it stimulates the whole system; and is consequently useful in chronic rheumatism and paralysis. When inflammatory symptoms do not forbid, oil of turpentine is given from ten grains to half a drachm, for cleansing the urinary passages, for healing internal ulcerations in general, and in laxities of the seminal and uterine vessels. They seem peculiarly to affect the urinary passages, and give a violent smell to the urine; dissolve and discharge mucous matter from the kidneys and ureters, though if there be any fixed obstacle, they are dangerous from their stimulus. When melted with honey over a slow fire, the oil of turpentine may, it is said by Cheyne, be given in very large doses without inconvenience; and the turpentine itself is occasionally made into pills with meal. In suppressions of urine and fits of stone, the turpentine clyster formerly prescribed is often useful. Of the different sorts the Venice is most diuretic and detergent; the Chio and Strasburgh more corroborant; the common chiefly used externally and for distilling. What remains, after distilling the oil from turpentine, is the yellow and the black resins. Turpentine passes off also by perspiration, and probably by exhalation from the lungs; and to these respective effects are to be ascribed the virtues they are supposed to possess in gravel, scurvy, and pulmonic disorders. In many cases of these diseases, however, and especially the last, they, as well as gums and balsams, are injurious by their stimulus. They are considered as rubefacient, and too stimulant to be applied except as styptics to fresh wounds, or those in a state of suppuration. See PHTHISIS, NEPHRITIS, and BALSAMICA.

The oils, both the common and the ethereal, are more powerful in all their qualities than the turpentine itself; and for the convenience of exhibition are usually preferred. Mixed with spirit of wine, they are used as styptics, to check the discharge of blood from wounds, and employed for rubbing on parts affected with pain. But if too freely used inwardly, they weaken the urinary passages and the seminal vessels. See Neumann's Chemistry; Lewis's and Cullen's Materia Medica; Home's Clinical Experiments.

VOL. II.

TEREBINTHINA INDICA. See PISTACIA.

TE'REBRA, (from *τερεω*, to bore). A name of the trepan. (See TREPANUM.) A surgical instrument also for perforating bones, or for extracting hard bodies from wounds.

TEREDO, (from *τερεω*, to pierce). See SPINA VENTOSA, and CARIES.

TERENI'ABIM MANNA. See ALHAGI.

TE'RES, vel TE'RETES. See VERMES.

TE'RES LIGAMENTUM, rises from the bottom of the cavity of the acetabulum, and runs obliquely backwards, to be inserted into the head of the os femoris, serving to confine the rotation of the thigh.

TE'RES MAJOR, *rotundus major* of Browne, a muscle which rises fleshy from the outer part of the lower corner of the scapula, and the thick rough part of its inferior costa. Its fleshy fibres pass over a part of the infra spinatus muscle, as it proceeds to the os humeri forwards. Joined by the latissimus dorsi and its tendon, it is inserted into the posterior ridge of the biceps groove, to bring the arm downwards, backwards, and inwards to the body.

TE'RES MINOR, *brevia vel brachys, transversalis octavius humeri muscle* of Placentinus, who added it to those belonging to the arm. It rises from the lower costa of the scapula, runs along the inferior edge of the infra spinatus, and is inserted tendinous near it into the back part of the large protuberance on the head of the os humeri. It draws the humerus backwards.

TERMINA'LIA BENZOIN. See BENZONIUM.

TERMI'NTHI, (from *τερμινθος*, a pine nut,) tumours in the skin nearly resembling the fruit of turpentine trees, of a blackish colour, inclining to green. (Galen.) See YAWS. Wiseman connects the epinyctis with terminthus, styling both painful tubercles, or angry pustules, affecting the skin of the arms, hands, and thighs. In Cullen's system, it is a variety of phlogosis phlegmone, in that of Sauvages a furunculus. Bleeding, purging, and a regular diet, are alone required for their cure.

TE'RNA, (from *ter*, three,) applied to leaves placed by threes. See also IMPETIGINES.

TE'RRÆ. See VENTER.

TE'RRÆ, (*ερα*, from the Hebrew *erets*). EARTH. In chemistry, earth is one of the four simple substances formerly called elements. Earths are fixed bodies, unalterable, and indestructible in any temperature we can produce. When carbonated they are insoluble without smell or taste, of a specific gravity rarely beyond 4.9. They are nearly allied to alkalis, and the kinds used in medicine are the following: the order is that of their alkalinity; BARYTES, STRONTIA, LIME, MAGNESIA, ALUMINE, vide in verbis. See CHEMIA.

Pure vegetable earths are chiefly calcareous; and what have been styled animal earths are chiefly the calcareous phosphates: we need not add that they are, in no case, absorbents, though, like the clays, they may sometimes be demulcent. See Lewis's Materia Medica; Neumann's Chemistry.

TE'RRÆ CARIO'SA. BOTTEN STONE; a partly decomposed granite, useful only in the porcelain manufactory.

TE'RRÆ TRIPOLITA'NA, *tripolis*. See ALANA.

TE'RRÆ AMPELI'TES. See AMPELITES.

TE'RRÆ CA'NDIDA; FULLO'NICA; SAMIA; SAPO'NARIA A'NGLICA; SIGILLA'TA ALBA. See CINOLIA ALBA.

TE'RRÆ EXONIE'NSIS is an earth mentioned only in the works of Dr. W. Musgrave on anomalous gout. We had supposed it a red ochre, which colours the arable land near that city; but were informed, by a very old and respectable apothecary, that it was an extract of some bitters, which, like the catechu, appeared in an earthy form. Even this gentleman, who, if alive, must have exceeded his hundredth year, spoke only from tradition.

TE'RRÆ FULLO'NICA. See CIMOLIA PURPURESCENS.

TE'RRÆ FOLIATA TARTARI. See DIURETICUS SAL.

TE'RRÆ MAGNESIÆ. See MAGNESIA ALBA.

TE'RRÆ SICULA, and SICILIANA. See BEZOAR FOS-SILE.

TE'RRÆ MARI'TA. See CURCUMA.

TE'RRÆ SELINUSIA. See CRETA SELINUSIA.

TE'RRÆ A'LBA. See ETHEL.

TE'RRÆ SARACE'NICA. See ANATRON.

TE'RRÆ PONDEROSA MURIA'TA. See BARYTES.

TE'RRÆ JAPONICA. JAPAN EARTH, *cachou*, *catechu*, *cadtehu*, *kate*, *caath*, *cutt*, *cutch*, was long supposed to be an earthy substance from Japan; but is a gummy resin, obtained by a decoction of a vegetable substance in water. The plant is called *caira*, *kheir*, or *khadira*; and is the *mimosa catechu*, Linnæi. Fil. Supplem. 439. The wood of the tree is extremely hard and heavy; the interior part varies from a pale brown to a dark red, sometimes approaching to black, but always covered at some depth with white wood. It is frequent in the uncultivated mountainous districts of Hindostan, and the neighbouring parts. From the interior coloured wood is produced the extract erroneously called *terra Japonica*. This wood is cut into chips, with which a narrow mouth unglazed earthen pot is filled; and as much water added as will rise to the upper chips: when this is half evaporated by boiling, the decoction is poured into a flat earthen pot, and boiled to one third part, set in a cool place for one day, and afterwards evaporated by the heat of the sun, stirring it several times in the day. When reduced to a considerable consistence, it is spread upon a mat or cloth, previously covered with the ashes of cow dung, divided into square pieces by a string, and completely dried by turning them frequently in the sun, until they are fit for sale. The pale brown wood is preferred, as it produces the fine whitish extract; the blacker extract from the darker wood is of less value. As it is carelessly prepared, it hath a considerable quantity of ashes mixed with it. Mr. Kerr does not think that the *terra Japonica* was produced from the areca, or betel nut, as its price would in that case greatly exceed that of the *terra Japonica*; and we now know that the betel nut is the product of a very different tree. It is used in dying, for painting chintz and other cloth, for when united with vitriolated salts, a black colour is produced; and mixed with oil, for painting the beams and walls of houses, to preserve them from the white ants. Among the black physicians, the *terra Japonica* is reckoned a powerful cooler. The colour of this drug varies from a pale reddish brown to a deep black. It is more or less ponderous, porous, or astringent, according to the manner of obtaining it. The best is of a dark reddish brown colour, dry, heavy, glossy, and compact; if chewed, it discovers, at first, a bitterish styptic taste,

followed by an agreeable sweetness. On analysis, it is found to contain a considerable proportion of tannin, to which its astringency is probably owing. When pure, it is almost totally dissolved both by water and by spirit. An extract made of spirit is the most agreeable and most astringent preparation. Where an astringent is required, whether for external or internal purposes, the spirituous tincture will be found highly useful. It is made by digesting three ounces of Japan earth, two ounces of cinnamon bruised, in two pints of spirit of wine for three days. (Pharm. Lond. 1788.) One, two, or three drachms may be taken in red wine, or any other proper vehicle: for a milder corroborant, the watery tincture or extract is given. In diarrhœas, in uterine profluvia, laxity, and debility of the viscera in general, in old catarrhs and various other diseases where astringents are necessary, this extract is peculiarly useful. A little of the watery extract held in the mouth, suffered to dissolve leisurely, and gradually swallowed, is useful in laxities and ulcerations of the gums, apthous ulcers, and in relaxations of the throat and uvula. Though this extract is the basis of several formulæ in numerous dispensatories, simple infusion in warm water, with a proper proportion of cinnamon, is one of the best forms in which it can be exhibited. See Neumann's Chemistry; Lewis's Materia Medica.

TE'RRÆ PONDEROSA MURIA'TA seu SALI-TA. See BARYTES.

TE'RRÆ O'LEUM. See PETROLEUM and NAPHTHA.

TE'RROR, (from *terreo*, to affright). The general effects of terror are a great contraction of the small vessels, and a repulsion of the blood into the larger internal ones. The perspiration is consequently suppressed; the heart trembles and palpitates; the lungs are oppressed from over distention, &c. After great frights, persons rarely recover, for a long time, their usual vivacity; and incurable epilepsies are often the consequence. When a person is violently affected with terror, the principal endeavour should be to restore the equilibrium of the circulation, to promote perspiration, and to allay the agitation or commotion. A little blood is with great propriety taken, the legs should be rubbed, put into warm water, and there continue for some time. A little weak wine and water may be given frequently; and after the circulation is in some degree restored, a little opium and camphor will be useful. But if the body has been costive a clyster should be premised. Terror is, however, often a remedy of complaints. Epileptic paroxysms have been checked by it; intermittents stopped; and, during its continuance, nervous complaints have been found to disappear, as during the siege of a fortress. See PATHEMA.

TE'RTHRA, (from *τερθρον*, a crane). The middle and lateral parts of the neck: *τερθρον* signifies the parts about the throat. Keil.

TERTIA'NA FE'BRIS, (from *tertius*, third,) a fever of the intermittent kind, returning every other day about noon. Hippocrates calls it *μυχος*. (See INTERMITTENS and FEBRIS). It varies in the duration of the paroxysm, for the paroxysm of a true tertian does not continue above twelve hours, of a spurious one longer; in the return of the fits (see TERTIANA DU-PLEX), and the symptoms, for it is sometimes attended

with comatous affection; spasms and convulsive motions; with efflorescences of the skin; or inflammation. It varies also as being complicated with other diseases. See Culleni Synopsis Nosologiae Methodicae.

The tertian type is the most common form; for the slightest fevers, though they return every day, show a marked exacerbation on the alternate days; and in the early period of fevers the changes are always on the unequal days. This induced Stahl to consider tertians as the common genius of every fever; but on this subject we have sufficiently enlarged. See INTERMITTENS.

TERTIA'NA DU'PLEX, *duplicana*, a tertian fever returning every day, but with unequal paroxysms; every other fit being alike.

TERTIA'NA DUPLICA'TA, a tertian fever returning every other day, with two paroxysms in one day.

TERTIA'NA TRI'PLEX, a tertian fever returning every day, with two paroxysms every other day, and one only on the intermediate day. See INTERMITTENS.

TERTIANA'RIA. See CASSIDA.

TERTI'OLA. See PANAX COLONI.

TE'RTIUM SAL, (the product of an acid with either an alkali earth or metal, making a third body different from either). A NEUTRAL SALT.

TE'SSERA, (*τεσσαρα*, four). See OS CUBOIDES.

TE'STA PROBA'TRIX, (quasi *tosta*, from *torreo*). See CUPELLA.

TE'STES, (from *testis*, the evidence of manhood,) *didymi*; *ferin*; are originally seated in the abdomen, just beneath the kidneys, and then called *cryptorchis*: they gradually descend near the time of birth through the sheath of the spermatic cord into the scrotum, each carrying with it a peritoneal coat, which makes the tunica vaginalis (*erythroides* or *elythroides*), because it includes them as a sheath. Usually arteries are sent to glands from some adjacent vessels; but the spermatic vessels arise from the aorta, the vena cava, and the emulgent veins. The gland is near their origin only in the foetal state.

The testicles are two small, white, oval bodies, covered by a strong, dense, white membrane, called the *tunica albuginea*. Immediately within it, is the body of the testis, of a yellowish white colour, composed of tubuli, and between these the blood vessels run. These tubuli are the secretory organs of the semen: they run in short waves from the tunica albuginea to the axis of the testicles, there form larger tubes, are continued through the tunica albuginea, and unite into one canal, which, by several windings, forms the epididymis; and by its continuation the vasa deferentia. The arteries from the spermatic artery are convoluted in a serpentine direction, forming little masses of tortuous vessels, separated by cellular partitions. In each partition there is a duct receiving the semen, on which the arteries appear to branch as larger arteries over the intestine, or as the vasa vasorum over the arteries themselves. The testicles have many lymphatics, which terminate in the inguinal glands. The nerves of the testicle are branches of the lumbar and the great intercostal, and there is no organ of the body more disobedient to the will. The semen, separated in the testicle, is further perfected in the epididymis,

and then conveyed to the vesiculæ seminales, and from thence into the urethra.

The testicles are subject to a variety of appearances and complaints. Sometimes there is only a single one; but in such instances the other has been usually retained in the abdomen (see PARORCHYDIUM): it is at least certain that this defect, even when it exists, does not injure the generative power. Sometimes there are said to be three, occasionally five, without any increase of this power; but the supposed additional testis is sometimes merely a larger epididymis. In some instances, the testicle sticks at the ring of the muscle, resembling a hernia; and when this circumstance is known, if the testicle lies obliquely, it renders the person subject to hernia, which cannot be retained, as he cannot wear a truss. The testicles have sometimes gradually decreased, and this has happened (Hamilton in the Medical Journal, xi.) after the metastasis of a parotid tumour in the cynanche parotidæa. We have witnessed the same consequence, after a tumour in the testicles, without any evident cause; sometimes, according to Mr. Hunter, it happens after a venereal tumour. The testicle has also been destroyed by hydrodatids.

We have already mentioned the sympathy of this organ with the stomach, and we find a case recorded, where inflammation came on from a blow on the pit of the stomach; and Pouteau mentions many instances of its sympathy with the breast. Is it from this cause that hectic patients (at least men) are commonly salacious?

Inflammation of the testicle is a disease very troublesome and obstinate; for we have observed that the arteries are small and tortuous, so that obstructions are not easily removed; leeches to the part must be repeatedly applied, cold cataplasms, and discutient fomentations freely used, while the bowels are to be kept open by neutral salts; a recumbent posture is highly necessary, and the suspensory bandage, even in this posture, useful: in any other it is indispensable. In the venereal inflammation, J. Hunter advises emetics; and we find that Rhazes in his Continens mentions a case where an abscess of the testicle was relieved by this remedy. In general, *abscess of the testicle* requires no peculiar management. Petit Memoires de l'Academie de Chirurgie, iv. 323.

The testicles have been sometimes found of a cartilaginous hardness, and sometimes ossified portions have been discovered in them. Tumours have been found also to contain osseous concretions.

Tumours, infarctions, and scirrhi. The causes of tumours are various. The chief source of these swellings is said to be a suppression of the gonorrhœal discharge, and the principal means of cure its renewal: a fresh infection has been even employed for this purpose. See HERNIA HUMORALIS.

A suppressed discharge of the seminal fluid, ischuria, and even worms of the intestines, as well as the metastasis from parotid tumours, already mentioned, have been accused, and frequently induce the complaint. To the former remedies, mentioned under the article already referred to, we may add the hemlock (Baylie's Practical Essays), electricity (London Medical Journal, 1786), aqua ammoniæ acetatæ, gum ammoniac, recommended by Plater, which has also the

authority of Rhazes (Continens, lib. i.), the pulsatilla and dulcamara, though these narcotics and the gum ammoniac are rather adapted to the chronic state, when pain and inflammation have ceased.

Scirrhi in the testicles are the diseases of advanced life, when the diminishing vessels concrete with the gland into hard unequal tumours. The size of these is often considerable, and they frequently degenerate into the most painful cancers. The suspensory bandage is highly necessary, to support the weight; and, in the early state, leeches may be frequently applied with advantage. The bowels should be kept freely open, opiates given occasionally, and every cause of stimulus avoided.

In this way the patient's life may be often preserved in tolerable comfort; but a cure is scarcely to be expected, except from an operation. Small doses of muriated mercury, with the decoction of sarsa and meze-reon, the hemlock, the dulcamara, the aconite, and the pulsatilla, have been employed both externally and internally with little success. Electrical sparks seem occasionally to have been injurious; nor will the gum ammoniac, with the vinegar of squills applied to the part, produce any very salutary effect.

When a scirrhus or cancer of the testicles is fairly characterized, castration is the only cure. Mr. Fearon, in his Treatise on Cancers, advises it to be performed in the following manner: the patient being placed in a proper situation, the integuments over the spermatic vessels in the groin are to be divided by an incision, beginning opposite to the opening in the abdominal muscle, and continuing it nearly to the bottom of the scrotum. The surrounding membranes of the spermatic cord must be then separated, and the operator is to pass a large crooked needle round the cord about half an inch below the abdominal ring. The ligature should be well waxed, oiled, and tied in one running knot, so tight only as to prevent the spermatic artery from bleeding and not to give pain by bruising the nerves. The whole cord should be divided about half an inch below the ligature. The testicle is then to be dissected out from the scrotum, beginning at the upper part, and going downwards. If any branch of an artery should bleed freely, it is to be taken up by a pair of dissecting forceps, drawing out the mouth of the vessel, while an assistant passes a ligature round it.

About the second or third day the ligature may be drawn out without any sloughing between it and that part of the cord from which the testicle was separated. The parts from whence the testicle was removed are then to be gently laid together, and the edges of the incision to be evenly and exactly brought into contact from one end to the other, and retained in that situation by slips of adhesive plaster, or a suture if found necessary. Should any part of the scrotum be ulcerated, it will be necessary to make a second incision, beginning a little above the ulcerated part, and continued in as direct a line as the inclusion of that part will admit of, down to the extremity of the first incision. These two incisions will enable the operator to dissect away the testicle, in the same manner as if there had been but one: nor will they give more pain than if the diseased part had been dissected away along with the testicle, as recommended by Mr. Sharp and Mr. Pott.

The parts are then to be brought together, and retained in the same manner as if there had been but one incision, that they may unite by the first intention. It is recommended to perform the whole of this operation with a straight knife, as well as the excision of a cancerous breast.

See Warner's Account of the Testicles and the Diseases to which they are liable; Hunter on the Venereal Disease; Fearon on Cancers; Morgagni de Sedibus, &c. xlii. 42, xliii. 43; Schurig's Spermatologia; Wilmer's Cases, &c.

There are some protuberances of the brain which bear this name, from their resemblance. See CEREBELLUM.

TESTICULA'TUS, (from *testiculus*). **TESTICULATED**, or having roots like the orchis.

TESTICULUS CANINUS, (from the resemblance of its roots to a testicle). See ORCHUS.

TESTUDO. See TALPA.

TETANUS, (from *τενω*, to stretch,) *convulsio Indica*, *holotonicus*, *rigor nervosus*, is a general spasmodic contraction of all the muscles. If the body is rigidly bent forward, it is styled *emprosthotonos*; if to one side, *tetanus lateralis*; if bent backward, *opisthotonos*. Dr. Cullen thinks that Sauvages' genus *catochus* is by no means natural, as it unites species of a dissonant nature: he has retained, however, the species collected under this head, depending on spastic rigidity, and placed them under tetanus. The species are the *catochus holotonicus*, an universal affection; *cervinus*, particularly affecting the neck; and *diurnus*, considered as symptomatic. See Cullen, Nosologia Methodica; Sauvages' Nosologia Methodica, p. 546, vol. i.

It is defined a spastic rigidity of almost the whole body; to which has been added with sensibility remaining and sometimes increased. This disorder is most frequent in hot climates, though it occasionally happens in the milder, particularly in the topical affection styled a locked jaw, a variety of this disease. Aretæus, Celsus, and Cælius Aurelianus consider cold as a principal cause, and direct rubbing the disordered parts, warm bathing, &c.; but the chief source of the disease is an irritation from a wound on a nerve, though it is said to arise also from diarrhæas or dysenteries imprudently checked, from the corrupted air of hospitals (Theden), from sea air, from purulent accumulations in the head, from caries of the bones of the neck, from fever (Storck Annus Medicus, ii. 98), from debility, repelled gout, poisons, and from worms. The less degree of the disease, the locked jaw, arises often in children from accumulations in the primæ viæ, from retained meconium, and from improperly tying the navel string. After operations in warm climates, where the nerves have been properly divided, tetanus often comes on; sometimes from wounds apparently the most trifling, and of every different part of the body. It has been also attributed to a fit of passion, after a surgical operation. When caused by a puncture or other injury of the nerves, it is commonly more violent and difficult of cure than from cold: when it comes on suddenly, and advances quickly to a violent degree, it is always more dangerous than when slower in its process. If the patient passes the fourth day, hopes may be entertained; and every day adds to the favourable prospect of reco-

very, though the danger is not wholly at an end long after the fourth, for when its force is considerably abated it will often return with its former violence.

The cases of tetanus, like other nervous diseases, are those of debility or of irritation; often of both combined, particularly in the disease of warm climates; and they prove very strongly the principle already laid down, that spasms, including convulsions, are chiefly connected with debility.

Opium is principally depended on as an internal remedy; four or five grains may be given every two hours, until the symptoms abate, and then the dose should be gradually lessened. If it cannot be swallowed, six times that quantity may be injected in clysters until the patient can swallow. Warm baths greatly assist the efficacy of opium; and the wound, if such be the cause, should be dressed with the Peruvian balsam, or turpentine. It is justly observed by Dr. Chalmers, that the quantity of opium can only be limited by the violence of the spasms. Other antispasmodics are inferior in power, and in their efficacy in this disease; but the musk, asafoetida, and oil of amber, are frequently advised. Bleeding is recommended seemingly with the same views, and cupping glasses, leeches, &c. with blisters to the neck, are employed, especially in the tetanus of fevers. The warm bath is equally a relaxant, and from the time of Hippocrates has been employed, though not with uniform success, or general commendation. Warm sudorifics have been equally commended.

The remedies which connect the relaxants with the tonics are the indirect stimulants, viz. wine, spirits, and ether. These in warm climates are highly useful; but not equal to the relief of the disease in the more temperate ones. A more steady stimulant is mercury; and numerous authors have spoken highly of its efficacy: when there is time for its operation, it has been chiefly used externally; but in many instances it has been freely, and it has been said successfully, employed internally. Other stimulants are the Barbadoes tar, mustard, frictions, electricity. (Watson.) The tonics employed have been bark, arnica, and cold bathing, or cold aspersions on the spine or different parts. We find the most decided testimonies in favour of cold, while bark and arnica seem to have been of little service.

When the cause is some injury received by a nerve, Dr. Cullen advises, if possible, to cut off that part from all communication with the sensorium, either by dividing the nerves in their course, or destroying, to a certain length, their affected portion.

See the London Medical Observations and Inquiries, i. 51, &c. 87, &c. ii. 130; iii. 326; vi. 22; the London Medical Transactions, ii. 39; Cullen's First Lines, vol. iii. edit. 4; London Medical Journal, vol. vii. p. 424; Edinburgh Medical Commentaries, vol. vi. p. 386; Memoirs of the Medical Society of London, vol. i. p. 65; Chalmers on the Diseases of South Carolina; Grainger on the more common Epidemic Diseases of the West Indies; De Haen Ratio Medendi, x. 3, and 4; Morgagni de Sedibus, &c. liv. 49, x. 234; Rush, Transactions of the American Society, vol. ii; Rush's Medical Inquiries; Lind on the Diseases of Warm Climates; Theden N. Bemerkungen; Moseley on Tropical Diseases.

TE'TANUS LATERA'LIS. See TETANUS.

TETARTOPHI'A, (from τεταρτος, fourth, and φων,

to arise,) a continued or a remittent quartan. The disease is rare, and very difficult to distinguish from the quartan intermittent.

TETRADYNA'MIA, (from τετρας, quatuor, and δυναμις, potentia,) the fifteenth class of the Linnæan system, comprehending those plants which bear hermaphrodite flowers with six stamens, four of them longer than the other two. This is a truly natural class, and the same with the cruciformes of Tournefort, the siliculosæ and siliculosæ of Ray: the latter are the orders of the Linnæan class.

TETRAGO'NIA, (from τετρας, four, and γωνια, an angle, an herb whose stalk has four equal sides). See EUONYMUS.

TETRAGO'NUS, (from the same). See PLATYSMA MYOIDES.

TETRAGY'NIA, (from τετρας, and γυνη). A class of plants having four pistils, or female parts of generation.

TETRA'NDRIA, (τετρας, and ανηρ). The fourth class of Linnæus's system, comprehending plants which have hermaphrodite flowers with four stamina of equal length.

TETRANGU'RIA, (from τετρας, and αγγος, because its fruit resembles a cup divided into four parts). See CITRULLUS.

TETRO'ROS. See ASTRAGALUS.

TEU'CRUM, (from Teucer, who is said to have discovered it,) SPEEDWELL, MOUNTAIN OR TREE-GERMANDER, (a generic term including the CHAMÆDRYS, POLIUM, SCORDIUM, SALVIA SYLVESTRIS, CHAMÆPITYS, and MARUM, q. v.) is native in Germany, Italy, and Sicily; but not in use with us, though a powerful antispasmodic and cephalic, because it cannot easily be cultivated in this country, nor obtained in a perfect state from the continent. See THEA; Cullen's Materia Medica.

TEU'CRUM FRUTESCENS. See POLIUM.

THA'LAMI NERVO'RUM OPTICO'RUM, (from θαλαμος, a bed). See CEREBRUM.

THALI'CTRUM, (from θαλλω, to flourish). See SOPHIA.

THA'PSIA, (from Thapsus, where it was found). DEADLY CARROT. *Thapsia asclepium* Lin. Sp. Pl. 375. The root of this plant operates violently both upward and downward, and is not used in practice; but, when imprudently taken, its antidote is vinegar. It is a name also for the *ferula glauca*, &c. and for a species of *laserpitium*.

THA'PSUS, (from the same). See VERBASCUM.

THE'A, (tee, Chinese,) TEA, *chaa*, is the leaf of an oriental shrub; but it is not indubitably ascertained that there is more than one species, though Linnæus enumerates the *thea bohea* and *viridis* Sp. Pl. 734, 735. The variety of teas is apparently owing to the different seasons in which the leaves are gathered, and the different modes of curing them. The tea shrub is cultivated in China and Japan, but principally in the provinces of China, and between the latitudes of 24° and 28°. The best is from Nankin in China, and Fisien in Japan. The green tea, called by the Chinese *byng*, should be chosen fresh, of a bright green, not inclining to a yellow or brown. It should be rolled in round cylinders, consist of entire leaves, be thoroughly dry, of a bitterish subastringent taste, but not ungrateful, and of a pleasant smell; the fresher the tea, the

greener is the infusion. Its prevailing smell is that of violets, or new hay; but if this be strong, it is the effect of art. Bohea tea, called by the Chinese *boui*, is of a blackish brown colour, gives a brown tincture to water, and smells of roses. Of all the substitutes for tea, the male speedwell is the most celebrated; though more pleasant and equally salutary teas are those of the rosemary, peppermint, and many of our indigenous aromatics.

Tea in its natural state is a bitter and an astringent, with apparently some narcotic quality; but, when dried, the astringency is in part lost, and the narcotic quality most sensible to the taste. The more highly flavoured teas have apparently an admixture of some other leaves, it is said of a species of olea: but this is denied by the Chinese brokers; and the different leaves occasionally observed in tea are not, on the whole, most numerous in the finer sorts. The whole mystery apparently consists in the process of drying, by which its latent narcotic powers are most successfully elicited or preserved; for the more highly flavoured teas are undoubtedly most injurious.

The effects of tea are those of narcotics in general: it gives a serenity, an hilarity, promotes perspiration and urine, relieves the tension of wearied limbs, and though it may not greatly assist, it certainly does not, when moderately used, impede digestion. It is certainly a beverage of singular utility, and its abuse only is productive of inconveniences. These are debility, with irritability, a trembling of the limbs, sleeplessness, impaired appetite, digestion, and strength.

The narcotic power of tea is not only shown by these effects, but by its assisting the operation of emetics; and if it contributes to remove crudities or indigested aliment from the stomach, it is probably indebted to its menstruum, the warm water, for the advantage.

See Cullen's and Lewis's *Materia Medica*; Neumann's *Chemistry*.

THE'A GERMA'NICA. See VERONICA.

THEBA'ICUM GU'MMI. See GUMMI-ARABICUM.

THEBE'SII FORA'MINA. See COR.

THE'CA, (from *τιθημι*, to deposit,) any case or covering, applied by botanists to some parts of flowers; by Hildanus to a case for surgical instruments. With the epithet *spinalis* it means the membranes or covering of the spinal marrow. See SPINA BIFIDA.

THEL'YGONON. See MERCURIALIS FRUTICOSA.

THE'NAR, *ἡνάρ*. The PALM OF THE HAND, OR THE SOLE OF THE FOOT. See PALMA, PES, and ABDUCTOR POLICIS MANUS, ET PEDIS.

THEOBRO'MA CACA'O, (from *θεῖον*, of the gods, and *βρωμα*, food, from its deliciousness). See CACAO.

THERAPEU'TICA, (from *θεραπευω*, to heal).

THERAPEUTICS, as a science, has shared a very disproportionate degree of attention; for, while appended to a course of the institutions of medicine, it is usually passed over in haste, from the want of time, and often left imperfect by the authors of the *Materia Medica*, as forming no part of their plans. Its limits also have not been accurately ascertained.

Medicine, when taught or practised on a dogmatic plan, is directed by indications, or those symptoms which point out the specific change to be induced in

order to restore health. Any given change is produced by a variety of medicines, agreeing in the same general purpose, though differing in minuter particulars. These then form a *class of medicines*, whose general properties and the subdivision of which, from the minute particulars just mentioned, is the subject of the therapist's consideration. The first part of the consideration is, therefore, purely practical; the second differs from disquisitions on the *materia medica*, as a general work on the natural history of plants does from the arrangement and definitions of the species. Thus therapeutics have been left with little cultivation by either party, and the elder Dr. Duncan first, with great propriety, took it up as the subject of his private lectures before he was appointed professor of the institutions. Dr. Cullen's *Materia Medica* is in a great measure a system of therapeutics; and if this work has any very striking original feature it is in the therapeutical disquisitions under the different heads into which medicines have been divided (See MATERIA MEDICA). These portions have been laboured with great care; but with what success others must decide.

THERI'ACA, (from *θηρ*, a wild beast,) medicines supposed to cure the bites of venomous animals, differing from *alexipharmics* and *alexiterials*, which are used as remedies against poison inwardly taken. This term was introduced "by the ancients upon a very false supposition, and continued by the moderns upon no better grounds. But, with the absurd compositions which have so long disgraced our pharmacopœias, and to which the term has been applied, the term itself should be rejected." Cullen.

THERI'ACA GERMANO'RUM. See JUNIPERUS.

THERI'ACA LONDINE'NSIS. See CUMINUM.

THERI'ACA RUSTICO'RUM. See ALLIUM.

THERIACA'LIS BEZOA'RDICA A'QUA, (from *theriaca*). See CHYLOSTAGMA DIAPHORETICUM MINDERERI; a fluid distilled from theriaca or mithridate.

THERIO'MA, (from *θηριον*, to rage like a wild beast), a term applied by Hippocrates to the most ill-conditioned and malignant kind of ulcer, described by Celsus as of a livid or black colour, extremely fetid, abounding with a mucus, which is accompanied with inflammation, fever, itching, and pain. Blood sometimes issues from it, and it spreads so fast that some have named it *herpes exedens*. The term is sometimes confined to malignant ulcers of the lungs. Galen and Hernius give this appellation to *phthisis*, and Dr. Cullen places it as a synonym of *ulcus*.

THERMA'SMA, (from *θερμαινω*, to heat). See FOTUS.

THERMÆ, (from *θερμος*, warm). See ACIDULÆ, AQUE SULPHURÆ, and BALNEUM.

THERMOMETRUM, (from *θερμος*, heat, and *μετρον*, a measure). The instrument adapted for measuring the different temperatures of bodies, particularly the human body. The thermometer now generally employed is a glass bulb containing mercury, lengthened into a circular or flattened tube, inclosed in glass hermetically sealed. The bulb must be small, that the heat may be readily communicated, and the tube is often flattened, that the variation of the height may be more conspicuous. For medical use the scale is not carried above 112° of Fahrenheit; and this is also styled

an *air thermometer*, since the temperature of the air in very few instances, independent of strong reflection, rises so high. When the instrument is intended for low temperatures, a highly rectified alcohol, slightly coloured, is employed, as the greatest cold hitherto produced has not yet succeeded in congealing this fluid, while mercury freezes at nearly 39° below the beginning of Fahrenheit's scale. When employed for considerable heats, mercury is preferred. By these means we measure by Fahrenheit's scale 643° of temperature, viz. from -43 , when ether freezes, to 600° , at which mercury boils, while the scale of temperature in this climate rarely exceeds 60° , viz. from 20° to 80° ; perhaps never 80° . In the arctic circle, however, it has been known to fall below -40 , and within the tropics to rise to 120° .

It is not our province to enlarge on the different forms of this instrument, or the various fluids at different times employed. The scales have also been various; but the history and progress of the invention, with a comparative view of the scales, is given by Dr. Mar-

tin in his *Essays*, which have been republished separately, in 12mo. at Edinburgh, with an illustrative plate.

The great object of different philosophers in the construction of this instrument has been to discover two fixed points. These are pretty certainly the freezing and the boiling point, in a calm atmosphere, and at the mean height of the barometer. Such have been employed by Celsius and Reaumur; but Fahrenheit thought the greatest possible cold was produced by mixing salt and snow, and he consequently made it the basis of his scale: fortunately it is a point equally determined with that of frost. In every reduction of the other scales to Fahrenheit's we must consequently add thirty-two, and then the degree of the *centigrade* thermometer, the modern name of Celsius', will be nine fifths, and of Reaumur's nine fourths. This means, however, Reaumur's mercurial thermometer; for the spirituous ones are very unequal, from the strength of the spirit not being accurately ascertained.

We shall add Dr. Duncan's table of the degrees of different thermometers.

Table of the degrees of different thermometers, omitting fractions, at which some remarkable chemical phenomena occur.

Reau.	Fahr.	Cent.	
-35	-46	-43	Ether freezes.
-34	-45	-42	Ammonia exists in a liquid form.
-32	-39	-39	Mercury freezes.
-24	-22	-30	Acetous acid freezes.
-14	0	-18	Cold, produced by mixing equal parts of snow and muriate of soda.
0	32	0	Ice melts.
5	43	6	Phosphorus burns slowly.
6	45	7	Wax melts.
22	82	28	The adipocire of muscle melts.
27	92	33	Fat begins to melt.
28	95	35	Spermaceti melts.
29	98	36	Ether boils.
30	99	37	Phosphorus melts.
33	106	41	Resin of bile melts.
40	122	50	Phosphorus burns vividly.
42	127	53	Fat is perfectly fluid.
44	130	54	Ammonia is separated from water.
50	145	63	Camphor sublims.
59	165	74	Albumen coagulates.
61	170	77	Sulphur evaporates, (Kirwan).
64	176	80	Alcohol boils.
68	185	85	Sulphur melts, (Kirwan).
71	192	89	Adipocire of biliary calculi melts.
80	212	100	Water and volatile oils boil.
80	212+	100	Sulphur melts, (Fourcroy).
83	219	104	Phosphorus evaporates?
96	248	120	Nitric acid boils.
112	283	140	White oxide of arsenic sublims.
120	303	150	Sulphur burns slowly, and camphor melts.
150	370	188	Charcoal burns.
164	400	205	Arsenic melts?
168	410	210	Tin melts.
190	460	238	Bismuth melts.
226	540	282	Lead melts, (Newton); arsenic sublims.
226	540+	282	Tellurium melts.
228	546	285	Sulphuric acid boils, (540° Bergman).

Table of degrees of thermometers continued.

Reau.	Fahr.	Cent.	Wedg.	
232	554	290		Phosphorus boils?
299	570	239		Sulphur burns vividly.
250	594	312		Leads melts, (Morveau).
252	600	315		Mercury boils, lintseed oil boils.
				Sulphur sublimates, (Davy).
297	700	371		Zinc melts.
341	800	427		Hydrogen gas burns.
345	809	432		Antimony melts.
564	1300+	705	1.7	Azotic gas burns.
1451	3297	1814	14	Diamond burns, (Sir G. Mackenzie).
2024	4587	2530	27	Copper melts.
2082	4717	2602	28	Silver melts.
2313	5237	2992	32	Gold melts.
7975	17977	9969	130	Cobalt melts.
9131	20577	11414	150	Nickel melts.
9602	21637	12001	158	Iron melts.
9708	21877	12136	160	Manganese melts.
10286	23177	12858	170+	Platinum, tungsten, molybdenum, uranium, and titanium melt.

When we compare the limited range of temperature which we experience to these degrees, we are lost in astonishment, which is greatly increased by the temperature which we can measure by Mr. Wedgwood's means, viz. the contraction of clay. A cone of moderately dried clay is so formed that it will enter a cylindrical ring. In proportion therefore as it contracts, it will pass further on. The scale commences with a red heat fully visible in the dusk, and the instrument is capable of contracting so as to show a temperature of $240=31200$ of Fahrenheit, would the materials of Fahrenheit's instrument admit of such a heat. We shall add the scale which we selected from the Philosophical Transactions, in which one or two of the articles are repeated, but they are again introduced for the sake of the comparison.

	Wedg.	Fahr.
Red heat fully visible in the twilight	0	1077
Wedgwood's enamel burnt on	6	1857
Brass melts	21	3807
Swedish copper melts	27	4887
Fine silver melts	28	4717
Fine gold melts	32	5237
Least welding heat	90	12777
Welding heat of iron	95	13427
Common smith's forge	125	17327
Cast iron melts	130	17977
Wedgwood's small air furnace	160	21877
Extremity of the scale	240	32277

Martin's Essays; Philosophical Transactions for 1783; De Luc sur les Modifications de l'Atmosphere; Leslie on Heat; Black's Lectures. See CALIDUM INNATUM, and CALORICUM.

THETLA'TIAN. See GUAO.

THLA'SPI VERUM, (from *θλασσω*, because its seeds appear as if broken). PENNY-CRESS, or TREACLE-MUSTARD, *thlaspi arvense* Lin. Sp. Pl. 901, is a plant with roundish-pointed leaves, and broad capsules, containing about four seeds in each cell. It is annual, grows

in fields, and flowers in June. The *thlaspi verum* Dioscoridis is the *lepidium perfoliatum* Lin. Sp. Pl. 897.

THLA'SPE VULGATIUS. MITHRIDATE-MUSTARD. *Thlaspi campestre* Lin. Sp. Pl. 902, hath hoary sharp pointed leaves, shaped like an arrow's head, and only one seed in each shell of the pod. It is biennial, grows in open clayey ground, and flowers in May. The seeds of both are stimulant; but the common mustard seed is generally preferable.

THO'LUS. See ACHICOLUM.

THO'RA, (*Θορα*). See ANTHORA.

THO'RA PA'ROU. See CAJAN.

THORA'CICÆ ARTERIÆ. The UPPER THORACIC ARTERY rises from the axillary and runs down on the sides of the thorax, giving out many branches in its passage. The inferior arises also from the same artery, and runs along the inferior costa of the scapula, &c. to several of the neighbouring muscles.

THORA'CICUS DUCTUS. (See LACTEA VASA.) Cheston records an instance of its being ossified.

THO'RAX, (from *θοραξ*, to leap, a motion communicated by the heart,) the CHEST, *anocælia*, *cussa* of Fallopius. It consists of the cavity, surrounded by bones and muscles, which lies between the neck and the abdomen, lined by the pleura, and divided into three regions, viz. the anterior, the posterior, and the lateral. Into the thorax descends the trachea arteria; and behind the sternum is the thymus-gland; the heart is seated in the middle of the thorax, and on each side of it are the lungs. It contains, besides the heart, its larger vessels, the thoracic duct, part of the vena cava, the vena azygos, the eighth pair of nerves, and the intercostal, with the commencement of the ganglionic system.

The thorax is bounded behind by the twelve dorsal vertebræ, on the sides by the ribs, before by the sternum, and below by the diaphragm.

Wounds of the thorax are not, as we have formerly

observed, necessarily mortal, and there are cases where a penetration through both cavities of the chest have been healed. (Forestus.) Even considerable wounds with fractured ribs have been cured with little remaining inconvenience. The blood has been drawn out by suction, and by means of a syringe: instances of each occur in Ludwig's Dissertation de Suctione Vulnerum Pectoris, and his Adversaria, i. p. 3, N°. 6. Bartholine and some other authors mention a flow of chyle through the wound, and in these cases the thoracic duct must have been injured: they all, as might be expected, were fatal.

Tumours of the thorax sometimes seem to arise from enlargement of the heart, or the great arteries in its vicinity; sometimes, it is said, from air or purulent matter contained in the cavity; occasionally from steatoma, more frequently from the careless pressure of nurses, during the period of infancy. The bones are, in general, too firmly fixed to suffer any common internal cause to alter their shape; but such was probably the case in an instance recorded in the Journal de Medecine, where the tumour was reduced by a purulent expectoration. From large aneurisms it is not very unfrequent.

Effusions in the chest from hæmorrhages, from water, or mucus, are not uncommon, and the viscera of the abdomen have occasionally been protruded through the fibres of the diaphragm; but these complaints occur under their proper titles. In the former cases the paracentesis of the thorax has been recommended by Gooch, Hewson (Medical Observations and Inquiries), and Kellie (Medical Commentaries).

When pus has been evacuated, the opening often remains *fistulous*. In scrofulous constitutions, and in the scrofulous period, these openings are usually fatal; but, in more advanced life, nature sometimes succeeds in effecting a cure. We once saw an obstinate fistula of the chest heal while the patient was taking large doses of digitalis: we dare not say that he was cured by this remedy.

THRO'MBUS, (Θρομβος). See SUGILLATIO.

THU'RIS CO'RTEX, *cleutheria, nascaflithon, cascarilla, storax rubra officinalis Judæorum, elaterii cortex, kina-kina aromatica, Peruvianus griseus seu sfurius*, supposed to be the bark of the elatera of Catesby, plentiful in the Bahama islands particularly, and of a tree called *ilathera*.

Dr. Brown, in his History of Jamaica, where it is frequent, observes, that all the parts of the tree, especially the bark, smell strongly of musk: and the powder of the bark is used by the negroes as an emetic. It is called in that island *alligator* and *musk wood*. It is now known to be the *croton cascarilla* of Linnæus, Sp. Pl. 1424, the willow leaved croton.

This bark is brought to us in curled pieces, or rolled up in short quills about an inch in width, covered on the outside with a rough whitish matter, and brownish within, exhibiting, when broken, a smooth, close, blackish brown surface. It hath a light agreeable smell, and a moderately bitter taste, accompanied with a considerable aromatic warmth; is easily inflammable, and yields while burning a very fragrant smell, resembling musk: it is bitter, but less rough and less disagreeable than the Peruvian bark.

Professor Süsser thought it a powerful diuretic, and

carminative, and used it with success in calculous, asthmatic, phthical, scorbutic, and arthritic complaints. It is indeed similar in its effects to the Peruvian bark, less useful in intermittents and gangrenes, but producing, in a less degree, dyspnœa, or stricture on the skin. Perhaps on these accounts it has been more commonly employed in Germany in hectic and fevers; but from the early prejudices of the German physicians to the Peruvian bark, they seem to have eagerly caught at the cascarilla, as a substitute, and employed it in intermittents, remittents, and putrid fevers. We find it in such complaints a medicine of very inferior powers. It seems to possess a more considerable aroma, united to its astringent powers, than the Peruvian bark, and is consequently better adapted to debilities of the stomach, and to cases of dyspepsia. Where the bark disagrees it is our best substitute. The best mode of administering it is in powder in doses of fifteen grains to a drachm; but unless it is recently powdered the aroma is lost. The college of London prepare a tincture of cascarilla, by digesting for eight days, in a moderate heat, four ounces of cascarilla in two pints of proof spirit of wine, and afterwards straining. Dose from one to three drachms repeatedly; and an extract made in a manner similar to that of extractum cinchonæ. The dose the same as the powder. In the gout, and especially in gouty disorders, it sometimes supplies the place of the radix serpentariæ: in disorders of the head it is mixed with tobacco for smoking.

Water extracts the virtues of cascarilla, and spirits more perfectly. Distilled with water it yields a greenish essential oil. See Lewis and Cullen's Materia Medica.

THU'RIS LI'GNUM. See ASPALATHUS.

THUS, (from *thus*, to sacrifice,) FRANKINCENSE. The Greeks call it *olibanum* from Libanus in Syria; but it is the production exclusively of Arabia. The true frankincense is consequently unknown in this country, and what has this appellation in the shops is the resin of the pine tree. (See PINUS.) The plant from which it is obtained has been doubted. It is certainly not the *juniperus lycia*, as has been supposed; but more probably the *amyris kataf* of Willdenow, ii. 334; Forskål Descr. 80, an Arabian tree.

The common frankincense is bitterish acrid, and used only for external purposes.

THUS CORTICO'SUM and MASCU'LI'NUM. See OLIBANUM.

THUS JUDÆO'RUM. See THURIS CORTEX.

THUS MYRTIFO'LIA BE'LGICA. See MYRTUS BRABANTICA.

THU'YA, (from *thus*, in consequence of its fragrant smell,) *cedrus Americanus, paradisæica, et vitæ arbor, TREE OF LIFE, thuya occidentalis* Lin. Sp. Pl. 1421, growing naturally in Canada and other northern countries. It is recommended in rheumatic pains, applied, when formed into an ointment, to the part affected, and in a short time is said to give relief. In violent erratic pains of the thighs, sometimes spreading all over the body, eight ounces of the leaves of polypody, and two of the cones of thuya, reduced into a coarse powder, and made into a poultice, with milk-warm water, are recommended to be spread on linen, and wrapped round the body, interposing a cloth, lest it should

inflamm the skin. At Saratoga the decoction of thuya leaves is given in intermittents, and in cough.

THU'YA MASSILIENSIS. See CEDRUS PHÆNICIA.

THU'YÆ GE'NUS QUARTUM. See CEDRUS CUM FOLIO CYPERI.

THY'MBRA, (from its smelling like thyme, θυμος). See SATUREIA SATIVA.

THY'MBRA HISPANICA. See MARUM.

THYMA'LEA MONSPELI'ACA, (from its smell). SPURGE FLAX. *Daphne cnidium* Lin. Sp. Pl. 511, is clothed with green leaves, resembling those of flax, bears white flowers in clusters on the tops of the branches, followed by red berries, called *cnidia coccus*, in each of which is a single seed. The seeds are supposed to be the real *cnidia grana*, and *coccus* is probably the whole berry. These berries are very caustic. The shrub is a native of the south of Europe. *Cneoron*, a supposed synonym, is another species of daphne, and the mezereon is from another.

THYMELE'A LAU'RI FO'LIA, (from θυμα, its smell). See LAUREOLA MAS and FÆMINA.

THYMI'AMA, (from θυμα,) has been confounded with the cascarilla, from its name of musk wood, but is brought from Syria in brown grey pieces. Its agreeable odour resembles that of the styrax liquida, and it has been supposed to be the production of the same tree. Its taste is bitterish and subacid, with a slight astringency; but it has never been used in medicine.

THY'MICÆ ARTE'RIÆ. The *arteriæ thymicæ* and *arteriæ tracheales* on each side, are in some subjects only branches of one small trunk, which arise from the common trunk of the right subclavian and carotid: they are generally small, sometimes run separate, or partly separate, and partly joined.

THY'MICA VE'NA. The right, when it rises separately, goes out from the bifurcation, and, when it is wanting, the thymus gland is furnished by the gutturalis, or some other neighbouring vein. The left comes from the subclavian.

THYMOXA'LME, (from θυμος, οξυς, and αλς). A preparation described by Dioscorides, of thyme, vinegar, salt, and some other ingredients.

THYMUS; *glandium*; a small, indolent, carnosus tubercle, like a wart, arising about the anus, or the pudenda; it resembles and is called from the flowers of thyme. They are easily extirpated. See CONDYLOMA, and ACROTHYMION. Wiseman's and Heister's Surgery.

It is also the name of a gland styled by Haller a lymphatic one, divided into lobes; lying behind the sternum in the duplicature of the mediastinum. It is peculiar to the fœtus, disappears in adults, and has no excretory duct, though lymphatics may be traced from it. In calves it is called sweetbread, but its use is unknown.

In botany it is thyme, a low shrubby plant, consisting of numerous slender tough stalks, with little roundish leaves in pairs, and loose spikes with purplish or whitish flowers on the tops: it is sometimes also a name for *satureia*.

THYMUS CITRATUS SERPYLLUS. See SERPYLLUM.

THYMUS MASTICHINA. See MARUM.

THYMUS VULGA'RIS, (from θυμα, odor,) COMMON THYME, *thymus vulgaris* Lin. Sp. Pl. 825, com-

MON BROAD LEAVED OR GARDEN THYME, hath upright stalks, and dark brownish green, somewhat pointed, leaves: it is native in the south of Europe, but common in our gardens, flowering in June and July. Thyme is moderately warm, pungent, and aromatic; to water it imparts by infusion its agreeable smell, though a weak taste; in distillation it yields an essential oil, which possesses the smell of the thyme, but is less grateful, and to the taste is hot and fiery. Spirit of wine takes up the whole of its active matter without heat. It is said to be resolvent, emmenagogue, diuretic, tonic, and stomachic; to afford an agreeable distilled water, more durable, but less active and penetrating than that of peppermint. The infusion has been highly commended in lowness of spirits, headaches, and for the cure of the night mare. A conserve of the leaves, or of the leaves with the flowers, is an useful vehicle for stomachic medicines, and the whole plant from its aromatic qualities may be found equally useful with lavender, sage, or rosemary, though its powers are on the whole weak. See Lewis's *Materia Medica*; Neumann's *Chemistry*.

THYONIA'NA. See CRINATUM.

THYROIDÆ'A CARTILA'GO, (from *thyroides*, the thyroid cartilage). The word thyro is prefixed to several muscles whose origin is in the thyroid cartilage. See ASPERA ARTERIA, et VOX.

THYRO-ADENOIDE'US. See CRICO-PHARYNGÆI.

THYRO-ARYTÆNOIDE'I, arise from the inside of the fore part of the thyroid cartilage, and are inserted into the arytænoid, serving to compress the glottis, and relax the ligaments of the larynx. Sanctonini calls these muscles *thyro-epiglottici*, because they are partly inserted into the membrane of the epiglottis.

THYRO-CRICO-PHARYNGÆ'I. See CRICO-PHARYNGÆI.

THYRO-EPIGLOTTICI. See THYRO-ARYTÆNOIDEI.

THYRO-HYOIDES. See HYOTHYROIDES.

THYRO-PHARYNGÆI, are broad muscles, arising from the outside of the ala of the cartilago thyroïdes, between its edge and the oblique line in which the thyro-hyoidæi are fixed, and they are a little confounded with the crico-hyoidæi. From thence they run up obliquely backward, and, meeting under the linea alba of the pharynx, sometimes appear to be but one muscle, without any middle tendon. See Winslow's *Anatomy*; CRICO-PHARYNGÆI, and PHARYNX.

THYRO-PHARYNGO-STAPHYLINI, and STAPHYLINI; two small muscles which accompany the pharyngo-staphylini very closely through their whole course, except that their posterior extremities are fixed in the thyroid cartilage, near the other muscles. They are inserted into the septum palati. They may be reckoned one pair, only under the first appellation. See PHARYNX.

THYROIDE'A vel BRONCHIA'LIS GLANDULA, the THYROID GLAND, surrounds the aspera arteria laterally and before: its use is not known; but it is larger in women than in men, and consequently the fore part of their necks is not so hollow. It is the seat of the BRONCHOCELE, q. v.

THYROIDES, (from θυρεος, a shield, and εidos, likeness or shape). See ASPERA ARTERIA.

THYRSUS. A THYRSE, (θυρεος, from θυα, impetifer; the spear bound with ivy, carried in sacrifices

to Bacchus). Linnaeus makes it a species of inflorescence, which may either be nudus or foliatus, defining it to be a panicle contracted into an ovate form, as in the syringa and petasites. It differs from a spike in having the flowers or fruits set more loosely on it, so that there are spaces visible between them. Also a stalk. See CAUDEX.

THYSSELI'NUM PLI'NII. See CÆLSNITIUM.

TIA'RA. See CYRBASIA.

TIBERIA'NUM TORME'NTUM. See COLICA.

TI'BIA, (quasi *tuba*, a *pipe*, from its resemblance to a hautboy,) *focile majus*, *arundo major*, *fossilus*, *canna major*, *canna domestica cruris*, the LARGER BONE OF THE LEG, is situated in its anterior internal part, and is in shape nearly triangular. Its upper extremity is large, divided into two cavities covered with cartilage, for the reception of the condyles of the os femoris, between which cavities is a rough irregular protuberance for the attachment of the ligaments, admitting a small lateral motion. On the posterior part is a small cavity for the reception of the fibula, and below the fore part a large rough tuberosity, where the ligament of the patella is fixed. The lower extremity is hollow, though a small tuberosity rises in the middle; and the internal side of this cavity is produced into a process called malleolus internus. The internal side of this extremity hath a cavity for the reception of the fibula: the anterior angle of the tibia is sharp, and is called *ocrea*; the spine of the tibia, or shin, the fore part of the tibia *ocrea*. In the fœtus both ends of the tibia are cartilaginous and become epiphyses.

It may be proper in this place to notice a process for relief when bones are carious, which may frequently prevent an amputation. If the tibia is carious to a considerable depth (see CRIES), the carious part may be removed in the following manner. We must first cut through the skin, the whole length of the part we mean to remove, on each side, saving as much of the integuments as possible. We then cut it across the bone above and below. The muscular flesh must be dissected as clear as can be admitted from the bone, still preserving as much as possible a thin plate of pasteboard, horn, or tin introduced, over the upper part of the bone to be removed, so as to support the skin. After clearing the periosteum, the morbid portion of the bone should be separated by a strong saw of a circular form. To give encouragement to this operation, it should be remembered, that there have been instances of osseous matter shooting and forming a complete bone, when nine inches or more have been removed.

TIBIA'NIS NERVUS, (from *tibia*,) is the internal branch of the sciatic nerve, sent off near the ham, passing behind the popliteus and gastrocnemii, going through the upper part of the soleus, running between it and the flexors of the toes, and to the malleolus internus. It passes behind the malleolus and between the os calcis and the abductor of the great toe, where it divides into the plantaris internus and externus: the first of these furnishes the toe with filaments, and the latter goes to the little toe, and to that adjoining.

TIBIA'NIS ANTI'CUS, a muscle which rises from the head of the tibia, and from the outside of its spine, grows tendinous, and, winding about the inside of the foot, is inserted into the os cuneiforme internum. It serves likewise to turn the sole inwards, and bend the foot upward.

TIBIA'NIS ARTE'RIA. The poplitea at its termination divides into two principal branches, the first of which runs between the heads of the tibia and fibula, passing from behind forwards on the interosseous ligament, where it is called *tibialis anterior*; the second divides into two more, the largest and innermost of which is the *tibialis posterior*, or *suralis arteria*. The anterior lies between the tibialis anticus muscle and the extensors of the toes, comes forwards between the head of the tibia and fibula, passes on the fore side of the interosseous ligament, runs on the side of the tibia about two thirds of its length. It then passes down in front, under the annular ligament, to the instep, between the first and second metacarpal bones, and sinks into the sole of the foot, where it anastomoses with the posterior tibial artery. The posterior runs between the soleus, the tibialis posticus, the flexor digitorum communis, and flexor pollicis, and passes between the bone and interosseous ligament: in its passage it gives branches to the tibia, and to its marrow, through a canal in its posterior and upper part; then runs behind the inner ankle, communicates with the tibialis anterior, and, surrounded by the neighbouring veins, passes to the sole of the foot, between the os calcis and the thenar muscle, where it is divided into the plantaris interna, which makes a circle like that in the palm of the hand: from this circle branches are sent to the toes.

The following important circumstance respecting this artery, is recited by Mr. Pott. In the upper part of the calf of the leg, under the gastrocnemius and soleus muscles, a small hard tumour is at first perceived, sometimes painful, but always impeding the patient's exercise; though not altering the natural colour of the skin until it hath considerably increased in the bulk. It enlarges very gradually, not softening as it increases, but continuing through the greatest part of it incompressibly hard; but when it hath attained a large size, it seems to contain a fluid which may be felt towards the bottom, apparently resting on the back part of the bones. An opening for the discharge of the fluid, which is small in quantity and sanious, mixed with grumes of blood, must be made very deep, and through a very distempered mass; but the evacuation produces very little diminution of the tumour; and very considerable symptoms of irritation and inflammation soon come on, advancing with great rapidity and exquisite pain, producing a violent fatal fever, and a mortification of the whole leg: it is not, therefore, advisable. If amputation hath not been performed, and the patient dies after the tumour hath been opened, the mortified state of the parts prevents all satisfactory examination. If the limb was removed without any previous operation, the arteria tibialis postica, will be found enlarged, diseased, and burst; the muscles of the leg converted into a morbid mass, and the posterior part of both the tibia and the fibula carious. This disease apparently arises from a ruptured artery, or is always accompanied with it, and is remedied by amputation only. See Pott's Remarks on the Necessity, &c. of Amputation in certain Cases, &c.

TIBIA'NIS GRA'CILIS MU'SCULUS. See PLANTARIS.

TIBIA'NIS PO'STICUS; *nauticus*, from the use which sailors make of it in climbing, rises from the tibia and fibula close to the soleus, and from the interosseous ligament runs through the annular ligament: it plays in

a groove of the bone, where it is tied down by the annular ligament, then runs across the foot, and is inserted into the middle of the os scaphoides.

TIBIA' LIS VE' NA, anterior and posterior, are divisions of the poplitea. They accompany their respective arteries in their course.

TIC DOLOUREUX. See **TRISMUS DOLORIFICUS**.

TIGILLUM. See **CRUCIBULUM**.

TIGLIA GRA' NA. See **CATAPUTIA MINOR**.

TILBURY WATER, found at West Tilbury in Essex, has at the well a straw coloured hue, and covered with a variegated earthy scum; but preserves its clearness in bottles. It contains a quantity of air, is soft and smooth to the taste, impressing after long agitation in the mouth, a small degree of roughness on the tongue. It appears, from its obvious properties, to be chalybeate; but no steel has been discovered in it. It contains a lime supersaturated with acidulous gas and nitrated kali; the former in the proportion of one pennyweight thirteen grains, and the latter of two pennyweights one grain, in the Winchester gallon. There are also three pennyweights ten grains of sea salt in the same quantity with a little superabundant mineral alkali. These waters operate mostly by urine, though they purge sometimes on the first drinking. A quart is reckoned a middle dose, and may be taken in a day, in acidities in the primæ viæ, alvine fluxes, and other disorders from debility of the fibres. They have been recommended also in the gravel, fluor albus, immoderate fluxes of the menses, and several complaints. André alleges that they are equally powerful for diarrhœas, and all kinds of fluxes, as the bark for intermitting fevers. See **AQUE MINERALES**.

TILIA. The **LIME OF LINDEN TREE**, *tilia europea* Lin. Sp. Pl. 733, a tall tree, with spreading branches: the leaves are heart shaped, serrated, soft, and hairy; the flowers whitish, followed by a kind of dry berry about the size of filberts. It is native in England, and flowers in July. The flowers are styled *anodyne*, and supposed to have an *antispasmodic virtue*; when fresh they have a moderately strong smell, which is soon lost in keeping; and with the smell, their virtue is apparently lessened: they have been much esteemed, but are now neglected in practice. See **Raii Historia**.

TINCÆ OS, (from its resemblance to a tench's mouth). See **OS INTERNUM**.

TINCAL, **TINCAR**, (*tinkel*, Germ.). **BORAX**, *chrysocolia*, *auricolla*, *amphitone*, *cæruleum*, *montanum*, comes to Europe from the East Indies in a very impure state, in the form of large, flat, hexangular, or irregular crystals, of a dull white or greenish colour, greasy to the touch; or in small crystals, apparently cemented together by a rancid, yellowish, oily substance, intermixed with marl, gravel, and other impurities.

It is purified by solution, repeated calcination, filtration, and crystallization. One hundred parts of purified borax contain thirty-four of real sedative acid, seventeen of mineral alkali, and forty-seven of water; but of the mineral alkali only about five parts are really saturated, the rest is free; and hence in many cases borax acts as an alkali. As borax is purified in the East Indies, Mr. Engestrom suspects that the tincal is only the residuum of the mother liquor of borax evaporated to dryness, and that the greasiness arises from its being

mixed with butter milk to prevent its efflorescence. See **BORAX**, **SEDATIVUS SAL**, and **CHEMIA**.

TINCTO'RIOUS FLOS, (from *tingo*, to dye). See **GENISTA TINCTORIA**.

TINCTURA, (from the same). Tinctures are spirituous liquors impregnated with the active parts of some medicinal substance; compound tinctures contain more than one ingredient, and *elixirs* in some authors are limited in the same way. Watery impregnations of medicines are called *infusions* or *decoctions*, according as they are prepared by macerating, or by boiling them in water. When the tincture is of a thicker consistence, it is called a *balsam*. Alcohol dissolves only the pure resin; but in its different degrees of strength down to that of wine, it takes up gradually an increased proportion of gum: even the strongest alcohol will hold with resin a small portion of mucilage, either from the water which it still contains, or from its intimate union with the resin. There are, however, many vegetable substances, styled resinous, equally soluble in water and in spirit, as the gum kino, whose tincture will not become white on adding water; and, indeed, some late experiments on cinchona have taught us, that there are vegetable principles different from resin, whose affinities to spirit are very different.

Preparations have been styled tinctures, whose menstruum differs from alcohol, as the ammoniated tincture of guaiacum and valerian, formerly styled the volatile tinctures of each, though the last is omitted in the late edition of the London Pharmacopœia. Dulcified spirit is sometimes employed; but acids, in general, are considered as improper menstrua, nor do we recollect an instance of their being used in any British pharmacopœia, except in an obsolete form the acid elixir of vitriol. In France and Germany it is not uncommon. Fixed alkalis and magnesia are supposed to increase the solvent power of alcohol and water; but they seem only to render the colour deeper.

All the tinctures take their name from the materials which form their bases, and may consequently be found under their specific appellations, yet in former works they were not to be thus discovered. The *tinctura amara* is now the tincture of gentian; the *tinctura thebaica*, the tinctura opii, &c.

TINCTURA THEBAICA. See **OPIMUM**, &c.

TINEA, (from its creeping like the moth,) consists in little ulcers oozing out a fluid at the roots of the hair, which forms a white friable scab. We have seen it in the roots of the beard. Bell ranks it as a variety of cutaneous ulcer. It has been doubted whether the tinea is a local or a general disease; but it is commonly the latter, though cases have occurred where permanent injuries have arisen from its suppression, and authors of credit have recommended blisters, issues, and setons, either as a part of the treatment or to prevent a relapse. These circumstances are mentioned not as commonly occurring, but to prevent a too indiscriminate practice.

The only effectual remedy is pulling out the hair by the roots, or destroying these by acrid applications. The pitch cap produces this effect with much pain, and we have known each separate hair eradicated by tweezers. The head also has been shaved, and covered with an oil skin cap, which keeps up a violent and continued perspiration, so as more gradually to destroy the bulbs.

The principal depilatory is mercury, and its most acrid preparations have been employed for this purpose. The chief are the white precipitate (Murray), the solution of sublimate (Duncan), Cinnabar (Hamilton), and the mercurial ointment (Chalmers). The other metallic acids are the ærugo (Starke), tartar emetic (Bizard), white vitriol, and arsenic, which, in one instance, apparently proved fatal. The balsam of sulphur, after being washed with an alkaline lixivium (Rulandus), the gum ammoniac with vinegar, the oil of silk worms, the powder of calcined toads (Stoll Prælectiones, p. 285), cantharides, soot, nasturtium, the mineral acids, onions, and the gratiola have been recommended.

Applications of a different nature are the myrrh, tobacco, hemlock, coltsfoot, viola tricolor and ledum palustre. In favour of hemlock we find the testimonies of Murray, Quarin, and Stoeller, without adding Storck, who fancied this medicine useful in every disease.

In the Pharmacopœia Pauperum of Banyer we observed, early in our practice, a formula neither inviting from its simplicity nor elegance, which, however, we then tried, and have continued to use for twenty-five years with uninterrupted success, though we generally find it necessary to add one third or one half of axunge. It contains six ounces of cerusse, two ounces of litharge, an ounce and half of burnt alum, with as much muriated mercury, two ounces of axunge, and six ounces of Venice turpentine.

TINNITUS AURIUM, (from *tinnio*, to ring). A noise in the ear generally resembling the roaring of a cascade, the *faraculis imaginaria* of Cullen. Hoffman attributes this disorder to spasmodic affections in the inner membranes of the ears, and Heister recommends diaphoretics internally and to fumigate the meatus auditorius externus with the vapours of hot wine, in which rosemary leaves and lavender have been heated, and to put the feet into warm water. When it is the effect of chronical disorders it is difficult to cure. (Etmulley.) We have already remarked that it sometimes proceeds from debility. Du Verney on the Ear, and its Disorders. See **SONUS** and **SURDITAS**.

TIPIO'CA. See **AMBAIBA**.

TISSUE CELLULARE, et **MUQUEU'X**. See **CELLULOSA MEMBRANA**.

TITHY'MALO CYPARI'SSÆ SI'MILIS. See **ESULA MINOR**.

TITHY'MALUS, (*τίθος*, a dug, and *μαλός*, tender, from its smooth leaves and milky juice). *Hiphomanes*, *pityusa*, *peplion*. **SPURGE**. *Euphorbia palustris* Lin. Sp. Pl. 662, a plant with small smooth leaves, round stalks full of a milky juice: the flowers are in umbel like clusters; each followed by a capsule, containing three seeds.

TITHY'MALUS HELIOSCO'PIOS, Lin. Sp. Pl. 658; *solsegius*, *esula solissequa*, **SUN SPURGE**, **WART WORT**, and **COMMON WATER SPURGE**.

TITHY'MALUS MARI'TIMUS, vel **SPINOSUS**; *euphorbia paralias* Lin. Sp. Pl. 657, *esula marina*, *hiphophæes*. **SEA SPURGE**.

The juice of these, and of all the other species, is very acrid, and used only externally for destroying warts, &c. See *Raii Historia*; *Lewis's Materia Medica*.

TITHY'MALUS AIZO'IDES. See **EUPHORBIVM**.

TITHY'MALUS PALU'STRIS, &c. See **ESULA MAJOR**.

TITHY'MALUS FOLII'S PINI. See **ESULA MINOR**.

TITHY'MALUS LATIFO'LIVS. See **CATAPUTIA MINOR**.

TITHY'MALUS ORIENTA'LIS. See **ESULA INDICA**.

TITILLA'RES VE'NÆ, (from *titillo*, to tickle, because they belong to the ticklish parts of the body). See **ILIACÆ VE'NÆ**.

TITILLICUM, (from the same). The **ARM PIT**. See **AXILLA**.

TO'DDA PA'NNA. See **PALMA JAPONICA**.

TOLACA'POLIN. A sort of cherry. See **CAPOLIN MEXICANUM HERNANDEZ**.

TO'LÆ. **TOLES** and **TOLLES**. (See **TONSILLÆ**.) Severinus applies this term to glandular abscesses in the limbs.

TOLUI'FERA. See **TOLUTANUM**.

TOLUTA'NUM BALSAMUM. The **BALSAM OF TOLU** is a resinous juice, flowing from incisions made in the bark of the *toluifera balsamum* Lin. Sp. Pl. 549. It is brought to us in small callibashes of a yellowish brown colour, inclining to red, thick and tenacious; by age growing hard and brittle, without losing any of its odorous qualities. In smell it somewhat resembles lemons, particularly if rubbed on the hand, hath an agreeable, warm, sweetish taste, slightly pungent, and without any nauseous relish. Its virtues are, in general, the same with those of the balsamum copaibæ, and of Peru, differing chiefly from these in being milder and more grateful to the palate, and in the stomach less acrid than the former, and less tonic and stimulating than the latter.

This balsam totally dissolves in rectified spirit of wine. In distillation with water it impregnates the liquor with its fragrance; and if the quantity be large, a small proportion of very fragrant essential oil is obtained. If distilled in a retort without addition, it sometimes yields a saline concrete like the flowers of benjamin. It has been chiefly recommended as a pectoral, and said to be, in gleets and seminal weakness, an efficacious corroborant; but it is much weaker than the other balsams, and seldom used, except as forming Dr. Hill's balsam of honey, which is the tincture of tolu sweetened. Dose from five to twenty drops or more, in the same manner and for the same purposes as the balsam of Peru.

Syrup of tolu, of the London college, is made by boiling eight ounces of balsam of tolu in three pints of distilled water for two hours; when cold, the strained liquor is made into a syrup in the usual way.

The *tinctura balsami tolutani* is directed to be made by digesting an ounce and half of balsam of tolu in one pint of rectified spirit of wine till the balsam is dissolved. (Ph. Lond. 1788.) Dose one or two tea spoonfuls; but both these forms are very trifling and inefficacious medicines.

TOM. See **HYBOUCOUHU AMERICANUS**.

TOMENTUM. **NAP. COTTON**. **SHORT WOOL**, or **FLOCKS**, (from *tumeo*, to swell up, being used to stuff pillows, bolsters, &c.) It is properly the short wool not carded and spun; and applied to the nap on the leaves of some plants which were used for the same purpose. Hence *tomentosus* is used to express the stem and leaf, when they are covered with hairs so interwoven as scarcely to be discernible. This species of pubescence,

is generally white as on sea plants, and such as grow in exposed situations, calculated to defend their surface from the violence of the wind.

TOME'NTUM CEREBRI. A term applied to the small vessels which pass from the pia mater to the brain, which, when separated from the latter, appear flocculent.

TONICA, (from *τονος*, *tone*, from *τενω*, *tendo*). Medicines which increase the tone or strength of the body. In a more extensive view, this class is extremely comprehensive, since it includes every means which increases the powers of life in general. Moderate warmth, frequent exercise, not carried beyond the powers of the constitution, irritability exerted, but not exhausted, the secretions duly kept up, and food of a proper quality, and a due proportion regularly supplied, may thus be styled tonics. Yet these are not the objects of the physician when he employs this term, though they ought to be kept in view, when he endeavours to restore the tone and strength. By tonics we mean, in general, the medicines exhibited to correct debility; and, in our classification of the materia medica, have divided them into the bitters, either warm or narcotic, the fossils and astringents. This arrangement was not made without farther views, which we have already opened, and which we shall proceed to explain more fully.

Early in this work, under the article **ASTRINGENTIA**, q. v. we pointed out the analogy between the increased density of the simple solid and the increased tone of the vital, connecting it with the chemical change, the precipitation of gelatine with the tannin. Whatever is the connection, however, between astringents and tonics, it is impossible to apply the chemical fact to the latter; for tonics act in small quantities, applied only to one organ, the stomach; and though it has been rendered probable that some portion, in some form, may be conveyed to the circulating mass (see Alexander's Experiments), no adequate quantity can reach the smaller vessels to produce any precipitation or consequent condensation. If the precipitation is made in the blood, it may be asked, what becomes of the gelatine? These and other difficulties have been stated in the article referred to, and the conclusion must be, that the increased tone of the stomach to which the medicine is applied must be communicated by the usual sympathy to the other organs.

This increased tone cannot, however, be a chemical change; for bark, which has been vomited with little or no diminution of its bulk, has still stopped an impending paroxysm of an intermittent. It is easy to say, that it acts on the nervous power, and from thence on the whole system; but this will be scarcely considered as a satisfactory explanation, and we may not be able to offer one more so.

Irritability of the muscular fibres is the distinguishing property of life: but in excess it is productive of various diseases, and there is no more common cause of this excess than debility. (See **CONVULSIO** and **FEBRIS**.) If we admit the existence of a nervous fluid, we must allow it to possess different states of mobility; and irritability, from all the phenomena, must consist in increased mobility. To lessen this irritability will be to procure a return of strength, if the cause of debility is removed; and for this purpose tonics are em-

ployed; but these we know are useless if the original cause be not removed. In no case is there greater irritability of the arterial system than in hectic; but no tonic will destroy this if the suppuration continues, or extends. Dyspepsia from infarcted liver will not be removed by any tonic while the original complaint remains.

If this be true, tonics are nearly allied to sedatives. We have adduced many facts to prove that bitters, even the warm ones, ultimately induce atony, if continued for a long time; and the narcotic bitters are often powerfully tonics, while some very active astringents possess no tonic power; on the contrary, some powerful tonics are not most slightly astringent, as the oxyds of zinc and arsenic. The connection between astringents and tonics is, therefore, in some measure accidental. The former are tonics only, so far as they are sedatives.

If we examine the class of tonics with these views, we shall find those of the slightest powers to be the *amara calida*. In fact, their aroma destroys in a great degree their sedative power, and the former must become habitual before the latter will show its effects. We thus find them useful as tonics before they act as sedatives; and this idea is confirmed by all practical authors, who recommend short intermissions in the use of bitters, when the disease is somewhat lessened. We know, at least, that by long continuance they become useless, if not, as in the case of the duke of Portland's powder, injurious. Many of these are warmly stimulant, and this quality prevents any injury arising from the bitter.

The narcotic bitters are superior often in tonic power to the *amara calida*. The *ignatia amara* which affords St. Ignatius' bean, the hop, the *nux vomica*, often show tonic powers superior even to the Peruvian bark. The grey nicker, which Neale observes is more active in restoring broken constitutions than any other medicine, is of the narcotic kind. In our lists, the *nux vomica* was omitted by accident, and the grey nicker has only of late reached us by private importation from the West Indies.

The fossil tonics show some astringency, and the degree differs in different bodies. In the alum, the iron, and the copper, it is particularly sensible to the taste; but in some others it is not distinguishable. Lead, on the contrary, is sweet, which implies a relaxant rather than an astringent quality; yet if the view of its powers in the article **PLUMBUM** be correct, we shall find that it ought to be considered as a powerful tonic. Perhaps the highly concentrated vegetable acids might have been included in the list; but facts were wanting in their support.

The more pure astringents certainly often combine a tonic power, and many of these are truly bitters; yet, as we have observed that some active astringents possess no such power, they should be separated, and no longer crowd the list of tonics. Authority, however, forbid, and we can only here enter our protest against their remaining on any future occasion.

As there is then no principle, hitherto ascertained, to which the different tonics can be referred, and as to suppose them sedatives will meet all the practical facts and the various phenomena, it will remain to enquire under what rank they should be arranged. Though allied to

the narcotic sedatives, tonics certainly differ from them: not one of the former display tonic powers. Where then is the distinction? We introduce the question not to answer it, but to point out a deficiency in the proof; nor can it be supplied, unless we admit, that some medicines of the same class act on the nerves, while others exclusively affect the moving powers, a principle that we were unable to establish in any considerable extent. Perhaps these considerations may be pursued; but we have already wandered too far in the region of speculations, nor should we have now indulged them, had we not inadvertently referred, in more than one place, to the present article for this purpose.

TO'NICUS, (from *τονος*, strength). TONIC. Every muscular fibre has a natural tendency to shorten itself, and this is its tonic power. Hence by the word tone, applied to the system, we mean the strength and activity of the moving powers of the constitution.

TO'NICI. Diseases from tonic spasm. See SPASMUS TONICUS.

TONSILLÆ, (a dim. of *tolæ*, the kernels). The TONSILS, *amygdalæ*; *amygdalia*; *antiades*; *paristhmia*: their disorders are named *tolæ*, *toles*, and *tolles*. These glands, seated, on each side, at the lower part of the space left between the lateral half arches of the palatum molle, are of a reddish colour, and externally have many holes, which communicate with an irregular cavity within, containing a viscid fluid, gradually discharged from them into the throat.

The tonsils sometimes swell in consequence of inflammation or scirrhus, and we have remarked, that deafness is a frequent consequence. Inflamed tonsils sometimes suppurate and break spontaneously, or the abscess is opened by an appropriate instrument, though a common lancet, guarded at its edges with lint or cloth will answer the same purpose. Scirrhus is not unfrequent, particularly in scrofulous habits, and has sometimes an ulcerated surface; but, in a great number of instances, which the author of this article has seen, it has in no single case become cancerous. In advancing life the tumour generally disappears; but it may be easily extirpated (Memoires de l'Academie de Chirurgie, v. 423), or taken off by a ligature (Sharp's Critical Inquiry, cap. 6). The tonsils sometimes appear to acquire a cartilaginous hardness, and calculi have occasionally been found in them (Kentman de Calculus; Memoires de l'Academie de Chirurgie, v. 461).

TO'PHUS, (from the Hebrew word *toph*). See GUMMA. The term is sometimes applied to the concretions in the joints of arthritics, called *epithoroma*.

Tophi are sometimes found under the tongue, on the membranes, and in the coats of the arteries; but they chiefly appear on the bones, are syphilitic symptoms, and cured by the remedies of LUES, q. v.

TO'PICA, (from *τοπος*, a place,) local applications.

TOPINA'RIA. See TALPA.

TOPOGRAPHIA MEDICA, (from *τοπος*, locus, and *γραφη*, a description). A description of any situation with medical views. These accounts are highly useful in many respects, and comprehend the situation of any town, the neighbouring hills and plains, its prevailing winds, connected with these; its air, the nature of its water, its seasons, weather, and prevailing diseases.

We have few works of this kind in our language, and these are imperfect; but we some time since made a catalogue of the publications which had attracted our notice on this subject, and, though long, we shall add it in a geographical form. It may be highly useful as a collection of references to direct enquiry.

GREAT BRITAIN.

Huxham on air and diseases.
Bissett, medical constitution of Great Britain.
Haygarth (philosophical trans. lxxiii. 9.), *Chester*.
Millar on the diseases of Great Britain.
Sims on epidemics.
Boasis Ireland's natural history.
Sydenhami opera.
Claramontii de aere, locis, et aquis Angliæ, deque morbis Angliæ vernaculis, Lond. 1672, 12mo.
Wintringham on endemic diseases.

DENMARK.

Suter de statu sano et morbo accolarum maris Baltici.
Batholinus de aere Hafniensi.
Henricus de salubritate aeris Havniensis.
Pontoppidan's natural history of Denmark and Norway.

SWEDEN.

Dalberg, tal om nagra det Suenska.
Climatets, Stockholm, 1777. Murray, bib. iii. 35.
Endemici par tractum Sueciæ, vide acta naturæ curiosorum ii. 153.
Lithenius de salubritate Sueciæ sciagrophia.
Linnæi flora Laponica.
— amœnitates academicæ, passim.
Acta medicorum Suecicorum.

GERMANY.

Formey topographia von Berlin.
Adolphi de salubritate Silesiæ.
Herz Versuch einer medicinischen orsbeschreibung der Uker marckischen Hauptstadt Prenzlau.
Gravius de salubritate Hassiæ.
Deichman de salubri aqua et aere Gottingensi.
Schulze de salubritate Halæ nostræ.
Erlich de morbis et affectibus quibusdam Westphalis familiaribus.
Mezger adversaria Westphaliensis.
Ludick de salubritate aeris in Vermia.
Barfoth de salubritate Lundia.
Adolphi de aere Lipsiensi.
Braune typographiæ medicæ urbis Lipsiensis specimen.
Burgrav de aere, &c. Francofurti ad Mænum.
Fintz et Krapp de salubritate Bambergensi.
Chartheuser de aere, aquis, &c. Trajecti ad Viadrum.
Hoechstetter observ. dec. iv. 1. Augustæ Vindelicorum.
Weikard vermische Schriften (Fuldensis).
Oelsfeldts typographische beschreibung des Herzogthums Madeburg, &c.
Ellisen medicinische ortbeschreibung des Statckens Hoya.

Ruhling Beobachtungen der Stadt Northeim, undder umliegenden Gegand, &c.
 Willius Beschreibung der Natürlichen, Beschaffenheit der Grafschaft Hochberg.
 Stenzel de præsiidiis sanitatis quibus Vittenberga abundat.
 Medizinische national zeitung, 1798.
 Planer de aere, aquis, &c. territorii Erfordiensis.
 Spielman de aere, &c. Argentinis.
 Holzberger de aere, &c. Argentinae.
 Hufeland's journal der practischen Arzneykunde, vi. vii.

POLAND.

Endtell Warsovia illustrata.
 Neuhauser in medicin. national zeitung (Cracow).

HUNGARY AND AUSTRIA.

Faker de salubritate et morbis Hungariae.
 Baty descriptio morborum quorundam Hungaris endemiorum, &c.
 Haidenreich medicina Aradiensis vel de morbis in Dacia frequentioribus.
 Packner de Austria morbosa per hyemem.
 Mayr de Austria morbosa autumnu.
 Gamnigg de Austria morbosa æstate.
 Haberman de Austria morbosa per ver.
 Gemory de indole aeris Hungariae.
 Fucker de salubritate et morbis Hungariae.

FRANCE.

Histoire et memoires de la societe royale de medecine passim.
 Journal de medecine v. 64, 65, 66, 68, 56 (Normandy).
 Menuret de Chambaud essai sur l'histoire medicotopographique de Paris.
 Pousse an Versaliariorum salutaris aer.
 Pescharch an sit urbis et agri Parisiensis aer saluberrius.
 Deuxivoye ergo aer Parisiensis salubris.
 Ferret an Clivi Meudonici ut amænus sit salubris.
 Cabillou in Hautsierke recueil i. iii. Chalons sur Soane.
 De la Berthonye in Hautsierke i. 152, Toulon.
 Massac Pæan Aurelianus, seu de laudibus salubritatis soli & cæli Aurelianensis.

HOLLAND.

Van Doeveren de sanitatis Groeninganorum ex urbis historia naturali derivandis.
 Van Groenevelt de salubritate aeris urbis Lugduno Batavorum.
 Scheuchzer de Helvetiæ aere, aquis, & locis.
 Emmeris tentamen medicum ad debellandum insalubritatem Zealandiæ.

SWITZERLAND.

Verdeil mem. de la société des sciences de Lousanne (Lausannensis).
 Thilenius medic. une chir. bemerkungen nebst Beschreibung von Lauterbach.
 Abhandel der natur forschenden Gesellschaft in Zurich Turica & Appenzellensis.
 Adolphi de incolatus montani salubritate.
 Blumenbach. biblioth. med. salubritas Bernæ.

ITALY.

Cartegni trattato de venti in quanto si appartieno al medico & del sito della città de Pisa.
 Cagnatus de aeris Romani salubritate.
 Pugh on the climates of Naples, Rome, and Nice.
 Smollett's travels.
 Lancisius de adventitiis aeris Romani qualitatibus.
 Bononi de situ aquisque Ferrariæ, &c.
 Bumaldi de aere Ravenate.
 Boschi osservazioni intorno alla proprietà salina dell'atmosfera Liguria.
 Testi Disinganno ovvero ragione fisiche fondate su l'Autorità, &c. che provano l'aria Venezia interamente salubre.
 De Neris de Tiburtiani aeris salubritate.
 Sarcone on the constitution and diseases of Naples.
 Donii de restituenda salubritate agri Romani.
 Constitutione medic. de Fiorenza, 1780, 1781.

AFRICA.

Adanson's natural history of Senegal.
 Memoires sur l'Egypte, 4 v. passim.
 Assalini on the diseases of the army of the east.
 Goldbery's voyage to Senegal.

ASIA.

Russel's natural history of Aleppo.
 Hasselquist reise nach Palästina.
 Bontius historia naturalis & medica Indiæ Orientalis.
 Murray de stupiditate Indiæ Orientalis.

MINORCA.

Cleghorn on the diseases of Minorca.

AMERICA.

Rush, medical observations and inquiries.
 Currie's historical account of the climate and diseases of the United States of America.
 Jolis Saggio sulla storia naturale della provincia del gran Chaco.
 Fermin traite des maladies les plus frequents de Surinambus.
 De Dusalos de morbis nonnullis Limæ grassantibus.
 Schoepf Reisen durch America.
 Chalmers on the climate and diseases of South Carolina.
 Sloane's Jamaica.
 Des Portes histoire de maladies de St. Domingue.
 Moseley on tropical diseases.
 Dancer's medical assistant, Jamaica.

MADEIRA.

Adams on the climate of Madeira.
 Sloane's voyage.

This catalogue cannot be complete in any branch, but even in its present state may afford useful information, and may serve for a basis on which a more perfect superstructure may be erected. A few little geographical inaccuracies to accommodate the works to the nature of the districts have been purposely admitted, to meet general ideas rather than political arrangements. The number of works might have been increased, but those omitted are of less importance and inferior merit

on the same subjects with those admitted, and an objection may remain that the list might have been still shorter and more select. The references in France are few, the country where this science has been, we have said, chiefly cultivated. This was the reason of its limited extent, for the districts examined are so numerous that they would have doubled the number of works inserted, so that it was necessary to refer to the volumes where they are to be found:—these are the *Journal de Médecine*, and the *History and Memoirs of the Society of Medicine at Paris*. Two German Journals, viz. *Hufeland's*, and the *Medinische National Zeitung*, are quoted for the same purpose of abridgment: the volume of 1798 is the only one that has reached us.

See Wepfer *Dissertationes de morbis climatum*; Buchner *de exploranda locorum salubritate*; Fincke in *versuch einer allgemeinen medicinisch-practischen geographie*; Kannegieser *de locorum aquarum et aeris salubritate*; Muller *de extispiciis veterum in quantum ad indolem et temperiem regionis dignoscendam valent*.

TORCULAR, (from *torqueo*, to twist). The **TOURNIQUET** is a kind of bandage used to check hæmorrhages after wounds or amputations. The most simple of these is a fillet, long enough to encircle the wounded limb, with a small stick to twist it round, and a small bolster to press upon the principal vessel. The fillet must be tied loosely above the orifice of the vessel, and the bolster placed under it, over the artery, and then the fillet twisted by means of a stick until it is sufficiently tight. When the wound is on the arm, the tourniquet must be placed near the armpit, for there the artery is most superficial. The first account of this instrument is in a treatise written by Mr. Lowdham, an English surgeon, and published in 1679; but it has been since much improved. See *Plates*; *Bell's Surgery*, vol. i. p. 26, &c.

TORCULAR HERO'PHILI. See **CEREBRUM**.

TORDILUM, (quasi *torquillum*, from *torqueo*, to twist; from its tortuous branches,) *seceli officinale* Lin. Sp. Pl. 345. A plant, the roots of which resemble those of skirret, but they are not employed in medicine. See **SISARUM**.

TORMENTILLA, (because it relieves pain in the teeth,) *heptaphyllum*, *consolida rubra*, **SEPTFOIL**, **TORMENTIL**; *tormentilla erecta* Lin. Sp. Pl. 716. Upright septfoil or tormentil is a plant with slender upright stalks, oblong indented leaves, which usually stand seven at a joint. The flowers are small, and of a yellow colour; the root crooked and knotty, of a dark brown or blackish colour on the outside, and reddish within. It is perennial, grows wild in woods and on commons, and flowers in June.

The root is a strong astringent; and its flavour is highly aromatic. It gives out its astringency both to water and to spirit, but most perfectly to alcohol. It may be administered in powder from ten grains to 3 ss. for a dose, though usually given in a decoction, made by boiling an ounce and a half of the root in three pints of water to a quart; at the end of the boiling about a drachm of cinnamon is usually added. Three or four table spoonfuls of this decoction is a dose. Both alone and with gentian it hath cured intermittent fevers, but the dose must be large, and the medicine given in sub-

stance. It is one of the strongest of the vegetable astringents; and where fluxes are attended with fever, in constitutions very irritable, it is preferable to any other medicine, as it contains a very inconsiderable degree of resin: according to Dr. Rutty, chronic ulcers are cured by washing with wine or water in which the tormentil has been boiled, and scorbutic ulcers in the mouth as well as relaxed gums and uvula relieved by the same medicine.

The decoction is said to be efficacious in restoring lost appetite, and in epidemic dysentery it is sometimes held in the mouth to prevent infection. In hæmorrhage from the bowels, fluor albus, and involuntary micturition, it is of service. The powder of the tormentil root is an ingredient in the *pulvis cum creta compositus*. (See **BOLUS**.) This root and that of bistort are similar, and are sometimes used for each other. See **Lewis**, **Cullen**, and **Rutty's Materia Medica**.

TORMINA, (from *torqueo*, to grieve). See **ILIACA PASSIO**.

TORMINA, (from *torqueo*, to twist). **COLIC PAINS**; a **DYSENTERY**, q. v.

TORNA'DO, (from the Spanish). A **HURRICANE**; a **WHIRLWIND**. According to Dr. Schotte the rainy season at Senegal begins about the middle of July, and ends about the middle of October: during this time the wind is generally between the points of east and south, the quarter from which the tornados come. The hurricane is preceded by a disagreeable closeness and weight in the air, which seems much hotter than it appears from the thermometer; its immediate approach is known by the clouds rising to the south-east, and joining so as to make the horizon look quite black, accompanied with lightning and thunder at a distance. The breeze dies away by degrees as the tornado advances, and an entire calm succeeds; the air grows yet darker; animals and birds retire and shelter themselves; every thing is silent, and the aspect of the sky, from whence the tornado approaches, is most dreadful. A violent storm comes on at once, which is so cold as to occasion the thermometer to fall seven or eight degrees in a few minutes, and strong enough to overset negro huts and vessels, or drive the latter from their anchors, and throw them on shore. The storm abates, and heavy rain follows, accompanied with much lightning and strong claps of thunder. Sometimes tornados happen without rain, or at least a very little; but the storm is in that case more violent, and lasts longer. It hath been imagined, that this kind of storm brings some pestiferous quality with it, because several apparently fell sick in one night after a tornado. Dr. Schotte thinks that no such ill quality is thus produced by it; and that the diseases may be attributed to the change it produces on the air, and consequently on the body; it may therefore be considered as the occasional cause of a disease to which the body was predisposed long before. Schotte's *Treatise on the Synochus Atrabiliosa*.

TORPE'DO, (from *torpor*, numbness). See **ANGUILLA**.

TORPOR, (from *torpeo*, to benumb). Diminished sensation and motion, in a fleshy part (**Vogel**); an intermediate state between a palsy and health (**Galen**); or a numbness, or deficient feeling and motion. Applied

to the habit, it very often means a sluggishness and inactivity in the moving powers of the machine, either of the whole or of some part. The torpor of animals, who sleep during the winter, does not wholly depend on cold, but the gradually decreasing appetite: if well fed, it may be prevented. Nicholson's Journal.

TO'RTIO, (from *torqueo*). A STRAIN IN A JOINT.

TORTU'RA, (from the same). A WRY MOUTH.

TORTU'RA O'RIS. See TRISMUS.

TORTICO'LLIS, (from *torqueo*, to twist, and *collum*, the neck). The WRY NECK, an instance of contractura.

TO'TA BO'NA. See MERCURIALIS.

TOXICODENDRON, (from *τοξικον*, poison, and *δενδρον*, a tree,) *edera trifolia*; the POISON TREE, or POISON WOOD; *rhys toxicodendron* Lin. Sp. Pl. 379. This tree is extremely noxious, poisoning, it is said, either by the touch or smell, especially while burning. Handling it has sometimes occasioned blindness for many days; but on many it will not produce any bad effect. The poison of the tree is temporary, and never mortal: salad oil and cream rubbed upon the parts expedite the removal of its effects. The first symptoms of its action are a violent itching in the skin, to which succeed inflammation and swelling of the part. Sometimes the whole body is swelled in this manner; sometimes only a particular part, as the legs; and, in this case, they often discharge a considerable quantity of water, and then every trace of disease disappears. Its chief use is for dying linen of a black colour. See Philosophical Transactions, vol. xlix. 1755.

TOXITE'SIA. See ARTEMISIA.

TRACHE'A ARTE'RIA, (from *τραχυς*, rough). See ASPERA ARTERIA.

TRACHEA'LIS ARTE'RIA, (from *trachea*), runs up from the subclavia in a winding course, along the aspera arteria to the glandula thyroidea and larynx, detaching small arteries to both sides, one of which runs to the upper part of the scapula.

TRACHEA'LIS VENA. See GUTTURALIS VENA.

TRACHE'Æ. See VAS.

TRACHE'LIIUM, (from *τραχηλος*, the throat, from its efficacy in diseases of the throat). See CERVICARIA.

TRACHE'LO-MASTOI'DEUS. See COMPLEXUS MINOR.

TRACHELOPHY'MA, TRACHEOCE'LE, (from *τραχηλος*, and *φυμα*, or *κλη*, a tumour). See BRONCHOCELE.

TRACHEOTO'MIA, (from *trachea*, and *τεμνω*, *seco*, to cut). TRACHEOTOMY, *bronchotomia*, and *laryngotomia*; a division of the trachea below the larynx by incision, or by puncture, betwixt the third and fourth ring, or a little lower. The diseases which may require this operation are obstructions on the upper part of the larynx, or foreign bodies accidentally introduced. In the latter case we want only their removal, and the wound may be then closed; but if the opening is required for assisting the breath, it must remain open while the obstruction continues.

In performing this operation, the patient is seated on a low stool, and his head held in an upright position. Opposite the third or fourth ring, the skin is then raised in a transverse fold, and cut so deep that the incision may extend longitudinally from the first ring to nearly the sternum.

The trachea must be next laid bare by separating the cellular substance, and dissecting away the muscular fibres, that they may be removed or pressed sideways. The operator then, guiding his scalpel by the nail of his left hand, supporting the trachea by the thumb and middle finger, makes an incision into the membranous connection of the third and fourth cartilage. A flat canula is afterwards introduced, guarding carefully, in this and every step of the operation, any injury to the back part of the trachea, or the slightest drop of blood from falling in. This canula is soon clogged with mucus, and a double one has been proposed, that one part may be cleaned while the other remains; but the mucus prevents their sliding, and after a day or two the wound between the rings will not close if the canula is removed. The proposal, therefore, of some authors to take out a portion of one of the rings is, in the greater number of cases, unnecessary, and only requisite when the size of a foreign body to be removed is too considerable to admit of its passing through a common wound. If carefully introduced, so as not to touch the parietes of the trachea behind, we have never seen it excite a cough.

Mr. Bell proposes for this operation a small flat trocar, previously passed through several folds of linen, to prevent its proceeding too far, and to guard against any fluid falling through the wound: this is secured by a plate of metal fitted to the neck. The aperture of the canula is covered with wet gauze. A foreign body is to be removed by small crooked forceps after the hæmorrhage has ceased. A French surgeon proposes cutting through the thyroid and cricoid cartilages; but these parts are highly irritable, and might occasion dangerous coughing.

When the skin is cut through, a small incision may be made into the windpipe, and then a short but crooked canula may be fixed for the air to pass through. See Sharpe's Operations; Bell's Surgery, vol. ii. p. 403; White's Surgery, p. 294; Themison Apud Cælum Oculorum, iii. 4.; Memoires de l'Academie de Chirurgie, iv. et v.; Morgagni Dissertationes Anatomicae, No. ix.; Richer Nov. Commentaria Gottingensia; Wendt Historia Tracheotomiae nuperrime administratæ.

TRACHO'MA, (from *τραχυς*, rough,) *dasyμμα*, if tettery; *tylosis*, if callous; and *sycosis*, if the pustules should be thick or scabrous. In Cullen's Nosology it is a variety of the ophthalmia tarsi, and consists in a roughness of the eye lids, particularly their internal parts, from scabs, which differ much in their appearances in different instances. These complaints are attended with a weight and heaviness in the eye, a swelling in the eye lids, a pain and itching, a heat and redness in the corners, and in the conjunctiva, a viscid humour mixed with pungent tears flowing from the ulcers, which often agglutinates the eye lids. If this complaint continue long in old people, the lower eye lid grows thick, and turns downwards, so that the cartilage appears to resemble raw flesh. The cause is an obstruction of the sebaceous glands, from a deposition probably of some matter, which by confinement becomes acrid. To relieve the complaint the glands must be destroyed by a caustic, and the pain which it occasions must be allayed by washing immediately with warm

water. The caustic must be applied twice a week. St. Yves on the Disorders of the Eyes.

Mr. Ware calls this disorder the *psorophthalmia*, and describes it nearly in the following words: The ducts of the ciliary glands are ulcerated; their oily soft fluid, mixing with the discharge from the ulcers, is changed into an acrid humour, which quickly inspissates into a hard adhesive scab. This scab spreads the complaint by its irritation over the whole internal edge of the eye lid, and prevents all relief, until local remedies check the formation of the scab by curing the ulcers which produced it. This inflammation of the edges of the eye lids produces a glutinous matter, which closely connects them when they have been for some time in contact, so as to require painful efforts for their separation. Usually the ulcers are confined to the edges of the eye lids, but sometimes they spread over the whole external surface, and excoriate the greater part of the cheek; in the latter case the inflammation often resembles the accompanying erysipelas.

M. St. Yves observes, in his chapter on the ophthalmia, subsequent to the small pox, that "the pustules on the edge of the cartilage of the eye lids, which penetrate between the cilia and their inner surface, do not cicatrize, from the acrimonious serosity which incessantly covers them; ulcers in consequence often continue several years, and even during life if not remedied." But though the small pox and measles are frequent causes of this complaint, a slight ophthalmia will sometimes inflame the lids, producing an ulceration and adhesion of their edges. The small pustules also, which form on the outer margin of the ciliary edge, called *styes*, have, in some instances, brought on a similar inflammation, and its consequences; nor is it an uncommon effect of scrofula, scurvy, or lues; but most frequently a local complaint, though, even then, sometimes accompanied with evident marks of a scrofulous constitution.

The ulcerations that appear to be superficial are generally soon removed, but those which are deep yield with more difficulty than such as are attended with fungous flesh.

The general practice has been to touch the ulcers with the lapis infernalis, two or three times a week; but to moderate the severity of this method, the part was presently washed with pure water. The pain of this application has, however, prevented its use; and Mr. Ware has proposed a far less exceptionable method. When this kind of inflammation extends over the whole surface of the eye lid, and the cheek, resembling erysipelas, he orders antiphlogists and sedatives; and when the extreme irritability is removed, finishes the cure by means of the unguentum citrinum. (Ph. Ed.) When the lower eye lid turns outward, the general method proposed for the psorophthalmia is usually effectual; and scorbutic, scrofulous, or venereal diseases must be relieved before the eye lid can be benefited. When from scrofula, the remedies usually employed should be continued for a considerable time.

The unguentum citrinum must be sometimes reduced and rendered milder. The best method of lowering is to add one half, or in irritable habits, a large proportion of the unguentum cerussæ acetatæ. It should be applied at night with a camel's hair pencil.

See St. Yves on the Diseases of the Eye; Ware's

Remarks on the Ophthalmia; Galen de Compositione Medicamentorum Aëtius Tetrabib. ii. Serm. iii. 42, 43; Vater de Trachomate.

TRAGACA'NTHA, (from *τραγος*, a goat, and *ακανθα*, a thorn). See GUMMI TRAGACANTHA.

TRA'GEA; *drangæa* of Fuschius, is an aromatic powder, preserved with an equal quantity, sometimes a larger proportion, of sugar; and taken in order to strengthen the stomach, and dispel wind. The modern peppermint and cinnamon lozenges are an improved formula, with similar intentions.

TRA'GI. See SPONGIA.

TRA'GICUS. See AURICULA.

TRA'GOPOGON, (from *τραγος*, a goat, and *πωγων*, a beard, from its downy seed, resembling the beard of a goat,) *barba hirci*; GOAT'S BEARD; *tragopogon firsense* Lin. Sp. Pl. 1109. The roots are soft, sweet, nutritive, and laxative, slightly diuretic and expectorant, but these qualities are too inconsiderable to admit this plant among the medicinal ones. The stems when young are eaten like asparagus. See Raii Historia, and Scorzenera, which it nearly resembles.

TRAGOPY'RON, (from *τραγος*, and *πωρος*, buck-wheat). See FAGOPYRUM.

TRAGOSELI'NUM, (from *τραγος*, and *σελινον*). GOAT'S PARSLEY. See PIMPINELLA.

TRA'GUS. See AURICULA.

TRA'NGEBIN MA'NNA. See ALHAGI.

TRANSFU'SIO, (from *transfundo*, to pour from one vessel to another). TRANSFUSION; or the art of transmitting the blood of an animal into the vessels of the human species. When every disease was supposed to reside in the blood, it was an obvious expedient to supply a depraved fluid by a pure one, in a medical view; and, by means of a syphon, the blood of a lamb, for instance, was directed into the human veins, while a proportional quantity was discharged from other veins. As usual with inventors, the plan was found wonderfully successful; but it sunk into disgrace from an accident, with which the operation was by no means connected. As there are few causes of disease in the blood, the operation of this remedy must be limited; and there is little expectation of its revival, or of its utility. Very extensive details on this subject occur in the early volumes of the Philosophical Transactions.

TRANSPIRA'TIO, (from *transpiro*, to breathe through). See PERSPIRATIO.

TRANSVERSA'LES MAJO'RES CO'LLI, are long and thin muscles, placed along the transverse apophyses of the neck, and the four, five, or six upper bones of the back, between the complexus major and minor. They rise from the transverse apophysis, and are usually inserted into the nearest apophysis, sometimes to more remote ones.

TRANSVERSA'LES CO'LLI MINO'RES. See INTERTRANSVERSALES.

TRANSVERSA'LES NA'SI. These muscles rise from the upper part of the upper lip, and run to the ridge of the nose.

TRANSVERSA'LES DO'RSI MINO'RES. Winslow speaks of these as being fixed to the extremities of the lowermost transverse apophyses of the back.

TRANSVERSA'LES PE'DIS. See PARTHENAR MAJOR and MINOR.

TRANSVERSA'LES ABDO'MINIS, rise from the transverse processes of the lumbar vertebræ, the spine of the os ileum, the ligamentum pubis, and the cartilaginous endings of the ribs below the sternum, from whence their fleshy parts run over the peritonæum, and become a broad, expanded tendon, before they pass under the rectus, to their insertion into the whole length of the linea alba. They press the belly inwards, and depress the ribs, assisting vomiting, micturition, and the discharge of the feces.

TRANSVERSA' LIS, (from *transversus*, across, because of the transverse direction of its fibres, or of its originating in the transverse processes of the vertebræ). See TERES MINOR.

TRANSVERSA' LIS ANTI' CUS PRI' MUS, is situated between the basis of the occiput and the transverse apophysis of the first vertebra of the neck.

TRANSVERSA' LIS ANTI' CUS SECUN' DUS, is fixed by one extremity very near the middle of the transverse apophysis of the second vertebra of the neck, and by the other, near the basis of the first.

TRANSVERSA' LIS CO' LLI, and LUMBO' RUM. See MULTIFIDUS SPINÆ MUSCULUS.

TRANSVERSA' LIS DIGITO' RUM, lies transversely under the first phalanges of the toes, is fixed to the first phalanx of the great toe, and inserted into the first phalanx of the little toe.

TRANSVERSA' LIS PLACENTI' NI. See ADDUCTOR MINIMI DIGITI PEDIS.

TRANSVERSA' LIS PERINÆI. A muscle sustaining the perinæum. It is often accompanied by another, styled by Winslow the *inferior prostate*.

TRANSVERSA' LIS SUTURA, runs across the face, sinking into the orbits, and joining the bones of the head to those of the face.

TRANSVERSA' LIS URE' THRÆ; *triangularis*, is a digastric muscle lying along the lower part, or the loose edge of the ligamentum pubis interosseum; its two extremities are fixed in the branches of the ossa pubis, its middle tendon lying on the middle of the edge of the ligament just named.

TRANSVERSO-SPINA' LIS LUMBO' RUM. See SACER MUSCULUS.

TRANSVERSUM EXTERNUM CARPI LIGAMENTUM, begins by a broad insertion, fixed in the large extremity of the radius, about two fingers breadth above the styloid apex; crosses obliquely, over the convex side of the basis radii, and partly over that of the carpus, and then turning towards the os orbiculare is inserted into it.

TRANSVERSUM INTERNUM CARPI; an annular ligament.

TRANSVERSUS. See PRONATOR QUADRATUS.

TRAPE'ZIUM, Os, (τραπεζιον, a four sided figure, from its shape,) the first bone of the second row in the wrist. See CARPUS.

TRAPE'ZIUS MUSCULUS, TRAPE'ZIA. See CUCULARIS.

TRAPEZOIDES, Os, (from τραπεζιον, and ειδος, likeness,) the second bone of the second row in the wrist, resembling rather a truncated pyramid than a trapezium. See CARPUS.

TRAULO'TIS, (from τραυλος, stammering). See PSSELLISMUS.

TRAUMA'TICA, (from τραυμα,) applications to cure wounds, the Greek appellation of astringent agglutinants. See VULNERARIA.

TRA'XINI A'RBOR FO'LIO, FLO'RE CÆRU'LEO. See AZEDARACH.

TRE'DON. See CARIES.

TRE'MOR, (from τριμω, to tremble). (See HORROR.) A TREMBLING, without a sensation of cold. It is a less degree of convulsion, and arises from every cause of debility; a frequent symptom of palsies, and the effect of excesses in every kind of narcotic, as opium, tobacco, and tea, as well as of the indirect stimulants, as ardent spirits. When connected with palsy, it arises from effusions on the brain (Boëti Sepulchretum lib. i. sect. xiv. 7, 9.); sometimes from worms in the brain (Obs. 10). A trembling arises from artificial and spontaneous discharges of blood; from violent passion and terror; sometimes from plethora, and, as is said, from a retention of the semen. Those employed in the mercurial mines, as well as the manufacturers of this metal, or its preparations, are subject to it; and lead often produces the same effect.

The cure is frequently trusted to antispasmodics, particularly musk; but the mineral waters are often recommended, and the sulphureous ones, from sulphur rendering mercury inert, are preferred, when this metal has been the cause. Cold bathing, and bark, with valerian, are often useful remedies; and electricity is recommended by De Haen. Small doses of ipecacuanha are said, by Martini, to have been successful. See Galen, Hamberger, and Richter de Tremore.

TREPANA'TIO, (from trepanum, a trepan). The operation of TREPANNING, proposed to relieve the brain from depressed parts of the skull, fragments of the broken bones of the skull, extravasations of blood or matter, on or under the membranes of the brain, and other causes of pressure, of irritation, and of inflammation. Many parts of the skull were formerly considered as unfit for this instrument, but the operation hath been performed on the greater number with the happiest success, and similar objections lie against some parts on which custom allows the trepan to be employed.

The causes, which chiefly require the use of the trepan, are those in which a pressure is evident on the brain, either from extravasated fluids, or from a depressed bone. Extravasated fluids are, however, often absorbed, and, for this purpose, the most free and repeated venesection, with active saline laxatives, are necessary. The bleeding, recommended in pleurisy, will not be too plentiful for a strong young man; and if the symptoms are very violent, the quantity may even be increased. Thirty ounces have been taken, and the evacuation repeated within twelve hours. In fact, the plan originally laid down by Wiseman must be followed closely if the patient can be saved.

The symptoms which show compression are dilated pupils, an apoplectic stertor, the pulse particularly low, full, and strong. We have said (see CONCUSSIO) that the dilated pupils often attend concussion when violent, but the apoplectic stertor, and the slow pulse, show compression; and the opinion is confirmed if the pulse does not rise on the first bleeding. In any violent accident it will be certainly proper to examine the wound; but it is highly improper, as is too often done,

to cut out a portion of the scalp on every occasion. It will be necessary to cut down on the skull, through the wound, but without removing any portion of the scalp. It is then not difficult to ascertain, with a probe, whether any fracture exists, taking care not to mistake a suture for a fissure, and to examine whether the pericranium is loosened from the skull, a certain sign of serious injury. If there is no depression, if the insensibility lessens, and the pulse rises on copious bleedings, we need not be more active. Tranquillity, rest, the lowest diet, and the other necessary evacuations, will relieve the patient. Should, however, the insensibility increase, whatever be the appearances on dividing the scalp, we must still proceed to the operation, for there is probably a considerable extravasation. See FISSURÆ.

Morgagni (de Sedibus, &c. l. ii. 12—20), and Richter in his Bibliotheca, iv. 655, discuss at some length the question where the trepan may be safely applied; but the happy boldness of modern practitioners has prevented any tedious disquisition. Copland (Medical Commentaries, Edinburgh), and Gooch (Practical Treatise, i. 301, &c.) have applied it to the occiput and the temporal bones, and it is, we believe, only applied with hesitation over the longitudinal sinus. In its vicinity, on either side, we have known it often used. Pott has remarked that the sutures offer no difficulty, but in children; Theden observes that the application does not succeed, probably on account of the strong attachment of the dura mater to the sutures. In fractures near the sutures the trepan should rather be applied to either side of these divisions.

When the operation is resolved on, the instruments and dressings in readiness, the head previously shaved, must be held steady upon a person's knee. With a proper knife and the scalprum, a piece of the scalp must be removed; enough to give room for a sufficient number of perforations. The incision should be bold, so as at once to reach the bone, and the edge of the knife should be inclined from the wound so as to cut more of the pericranium than of the skin: then raising the pericranium a little with the point of the knife, quite round the incision, with the scalprum the skull must be cleared of its membranes. The trephine is the most commodious instrument, for it works both backward and forward; and when the saw hath entered well into the bone, the central pin should be taken out, as well as the saw itself, to examine the depth to which it hath passed, and to brush out the small portions of bone that might impede the operation. The diploe in some parts of the cranium is constantly, in others occasionally, wanting, and this circumstance should be attended to. When the piece is loose, it is taken out with the forceps; and if the lower edge of the perforation be rough, it is smoothed with the lenticular. The depressed piece of skull is next to be raised with an elevator, now made with fulcra, to rest on the sound bone. If extravasated matter seems lodged under the dura mater, which is discovered by a tumour, it must be discharged by puncturing. If the symptoms of compression do not appear to arise from a fracture, but if extravasation under a fissure only is suspected, the trephine must be applied over one part of it, as the extravasation is often immediately below; and when the fissure is of a considerable extent, a perforation must be

made at each end, if not at the sides. When several perforations are made to remove many depressed fragments of bone that have their internal surface larger than their external, it is necessary to apply the trepan as near the fractured parts as possible, and to unite the perforations to avoid cutting the intermediate spaces with the head saw. In places where the unequal thickness of the skull is observed, it is best to elevate the piece that is sawed before it is cut quite through, that the membrane may escape unhurt. When an injury happens on a suture, where it is not thought advisable to use the trepan, a perforation must be made on each side. When the pieces of bone or the extravasated fluids are removed, the dressing should be as innocent in quality, and small in quantity, as possible; clean dry lint to absorb the matter is only wanted; and this may be kept on by a common woollen cap, which is preferable to all bandages. After dressing, the patient must be laid in as easy a posture in bed as possible, with his shoulders raised. Perfect quiet, open bowels, venesection, and a low diet, are often equally necessary before as after removing the pieces of the skull. The air of the patient's room should be cool, and the room itself airy. In young people the perforations are in time filled up with a substance of a bony hardness; but in adults this repair is less perfect. Sometimes a fungus proves troublesome, but it is best prevented by applying a plate of lead, as invented and described by Bellosse and Gooch; and removed by chalybeate and astringent applications, but it often yields slowly.

See Bellosse's Hospital Surgeon; Heister's Surgery; Sharpe's Operations; Gooch's Cases and Remarks; White's Surgery, p. 220; Hill's Cases in Surgery; King in the Transactions of the Irish Academy; Pott's Observations.

TRE'PANUM, TRE'PHINE, (from *τροπανω*, to perforate). A **TREPAN**; *peretereion*, a circular saw, with which the cranium is perforated in the operation called *trepanning*. It hath received different names from its various forms, as *abaptista*, *anabaptiston*, *modiolus*, *chænicis*, *terebra*, *terebella*. Until lately, the trepan was very generally used, but the trephine is more commodious, and acts as quickly as the trepan. See plates of Chirurgical Instruments, and **TREPANATIO**.

TRIA'NDRIA, (from *τρεις*, and *ανδρ*). The name of the third class in the Linnæan system, comprehending those plants which bear hermaphrodite flowers with three stamens.

TRIANGULA'RES STE'RNI, (from *tres*, and *angulus*), *pectorales interni*, *sterno-costales*, rise from the side and edge of the sternum and xiphoid cartilage of the sixth, fifth, fourth, third, and second ribs, to depress them.

TRIANGULA'RIS. An appellation of the *depressores labii superioris*, *scalenus*, *deltoides*, *transversales urethræ*, *pyramidalis nasi*, and *splenius*.

TRIANGULA'RIS VE'NA. The EXTERNAL JUGULAR VEIN, where it passes through the musculus triangularis.

TRI'BULUS, (from *τριβω*, to vex). See **CALTROPS**.

TRI'CA LUMBO'RUM. See **PLICA POLONICA**.

TRI'CEPS AU'RIS. See **ABDUCTOR AURIS**.

TRI'CEPS, (from *tres*, and *caput*). THREE HEADED; but Douglas divides it into four. It rises by its first head from the fore part of the os pubis, and its tendon

is inserted into the linea femoris aspera: it is then blended with another head which runs down to the knee. The second rises from the lower part of the os pubis, and is inserted higher in the linea aspera; the third from the small process of the ischium, close to the obturator externus, inserted in the linea aspera behind the little trochanter; the fourth from the ischium and its tuberosity, inserted in the linea aspera, and, joining with the first, forms a tendon which goes to the knee, blended with that of the vastus externus. See ABDUCTOR FEMORIS.

TRI'CEPS EXTE'NSOR CU'BITI, a three headed muscle of the humerus, *anconæus major externus et internus* of Winslow; *biceps et brachialis externus* of Douglass. The first arises tendinous from the inferior costa of the scapula near its cervix, and is styled *longus*. The second, *brevis*, arises by an acute tendinous, fleshy origin from the back part of the os humeri, a little below the head, outwardly. The third, *brachialis externus*, rises at the back part of the humerus. These heads unite below the insertion of the teres major, and cover the hinder part of the humerus. It is inserted into the olecranon, partly into the condyles of the os humeri, adhering firmly to the ligament.

TRI'CHIA, or TRICHI'ASIS, (from *τριχίς*, a hair,) *ophthalmia trichiasis* of Cullen, *entropium*, *distichiasis*, *districhiasis*, *capillitium*, *distichia*, an inversion of the cartilage on the edge of the eye lid, from which it bears upon the conjunctiva and cornea, exciting, by the friction of the eye lashes, an inflammation in the eye. It is defined by Goræus, "A falling in of the eye lids, and a preternatural generation of hairs on them;" and he divides it into three species, *phalangosis*, *ptosis*, and *hypophysis*, to which another, *distichia*, has been added. See BLEPHAROPTOSIS.

The upper lid and its ciliary edge, according to Mr. Ware, are preserved, both in motion and rest, in their natural situation, by the equal, though contrary, actions of the musculus orbicularis, and levator palpebræ superioris. The skin of the upper lid is always very thin, flaccid, and folded, so that in trichiasis of this lid there seems a relaxation of the levator palpebræ superioris, and a contraction of the superior part of the orbicularis. The cure is only palliative, when, in order to immediate relief, the eye lashes are extracted by their roots. The radical cure is effected by an incision through the integuments of the upper eye lid, from the inner angle of the eye to the outer. The fibres of the orbicularis muscle must then be so separated as to expose the expanded fibres of the levator muscle as near to their termination in the edge of the lid as possible, and a small, warm cauterizing iron, adapted to the convexity of the globe of the eye, passed two or three times over the tendino-carneous fibres. Thus, by producing a slight irritation, which occasions contraction, a cure may be expected.

The lower lid, whose motion is very small in comparison with that of the upper, is preserved in its natural state by the equal action of the orbicular fibres spread over it, and the thickness and elasticity of the skin which covers it. A trichiasis in the lower lid can, therefore, only arise from a relaxation of the skin, and a contraction of the inferior part of the orbicularis. The cure will consequently depend on increasing the

renitency of the skin, so as to prevent the contraction of the musculus orbicularis. When the case is recent, a cure hath sometimes been effected by forming a fold in the skin before the inverted lid, to draw its edge from the eye, and preserving the skin in that state by the application of sticking plaster. In slight cases the skin may recover its tone by these means; but in others it will be necessary to cut off a small transverse portion of the loose skin below the edge of the lid, and afterwards confine the sides of the wound together by means of a suture.

Richter remarks that he had often performed the operation, and generally found that he had not cut enough of the skin, and consequently had only lessened, not cured, the complaint. He advises every one, therefore, to cut much more of the external skin of the eye than appears necessary.

Sometimes none of these methods will suffice, as the ciliary edges are not only inverted, but likewise contracted in their length. In this case their circumference must be enlarged either by an incision of the outer angle, or by a complete division of the cartilage, called *tarsus*, in the middle. The first of these operations is no more than a simple straight incision with a sharp pointed curved bistoury. The last, which is seldom necessary, will be best performed by the same instrument; only observing, that the point be carefully introduced between the globe and eye lid, and carried below the cartilage, that is, about one eighth of an inch; whence it is to be pushed outward in a horizontal direction till it hath cut its way through the lid. The cartilage being thus entirely divided, each portion will recede towards the angles, and a separation be left between them, which will not only take off the complaint at present, but prevent its return for the future. Bell's Surgery, vol. iii. p. 275; Ware on the Ophthalmy; White's Surgery, p. 247.

TRICHI'ASIS, (from *τριχίς*, hair,) a term for an affection of the urine, in which something like hairs is seen floating. Fissures, or a roughness in the skin, of the breast, and abscess in a woman's breast. Erotianus.

TRICHI'ASIS, (from the same). *Mictio pilorum*. See PLICA.

TRICHI'SMOS, (from the same,) *capillatio*, a species of fracture of the cranium, almost imperceptible to the sight, and sometimes the cause of death, because it cannot be discovered.

TRICHO'MA, (from *τριχίς*, hairs). See PLICA POLONICA.

TRICHO'MANES, (from *τριχίς*, hairs, and *μανες*, thin, because it resembles fine hair). See ADIANTHUM NIGRUM.

TRICO'RNES, (from *tres*, and *cornu*,) muscles which have three terminations, or horns.

TRICOCCÆ, (from *τρις* and *κοκκος*,) the thirty-eighth order of plants in Linnæus's natural method, consisting of a three cornered capsule, containing three seeds in three separate cells. The order is not strictly natural.

TRICUSPIDA'LES VA'LVULÆ, (from *tricuspidis*). See COR.

TRI'ENS. See CYATHUS.

TRIFO'LIA SPI'CA. See CAAPONGA.

TRIFO'LIIUM, (from *tres*, and *folium*, because it

has three leaves on one stalk). **TREFOIL.** *Quadrifolium trinitas*. CLOVER, used for feeding cattle only. See *Raii Historia*.

TRIFO'LIUM ACETO'SUM. See **ACETOSELLA**, under **ACETOSA**.

TRIFO'LIUM PALUDO'SUM. MARSH TREFOIL, or BUCK BEAN. *Menyanthes trifoliata* Lin. Sp. Pl. 208, is a plant with large oval leaves, pointed at each end like those of the garden bean; set three together on long pedicles, which embrace the stalk to some height, leaving it afterwards naked to near the top, whence arises a short spike of pretty large reddish white monopetalous flowers, each cut into five segments, hairy on the inside, and followed by an oval seed vessel. It is perennial, grows wild in marshy places, and flowers in May. The leaves are of a penetrating bitter taste, which they impart both to water and spirit, without any remarkable flavour. They are usually infused in water, with the addition of some grateful aromatic, as orange peel, or the canella alba. If a pint of this infusion is drank in a day, it is diuretic and laxative. See *Lewis's Materia Medica*.

This plant has been highly commended as a tonic, a bitter, and astringent, and supposed to be singularly successful in scurvy, dropsy, jaundice, asthma, periodical headach, intermittents, hypochondriasis, rheumatism, scrofula, worms, gout, cachexy, catamenial obstructions, palpitations of the heart: in infusion, it has proved a good wash in the impetigo, scabies, and tinea, according to the report of Francus.

Dr. Cullen considers it a very pure bitter, of a strong kind, not losing its strength by drying, and has seen several instances of its good effects in some cutaneous diseases of the herpetic and apparently cancerous kind, taken by infusion, like tea. (*Materia Medica*.) In these diseases, as well as in some rheumatic and hydropic cases, it has lately been much used as an alterative and aperient. It is a bitter, however, of the narcotic kind, and though such have been styled deobstruent, we have never had any evidence of its utility in visceral obstructions. It is sometimes substituted for hops in malt liquors. The leaves may be given in powder from \mathfrak{D} i. to \mathfrak{D} ij. two or three times a day; but a strong infusion joined with some grateful aromatic is perhaps preferable.

TRIFO'LIUM ARVE'NSE. See **LAGOPUS**.

TRIFO'LIUM AU'REUM and **HEPA'TICUM.** See **HEPATICA NOBILIS**.

TRIFO'LIUM ODORATUM. See **LOTUS URBANA**.

TRIFO'LIUM CABALLI'NUM, and **MELILO'TUS.** See **MELILOTUS**.

TRIGE'MINI NE'RVI, (from *tres*, and *geminus*), *innominati*. The fifth pair of nerves, which rise from the annular processes, where the medullary processes of the cerebellum join, in the formation of that tuber, to enter the dura mater near the point of the petrous process of the temporal bones, and then sinking close to the receptacula, at the sides of the sella turcica, each becomes in appearance thicker, and goes out of the skull in three great branches; orbital, maxillaris superior and inferior.

TRIGE'MINUS MU'SCULUS. See **COMPLEXUS**.

TRIGONE'LLA, (from *τριγωνος*). See **FENUM GRÆCUM**.

TRIGY'NIA, (*τρεις*, and *γυνη*). The third order in

the first thirteen classes of the Linnæan system, except the first, fourth, and seventh, including those hermaphrodite plants which have three pistils in each flower.

TRIHILATÆ, (from *tres*, and *hilum*, a mark in the seed). The twenty-third order in Linnæus' natural method. It consists of plants which have three seeds each, marked with a cicatrix where they are fastened to the fruit. It contains but one or two plants ever used either as food or medicine, and is by no means a correctly natural order.

TRIJUGUS, (from *tres*, and *jugum*). A pinnate leaf with three pair of leaflets.

TRIOCHIS, (from *τρεις*, and *γλῶχίς*). The pubes of plants, when they have three curved hooks.

TRINITAS, (from *trinus*, by *threes*). See **TRIFOLIUM**.

TRIOE'CIA, (*τρεις*, and *οἶκος*). The third order in the class polygamia of Linnæus, containing plants which have male and female flowers of the same species, on three distinct individuals.

TRIO'RCHIS, (from *τρεις*, and *ορχίς*). A person with three testicles.

TRIPA'STRUM APPELLIDIS. A machine for setting fractured limbs on the principle of one for launching ships, invented by Appellides or Archimedes. It was worked by three cords, and consequently called *tripastrum*.

TRIPETALOIDEÆ, (from *tria*, and *petala*). The fifth order of Linnæus' natural method, chiefly containing grasses; but all the genera have not three petals.

TRIPLEX MU'SCULUS. See **TRICEPS**.

TRIQUETRA O'SSA, (from *tres*). *Ossa Wormiana*, from Wormius, who first observed them, are small irregularly shaped pieces, principally betwixt the parietal and occipital bones, joined by true sutures to their adjacent bones.

TRISMUS, (from *τριζω*, *strideo*, to gnash,) *capistrum*, *tortura oris*, LOCKED JAW. Dr. Cullen considers this as a species of tetanus, defining it a spastic rigidity, particularly of the lower jaw. The varieties are, 1. *Trismus nascentium*, which seizes infants within the two first weeks from their birth; 2. *Trismus traumaticus*, from a wound, or cold; to this belong the *angina spasmodica*, *convulsio a punctura nervi*: *trismus catarrhalis*. The fifteen other species of Sauvages he considers as spurious, or false; either because they do not depend upon spasm; because they are rather convulsive than spasmodic; or, are affections of the muscles of the face, rather than of the lower jaw. See *Synopsis Nosologiae Methodicæ*, vol. ii. p. 214.

Every kind of irritation will induce the disease. Wounds and operations of almost every sort have been its causes: even pulling by the hair, the extraction of a tooth, the irritation from an artificial tooth, a caustic applied to a bubo, repelled erysipelas, suppressed perspiration, cold during the use of mercury, continued cold with damp in the warmer climates, violent vomiting, retained meconium, an improperly tied navel string, and a fit of passion, terror, or hysteria, are said to have occasioned it. In one instance it arose from a burn on the hand, which was relieved by repeated effusion of cold water, and was immediately preceded by an affection of the stomach. Dr. Huck Saunders found a large proportion of his wounded soldiers

seized with it, who had been left in a cold night subsequent to the action, though in so high a latitude as that of Ticonderoga. It is most commonly, however, fatal in warm climates, where the debility and the irritability of the constitution are considerable. It is said to affect parrots, and is undoubtedly often fatal to horses.

Opium, as in tetanus, is the principal remedy, and it has been topically applied to the masseter muscle, to the umbilical cord of a newly born child, and to the soles of the feet. Dr. Rowley, who cures the worst diseases with the most insignificant medicines, informs us that opium, musk, and warm bathing, were together ineffectual in trismus, where other antispasmodics have been, it is said, used with success. Musk is recommended by Dr. Huck in the Medical Observations and Inquiries, iii. 31; oil of amber by Dr. Carter, in the Medical Transactions, ii. 4; and the fetids which Dr. Carter also used, by Stoll, vii. 353. Mercury has been highly recommended by Rush, by Home, and Stoll; nor is there, we have seen, a more certain method of supporting the action of the system than by a mercurial course. In general, however, there is not a sufficient time for its action.

With a similar view of supporting the action of the system, warm bathing and diaphoretics have been recommended by Stoll and Chevalier, while the same end has been obtained, though by opposite means, viz. cold bathing, and cold affusions (Lind on the Diseases of Warm Climates; Currie's Memoirs of the Medical Society London; Philadelphia Transactions, i. 21). Electricity and blisters have been found good auxiliaries.

When arising from a wound, active stimulants have been applied, perhaps to destroy the irritation by excess of excitement, or the part when unimportant has been amputated, but we ought to reflect that after an operation the disease is as likely to recur as from the former injury. Yet, on the whole, a lacerated wound is a more common cause of the spasm than one inflicted by a sharp instrument. See TETANUS.

TRISMUS DOLORIFICUS; **DOLOR FACIEI CRUCIANS**, q. v. *tic douloureux*, PAINFUL AFFECTION OF THE FACE, extremely violent excruciating pain, often excited by opening and moving the mouth, attended with copious pyalism, pervigilium, and continued convulsive agitation of the adjacent muscles. Dr. Haighton, (Medical Records and Researches, 1798) successfully treated this disease by an entire division of the suborbital nerves; but André had long cured before this complaint by burning with a caustery the same nerve, and by excision: the disease was greatly alleviated by the ulcers formed by cauterizing, though they did not touch the nerve affected. (Sauvages Nosologia Methodica, ii. 533.) We have already considered this subject in the article referred to, and now resume it chiefly to suggest the following circumstances.

The operation is not always effectual; and when it has appeared so for a time, the pain has returned with great violence, after some months or years. The suspicion which this fact excited led to a further examination of the complaint, and in a violent instance of the disease, the eye and the stomach appear to be affected beyond what mere sympathy might demand. The nerves which supply the eye externally, and the slight connection of the intercostal with the brain, are

nearly from the same spot in the cerebrum, and it did not seem improbable that the disease may have really been at the origin of the nerve, though felt as usual at its extremity. This reasoning led the author of this article to employ the arsenic, and in one instance with a decided good effect. Others, led perhaps by different views, have since used it, apparently with some success; and still more lately a mercurial salivation has been found useful.

TRISSA'GO (quasi *tristaga*, from *tristis*, because it dispels *sadness*). See **CHAMÆDRYS** and **SCORDIUM**.

TRISTI'TIA, (from *tristis*, *sad*). GRIEF or SORROW, relaxes the solids, impairs the vital power, and checks perspiration: it particularly weakens the stomach and intestines, occasioning flatulence and every symptom of weakness. Opiates in moderate doses are beneficial.

TRITÆOPHY'A, **TRITÆ'US**, (from *τριταῖος*, a *tertian*, and *φυω*, *nasco*), an epithet of a fever resembling a tertian, but with obscure or short intermissions. Linnaeus calls it a continued tertian. Erotianus defines it a fever which gives signs of approaching paroxysms, but though the intervals are regular, it never arrives at perfection. Its name is derived from its great resemblance of a tertian; and it is often called a small semi-tertian. Dr. Cullen properly considers it as a remittent fever of the tertian type.

TRITICUM, (from *tero*, *to thresh*). **WHEAT**; *frumentum*, *triticum hybernum* Lin. Sp. Pl. 126. Whether in the form of flour or of starch, it is the most glutinous of the farinacea, and this is the farinaceous food most generally used by the superior classes over the whole of Europe. It can be formed into a more perfect kind of bread than any other of the cerealia yet known. See **PANIS**, **BREAD**, and **CERELIA**.

TRITICUM REPENS. See **GRAMEN CANINUM**.

TRITICUM VACCINUM. See **MELAMPYRUM**.

TRITORIUM, (from *trito*, *to beat small*). See **DEPURATIO**.

TRITURA'TIO, (from *triturare*, *to rub or grind*). **TRITURATION**. The reducing a solid body into a subtile powder, or grinding with some liquid. Powders are united by trituration with a view to their subsequent division into doses.

TRO'CAR. The name of an instrument used to discharge the water in an ascites; from the French words *un trois quart*, a *three quarters*, expressive of the triangular point of the instrument. It is furnished with a canula for the fluid to pass through; but as this, whatever be its tenuity, must furnish some resistance in passing through the integuments, it is now constructed to sink into a circular shoulder, and room is made for withdrawing it by the elasticity of the canula, slightly divided a little way from its extremity.

TROCHANTE'RES, (from *τροχων*, *to run*, because several muscles that move the thigh are inserted into them). Two processes of the thigh bone, of unequal size. See **FEMORIS OS**.

TROCHI'SCI, (a dim. of *τροχος*, a *wheel*), *artiscus*, *tabella bacilli*, *pasta regia*, *pastillas*, *cyclisci*, *dactylios*, *morsellus*, *morsulus*; **TROCHES** also called tablets and cakes are made by mixing the medicine with a proper quantity of sugar, and the mucilage of gum tragacanth; and when formed into a stiff paste it is cut into proper portions, and dried. This form is adapted

for medicines designed to be slowly swallowed, as demulcents, which chiefly sheath the epiglottis, and the remedy for the bronchocele. Modern refinement has extended their use, and we have peppermint, cinnamon, ginger, paregoric, and even ipecacuanha drops, since it has been fashionable to take small doses of ipecacuanha for indigestion. These lozenges are of easy conveyance, and ready when suddenly wanted. The chief objection to this form is when an antacid is required, since the sugar sometimes creates more acid than the absorbent neutralizes. See COLLIX.

TROCHI'SCI CYPHEOS. See CYPHI.

TROCHI'TÆ. See ENTROCHUS.

TROCHLEA. Τροχίλια, a pulley, (from τρεχω, to run,) a cartilaginous pulley, through which the tendon of one of the muscles of the eye passes.

TROCHLEA'RES, (from trochlea). See PATHE-TICUS.

TROCHLEA'RIS MU'SCULUS. See OBLIQUUS MAJOR OCULI, OF SUPERIOR AMATORIIUS.

TROCHOIDES, (from τροχος, rota, and ἴδος forma, similar to a wheel,) *axea commissura*, an epithet of an articulation, or juncture of bones, when one is inserted into the other like an axletree, which has the motion of a wheel. The first and second vertebræ of the neck are articulated in this manner.

TROI'SIEME, LE, MU'SCLE DU TRI'CEPS. See ABDUCTOR FEMORIS, TERTIUS AND MAGNUS.

TRO'MPA. See CETE ADMIRABILE.

TSI'AM PA'NGAM. See CAMPECHENSE LIG-NUM.

TSIANAKU'A. See COSTUS.

TSJE'RU-CA'NSJAVA. See BANGUE.

TU'BA EUSTACHIA'NA, (from *tubus*, a hollow pipe,) *aquæducus*, *aquæductus Fallopii*, *meatus cæcus*, *ductus auris palatinus*, *meatus a palato ad aurem*, was first discovered by Alcmæon, a disciple of Pythagoras, who called it the auditory passage; but Eustachius claims the honour, and from him its present name is derived. Fallopius calls it the aquæduct; others *ductus auris palatinus*. This tube passes from the fore part of the drum of the ear to the back part of the nose, above the root of the velum pendulum palati, and allows the air to pass inwards. See AUDITUS, SONUS AND SUR-DITAS.

TU'BE FALLOPIA'NE, *parastatæ varicosæ* of Rufus Ephesius, rise from the uterus, and are there large enough to receive a hog's bristle; they then proceed in a tortuous course, and terminate near the ovaria, in an irregular fringe, where their diameter is about a third of an inch. This fringe is called *morsus diaboli*, or *foliaceum ornamentum*, and is hung upon a membrane like the mesentery, between the doublings of which the vessels run to the tubes. Their use is to supply a passage for the ovum, from the ovarium into the uterus, subsequent to impregnation. These tubes are sometimes found cartilaginous, sometimes a fœtus has been found in them, so that the animation of the ovum precedes its escape from the ovary. In one instance it has been found ossified, and frequently from different causes imperforated. (Sandifort *Observationes Anatomico Pathologicae*; Weitbrecht in *Comment. Petropolitani*, iv. 261). It has prolapsed through a fissure in the vagina. See GENERATIO.

TU'BE NO'VUS VALSA'LVÆ MU'SCULUS. See CIRCUM-FLEXUS PALATI.

TUBERA, (from *tabur*, Hebrew). Tumours of the solid parts, not containing a fluid. See AMANITA.

TUBE'RCA CERVI'NA, (from *tuber*, a round ball). See AMANITA.

TUBE'RCLA MAMILLA'RIA. See PAPILLÆ MAMILLARES.

TUBE'RCLA QUADRIGEMINA, CORPORA QUADRIGEMINA, EMINENTIÆ QUADRIGEMINÆ, four white oval tubercles of the brain, two of which are situated on each side over the posterior orifice of the third ventricle and the aquæduct of Sylvius. See NATES and TESTES.

TUBE'RCULUM, (a dim. of *tuber*,) *epanastasis*; *phyma*; a hard superficial tumour, circumscribed, and permanent, or proceeding very slowly to suppuration. See VOMICA.

TUBE'RCULUM LOWE'RI. See COR.

TUBE'RCULUM ANNULA'RE. See MEDULLA OBLONGATA.

TU'BULI LACTIFERI, (a dim. of *tubus*, a pipe). See LACTIFERI DUCTUS.

TU'BULO'SUM FO'LIUM. See FARCTUS.

TU'BULUS DENTA'LIS. See DENTALIUM.

TU'BULUS MAR'INUS. See ANTALIMUM.

TU'GUS. See AMOMUM.

TUMIDO'SI, (from *tumeo*, to swell). See INTU-MESCENTIÆ.

TU'MIDUM, (from the same). See BRONCHO-CELE.

TUMOR, (from the same). BOTHOR, Arab. q. v. *epanastasis*. The morbid enlargement of a particular part, without being caused by inflammation. This definition, though plain and simple, is not, however, unexceptionable; for dropsical swellings, from their extent, would be excluded, and yet hydrocele must be introduced, unless it be alledged that in this case the tumour extends above the organ affected. Mr. Abernethy limits, on the contrary, the meaning of the word too strictly, confining it to such swellings as arise from new productions; yet he is compelled to admit enlarged glands, as their contents may be such, though it will be obvious that extirpation or death must take place before it be ascertained whether any given disease is in reality a tumour. With all these difficulties before our eyes, we may have erred in our arrangement (see NOSOLOGY): but this is now of little importance; nor shall we stay to defend it.

The only other classification we have met with is in a work which seems to have rarely reached this country, since Mr. Abernethy has not seen it, Plenck's. The first part was published in Latin, at Vienna, in octavo, 1767, and about three afterwards, in the German language, at Dresden and Leipsic. He divides tumours into sixteen genera, inflammatory, purulent, gangrenous, indurated, watery, bloody, encysted, excrescential, bony, earthy, airy, salivary, bilious, milky, spurious herniary, and organic. As the work is rare, we shall mention a few examples of the more important classes. The inflammatory tumours are the true *erysipelatous* ones without fever; the indurated the *strumous*; the aqueous the *lymphatic*, which is a smooth round, white, indolent, and elastic swelling, arising from a ruptured lymphatic. Among the *cystic* tumours he mentions *lipoma*, which differs from steatom in containing fat only, though there is a species

whose contents are different, referred to sarcoma. An instance of the excremental tumours is the *cercosis*, a polypus from the uterus or vagina; of the bony, *exostoses*, *tophi*, or *gummata*; of the earthy, *arthritic tophi*, and the *sublingual calculus*. *Pneumatosis* is a species of aerial tumours; but, when general, is called *emphysema*; *ranula* of salival: *sparganosis*, a painful swelling of the mammae, and the *milky abscess*, are species of the lacteal tumours. All enlargements of the scrotum or umbilicus, if not organical, are styled by Plenck *herniary*. The *liparocoele*, which Morgagni calls *steatocoele*, a fatty swelling of the cellular membrane which surrounds the scrotum and testes; and the *lipomphalus*, a fatty hernia of the umbilicus, are of this kind. The organic swellings are *gibbosity of the vertebrae*, *hernia*, &c.

Other authors divide tumours into watery, fleshy, cystic, flatulent, fungous, humoral, milky, stony, lymphatic, menstrual, metastatic, salival, phagadenic, polypous, bloody, scirrhus, wormy, and solid; but such minutenesses must not at present detain us.

Mr. Abernethy, considering tumours, as new parts, chiefly confines himself to the sarcomata. His first species is the common vascular or organized sarcoma; the next the *adipose*, followed by the *pancreatic*, the *cystic*, the *mammary*, the *tuberculated*, the *medullary*, and the *carcinomatous*. The encysted tumours conclude.

Our author seems to think that tumours possess an independent life. A clot of blood first effused, suspended against any membrane by a short pedicle, is soon supplied with vessels passing through the pedicle, and these deposit the peculiar substance of the tumour, gradually enlarging it till the coats can no longer resist the distending power. They then crack, the substance of the tumour sloughs off, and, though at first a tendency to cicatrization is perceivable, it soon becomes a foul ulcer, and the discharge, with the debilitating power of the attending fever, proves fatal.

This short abstract of the pathology is sufficient to explain our author's system, and we shall add a few observations on it, as it militates against what we consider a fundamental principle in physiology, the identity and unchangeableness of the primordial germ. With this view we remarked, that the deviations in bulk were limited. When, however, the continuity of the containing membranes is broken, and blood exudes, the exposed vessels will probably shoot to some distance, though no inconsiderable one. In cases of tumours these vessels may be found in the neck; but very few contain vessels in their substance, which the most dexterous anatomist can inject. Mr. Abernethy, too, injures his own system, by remarking that the coats of the tumour are the thickened cellular texture around, from which they are supplied with vessels, and the whole hypothesis becomes unnecessary; for the substance of the tumour, if gradually deposited at its base, will impel the former depositions, and proportionally distend it at its fundus: we know, from observation, that such tumours really increase from their base. The position, that such tumours are not organized bodies, does not rest wholly on the failure of injections; for the gradual changes of the tumours prove that all the effects are produced from the coats, which

are confessedly not new productions. The coats inflame, suppurate, and burst; the contents, no longer confined, melt into a curdy mass, and the patient sinks from debility. Thus the whole system seems to totter; for the containing coat is the condensed cellular texture of the patient, and as there is little evidence of the vessels extending far into the substance of the tumour, these also have apparently no addition. The tumour itself is seemingly secreted from them, or the vessels permeating the coats, by what mechanism we cannot pretend to explain, as the whole mystery of secretion is involved in obscurity. If we consider the remedies, we shall find them applied to the coats to prevent increased action of their vessels: to these also our astringent and discutient applications are directed. The rest of the mass has no life; for when the coat is destroyed, the whole melts as it would do out of the body by the action of heat, air, and moisture.

The first tumour mentioned by Mr. Abernethy is the *common vascular or organized sarcoma*, a swelling which more particularly merits the name of a new formation, as vessels pass through it, and the veins on its surface are peculiarly large. It seems to consist of coagulable lymph, covered with the red globules; but so far from possessing independent life, when the coat is removed, the contents slough away, in other words dissolve, or portions separate without sloughing. The substance of the tumour itself is insensible, and has consequently no nerves: we cannot, therefore, admit of its being a living matter.

The *adipose sarcoma* is a fatty tumour, yet its contents differ somewhat in appearance from fat; but it acquires its capsule from the cellular membrane; and, if any vessels pass into its substance, they are so small, that, on turning out the tumour, they afford neither resistance nor pour out blood.

The *pancreatic sarcoma* resembles, in its lobated appearance, the pancreas, and is apparently a congeries of lymphatic glands, though sometimes a single one only is affected. We adopt this opinion from these being the only instances of sarcoma where the coats of the gland swell, are affected with lancinating pains, and become foul ulcers; for they scarcely ever are cancerous. It occurs most frequently in the breast nearest the axilla, a part where the lymphatic glands are numerous; and we have seen it in the inguen, when we have distinctly traced the formation of distinct lobes before they coalesced. A malignant parotid, before it breaks, has sometimes assumed this appearance.

A *cystic sarcoma* consists of distinct cysts, formed evidently by an enlargement of the natural cryptæ, and this tumour chiefly occurs in the testis, the ovary, occasionally in other parts. The cysts sometimes contain an unctuous matter of the consistence of cheese. See Baillie's *Morbid Anatomy*, fasc. viii. pl. 8, fig. 2.

The *mastoid or mammary sarcoma* resembles the mammary gland. It is peculiarly rare, and seems to approach a fungus, by the diseased part extending far below what appears to be the tumour, and becoming the source of a fresh deviation from the healthy state.

The *tuberculated sarcoma* can scarcely be styled a separate tumour; for it consists of enlarged lymphatic glands, which run together in one part, but are found

distinct over the whole body, and, on dissection, on the viscera. The skin breaks; but the glands do not slough: the pain and irritation are so considerable and extensive that the patient soon sinks. We doubt whether this species is properly distinguished from the pancreatic.

The *medullary sarcoma* is chiefly found in the testis, and it is filled with a pulpy substance not unlike that of the brain. It is a destructive complaint, and has been styled the soft cancer, though it differs from the true carcinomatous tumour. The case related by Mr. Abernethy proved fatal by an enlargement of the lymphatic glands of the groin, which were greatly distended, and inflamed the skin, terminating in suppuration. Their substance was tender, and it appeared that the substance of the original tumour had been absorbed in a softer state, since in the higher glands, within the abdomen, it had almost the consistence of cream. This tumour is neither, like cancer, hard, disposed to ulcerate or to spread to contiguous parts; but it is continued along the absorbents with great rapidity, wherever it may first appear; for it is not confined to the testis. The contents of the tumour are sometimes darker, being of a hue between a brown and a blood colour; but the consistence is the same, and the difference seems to arise only from the accidental mixture of some blood. The blood vessels of the parts diseased are always highly irritated, and the veins peculiarly full, so that some effusion may be expected. Mr. Cooper's observation, quoted by our author, from his paper on obstructions of the thoracic duct, in the Medical Records and Researches, seems to confirm the suggestion.

The last species is the *carcinomatous sarcoma*, in its incipient state a *scirrhus*; but of cancer we have already spoken at length. Mr. Abernethy distinguishes this kind by the communication of the irritation to contiguous parts, and by the white bands, described by Dr. Adams, sometimes enlarging into white firm partitions, and giving the idea of an animal nature. It agrees with the mastoid sarcoma in the disease extending below the apparent base of the tumour.

Encysted tumours are distinguished by a regularity of surface and shape, and a pulpy feel. Their contents are different in consistence, sometimes in colour, and from these they have been divided into steatomatous, atheromatous, and meliceritous, to which Mr. Abernethy adds a horny substance (Home in the Philosophical Transactions), and occasionally hairs, particularly in encysted tumours of the ovary. Other authors, but of no very good authority, mention flatus, bones, worms, lice, eggs, and even frogs, in encysted tumours (*Ephemerides Naturæ Curiosorum*). The vessels of the cyst are apparently minute; for our author acknowledges that, when they burst, they do not suppurate, but become flabby, and are not disposed to heal. Mr. Abernethy gives a short account of some other cysts, containing serum, hydatids, or granular substances, not unlike pearl barley.

We might perhaps rest the confutation of our author's pathology on his own facts. We see indeed new formations, as every exuded fluid capable of concreting may be styled such, but no independent life; no new creation of vessels; but the minute branches derived from the cellular substance which forms the capsula; no nerves.

The mass of matter contained in the cyst does not resemble, in any respect, the fluids of the body in any form, to which heat, stagnation, and absorption, can alone reduce them. Even in the case of scrofulous glands, where we have reason to think that the substance is the gluten of the blood, it is apparently changed by a secretion from the cavities of their cells. In every instance, except the first species, the substance of the tumour is equally different from any of the fluids, or any portion of the more compounded ones. The common, vascular, organized sarcoma seems only an effusion of the gluten, into which vessels undoubtedly pass, but which seems never to attain any considerable size; or at least before it does so, the character is lost. What the cause of this new secretion may be, we are unable to ascertain; but Mr. Abernethy very properly observes that its nature is not connected with that of the adjoining part; but it is not admissible to conclude that this is a new embryo introduced with its own peculiar powers, till we know why, from arteries nearly contiguous, serum and mucus, the perspirable and sebaceous matter are evacuated.

To conclude, at once, with the volume before us, we shall mention Mr. Abernethy's very judicious plan of cure. As the irritation of a tumour contributes undoubtedly to its increase, we must endeavour to lessen it by taking away its two principal causes, the blood and the heat: the first is attained by the repeated application of leeches, the second by the application of folded linens, wetted with sedative and refrigerant lotions. If we thus suspend the growth of the tumour, other measures may be afterwards pursued. These are stimulants, such as friction with mercurial ointment, gentle pressure, and electricity; and from the views we have offered in different parts of this work relative to the means of removing obstruction, this part of the author's plan will appear to be by no means at variance with the former. Those means which excite a counter irritation, such as rubefacient plasters, solutions of salts, blisters, and issues, are often of service. Abernethy, *Classification of Tumours*.

Other applications of rather a sedative than a stimulant nature are, the colchicum (*acetum colchici*, Storcke), hemlock, belladonna (de Meza in the Copenhagen Transactions), dulcamara (Carrere), lead (Aikin and Goulard), and galbanum. If the irritability of the cyst is destroyed, there will be little apprehension of its increase; but we often find, that though by these means we can arrest the progress of the disease, we can seldom remove it. Extirpation, either by a knife or ligature, is, if practicable, the only certain remedy.

See *Recueil des Pièces qui ont concouru, &c. de l'Académie de Chirurgie*, vol. i.; *Astruc Traité des Tumeurs*; *Bang in Act. Societ. Med. Havniensis*; *Sauvages' Theoria Tumorum*; *Parey's Works*; *Bell's Surgery*; *Becket's Chirurgical Tracts*.

On encysted tumours, see *Morgagni de Sedibus, &c.* lxxviii. 12.; *Boyer in Fourcroy Médecine éclairée*; *Mémoires pour le prix de l'Académie*, vol. x.; *Heister de tumoribus cysticis singularibus apud Halleri Disputationes Chirurgicæ*, vol. v.; *Richter's Bibliothecæ*, vol. vi. and x.

TU'NBRIDGE WATER contains steel, with the assistance of the carbonic acid, but no uncommon solid contents. It is chiefly used as a corroborant in the

diseases from relaxation, to which females are usually subject.

TU'NGSTEIN, one of the newly discovered metals, whose oxide is acid. It is usually found in union with calcareous earth; but its affinities are little known, and it has never been used in medicine.

TU'NICA, (*à tuendo corpore*). A SKIN, COAT, OR MEMBRANE. See **CARYOPHYLLUS RUBER**.

TU'NICA FILAMENTO'SA. See **DECIDUA**.

TU'NICA VAGINA'LIS TE'STIS. See **TESTES** and **ELYTHROIDES**.

TU'NSTAS, (from *tungstein*.) **TUNSTATS**; salts formed by the combination of the tungstic acid with different bases.

TURBINA'TA O'SSA, the superior and inferior portions of the **ETHMOIDES OS**, q. v.

TURBINA'TUM, (from *turbino*, to sharpen at the top). SHAPED LIKE A SUGAR LOAF. See **CEREBRUM**.

TU'RBITH; *turpethum* and *turpetum*, the cortical part of the root of a species of *convolvulus indicus*, *convolvulus turpethum* Lin. Sp. Pl. 221. It is in oblong pieces, of a brown or an ash colour on the outside, and whitish within. The best is ponderous, not wrinkled, easy to break, discovering to the eye a large quantity of resinous matter. The bark is cathartic, but so unequal in strength that it is now neglected in practice. See **Neumann's Chemistry**; **Lewis's Materia Medica**. The name also of some kinds of *seseli*.

TU'RIO, *quasi terio quia facile teratur*; the first tender shoots of plants which appear in spring, as those of the asparagus and hop. Ray.

TURPE'THUM, and **TURPE'TUM**, (Indian). See **TURBITH**.

TURPE'THUM MINERA'LE. **MERCURIUS EMETICUS FLAVUS**, **MERCURIUS VITRIOLATUS**. See **HYDRARGYRUM**.

TURUNDÆ, *offa trita et manibus subacta*, from their being rolled up; **TENTS**, usually made of lint, and introduced into deep wounds. They serve to convey medicines to the bottom of a wound; to hinder the external part of a wound from healing before the lower portion; and to clean wounds from what should not be retained in them. They should be very soft, that they may neither obstruct the discharge of matter, nor hinder the healing of the wound in general. Tents are made of sponge, for dilating the orifices of wounds; they are also made of the dried roots of gentian, turnips, comfrey, calamus aromaticus, &c. but these harsher materials are now disused. See *Le Cat dans les Mémoires pour le prix et Morand Opusculs de Chirurgie*, ii.

TUSSILA'GO, (from *tussis*, a cough,) *bechium*, *calceum equinum*, *chamaluce*, *filius ante patrem*, *farfara*, *calliomarcus*, **COLT'S FOOT**, *tussilago farfara* Lin. Sp. Pl. 1214, is a low plant, producing, early in the spring, single stalks, each of which bears a yellow flosculous flower, followed by several seeds winged with down: the leaves, which succeed the flowers, are short, broad, angular, slightly indented, green above, and hoary underneath. It is perennial, and grows wild in moist grounds. The leaves and flowers are mucilaginous, and bitterish, with little or no smell: infusions of the leaves are sweetened with liquorice or honey for a common drink, when a troublesome cough attends; but if any considerable advantage is expected, a strong

decoction should be made, and used freely. The leaves have been held in high estimation, as possessing demulcent and pectoral powers; consequently esteemed efficacious in pulmonary consumptions, coughs, asthmas, and in various catarrhal complaints. Every writer on the *Materia Medica* might be cited as speaking in its favour, except Dr. Cullen, who suspects that this plant has little virtue, as he has often employed it, but never found it either evidently demulcent or expectorant. In scrofulous cases he has given it with seeming success. Some ounces of the expressed juice of the fresh leaves were taken every day, and seemed to assist the healing of scrofulous sores: even a strong decoction of the dried leaves, employed as Fuller proposes, has seemed to answer the same purpose; but both have occasionally failed. See **Cullen** and **Lewis's Materia Medica**.

TUSSILA'GO MA'JOR. See **PETASITES**.

TU'SSIS, (from its noise, or from the Hebrew *gnatishah*,) *bex*, a cough, is a violent expulsion of some matter from the bronchiæ of the lungs, by means of a convulsive and a violent expiration. See **CATARRHUS**.

The seat of every cough is generally in the breast, but the remote cause is variously situated. The principal parts diseased are the *aspera arteria*, and the bronchiæ; these are irritated by inflammation, obstruction, or foreign bodies introduced; but the morbid irritation may be in an adjacent part, as the diaphragm, the stomach, the œsophagus, the pleura, the external surface of the lungs, &c. Thus coughs attend pleurisies, wounds about the neck, inflammation of the liver, &c.; acrid matter in the stomach or in the duodenum. Spasmodic disorders are often attended with a cough, the lungs suffering either by consent from the source of the spasm, or becoming in their turn the seat of that which produced the spasm in some distant part. The most frequent cause, however, is suppressed perspiration.

Coughs are generally at first dry; but at last expectoration comes on and a hectic fever is the consequence (see **PHTHISIS**); but it sometimes happens that a cough continues during a long life without inconvenience, and though it does not lead to phthisis, induces at last asthma or hydrothorax.

So far as coughs are connected with the state of the lungs, they have been already considered under the articles **CATARRHUS** and **PHTHISIS**, so that we shall here chiefly speak of the symptomatic coughs. These frequently arise from the stomach, and are dyspeptic symptoms, often from diseases in the liver; and if the facts recorded by the American practitioners be true, that salivation has even cured hectic, it must have been those which arise from scirrhus in that viscus. This circumstance must be constantly kept in view, when we consider the coughs of those who have long resided in the East or West Indies, particularly the former; for they very generally proceed from the liver, and we have much reason to suspect this organ to be a more frequent source of coughs, even in this climate, than has been suspected. Those which attend cancers are, according to Mr. Abernethy, more probably from the affection of the liver, which usually takes place in the latter stages, than from the irritation communicated from the diseased part.

Symptomatic coughs are also excited and kept up by foreign bodies accidentally formed, or introduced into the trachea. Calculi, we have said, are formed in the bronchial glands (Morgagni de Sedibus, xv. 21, 22); beans, nails, the splinters of a fractured rib, and a little bone (Morgagni, xxii. 24), have produced continued coughs: Hildanus, as well as Tulpius, describe coughs as arising from fragments of tents, introduced into wounds of the thorax. Worms are mentioned as the causes of irritation by Bartholine, sometimes hydatids (Medical Observations and Inquiries, vi. 15), and polypos masses (Tulpius, iv. 9).

We know that the use of the ear picker will bring on a cough; and we shall not, therefore, be surprised to find it occasionally produced by acrid cerumen, by dentition, or swollen tonsils; but it is singular to find cough excited by affections in the head, and water in the ventricles of the brain. Morgagni, xix. 54; Bonetus, lib. ii. sect. iii. 33.

Some coughs are styled purely nervous, and such are described with great fidelity and judgment by Dr. Whytt, in his treatise on nervous diseases. In this, as in other convulsions, increased irritability, with a less evident stimulus, or sometimes with a stimulus which escapes observation, induces a violent degree of the complaint. It is then constant and almost unconquerable. This is the kind of cough which attends dyspeptic, chlorotic, and hysteric habits; which has been described by authors as owing to metastasis of fevers (Stoll Ratio Medendi, i. 282); repelled eruptions or gout, and the irritability left after peripneumony. Merten's Observationes Medicæ, ii. 1, 3.

The remedies of the symptomatic coughs are those of their causes, which, when there is no real disease of the thorax, should be anxiously investigated. The nervous coughs alone require attention. In what Stoll styles the metastatic coughs, he advises the arnica, and in the gouty ones, though attended with copious expectoration, we have given the bark with advantage: Home (Facts and Experiments) mentions the success of the same remedy in febrile coughs. The ammoniated copper is mentioned by Bell in the Medical Commentaries, and warm bathing, with occasional venesection, by Whytt. The fetids have sometimes succeeded, and mercury in more than one instance. We remember a case of incessant and unconquerable cough of this kind, in which, from recollecting the good effects ascribed to mercury, we gave it in small doses. These were, for a time, ineffectual; but a salivation suddenly came on, and from that moment the cough rapidly declined, and soon ceased. It returned after about two years, and yielded to the same remedy. Of the narcotics, the hyoscyamus, the hemlock, and the polygala amara, have been recommended: of the diaphoretics, ipecacuanha in small doses, and the mezereum.

TU'SSIS CATARRHÆ'LIS. See a CATARRH from cold, in CATARRHUS.

TU'SSIS CONVULS'VA, RHEUMA'TICA, et FERINA. See PERTUSSIS.

TU'SSIS EPIDE'MICA. See CATARRHUS EPIDEMICUS and INFLUENZA.

TU'TENAG. A name for zinc, also for a white compound metal, called Chinese copper. See ZINCUM.

TU'TIA, (Persian). TUTTY, *pompholyx cadmia factitia*, et *fornacum, alfusa, capnitis*, an impure ore of

zinc, found in Persia, formed in cylindrical moulds into tubulous pieces, and baked to a moderate hardness.

It is generally brownish, full of small protuberances on the outside, smooth and yellowish within, sometimes whitish, or bluish from metallic particles. It is frequently found collected in the chimneys after smelting other ores.

When tutty is finely levigated, it is sedative and astringent, used in collyriums to repel slight inflammation in the eyes, and in healing wounds.

TU'TSAN. See ANDROSÆMUM.

TYLO'SIS, (from *τυλος*, *callous*). See TRACHOMA.

TYLLO'MA. A CORN. See CLAVUS.

TYMPANI MEMBRA'NA. See AUDITUS.

TYMPANI'TES, (from *τυμπανον*, *a drum*). *Meteorismus*, and FLATULENT DROPSY. Dr. Cullen defines it a tense, elastic, sonorous intumescence of the abdomen; the habit costive, with an emaciation of the other parts. The species are; *t. intestinalis*: a tumour, often irregular, of the abdomen, and frequent rejection of air, alleviating the tension and pain; and *t. abdominalis*: the sound more evident, the tumour more regular, the emission of wind more rare, and less alleviating. In the former the wind is confined to the intestinal canal; in the latter to the cavity of the peritonæum. Authors have not, in general, distinguished these two kinds in their description, and we wander in great obscurity when we endeavour to trace the causes or the method of cure adapted to the second species.

The *t. intestinalis* need not detain us; for every cause of dyspepsia, indeed every cause of weakness, produces flatulence. (See APEPSIA, DIGESTIO, and HYSTERIA.) The remedies are already noticed at some length, and we need only repeat, on the present occasion, that clysters of asafœtida, with warm carminative seeds, often give immediate relief.

The *t. abdominalis* certainly attends the last stages of enteritis and hernia; but it then arises from the evolution of air, in consequence of putrefaction. Authors have spoken of a secretion of air, which we dare not deny, since it apparently takes place in the air bladders of fish. We see, however, no analogous secretion in the human body. One source of air may be suspected, viz. the decomposition of the watery fluids; but we know no probable means of effecting this change, except by electricity or galvanism, which are never experienced to so great an extent without proving fatal. Air has been sometimes found mixed with blood in the circulating system; but when thrown into the arteries it is soon fatal, so it seems to have been separated in articulo mortis.

We might accumulate a respectable list of authorities in support of the opinion that the abdominal tympanites has no existence; but this would be carrying scepticism too far, especially as we have respectable authority for occurrence (Bell on Tumours, &c.; Morgagni de Sedibus, xxxviii. 24), and its being relieved by an abscess of the umbilicus (Guisard Pratique de Chirurgie, i. 134; Storck Annus Medicus, ii. 123). Trnka proposes exhausting the air by an air pump applied to the intestines, perhaps to the rectum; for we have not been able to peruse this work. See Bell on Ulcers; Collectiones Medicæ Havniensis, ii. 73; Dusseau Journal de Médecine, 1779; Lieutaud Historia, Anatomico Medica, i. 432.

TYMPANUM, (τυμπανον). See AUDITUS.

TY'PHA AROMA'TICA, (from τιφος, a lake, because it grows in marshy places). See CALAMUS AROMATICUS.

TYPHO'DES, (from τυφω, to inflame,) *helodes, lactica*, a fever attended with colliquative sweats, while the tongue continues dry and hard.

TYPHOMA'NIA, TYPHO'NIA, (from τυφω, to burn, and μανια, delirium). "A disorder complicated of a phrensy and a lethargy, in which the patient is delirious, and labours under a sleepy coma." (Galen Exegesis.) It may be called a lethargic madness, or a delirious lethargy, according to Gorraeus.

Dr. Cullen considers it as a symptomatic apoplexy, occurring in intermittent and continued fevers, sometimes arising from worms. The species consequently are, *febricosa; continua; agrypnocoma; verminosa*. See Synopsis Nosologiæ Methodicæ, vol. ii. p. 184, 191, 192.

TY'PHUS, (τυφος, from τυφω, to inflame). The first species of this complaint, according to Hippocrates, is a legitimate continual fever, which reduces the strength, attended with pains in the belly, heat in the eyes which hinders the patient from looking steadily on any object. The pain prevents him from answering any questions, though he begins to speak, and fix his eyes on any object, when at the point of death. The second is a tertian or a quartan, succeeded by pain in the head; saliva and worms are copiously discharged by the mouth; the eyes suffer great pain; the countenance and feet are pale, and the whole body is sometimes affected with soft swellings; the breast and back are occasionally painful; the belly rumbles; the eyes are fierce; the saliva adheres to the throat, and renders the voice hoarse. In the third species there are intense pains in the joints and sometimes all over the body: the blood is hot, and stagnates in the limbs; some bile retained in the joints becomes indurated, and produces lameness. In the fourth there is violent tension, elevation, and heat of the belly, succeeded by a diarrhœa, which sometimes terminates in a dropsy, and is some-

times attended with fever. In the fifth there is a paleness and a sort of transparency of the whole body, as if it was a bladder full of water, though without any inflation; on the contrary, the body is weak and extenuated. The patient winks his eyes, and feels the bed-clothes as if he wanted to catch something on them, &c.

These are all symptoms of violent fevers at different periods, and the passage would have scarcely merited selection, but to show with how little real discrimination diseases were sometimes described even by those who have attained the highest credit as observers. The term has now become fashionable, and it may require a little discussion.

We have contended that fever is a simple disease, differing only as more or less perfectly intermitting and exacerbating. Those in which the remissions and exacerbations are indistinct, authors have styled *continued fevers*. In all the various appearances of these in the different epidemics, we have not yet been able to discover any other difference than arises from the degree and duration of inflammatory diathesis, the early appearance or degree of debility, except those accidental symptoms which, arising from habit, idiosyncrasy, and climate, will give a peculiar hue to every complaint.

Dr. Cullen has, therefore, with great propriety, included the greater number of continued fevers under the title *typhus*, distinguishing the milder typhus, the common nervous fever, from the severer asthenic or putrid fever. He has introduced, with propriety, the inflammatory fever, which, though generally symptomatic, yet often appears when no original disease can be traced. The synochus also has been admitted as the common type of epidemics in this climate. All these diseases have been considered under their appropriate heads; for ready reference is the great and most important object in a dictionary. See SYNOCHA, SYNOCCHUS NERVOSA, and PUTRIDA FERRIS.

TYRO'SIS, (from τυρω, to coagulate). A disorder in the stomach proceeding from milk coagulated in it.

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U'LA, (ὤλας). See GINGIVÆ.

U'LCERA SERPE'NTIA O'RIS. See APHTHÆ.

U'LCUS, (ὤκος, an ulcer). *Cambuca, cambuca membrata, helcosis, exulceratio*, a solution of continuity in a soft part, with loss of substance, and usually a discharge, often the consequence of wounds. A loss of substance in the bones, from erosion, is called a *CARIES*; though, when an abscess is opened for the discharge of its contents, it is usually styled an *ulcer*. External ulcers are discerned by the eye, but internal ones by their discharges, which are often mixed with the excretions. The degree of danger will be estimated by the quality of the ulcer, the part affected, and the strength of the patient.

The causes of ulcers are wounds and inflammations. A solution of continuity by a wound, if complicated with a diseased constitution, produces a compound ulcer; but in firm habits often heals without inconvenience. Incised wounds, without loss of substance, seldom produce ulcers, but heal by the first intention; in other words, the divided edges unite, and no supuration follows. Inflammation is the most general and frequent cause of a solution of continuity from an excess of action, which changes the state of the arteries, so as to render them capable of secreting purulent matter, for true pus is not secreted without inflammatory action. The inflammation may be from a general or a local cause, and this distinction should be kept in view in the treatment of ulcers. There is little doubt, for instance, but that Dr. Rowley's medicine, nitre joined with camphor, will cure the ulcer of an active young man, who lives freely, and is subject to inflammatory complaints, which exacerbate the inflammation; but the same remedy will be injurious to the ulcer of an emaciated old woman, or to that of an exhausted arthritic. General inflammation is also a cause of a critical, or more properly a metastatic, abscess, subsequent to fever, and this will also require particular attention, according to the state or circumstances of the fever, which cannot be the object of consideration at present. See ABSCESSUS.

Local causes of inflammation are numerous. Of these the most frequent, and the most unsuspected, is debility, whose action will not appear to be easy of explanation. Yet when it is recollected that from debility

the balance of the circulation is disturbed, that the foundation of inflammation rests on accumulation, in consequence of atony, the influence of this cause will be obvious. We thus find ulcers most common in cachectic persons, who are constantly on their feet; and such ulcers are the most difficult to cure. To a certain extent the action of the vessels may be restored, but beyond they will seldom proceed.

The local causes of a different kind are topical stimuli. Thus a carious bone produces an ulcer, the vena medinensis shows itself in the skin by a slight ulceration, and needles, received at a distant part, work, in common language, their way through the skin, exciting inflammation. The stories of worms in ulcers may, perhaps, have some foundation, but they are more probably the effect of negligence than the cause of the complaint. Foreign bodies, introduced from without, are, indeed, often causes, and the common sources of the factitious ulcers, formed to impose on the humane and charitable. Bodies of various kinds have been the cause of ulcers, and produced them after remaining with little inconvenience for many years; but the only substance, formed in the body, which can occasion them are calculi, chiefly arthritic ones.

It has been usual to blame an acrimonious state of the blood as the cause of these complaints; but, except, in scorbutic ulcers, there is little evidence of its existence or of its producing this disease; and in scorbutic ones the lax texture of the solids is a more immediate cause than acrimony. This is of more consequence, as it has led to a variety of medicines to correct that acrimony which, however, act in a different way. Mercurials and antimonials give tone to the whole system, and determine to the surface; a circumstance so essential to the general health. The sarsa and mezereon are similar to mercurials; and both are sometimes successfully superseded by the nitrous acid.

One undisputed cause of ulcers from this source is the poison of copper, which sometimes erodes the hands of the workmen, and, as has been alleged, gives a greenish hue to the purulent matter, and, perhaps, the venom of a wasp, which, Hildanus observes, produced an incurable ulcer on the cheek. We must return, however, to these subjects after we have examined the particular species of ulcers.

The symptoms which attend and retard the healing

of ulcers are inflammation, pain, a flow of morbid humours, a spongy flesh, &c. The callous tumid lips of ulcers, or ulcers which are difficult to heal, are termed *ochthodes*.

Mr. Bell divides ulcers into two classes, viz. those which are merely local, not depending on any disorder of the system; and those which are the consequence of, or connected with, any disorder of the constitution.

The species belonging to the first class are, the simple purulent ulcer; the simple vitiated ulcer; the fungous; the sinuous; the callous; the carious; the cancerous; and the cutaneous ulcer.

The species belonging to the second class are, the venereal; the scorbutic; and the scrofulous ulcer; to which we may add the arthritic.

Ulcers of long continuance, or which have succeeded in carrying off or preventing any disorder to which the constitution may have been liable, are not, we are told, to be hastily cured; but in a situation highly troublesome, a vicarious discharge, by means of a pea issue, or of a cord (see FONTANELLA and SETACEUM), may be gradually produced, and the ulcer slowly healed.

If an ulcer is the consequence of a critical abscess, the drain may be allowed to continue for a short period, and the sore may then be safely healed; but if apoplectic or paralytic attacks have yielded to the formation of an abscess, such an ulcer should not be wholly dried. In such cases, nature will be contented with a slight discharge, and it is the surgeon's object to relieve the patient with as little inconvenience as possible. We have seen relief obtained by an ulcer not a quarter of an inch in diameter: if it spread, no advantage was obtained; but, if contracted farther, apoplexy was the consequence, relieved only by applying a blister to the formed cicatrix. We shall find a similar inconvenience from healing old arthritic drains, and asthmatic persons have experienced considerable exacerbation of their complaints when formed drains have been checked.

The long continuance of a drain has been considered as an argument against stopping it, and every physician who has been accustomed to observe the effects of habit must have imbibed some prejudices on the subject. Whether facts combating with prejudice or particular instances have occasioned a contrariety of sentiment, we cannot determine; but there is considerable weight of evidence on each side. The balance, in point of authority, undoubtedly rests on the danger of healing old ulcers; but the gradual improvements of practice have taught us, in a great degree, to disregard it. Were the inconveniences very striking, the former opinion would not have been, for a moment, shaken. We would willingly, if possible, draw the line, and point out what ulcers may or may not be healed with safety; but beyond the facts already adduced we find no firm footing for our steps.

Except the callous and the sinuous ulcer, and the ulcer with a caries in the bone, the cure of all the other kinds depends, according to Mr. Sharpe, chiefly on that of the morbid habit of the body. If the body is untainted, the healing of an ulcer is the work of nature, and topical applications only maintain the due degree of tone which enable her to carry on this operation. While an inflammatory hardness exists, an emollient poultice laid over the dressings will relieve, after which dry lint generally suffices, or at the most it may be moistened

in some mild astringent, to give a tone to the new flesh. When a too great laxity, or a sponginess, is observed in ulcers, gently stimulating and bracing applications are more useful.

The three kinds of ulcers which Mr. Sharpe mentions as more particularly depending on external management, so frequently arise from a morbid habit of body, that this must be first corrected. When removed, emollients to the callus on the edge of the ulcer may be applied; or, in many instances, unguentum resinæ flavæ, with a little finely powdered precipitate, will succeed. See Heister's Surgery; Sharpe's Operations, in the introduction.

The *simple purulent ulcer* is a local affection, with pain and inflammation, in a very considerable degree, while the discharge afforded is always of a mild purulent nature, and of a proper consistence; and the granulations which arise in it are of a firm, fresh, red, healthy appearance. This ulcer is the most simple that can occur, and to its state all others must be reduced before a permanent cure can be expected. As there is very little inflammation, and no preternatural swelling supposed to take place, but merely a vacuity, either from a real loss of substance, or from a retraction of parts simply divided, if the discharge be of a mild purulent nature, no peculiar treatment except to guard against the air and external injuries is necessary. Pledgets of lint spread thinly with the ung. cereum Ph. Edin., Pott's soap cerate, or the unguentum e lapide calaminari, may be applied, every twelve or twenty-four hours, to the surface of the sore. If inflammation attends the ulcer, warm fomentations or warm emollient cataplasms may be necessary while it continues. If fungous flesh appear to rise above the surface as soon as the inflammatory state is over, slight compression, by means of a roller, may be applied, and continued during the remainder of the cure. The roller should be applied so as not only to act as a gentle pressure upon the parts immediately surrounding the ulcer, but likewise to support the skin, and other teguments so as to prevent their retraction, which in large ulcers often happens. The *formation of a cicatrix* is frequently effected by nature alone; but when every deficiency appears to be supplied, the cure is sometimes still tedious, the surface of the sore remaining raw, and discharging considerable quantities of thin matter. In such cases, more astringent applications must be substituted, and occasionally more stimulating ones, as the precipitate; or more drying ones, as the bole powder, either with or without opium, according to the irritability of the sore. If the cicatrization is prevented by spongy granulations rising above the skin, they may be checked by dry lint, a gentle compress, or in obstinate cases a slight application of the vitriolum Romanum may be necessary to check the luxuriance. It is very rare that a caustic is required. Bell on Ulcers, edit. 3. p. 161, &c. White's Surgery, p. 29.

The *simple vitiated ulcer* differs from the former, chiefly in the appearance and nature of the discharge. The most common appearances of such deviations are, sanies, ichor, or sordes. From the acrimony of these fluids, the parts, instead of filling up with firm granulations, waste, and instead of a reddish hue, have either a dark brown, or a blackish, rough, sloughy appearance. The pain in all is greater in proportion to the acrimony

of the matter. As the simple purulent ulcer happens most frequently in the fleshy parts, so the simple vitiated ulcer is most common near the tendons or aponeurotic expansions of the muscles, as these parts seldom afford a salutary pus. Accidental inflammation of the ulcer, or a general ill habit of body, may also occasion this species of ulcer in every part. The principal endeavour in such cases must be to ease pain, and abate irritation, by warm emollient fomentations and cataplasms, continued until all appearances of inflammatory tendency are removed. The part may be fomented three or four times a day, for half an hour each time, with an emollient decoction; and a pledget spread with the unguentum cereum (Ph. Ed.) applied. Opiates inwardly will be necessary to remove irritation. If the habit be too full and inflammatory, it must be lowered; if too low, supported; and in the latter case these ulcers most often occur. A free but prudent use of the cortex Peruvianus is sometimes useful, but in plethoric habits and in inflammatory constitutions this medicine must be avoided. The previous removal of any general disease is indispensably necessary. Sometimes more difficulty attends the cicatrization of these ulcers, when long continued, and an issue, inserted in a proper situation, will be generally necessary to finish the cure. Nitre has been highly commended in this species of ulcer. Bell on Ulcers, edit. 3. p. 216, &c.

The fungous or spongy ulcer is distinguished by preternatural risings of parts, more soft and spongy than sound, healthy, granulations; but which sometimes by continuance acquire an extraordinary hardness, and are generally painful. In young and healthy habits the new granulations often advance too quick, and rise above the surface of the neighbouring parts; and in others, for want of care, wounds and ulcers are permitted to fill up without being firm at the bottom, whence the fungous ulcer generally arises. If the fungous appearance is owing to luxuriance of health, its surface may be slightly touched with the argentum nitratum, once in two or three days; and a pledget of dry lint immediately applied. If the basis of the fungus is narrow, it may be removed by a ligature. When the fungous appearance is owing to the insecure basis, it rises quickly, and is not so firm as the former kind, and having given free vent to the impacted matter, we must attend to the progress of healing from the bottom. This fungous flesh is soft, and wastes without requiring escharotics. Bell on Ulcers, edit. 3. p. 232.

The SINUS ULCEr. See FISTULA.

The CALLOUS or VARICOUS ULCER, supposed to be nourished by the fluid of the swelled veins, apparently opening into them. An ulcer is said to be callous, when its edges, instead of contracting, and diminishing the size of the sore, acquire a preternatural thickness, and are ragged, often rising considerably above the level of the neighbouring parts: the discharge afforded by them is commonly a thin vitiated matter; and these ulcers are most commonly varicous, especially when in the lower extremities, owing chiefly to the stricture occasioned by the callosities on the different veins. Escharotics have generally been used to destroy callosity on the edges of ulcers; but as they tend to increase the disease by continuing the inflammation, emollients, with the assistance of warmth, are substituted in their stead.

By the use of a warm emollient poultice, and a reclined posture, the most unpromising ulcers have been healed. Yet sometimes the callosities are so hard as to require the knife or the caustic; and if the last is preferred, the argentum nitratum is the best. With this the hardened parts may be touched, every two or three days, and when they are duly wasted, the ulcer will probably be reduced to the simple purulent one. To strengthen and restore the veins that were rendered varicous round the callosities, a tight stocking or a spiral bandage will be useful, but not before their having been continued for a long time. Callosity frequently attends venereal and cancerous ulcers; but in these cases the morbid state of the constitution must be corrected. Bell on Ulcers, edit. 3. p. 254.

The CANCEROUS ULCER. See CANCER.

The CARIOUS ULCER, that which is connected with a local affection of a bone. Bruises, lacerations, and injuries of the periosteum, sometimes terminate in a caries; and in about four, or five days, the bone begins to lose the natural healthy appearance, turns of a pale white, with a slight tinge of a yellow; and whenever the latter begins to appear, there will be little doubt of the consequence. Sometimes it will continue in this state for many days, and by degrees acquire a more deep sebaceous appearance, remaining in this state for a time, proportioned to the violence of the cause, and afterwards going through the subsequent stages, until it hath acquired a deep blackness. The discharge from such ulcers is never of the consistence of good pus; but generally thinner, and from the first appearance of caries acquires a most disagreeable fœtor, which increases as the disorder advances, and at last it appears blackish, as well as the bone underneath. As the several degrees of blackness go on, small holes are formed in the diseased parts by the acrimony of the discharge, and by degrees increase considerably, until even the most solid bones acquire a spongy appearance. In this situation, the mortified portion is generally loose; and, on pressure, an oily matter, with a most disagreeable fœtor, is forced out, which gives the whole discharge such a peculiar smell as to prevent its being again mistaken. In these ulcers also the fleshy parts are soft and more flabby than in their natural state, of a darker brown and a glassy appearance, the granulations sprout up in irregular clusters, advance too quickly and too far, if not prevented, which is always necessary until the diseased part of the bone is either cast off or separated by art. When neglected, these soft productions in carious ulcers frequently increase so as to form very large and troublesome excrescences, though even a portion of the bone only is carious. When the whole bone is affected, the progress and symptoms are more rapid, and the whole must be removed; but in more partial affections, the diseased portion alone requires to be separated. When a probe can be introduced so far as the bone, the roughness of its surface will discover the caries; but though the bone cannot be reached by the probe, the appearances of the ulcer, and the fœtor of the discharge, will rarely fail to discover it; and before this ulcer can be cured, the carious parts must be removed. To separate the carious parts, the surgeon must make a number of small holes by a pin or perforator over the surface of the diseased

bone, to such a depth as to give the patient a little pain only, and repeat this operation in different parts, every third or fourth day. In this way the diseased portion of the bone soon loses the cohesion of its own parts, and a gentle inflammation is excited so as to produce free suppuration. If the caries goes deeper than the second lamella of the bone, a head of a small trepan may be used, and carried so deep as to give some pain. We thus convert a large caries into many smaller diseased parts, and their separation from the sound bone is more easily affected. When any of the parts loosen at the edges, their final separation may be hastened, by daily insinuating below them the end of a spatula, so as to raise their edges a very little upwards. While any of the carious bone remains, the fœtor of the matter demands attention; and it is moderated by a strong decoction of bark and walnut tree leaves, or by a solution of camphor in weak brandy. The carious part of the bone should be dressed with soft lint soaked in either of these, while the rest of the sore is treated as a simple purulent ulcer. Lime water powerfully corrects the putrid discharge from carious ulcers, and the exfoliation of bones is much promoted by bathing with it. The bark is almost the only medicine which in cases of caries should be given internally; but in some instances the soft parts which cover the carious bone are so swelled and painful, that opiates are necessary. After the removal of the carious bone, the remaining sore must be treated in the same manner as directed for that species of ulcer to which, at the time, it appears to belong. See *CARIES*; Bell on Ulcers, edit. 3. p. 262.

The CUTANEOUS ULCER. See *HERPES* and *TINEA*.

There are other kinds of cutaneous ulcer more nearly allied to our present subject, and which may be comprehended under this head. The first of these which we shall mention are those ulcerations of the epithelium from mercury. These, like all other cutaneous ulcers, are highly irritable, and are distinguished from syphilitic ulcers by their bright red colour, by their not containing sloughs, and by their sides imperceptibly uniting with the teguments. If these appearances do not distinguish them, the quantity of mercury previously used will show that they are not syphilitic, as well as their spreading while this mineral is employed. In such cases soft mucilaginous and slightly astringent washes, omitting the mercury, will soon relieve. If danger is apprehended from the original disease it may be suspended for a time, by the decoction of mezereon, with the nitric acid.

There are some slight cutaneous sores attended with great irritability and excruciating pain; but, as the same irritability attends also deeper ones, we had designed to have placed them in a separate class, would authority have supported us. The pain usually arises from some subcutaneous nerve, and is felt in the neighbourhood as much as in the ulcerated part. Moderately warm fomentations, frequently repeated, and sprinkling the ulcer with fine powder of myrrh, will often relieve the patient; but occasionally the bole powder with opium of the former pharmacopœia, is more effectual. When the discharge from such ulcers is not thick or laudable, even a small proportion of the precipitate may be borne. If simple ointment be slightly

coloured by precipitate, so as to give the palest red hue, we have often known it remove pain instantaneously.

The VENEREAL ULCER. Hunter on the Venereal Disease; Swediaur, 129; Plenciz Acta et Observationes Medicæ 14. See *LUES VENEREA*.

The SCORBUTIC ULCER. See *SCORBUTUS*.

The SCROPHULOUS ULCER. See *SCROFULA*.

ARTHRITIC ULCER demands particular attention. It is a highly irritable sore, produced by chalk stones, with difficulty healed, and generally diminishing fits of gout during its discharge. All ulcers in gouty habits must be healed with the utmost caution; for they are often salutary, and the suppression of the discharge is generally injurious.

AN ULCER IN THE BLADDER is often suspected from a slimy discharge, of a yellowish colour, proceeding from weakness. When an ulcer is really formed in this organ, there is a discharge of fetid matter, or blood, and occasionally scales, or a membranous pellicle on the urine. A continual dysuria, and a pain in the urinary passages also attends. For the distinction and cure, see *ULCER IN THE KIDNEYS*.

AN ULCER IN THE KIDNEYS. Though the kidneys are often wasted, they are rarely found ulcerated; and, according to Cheselden, an ulcerated bladder is very uncommon in the bodies obtained for dissection. When the bladder is affected, the pain is felt in the pubes and the bottom of the belly; but when the kidneys suffer, the pain is in the back part of the loins. In the former case, there is a difficulty if not a suppression of urine; but in the latter the urine passes freely. From the bladder there are voided membranous scales, from the kidneys fibrous pieces of flesh; and a violent pain is felt in the bladder when ulcerated: the pain from an affection of the kidneys is dull and inconsiderable.

The urine looks like milk when first made from an ulcerated kidney, though not fetid; but, on standing, the white matter falls: when the pain is considerable in the kidneys, which usually arises from calculi, it occasions a nausea, and sometimes a vomiting. When an ulcer is suspected in the kidneys, the patient should abstain from acrid, sour, and salt diet: he should live on mild mucilaginous aliments, such as the broths of young animals, whey, milk, butter-milk, &c. Violent exercise must be avoided, chalybeate waters drank, and solutions of the mildest balsams occasionally taken.

To connect the discordant ideas of authors respecting the cure of ulcers is a difficult, and would be, we fear, an useless task. Yet it will afford some gratification to find them concurring in the outlines with the principles laid down.

By far the larger proportion of applications to ulcers are stimulants and tonics, though we often find the narcotic bitters and sedatives nearly allied to tonics employed. The lead which is of this kind is connected with the more refrigerant applications, which are often used both externally and internally, and the carbonic acid air, in all its varied forms, certainly belongs to this class.

Stimulants and tonics are always indicated when the inflammation is insufficient, the discharge thin or sanious, the edges of the ulcer pale and languid. Their kinds and forms are innumerable, and we find in our list

of the stimulants, mercurials, internally with the nitrated quicksilver externally, nitrated silver, cantharides, flammula jovis, vinous and spirituous embrocations, scarification, the actual cautery, sedum acre, the leaves of the persicaria, pisselaëum, petroleum, vegetable balsams, lime water, electricity, and heat, applied by hot coals, hot water, or even the rays of the sun, collected in the focus of a burning glass. *Histoire de la Societe Royale de Médecine*, Ann. 1776: Aitkin in the *Medical Commentaries*.

The tonic applications are the bark, zinc, copper, iron, arsenic, the arnica, alum, rhubarb, willow, and oak bark, and the amara calida, with which are connected the narcotic bitters, as the nux juglans and nux vomica, phellandrium, aquaticum, and myrrh, but these are apparently better adapted to the painful irritable sores. The use of the more direct sedatives and narcotics has not been limited, but camphor, opium, hemlock, foxglove, belladonna, tobacco, and similar vegetables have been employed. Lead has certainly not been used with any discriminating views, and as a tonic, as well as a sedative may be generally applicable. We fear, however, that it is too generally employed, and a work of no inconsiderable utility may be written on the abuse of lead.

The refrigerants are carbonic acid air in all its variety of forms, the vegetable acids, and fruits, nitre with camphor internally, cold applications, which might perhaps with more propriety be classed among the tonics. A miscellaneous list still remains of little real utility, but we must mention separately the gastric juice, saliva, carrots, and the charcoal. The first and last are said to be antiseptics; and may probably correct fœtor, as well as the carrot poultice.

These remedies are chiefly external applications; and internally mercury, either alone or joined with antimony, bark, and the sulphat of iron, are the principal remedies, assisted by the sudorific decoctions, which act in the manner already explained. When the ulcer is foul, the edges thick, and the whole circulation languid, the most active stimulants are required: and, instead of the cautious use of the mercurius nitratus ruber, which we mentioned under the irritable sore, the whole ulcer must be often filled with it. This may appear a severe remedy, and we start with horror at the directions of the older surgeons, who recommended hot turpentine, &c.; but when pain, as often happens, arises from an inefficient force to propel the fluids, whatever assists their action gives a pleasing, salutary warmth. It is only necessary, in such cases, to proportion the degree of stimulus to the state of irritability. Thus calomel to a languid syphilitic sore will give ease, and a patient can walk, even when a large proportion of the red precipitate has been applied to an ulcer, who could with difficulty rest on his leg before.

It will now, we think, be sufficiently obvious, that the frequency of ulcers in the lower extremities, and their obstinacy in resisting the best concerted plans, most commonly depends on debility of the vessels. If we look at the other directions for their cure, we shall find that they coincide in the same intention. Rest has been usually enjoined; and it was urged more strongly as it facilitated the action of mercury internally, which was always considered as the chief source of relief. Rest was undoubtedly proper in inflammatory

and irritable sores; and in the other kinds it will be obvious that it assisted the circulation in the lower extremities, and obviated one cause of debility, turgescence. The result, however, was, that though the ulcer healed, on returning to an active life it again recurred, and the relapse was rendered more certain by the extent to which the mercurial course was carried, and the debility which was the necessary consequence. To cure ulcerated legs while the patient was permitted to walk, was apparently a solecism; and, if we recollect rightly, Mr. Underwood was the first English author who suggested this plan. It was a very simple one, viz. the free application of escharotics, even the argentum nitratum, and a firm equable support by a steady bandage. There is no doubt of its being frequently successful, and no stronger proof can be afforded of the principles laid down in this article. We have not the means of readily ascertaining the priority of different authors' claims to this discovery; but we find it recommended by Mr. Else in the *Medical Observations and Inquiries*, iv. 29.; Richter's *Bibliotheca Chirurgica*, viii.; Theden *Neue Bemerkungen*, i. 18. The laced stocking was first employed, and is always useful; but, to succeed more perfectly, a roller must be applied to the foot, and the spiral turns on the leg receive a firm basis by first repeatedly crossing it round the heel and over the instep. In passing up the ankle, and small of the leg where the ulcer is usually situated, the folds must be firmly fixed, and full one third of the former turn covered by the succeeding one. The tightness must be regulated by the tenderness; but it should generally be so considerable as to be felt at first slightly inconvenient. When the surgeon arrives at the wound, he should press the edges as much as possible together, and endeavour to retain them in this state by the roller. Nature is thus saved considerable exertions in pushing forward the new granulations. We have been thus full on the subject, because it appears of the utmost importance; and we have little doubt in saying, that the most dexterous bandager will be the most successful practitioner in this branch. If any irritable pimples surround the ulcer, these must be removed previous to the application of the bandage by proper exsiccatives and astringents, or the union of the lead ointment, with the zinc, or a mild mercurial.

Mr. Baynton's method does not differ in principle from that just described. He advises us to bring the edges of old ulcers gradually together by strips of sticking plaster. This method not only diminished the discharge, but corrected the fœtor, and brought the callous edges to a level with the middle of the sore. The strip of plaster must be two inches in breadth, fixed on the side of the leg opposite to the sore, and each extremity drawn over it with as much firmness as the patient can easily bear. We thus obtain an equable pressure, bring the edges of the wound nearer, and by the tension give a support to the new vessels, as well as prevent accumulations, in the contiguous ones. By the pressure the callous edges are destroyed. Different slips are afterwards applied above and below, covering the edge of the former, and giving it support. Mr. Baynton advises the leg to be covered at least one inch below, and two above, the diseased part. We have found it convenient to reverse the direction. To secure the success of this method the leg should be previously

shaved, that the plasters may be removed with little irritation, as the discharges, which are at first considerable, may not be retained and become injurious from their acrimony. From this cause it is sometimes necessary to remove them twice in twenty-four hours; but, in general, one dressing in that period is necessary. The whole foot and leg are then covered with the bandage already described. If the parts are much inflamed, refrigerant applications, with rest, may precede this plan, and the part affected may be bathed around with cold water during its employment.

The great advantage of Mr. Baynton's plan is, that by the strip of plaster the edges of the sore are more accurately approximated and retained in their situation; the disadvantages, that the discharges are retained. The former method we have, therefore, adopted, till the sore is brought into a more manageable state, and the cure is evidently assisted afterwards by the strips of plaster. It is more convenient, however, to spread the adhesive plaster only within about two inches of each extremity of the cloth, as it is thus more easily renewed, and on calico, as it possesses elasticity. The bandage should be always of calico.

In either plan, walking may be permitted, and each is assisted by it. If the pain be at first considerable, it soon passes off; for, while the general circulation is assisted, accumulations are prevented.

For the pathology of ulcers, see Hoffmanni Opera Supplementum, ii. 2.; Hamberger Ulcerum Pathologia; Juncker de Abscessuum et Ulcerum indole diversa; Faustell de Ulceribus præcipue Chronicis; Geach's Tracts; Recueil des Pièces pour le Prix de l'Académie; Pott's Works; Heister's Surgery; London Medical Observations and Inquiries, iv. 347, &c.; Rowley, on the Cure of ulcerated Legs; Underwood's Treatise on Ulcers of the Legs.

ULCER ON THE TONGUE. Ulcers in different parts of the nose, nostrils, &c. have been so foul and obstinate as to be mistaken for cancers, yet they have been cured by repeated emetics and saline purgatives. They have therefore been attributed to irritations in the præcordia; nor is this surprising, when we reflect how frequently eruptions of the lips and soreness of the tongue accompany stomach complaints. Richter has related a striking case of this kind, where the ulcer of the tongue was highly fetid, and the edges swelled and hard; but it was effectually cured by purgatives, assisted by the topical application of astringent washes.

ULCERS IN THE TONSILS are by no means frequent, for as their excretory ducts are numerous, the mucus white, and the surface irregular, there is often on inflammation the appearance of ulceration, when in reality there is none. When ulcers are really formed, they may be seen after the use of an active gargle, and may be touched with mixtures of honey, alum, borax, muriatic acid, &c. according to their cause or attending circumstances. See TONSILLÆ.

ULCERS IN THE WOMB. Whilst a viscid or yellow fluid is evacuated, the ulcer is in a mild state; but when it becomes sanious, fetid, and attended with pain, a cancer has come on or is impending, and palliatives only can be proposed. In the milder kind the bowels must be kept lax with manna, tamarinds, and similar purgatives, an infusion of elder flowers in milk and water injected. In worse cases a strong decoction of

hemlock, with opium, may be used as an injection, and opium given freely to relieve pain.

U'LCUS DEPASCENS. See HERPES.

U'LE. See CAOUTCHOUC.

ULMARIA, (*quod uliginosis gaudet locis*). *Regina præti, barba capræ*, MEADOW SWEET, *spiræa ulmaria* Lin. Sp. Pl. 702. The leaves are slightly astringent, the flowers highly fragrant. As cattle refuse it, some dangerous qualities have been suspected; but they also reject many innocent plants if their fragrance is offensive.

ULMUS, (from the same). The **ELM TREE**, *ulmus campestris* Lin. Sp. Pl. 327, is a tall tree, covered with a rough, chapt, brownish, brittle bark, under which lies a white, smooth, tough, coriaceous one. In the spring, before the leaves appear, it produces imperfect flowers, followed by flat roundish capsules, containing each a single seed. The inner tough bark hath no smell, but on being chewed discovers a copious mucilage; the outer brittle bark is less mucilaginous. The elm bark has been given, in decoction, in herpetic and leprous eruptions; but, though it seems occasionally to assist the action of mercurials, it is alone unequal to the cure of either complaint.

The inner bark is chiefly employed, and if two ounces are boiled in a quart of water to a pint, it is agreeably mild and astringent. The bark in the spring is most advantageously stripped from the small, but not the smallest, branches; and in autumn from the branching roots. Half a pint is to be taken every evening and morning; but on the first use of this medicine the disorder may appear to be aggravated, as is often the case with mercurials and the most successful medicines. Nitre may be occasionally joined with it, if the eruptions have an inflammatory irritable base, and gentle purgatives must be frequently interposed.

Banau proposes the use of the elm bark in fluor albus, rheumatism, old ulcers, cancerous and scrofulous affections, tinea capitis, scurvy, &c. See London Medical Transactions, vol. ii. p. 302.; Medical Memoirs, n. 152.; Journal de Paris, 1783, n. 255.; and **LEPRA ICHTHYOSIS**, in this work.

U'LNA, (from *ωλενη*, *the cubit*), *cubitus*, *focile*, one of the bones of the fore arm. At its upper extremity are two processes, of which the posterior, called olecranon, is the larger. Its concave surface moves upon the trochlea of the os humeri, and into its upper part all the extensors of the cubit are inserted. The anterior process is not so large, nor reaches so high, but is sharper at its extremity, and therefore named coronoid. Between these a large sigmoid cavity is left, adapted to the trochlea of the os humeri; and on the other part is a cavity, where the extremity of the radius moves. The lower extremity of the ulna terminates in a very small head, which internally is received into the semilunar cavity of the radius, while, on its external side, there is a process called the styloid, from which a strong ligament is extended to the os pisiforme and unciniforme of the carpus.

ULNA'RIS. The **ULNAR NERVE**. See **CERVICALES**.

ULNA'RIS ARTERIA. See **CUBITALIS ARTERIA**.

ULNA'RIS EXTE'RNUS. See **EXTERNUS CARPI RADII**.

ULNA'RIS GRA'CILIS. See **PALMARIS LONGUS**.

ULNA'RIS INTE'RNUS is a long muscle situated on the outer part of the ulna, fixed by its upper part on the back side of the long or internal condyle of the os humeri, in that part of the olecranon next the condyle, along the upper half of the ulna very nearly, and to the middle common tendon of the profundus: it ends by a long tendon on the os pisiforme of the carpus, reaching also to the os unciforme.

U'LON, (ὑλον, from ὑλος, *soft*). See **GINGIVÆ**.

ULVA. See **ALGA**.

UMBE'LLA, (a dim. of *umbra*, a shadow). A receptacle producing many equal foot stalks, from one centre, and forming a plain surface. This is styled an universal umbel; but when it sustains others, the latter are called partial umbels.

UMBELLI'FEROUS. Plants whose flowers are disposed in umbels, as fennel, hemlock, parsley, &c.

UMBILICA'LIA VASA, (from *umbilicus*, the navel). **UMBILICAL VESSELS**, consisting of four ligamentary ropes: the uppermost running from the navel to the fissure between the two lobes of the liver, is the remains of a vein, which, in the foetal state, anastomosed with the vena cava hepatica, covered with the falciform process. The next is the supposed urachus, and the other two are the extremities of the umbilical arteries, which at the top of the bladder approach each other, and join the urachus. In the foetal state these vessels form the umbilical cord, by which the foetus is attached to the mother by means of the placenta. See **PARTURITIO**, and **PREGNANCY**.

UMBILICA'LIS RE'GIO, the middle external region of the belly on its fore part, reaching from an imaginary line drawn betwixt the lowest false ribs, to another imaginary line drawn between the two cristæ of the os ilium. It is divided into three parts, viz. the middle, strictly the umbilicalis, and the two lateral, called flanks.

UMBILICA'LIS ARTE'RIA, a continuation of the **HYPGASTRIC ARTERY**, q. v. ascending on the side of the bladder, and from thence to the navel. It is shrivelled in the adult state, as only useful in the foetal.

UMBI'LICUS. The **NAVEL**, (*quasi umbo ilicis*, the knot of the flank,) *omphalos*, the remains of the umbilical vessels in the middle of the belly.

Through the navel sometimes the urine in the case of calculus has been discharged; and water in cases of ascites, which seems to have suggested the idea of introducing the trochar through it in the operation of the paracentesis. In newly born children it is often destitute of skin, sometimes inflamed; and Dr. Gartshore (*Medical Communications*, ii. 5.) describes an epidemic erysipelas of this part, appearing at birth, and yielding to the bark. It sometimes suppurates and discharges pus; but the purulent discharges from the navel are more commonly owing to internal suppurations. Excrements, worms, hair, bones formerly swallowed, the menstrual blood, and even milk, have been discharged through it. Of its **HERNIA** we have already spoken, vide in verbo.

UMBI'LICUS MARI'NUS, *operculum cochleæ calatæ*, *cotyledon marina*, *acetabulum marinum*, *androsace*, *Mathioli*, *fungus patreus marinus*, a small oval shell, resembling the human navel; but properly the operculum of a shell fish, serving to close up the aperture in the shell of the buccinum, and for that purpose fixed to the an-

terior extremity of the body of the animal. It is convex on one side, and flat on the other: the convex side is plain, and white; the flat yellowish or reddish, and marked with a spiral line. It has been considered as an absorbent and astringent, sometimes as a diuretic, but not in present use. See **ANDROSACE**, and **COCHLEÆ**.

UMBI'LICUS VE'NERIS. See **COTYLEDON**.

UNCIFO'RME OS, (from *uncus*, and *forma*). The fourth bone of the second row in the wrist; it hath an apophysis shaped like a claw, from which its name is derived. See **CARPUS**.

UNE'DO POPYRA'CEA, (from *unus*). See **ARBUTUS POPYRACEA**, and **AMATZQUITL**.

UNGUENTA'RIA. See **NUX MOSCHATA**.

UNGUE'NTUM, (from *ungo*). AN OINTMENT, differs from a plaster only in consistence. The fresh leaves of plants are usually boiled in lard; but the extract retains little of their virtue, with a very few exceptions, as, for instance, the Sabine ointment. The names are most commonly taken from the substances.

UNGUE'NTUM LILIORUM. See **CRINOMYRON**.

UNGUE'NTUM APOSTOLORUM. See **APOSTOLORUM UNGUENTUM**.

UNGUE'NTUM MARTIATUM. See **MARTIATUM UNGUENTUM**.

UNGUE'NTUM AD VESICATORIA. See **CANTHARIDES**.

UNGUE'NTUM HYDRARGYRI NITRATI. See **TRACHOMA**.

U'NGUES, (from *οὔχος*, a hook). The **NAILS** are continuations of the cutis vera, or rather of the nerves, which supply it. While connected with the cutis they are acutely sensible; but, on the connection being destroyed, they become a dead animal matter, wholly insensible. In this, as in their substance, they resemble horns of animals, and are composed of several planes of longitudinal fibres united together, which end at the extremity of each finger, and are all nearly of an equal thickness, but of different lengths. The principal use of the nails is to give a support to the arteries and nerves, in which the sense of touching resides.

The nails, like the hair, are said to grow after death, but with as little foundation from observation. They partake of the diseases of the vital rather than the simple solid, and are weak and brittle in cachectic habits, long and bent in phthisical ones. Their growth is often irregular, and, in some instances, they have been elongated to an immoderate extent, while in hæmiplegia their growth is said to have been wholly checked. A singular and almost incredible instance is recorded in the *Journal de Médecine* of a nail growing on the second phalanx after the first had been separated, xxvii. 177. Gooch has recorded an habitual decay of the nails, and they have been separated after malignant fevers and by terror from the hand with the cuticle, the fact which has led to the supposition that they are derived from it; but the cuticle is insensible, and the nail is acutely sensible, like the horns of animals, at its origin, independent of the subjacent skin.

U'NGUIS, and **U'NGULA**, a collection of matter in the pupil of the eye, in the shape of a nail. It is described as a film formed on the external part of the eye, extending over the pupil, which, when red, is called *pannus*, when white, *albugo*. When pustules appear on the cornea of the eye, it is not called *unguis*,

but PHLYCTENE, q. v. When red the vessels are divided near the great angle of the eye, and the film in consequence shrivels, and may be easily removed. See also PTERYRIGION and ALBUGO. Bell's Surgery, vol. iii. p. 300.

The name of that kind of articulation now called suture. In botany it is the white and inferior part of the leaves of roses, &c. sometimes called the claw.

U'NGUIS O'SSA, (from the resemblance to a nail,) *lachrymalia ossa*, are two thin bones, very brittle, placed at the inner canthi of the eyes, covering some of the sinus ethmoidalis, and properly part of the os ethmoides.

Their surface is smooth and hollow, divided by a ridge; the hind cavity forms a portion of the orbit, and the fore part is a perpendicular canal which contains the lachrymal sac and duct.

U'NGULA. See UNGUIS.

U'NGULA CABALLI'NA. See TUSSILAGO.

UNICO'RNU, *ceratilis, cornu unicornu, cornu et ebur fossile, monoceros*. The existence of the unicorn is highly problematical, though Sparmann has collected some traditions which seem to rescue it from the class of unfounded fables. What is generally styled the horn of the supposed beast belongs to a species of chetodon, a cetaceous animal; but the name is more commonly given to the fossile bones of some large animal, either the mammoth or the megalatherium. They were formerly employed as sudorifics and astringents, and more lately on the continent as absorbents, internally and externally, in the troublesome tettery eruptions of children, for which flour and cerusse are more commonly used.

UNIFLO'RUS, (from *unus*, and *flos*,) bearing but one flower.

UNIFO'LIUM, (from *unus*, and *folium*,) bearing but one leaf. See MONOPHYLLON.

UNILOCULA'RIS, (from *unus*, and *loculus*, a capsule with one seed shell.

UNISPE'RMUS, (from *unus*, and *sperma*, bearing but one seed.

UNIO'NES, (from *unus*,) because only one is found in a shell. See MARGARITÆ.

UPMINSTER WATER, rises near Brentwood in Essex, about twenty-two miles from London. It is clear, bright, and sulphureous, retaining, according to Dr. Rutty, its strong sulphureous smell after being carried to Dublin in bottles. From a gallon of this water he obtained 132 grains of solid matter, composed of insoluble earth, vitriolated magnesia, and natron. It is purgative and diuretic in its operation, and is administered in a morning, from one pint to two quarts.

UPOSTA'SIS. See EPISTASIS.

UPSIOI'DES, (ὐψιλοειδής). See OS HYOIDES.

U'RACHUS, (from *urine*, and *εχω, to contain*). In the fetal state the urine was formerly supposed to pass from the bladder into the allantois, through the urachus, which after the birth shrivelled and became a ligament. See INVOLUCRA.

URANOSCO'PUS, (from *ουρανός*, and *σκοπεῖν*,) *cæli spectator*, sometimes *priest*, and improperly confounded with the callionymus. It is the *u. scaber* of Linnæus, and the name of a sea fish, whose eyes are placed so upon the head that it looks directly to the sky. Its bile is said to be more plentiful than that of

any other fish, and by Galen recommended in affections of the eyes and ears. Castelli.

URCE'OLA, URCEOLARIS, URCEOLUS VITREUS, (from *urceolus*, a small pitcher,) so named from its uses in scouring glazed vessels. See PARIETARIA.

UREA; URIC ACID. See CALCULUS and URINA.

URE'DO, (from *uro*). A BLAST. Also the name of a particular headache, an instance of which is related in the Philosophical Transactions, June 1668. See URTICARIA.

URETE'RES. URETERS, (from *σπον, urine*). See RENES.

URETE'RICA. A suppression of urine from inflammation in the ureter. See ISCHURIA.

URETEROLI'THICA, (from *ureter* and *λίθος*). A suppression of urine from a stone in the ureter. Videatur idem.

URETEROTHROMBOI'DES, (from *ureter*, *θρομβος*, and *ειδος*). A suppression of urine from grumous blood in the ureter. Vid. idem.

URETEROPHLEGMA'TICA, (from *ureter*, and *φλεγμα, phlegm*). A suppression of urine from pituitous matter in the ureter. Vid. idem.

URETEROPY'ICA, (from *ureter*, and *πυον, pus*). A suppression of urine from purulent matter in the ureters. Vid. idem.

URETEROSTOMA'TICA. ISCHURIA, (*ureter*, and *στομα, mouth*). A suppression of urine from obstruction in the lower orifice of the ureter. Vid. idem.

URE'THRA, (from *σπον, urine*,) *meatus urinarius*, a membranous canal running from the neck of the urinary bladder, through the prostate gland, where it is styled *urethra prostatica*, after which it is much dilated, and this portion is its *bulb*. A cutaneous eminence called *caput gallinaginis* or *verumontanum* is placed in the bulb, and in it are the apertures from the prostate gland and testis, so that the fluids from each are here united. It then passes between the cavernous bodies of the penis, so far as its extremity, where it ends by a longitudinal orifice in the anterior part of the glans. The inner membrane of the urethra, or passage for the urine from the bladder, is a continuation of that which lines the bladder, very smooth and sensible, in which are several lacunæ, the mouths of the mucous glands, the seat of gonorrhœa. In women the urethra is wider than in men, and its length is only from an inch to an inch and a half. A stone fixed in some part of the urethra (see CALCULUS) produces great pain, inflammation, tumefaction of the parts, always a partial, frequently a total, suppression of urine. When long neglected, the suppression and tumefaction terminate in a rupture of the urethra, and the urine escapes into the contiguous cellular substance, producing very troublesome swelling in the body of the penis, as well as in the scrotum, and through the whole course of the perinæum. When a stone has been long fixed at one part without yielding, and when the pain and inflammation produced by it are considerable, a surgical operation is necessary for removing it; but in the incipient stages more gentle means may be first employed. We have rendered it highly probable that the urethra is subject to spasm, and to relieve it general or topical bleeding, according to the patient's strength and habits, will be necessary. A quantity of warm oil should be repeatedly injected

into the urethra, to lubricate the passage; the patient should be immersed in a warm bath, anodyne liniments rubbed in on the canal, and a full dose of opium at the same time given. When the parts are thus relaxed, some attempt should be made for extracting the stone. To this end, the surgeon should at first endeavour by very gentle pressure to push the stone forward along the course of the urethra; and in this manner large stones may be brought off, which might otherwise require a very painful operation. When the stone fills up the urethra, or will not pass, it will be necessary to proceed to the operation, which is performed by cutting upon the stone, and extracting it either with a scoop, or with a pair of small forceps, as in the original operation of lithotomy by cutting on the gripe. When the stone is fixed in the urethra near the neck of the bladder, the patient, laid on a table, must be secured as for the operation of lithotomy; an assistant suspending the scrotum and penis. The surgeon, after oiling the first and second fingers of his left hand, should introduce them into the anus, in order to press firmly upon the parts immediately behind the stone, which will not only enable him to lay it bare with more ease, but prevent it from being pushed into the bladder by the pressure of the knife. An incision ought to be next made through the common integuments and urethra, so as to lay the stone completely bare, which may now be turned out by a due degree of pressure applied by the fingers in the rectum, with a scoop or a pair of forceps. The subsequent treatment is the same as after the operation of lithotomy. When the stone hath passed further into the urethra, in order to extract it, the skin should be drawn as much as possible behind it, and the stone being now secured in its situation by pressure, a longitudinal cut must be made directly upon it through the urethra, of a sufficient size to allow of its easy extraction with either instrument mentioned. The edges of the wound should be completely cleared of sabulous particles, and the skin replaced in its natural situation, which will completely cover the wound in the urethra which thus usually heals by the first intention. If the stone fixes near the point of the penis, as is sometimes the case, if so near as to be observed by the eye, it may be frequently taken out with a pair of small forceps: and to facilitate the extraction, when it cannot be otherwise effected, the urethra may be somewhat dilated from its extremity with the point of a scalpel. But if we fail in this attempt, an incision must be made upon the stone where the urethra is covered with skin. Soft dressings should be applied to the wound, and, when the cure is nearly completed, a hollow bougie, a short silver tube, or a small catheter of the elastic gum, introduced into the urethra, to preserve it of a proper size. The worst situation of a stone is just below the scrotum, for if it makes its way into the scrotum, or it be necessary to make an opening into it, the collections of urine which accumulate occasion considerable distress. When a stone therefore is discovered in this situation, it must be carried farther if possible into the urethra, or pushed back into the perinæum by means of a staff. If either attempt is impracticable, and it is necessary to extract the stone, an incision must be made into the urethra, beginning the wound at the under part of the scrotum immediately to one side of the septum, and continuing it upwards till the stone is

distinctly felt, when it may be laid bare and extracted as above directed. The dressings after the operation must be conducted so as that the sore may heal first at the bottom, for otherwise the parts below will be filled with matter, perhaps with urine, and very troublesome sinuses formed. In females, the urethra is short, and dilates readily, so that stones are rarely detained in it, or may be turned out by passing the end of a blunt probe behind them, and pulling them forward. If this does not succeed, the end of the urethra may be divided a little way so as to admit the introduction of a pair of forceps. See STRICTURE, &c.

The urethra in new born children is sometimes imperforated, and requires an operation: it is sometimes obstructed by caruncles and excrescences, independent of stricture, though the existence of caruncles has been denied, particularly by Camper (*Demonstrationes Anatomico Pathologicae*, ii. 11) and by Saviard (*Nouveau Recueil de Observations*, 74). In general, however, it is admitted, and they must be treated like strictures. There are sometimes considerable hæmorrhages from the urethra, and inflammation is no uncommon attendant, not only from gonorrhœa, but from the means employed to destroy caruncles and strictures. Little bones, coagula of blood, fragments of a bougie, and even needles, have occasionally obstructed it, and the means of removing these will be obvious from what we have said respecting calculi. Spasm is also relieved by the means described in that part of the article, to which we may add, ether, camphor, and often wine in a large quantity. Spasm frequently arises from increased sensibility of the urethra after gonorrhœa, and is then relieved by opium, hemlock, often by electricity. See Bell's Surgery, vol. ii. p. 140—188.

URETHRELMINTHICA, (from *urethra*, and *ελμινς*). A suppression of urine from worms in the urethra. See ISCHURIA.

URETHRITICA, (from *αρεθριτις*, an inflammation of the urethra,) from inflammation in the urethra. Videatur idem.

URETHROHYMENO'DES, (from *urethra*, *ύμη*, a membrane, and *ειδος*, likeness,) from a membrane obstructing the urethra. Vid. idem.

URETHROLITHICA, (from *λιθος*, a stone,) from a stone in the urethra. Vid. idem.

URETHROPHLEGMA'TICA, (from *φλεγμα*, *phlegm*,) from mucus obstructing the urethra. Vid. idem.

URETHROPY'ICA, (from *πυον*, *pus*,) from pus. Vid. idem.

URETHROTHROMBOIDES, (from *θρομβος*, *grumous blood*, and *ειδος*, likeness,) from grumous blood. Vid. idem.

URI'NA, (from *ουρον*). The URINE, *adsamar*, *albor*, *alcolita*, is a fluid secreted from the blood by the kidneys, conveyed by the ureters to the bladder, and discharged through the urethra. When suppressed, a portion is usually absorbed, and often passes through the pores of the skin. The sudden discharge of some fluids after swallowing them hath led to a suspicion, which anatomy does not countenance, that there is a shorter passage to the bladder than through the kidneys. Of the appearance of the urine as a source of prognostic, particularly at the crisis of diseases, we have already spoken (see PROGNOSTICA), and need now only add,

that when after standing a cloud is diffused in the urine, it was usually styled *nubes*, or *nubecula*; when the cloud sinks a little, leaving the urine above somewhat transparent, *enœoremata*, *sublimationes*, *suspensa*, or *sublimia*; and when the whole cloud falls to the bottom, in a thick sediment, *subsidentia*, *subjectia*, and *sedimenta*. When it drops a white mucus, or purulent sediment, it is named *puoturia*.

The recent urine of a healthy person is a clear, yellow fluid, varying in specific gravity from 1.005 to 1.033, according to the quantity of its solid contents, or to the proportion secreted. Its smell is peculiar and well known; its taste saline and slightly acidulous, so as to redden the blue vegetable juices. After standing for some hours, it becomes slightly turbid, depositing a red matter, which is chiefly the *uric acid*; the *uric oxide* of Dr. Pearson. When exposed to a gentle heat, the urinous odour is increased, the urine is covered with a pellicle, in which many globules of carbonic acid gas are entangled; the colour gradually becomes a dark red, and a whitish flocculent coagulum is soon deposited, the steam becoming more decidedly ammoniacal in its smell. It now turns syrup of violets green; for, as may be expected from its smell, a quantity of ammonia is formed or developed, and the phosphat of lime, held in solution by the excess of acid, is deposited with some albumen in a flocculent form. If the evaporation is continued till the fluid has acquired the consistence of a syrup, decanted from its sediment, and set in a cold place, brown, dirty crystals are deposited. These may be purified in the usual ways of repeatedly dissolving, filtering, and crystallizing; but more quickly by digesting with alcohol, which will dissolve the extractive matter, and the urea, without the saline impregnation.

The salts, thus formed, are the muriats of potash and soda, phosphats of soda, and of soda with ammonia, formerly styled *microcosmic* or *fusible salt*. If the evaporation is slowly and carefully conducted, the salts separate nearly in the order mentioned. The simple phosphat of soda may be distinguished by the form of the crystals, which are four-sided prisms, by efflorescing and running into an opaque glass, when melted. Mr. Cruikshanks finds, that thirty-six ounces of healthy urine yield about one of solid contents; of which the muriatic salts are estimated at about three drachms, the alkaline phosphats at three drachms and fifty grains; the phosphat of lime and uric acid, deposited, at twenty-five grains, and the extractive matter or urea at three drachms forty grains.

Urine also contains, according to Proust, a resinous matter, and a small proportion of sulphur, which is chiefly discovered by the urine blackening a silver dish in which it is evaporated. Minute chemistry has detected some other acids, particularly the *benzoic*, and the pink coloured sediment, styled the *rosaceous acid*; but these are of little importance in our present views.

The urea requires a more particular attention. We have styled it, with modern chemists, an extractive matter, slightly acidulated; and it yields, on distillation, carbonated ammonia. With nitrous acids, a nitrous gas is separated, and crystals deposited of a flat rhomboidal shape, and a greasy feel, resembling the acid of borax. On examination, it appears to be neither oxalic nor phosphoric acid. This salt when heated melts, and

evaporates in white smoke, and a reddish flame, similar to nitrat of ammonia.

When the urea is separated by its solution in alcohol, it takes up a small portion of benzoic acid, though too small to affect its properties. The first crystallization is in imperfect quadrangular plates, of a brilliant yellowish white, containing a little muriat of ammonia. In this state it is hard, granular, highly fetid and deliquescent. When distilled alone, the benzoic acid first rises into the neck of the receiver. Carbonate of ammonia, and nothing else, follows. The smell in the vessels resembles highly putrid fish, and the residue is blackish and dry. In a higher temperature, white fumes of muriated ammonia rise, and the coaly residuum resembles, in smell, the prussic acid, when moistened. Urea is soluble in water, and continues for a long time without any change, unless some albuminous matter is added, when it ferments, and acetite of ammonia is produced. This solution, on distillation, is almost wholly changed into carbonat of ammonia. Caustic fixed alkalis dissolve the urea, disengaging a large portion of ammonia, and leaving the benzoic, acetous, and carbonic acids. It changes the forms of the crystals of other salts, so that muriat of soda crystallizes in octoedra, and muriat of ammonia in cubes.

The urine of a horse contains no phosphoric and no separate benzoic acid; but benzoat of soda only: that of the cow contains no soda, phosphoric salts, or benzoats; that of the camel, carbonat, sulphat, and muriat of potash only with the urea; that of the rabbit, sulphur, without phosphoric or benzoic salts; that of the Guinea pig contains no urea.

In diseases the urine is sometimes of a black colour; but this is not always a dangerous symptom. The colour has been attributed to eating grapes, or damascene plums; sometimes, as by Hippocrates, to black bile. The greater number of authorities are certainly in favour of the little danger to be apprehended from black urine, and unless in fevers of the asthenic kind, with highly putrid symptoms, we have not found it formidable. The urine is sometimes calcareous when discharged, like the urine of a horse, after hard riding, and sometimes milky, or, as it is styled, chylous. The first seems to have occurred after long fits of gout, and sometimes in cases of rachitis or mollities ossium. The second is often purulent, sometimes a mucous discharge, though occasionally said to be an admixture of chyle. Theden mentions white urine "from mucous hæmorrhoids of the vesica." Urine, however, often contains a very extraordinary proportion of gelatin and albumen, which frequently attend the dropsies that follow scarlatina or putrid diseases. We have seen that this portion of the blood is chiefly affected in severe fevers, and probably from its altered qualities, is thrown out, while the attenuated fluids pass more freely through the exhalents. In dyspeptic cases also the urine is said to contain a large portion of albumen combined with it, which may be precipitated by tanin, while, in diseased liver, there is no albumen, and the urine is highly coloured, depositing a rosaceous sediment. Highly red urine usually attends inflammatory fever and inflammation of every part of the urinary organs.

Pale urine is a common attendant in hysteria, and Berthollet has observed that previous to a fit of gout the urine contains a smaller proportion of the urea, and

often none. We have seen urine of this kind attend low fevers, and the fever has diminished on the return of water possessing the usual colour and smell. We have discovered the amendment by looking at the water in the window above, before we had seen the patient; but were unfortunately unable to produce it until nature chose to determine the urea, &c. to the kidneys. In gout the urine is pale, and the conclusion of a fit is determined by a very copious discharge of the red matter.

De Haen mentions a case of fetid urine (*Ratio Medendi*, pars. xii. 170.), which was highly putrid, and "did not effervesce with acids." It is sometimes scaly or branny from weakened vessels, sometimes oily, occasionally of a violet smell, which, in one instance, followed after taking Peruvian bark; but is a general effect of eating asparagus. It is coloured occasionally by rhubarb, by mithridate, and by bile (*Bianchi Historia Hepatis*, 136). We have already mentioned that we have seen the urine green from the bile, when it has contained an excess of acid.

The numerous stories of foreign bodies found in the urine are calculated rather to excite our wonder than command our assent. We can admit, that substances introduced into the urethra may appear to be discharged with the urine, that hydatids may be formed in the bladder or kidneys, or that worms, occasionally solid substances, forming abscesses between the rectum and bladder, may find their way into it. Portions of decayed kidney may also be sometimes discharged in this way; but bones, pills, pieces of iron, stones of fruits, seeds of various kinds, leaden balls swallowed, parsley roots, needles, ants, little fish, &c. cannot be formed in the bladder, nor pass through the minute vessels of the kidneys. In fact, except in the modes just mentioned, no such substances can reach the bladder, and, however respectable the authority of the relater, we must arrange them with St. André's rabbit woman. As this censure was to follow, we have avoided mentioning the names of the authors.

When the urine is retained by any obstacle in the bladder, it sometimes passes out by unaccustomed passages, which we shall notice in the following article (*UROPLANIA*); but, when no escape is obtained, the load is gradually lessened by a portion being taken up by the absorbents, and carried generally to the skin. After some time the distention gives little pain, and the patient sinks in a comatous state subsequent to a slight delirium, from a mortification of the vesica. The delirium and the coma have been attributed, with little reason, to the effusion of the absorbed urine in the ventricles of the brain. There is no evidence of such effusion, and the distended bladder, pressing on all the branches of the descending aorta, will sufficiently account for all the effects.

The *urine casters*, a sect of quacks almost within our own recollection, had a peculiar jargon, which it is not necessary to attend to, and, in our references, we shall confine ourselves to the more judicious observers of ancient and modern times.

For the analysis of urine, see Fourcroy and Vauquelin, *Annales de Chimie*, xxxi. xxxii.; Cruickshank's *Experiments apud Rollo on Diabetes*; and *Philosophical Magazine*, vol. ii. Proust *Annales de Chimie*,

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xxxvi.; Fourcroy *Connoissances Chimique*, x. 181.; Pearson's *Experiments in the Philosophical Transactions* for 1793.

Willisii *Opera* i. 223.; Bellinus de *Urinis*; Stahl de *Uromantia et Uroscopiae abusu tollendo*; Alpinus de *Præsagienda vita vel Morte*; Boerhaavii *Institutiones cum Commentariis Halleri*.

BLOODY URINE. *Hæmaturia*, (from *αἷμα*, *sanguis*, and *ουρον*, *urina*). Hippocrates observes that if pure blood is copiously and suddenly discharged without pain, it flows from the kidneys; but when the quantity is small, of a blackish colour, with pain, or heat, or both, during or after the discharge, its source is the bladder. The symptoms of vessels ruptured in the bladder are intense pains, fainting, difficulty of breathing, a low, small, frequent pulse, nausea, anxiety, and cold sweats. A stone in the bladder is sometimes the cause: and in the *Edinburgh Medical Essays*, vol. vi. it was produced by a worm. Cælius Aurelianus speaks of a species of hæmorrhoids discharging blood with the urine; and it is sometimes observed that, on their cessation, blood passes by the urethra. Indeed Hoffman describes vessels around the sphincter of the bladder opening as hæmorrhoidal ones, and Theden speaks a similar language, when he mentions the source of mucous discharges with the urine. Strong purges and highly stimulating diuretics are often the reputed causes; but this hæmorrhage rarely happens from the former, and indeed not frequently from the latter, unless the management has been rash and indiscreet. It most commonly proceeds in old persons from debility, sometimes, in full habits, from plethora. In each case it is a troublesome and obstinate, but not a dangerous disease; and, as it flows slowly and in small quantities, it is not easy to say from what part of the urinary tract it proceeds. Florid blood has been supposed by modern authors to come from the bladder, what is dark and grumous from the kidney. As a symptom, it frequently attends calculus in the bladder. Bloody urine sometimes also arises from poisons, sometimes from the rupture of a vessel, in consequence of a strain, a blow, or concussion.

The most dangerous hæmaturia are from ulcers and from wounds of the kidneys or bladder; but those from the kidneys, or the sphincter of the bladder, are sometimes critical and salutary, returning at certain intervals: yet, though at first salutary, from their supplying other evacuations, they are not without danger from the debility induced.

Bleeding is only requisite in the young and plethoric, when attended with pain, and arising from a strain, &c. In these circumstances, rest, cooling saline purgatives, camphor with nitre, and, after the bowels are cleared, with Dover's powder, are the most effectual remedies. The drink should be diluting and mucilaginous, the diet low, the laxatives repeated every day, or every other day, according to their effects. When the bloody urine proceeds from suppressed hæmorrhoids, we are told to bleed, and give aloetics: but we thus establish two injurious habits instead of one, and it will be better, by a judicious plan of diet and medicine, to destroy the original accumulations in the rectum.

Even in old people, nitre with camphor will be found useful; and, if combined with, or originating from, fulness, regular evacuations by stool, a regulated diet,

and steady moderate exercise, should constantly be employed. With these assistances we have never found such hæmaturia dangerous; on the contrary, they have sometimes appeared salutary. We have not found in any instance the bark or the uva ursi particularly advantageous. See Hoffmanni Rationalis Medicinæ Systema; Cullen's First Lines, vol. iii. p. 67, edit. 4.; London Medical Journal, vol. iv. p. 282.; Sydenhami Opera.

INCONTINENTIA URINÆ, enuresis, (from *ἐνὺρσις*, *urinam non contineo*), "an involuntary flux of urine without pain," arises from the weakness of old age, from palsy, a relaxation of the suspensory ligament of the bladder, from hard labour, the abuse of acidulous mineral waters, excess of venery, accumulations in the head occasioning insensibility, narcotic poisons, difficult labours, lithotomy, violent straining to make water, coughing, epileptic paroxysms, diseases of the medulla spinalis, or the sphincter vesicæ. These are causes of the atonic species.

When from irritation, it is often produced by a stone in the bladder, by the pressure of a child's head in the latter months of pregnancy, a scirrhus of the prostate, "a bagpipe singing in the nose;" or the sound of a lyre, which we add in support of Shakspeare's pathology, from the Ephemerides Naturæ Curiosorum, Dec. 1. i. 134.

The means of relieving the latter species depend almost wholly on the causes. When the disease proceeds from pure debility, the bark, the catechu, and the Peruvian balsam have been employed, though seldom with considerable effects. Blisters to the sacrum, cold bathing, cold water dashed against the sacrum, are more useful; but the most serviceable medicine is the cantharides. Twenty drops of the tincture slowly, but daily increased, until some pain is felt at the neck of the bladder, frequently relieve, and often check the disease for some years (Smyth in the Medical Communications, ii. 34). This author, however, directs the cantharides in substance. Lange recommends the application of the tincture of cantharides to the perinæum; and a blister, to this part, is often an excellent auxiliary. See Hoffmanni Opera; London Medical Observations and Inquiries, vol. ii. and iii.; Bell's Surgery, vol. ii. p. 163.; London Medical Journal, vol. vi. p. 417. vol. vii. p. 416.; White's Surgery, p. 378.

URINÆ STIMULATO'RES. See ACCELERATO'RES URINÆ.

URINARIA, (from their diuretic qualities). See LINARIA; DENS LEONIS.

UROPLANIA, (from *ουρον*, *urine*, and *πλαναω*, *to wander*). A discharge of urine through unaccustomed passages.

Urine, when retained, finds a way through many neighbouring organs, and the orifice, originally formed by inflammation and suppuration, soon becomes callous at its edges, in medical language *fistulous*. The abscess is most frequently formed in the perinæum, at the root of the penis; sometimes at the bulb, or in the course of the urethra; through the loins, the rectum, and almost every part around. It can only be cured by opening the natural channel, the urethra, by bougies, either simple or armed, catgut, &c. The edges of the fistulous sore, in that case, if touched with a caustic,

or cut off by a knife, soon unite, and the patient is cured. The urine, we have said, also sometimes passes through the skin, or the want of secretion is imperceptibly supplied, as there are instances of persons not discharging any for six weeks; one case of which occurred within our own observation, and another is described by Dr. Senter in the Philadelphia Transactions.

Urine has certainly sometimes passed through the umbilicus, as has been said, through a pervious urachus (Act Euditorum, an. 1760, 265, Blanchard Collectiones Physico Medicæ, cent. iv. 19.); has been effused into the cellular substance of the scrotum, been collected in the peritonæum, and discharged by the vagina, and even by the mouth (Valisnieri Opera, iii. 338). In the monsters who exhibit themselves as shows, the ureters terminate abruptly, with open mouths just below the navel.

URORRHŒ'A, (*ουρον*, and *ῥεω*, *to flow*). The urine passing from the urethra through some erosion of the perinæum. See UROPLANIA.

URTICA, (*ab urendo*). The COMMON NETTLE, *acalephe*; *adice*; *cnide*; *urtica dioica* Lin. Sp. Pl. 1396, has been styled an astringent and diuretic, useful in calculous complaints, hæmorrhages, scurvy, gout, jaundice, &c. In spring the young shoots are boiled and eaten by the common people as antiscorbutic; the reason of which we have endeavoured to assign (see SCORBUS). When applied to the skin their stings produce strong irritation, and they have consequently been used externally to stimulate paralytic limbs, and in other cases of torpor or lethargy.

URTICA ALBA, INERS, MORTUA. See LAMIAM ALBUM.

URTICA INERS MAGNA FŒTIDISSIMA. See GALEOPSIS.

URTICA LACTEA. See LAMIAM MACULATUM.

URTICA MARI'NA. SEA BLUBBER. A round compressed pellucid substance, resembling jelly, with red veins interspersed; the *medusa* of naturalists, which derives its present name from the pricking pain felt on handling it. The animal has no sting; but the caustic juice seems discharged at will. It is singular, also, that this animal can apparently render itself heavier at pleasure. It is the *ortia de mer de Dicquemare*, not used in medicine, but probably poisonous. See Journal de Physique, 1784.

URTICA ROMANA, urtica pillulifera Lin. Sp. Pl. 1395. The seeds were formerly used in hectic, but are now neglected.

URTICATIO, (from *urtica*). Whipping with nettles, a remedy in palsy.

URTICA'RIA, URTICA'TA, (from *urtica*), *febris urticata*; *uredo*; *purpura urticata*, the ACUTE NETTLE RASH, an *exanthema* defined by Dr. Cullen *febris amphemerina*, in which red spots, resembling the stinging of nettles, break out on the second day, commonly disappearing in the day time, and returning at night with fever, and after a few days wholly falling off in very minute scales. It is the *species altera erysipelatis* of Sydenham, the *scarlatina urticata* of Sauvages. Dr. Cullen observes that there is a disease called by the English the nettle rash, supposed to be the *urticaria*; but that described by Dr. Heberden, in the London Medical Transactions, and such as he has often seen, is totally

different, he adds, from the urticaria of nosologists; for it is chronic without fever, and rather belongs to the class of impetigines. In a former edition of the Synopsis he had asserted that the urticaria was contagious; but that opinion he finds, from experience, is erroneous. It is a troublesome, but mild disease, seldom requiring the use of remedies, but an antiphlogistic regimen, in a moderate temperature. The itching is sometimes relieved by bruised parsley, by camphorated vinegar or tincture of opium. Opium internally removes irritability. When acute, as it sometimes is, the eruption appears to be critical. Cullen's First Lines, edit. iv. vol. ii. p. 252; Heberden in the Medical Transactions; Saalman Descriptio Febris Urticæ; Chemnitz de Essera Arbum; Koch Febris Urticata.

U'RUCU. See ACHIOTL.

U'STIO, (from *uro*, to burn). See CALCINATIO.

UTERA'RIA, (from *uterus*, the womb). UTERINE or HYSTERIC MEDICINES. Medicines suited to cure diseases of the uterus; a term much too general, and now rejected.

UTERIFO'RMIS ABSCE'SSUS, (*uterus*, and *forma*, likeness). See CÆDAMASARIA.

U'TERUS, (from *uter*, a bottle). The WOMB, *gone*, *ager naturæ*, *hysteria*, *matrix*, *metra*, *utriculus*, *delphys*, *gaster*, *et eugeos*; situated between the bladder and the rectum, covered with the peritonæum, which comes from the back part of the bladder ascending over the fore part of the uterus, and its fundus, down the posterior side, and thence to the rectum. On each edge of the uterus, this position of the peritonæum forms a broad duplicature, which is extended on each side, more or less directly, to the adjoining lateral parts of the pelvis, forming a sort of membranous partition between the anterior and posterior parts of the cavity of the pelvis, and then is continued loosely with the peritonæum on its sides. These two duplicatures are called the ligamenta lata, the laminæ of which are connected by a cellular membrane, and contain the tubæ Fallopiæ, the ovaria, part of the spermatic vessels as well as those which go to the uterus, the ligamenta rotunda, and the nerves. The uterus is somewhat triangular in its shape; the fundus is almost a straight line, and the two sides approaching toward the cervix: it then grows larger, and is narrower again at the os tincæ, which is received into the vagina. Where the uterus grows broad beyond the neck, Moschion calls it *omos*. In the unimpregnated state it is thicker at the cervix than at the fundus, as at the former it exceeds, and at the latter usually falls short of half of an inch. The inside of the uterus is smooth; at the upper part very vascular, and below, white. The cervix uteri, on each side, is divided into two lateral parts by a ridge, from whence the fibres go off in a pinnated manner. At each angle of the fundus we may introduce a bristle into the beginning of the Fallopian tubes, which proceed in a tortuous direction to the ovaria. (See OVARIA and TUBÆ FALLOPIANÆ.) The uterus is furnished with blood vessels from the hypogastrics and the spermatics. The spermatics rise as in the male, and when they reach the psoas muscle, they pass between the duplicatures of the ligamenta lata, to the tubæ Fallopiæ, the ovaria, and the uterus. On the sides of the uterus, the hypogastric branches of the iliacs pass to the vagina, in a

serpentine direction anastomosing with the spermatics, which are mostly above; the hypogastrics below.

The veins of the uterus are large, and admit of considerable distention; but in the impregnated state, and in the intervals of menstruation, they are of the size of the arteries. They accompany and anastomose with the arteries, bearing the same respective names: the former proceed to the vena cava on the right, and to the emulgent vein on the left; the latter to the internal iliac. The lymphatics of the uterus are particularly large and numerous: those which follow the course of the hypogastric vessels pass into the gland of the iliac plexus; the spermatic to the glands near the origin of the spermatic artery.

The nerves of the uterus arise from the lower mesocolic plexus, and from two single, flat, circular ganglia behind the rectum: the ganglia are joined by branches from the sacral nerves. The nerves of the ovaria are from the venal plexus. From its intimate connection with the ganglionic system, it is in no instance subservient to volition.

The uterus is lined by an acutely sensible membrane, derived from the villous coat of the vagina, which, when it arrives at the uterus, is beautifully corrugated in longitudinal rugæ, which lessen as they approach the fundus, and at last disappear.

The muscular fibres of the uterus are compact in their unimpregnated state, and loose in the pregnant. From the expanded vessels they seem to lose their cohesion. Their direction is seldom regular; but in general, as in all hollow muscles, circular, and more distinct, often more regular about the fundus.

The diseases of the uterus almost elude enumeration. The *inverted*, the *reverted*, and the *retroverted* uterus have occurred in the obstetric arteries, particularly PREGNANCY and PARTURITIO, q. v. Polypi, scirrhi, and cancers of the uterus do not differ in their treatment from the same diseases in other parts, except that the first may be removed by ligatures which are dexterously conveyed by means of an instrument round their neck. Of *cancers* and *scirrhi* we have already spoken, and the gloomy prospects held up in these articles are still more so when the disease occurs in the womb. The uterus, when *prolapsed*, is secured by pessaries; and when this takes place in a slight degree, rest, with tonics, particularly the cold bath, will often prevent its increasing. Rest is, however, particularly necessary. Resinous and balsamic vapours received into the vagina are very ineffectual remedies, and now neglected, and still more ridiculous are the cataplasms on the abdomen, to draw the uterus upward, some of which Vogel has admitted into his *Materia Medica*. Numerous cases are related where extirpation of the prolapsed uterus has been practised with safety. We can easily conceive that it may be so when a gangrene has come on; but that in other circumstances it would be, as is often reported, fatal. The most singular case of this kind is related by Wrisberg, in a dissertation published at Gottingen, in 1787, where the uterus was extirpated, soon after a natural birth, and the woman recovered.

Inflammation of the uterus is more uncommon than authors have represented it. We have never seen but two decided instances of it, and in neither was there

any symptom of puerperal fever: both recovered by fomentations, camphor, and, above all, by active laxatives. Abscesses of the uterus are mentioned by many authors, but, except the cancerous ulcers after scirrhi, they appear to be very rare. *Dropsy* and *emphysema* of this organ seem also to have occurred, as they are sometimes mentioned; yet each, we believe, has seldom been observed in this climate; and the authorities we have been able to discover, after some search, are not such as we can venture to adduce as satisfactory. Dropsies, from *hydatids*, may undoubtedly occur, and *air* may be separated by the putrefaction of a dead child, or from the matter of foul ulcers; but, beyond such cases, we do not find that the diseases have occurred.

The uterus is sometimes *callous*, *cartilaginous*, containing little *bones*, *calculi*, *concretions* of different kinds, usually imperfect conceptions, or *fœtuses*, confounded by compression. Numerous instances of a *double uterus* are recorded, and Callisen has described a case of a double uterus and vagina (Collectiones Societatis Medicæ Havniensis, i. 18): in such a person superfetation would not be surprising. See also Eisenmanni Tabulæ Anatomicæ quatuor Argentorati, 1752; and Haller de Renibus Monstrosis et Utero duplici.

The *obliquity of the uterus* was first pointed out by Deventer as the cause of protracted labours; but subsequent authors have considered this cause as visionary. The course of our inquiries into the diseases of the uterus has shown, however, that it is not wholly without foundation, though it may be so in the view which he has given. Sandifort (Observationes Anatomico-pathologicæ, i. 107) mentions this deviation from nature, in consequence of the pressure of tumours, and from a different length of the *broad ligaments*. Morgagni speaks of it as rising from lameness, and from the disproportioned length of one of the *round ligaments*. (Morgagni de Sedibus, xlviii. 31, 36). Other authors describe it as arising from different causes; but sometimes as the source of difficult labours.

Ruptured uterus is very frequently fatal, and has been represented as constantly so. There is, we suspect, not the slightest chance of escape if it occurs in the fundus; yet we perceive a case quoted from Saviard, whose work upon this subject we have not been able to procure, that, from a rupture in the uterus, the *fœtus* escaped into the abdomen, and was afterwards discharged by an abscess of the navel. The rupture must, in this instance, have been considerably near the fundus, and the mother have survived. In general, ruptures in the more membranous part of the womb are not fatal, and Dr. Douglas, some years since, collected a number of cases in which women had escaped after such an accident; but, if we recollect rightly, by far the greater number were near the neck. In general, fainting, cold sweats, and a rapid prostration of strength, close the scene in a very few hours.

See De Graf de Mulierum Organis Generationi inservientibus; Winslow's Anatomy; Haller's Physiology, lect. 34 and 35.

UTRICA'RIA, (*uter*, a *bottle*, from the spherical appendages at the ends of its leaves). See **BANDURA**.

UTRI'CLUS, (*dim. of uter*). See **UTERUS** and **VAS**.

UTRIFO'RMIS ABSCE'SSUS, (from *uter*, and *forma*). See **ÆDEMOSARCA**.

U'VA, (quasi *uvula*, from its juice). An **UNRIPE GRAPE**. See also **STAPHYLOMA**.

U'VA GRUI'NA. **CRANE BERRIES**, *vaccinium oxycoccus* Lin. Sp. Pl. 500, are brought from New England, and are reckoned antiscorbutic.

U'VA U'RSI. **BEAR'S WHORTLE BERRY**, **WHORTS**, or **BILBERRIES**, *vaccaria vaccinia*, *arbutus uva ursi* Lin. Sp. Pl. 566; the **BEARBERRY STRAWBERRY TREE**, or **TRAILING ARBUTUS**, is an evergreen, trailing, shrubby plant, with many small, oblong, oval leaves, monopetalous white flowers, with a flesh coloured border, cut into five sections, and red berries. It greatly resembles the common red wort bush, from which it may be distinguished by the leaves being more oblong, by the flower having ten stamina, and the berry five seeds. It is found on the snowy hills in Austria and Styria; in Scotland; more plentifully in Sweden, and cultivated in gardens in England.

The leaves are bitterish and astringent, without any remarkable smell, at least when dry. They are celebrated by De Haen in nephritic and calculous complaints, and ulcers in the urinary passages. It sometimes moderates the pain in calculous complaints; but does not appear peculiarly serviceable in any other respect. It has also been recommended in cystirrhœa, diabetes, &c. and almost every other complaint to which the urinary organs are liable, and is sometimes useful in increased sensibility, suppuration, or chronic inflammation of the neck of the bladder. But to secure its efficacy the dose should not be less than two scruples, and sometimes even exceed a drachm, though commonly given from fifteen grains to thirty, two or three times a day. The decoction or infusion are trifling and inert. Cullen's Materia Medica; Medical Museum, vol. i. n. 13.

U'VA PA'SSA MA'JOR, a **RAISIN**, *astaphis passulæ*. When the grapes dry on the vines they are called *patetæ*, *patetheisæ uvæ*, the fruit of the *vitis vinifera* Lin. 293. See **VITIS**.

U'VA PA'SSA MI'NOR. **CURRENTS**, the fruit of the *vitis vinifera* Lin. 293, var. β . Grapes and currents are supposed to be both demulcent and expectorant.

U'VA CRISPA. See **GROSSULARIA**.

U'VA LUPINA. See **HERBA PARIS**.

UVE'A, (from *uva*), *aciniformis*, or *acinosa tunica*; the posterior lamina of the iris, resembling in animals, which the ancients chiefly dissected, an *unripe grape*. The choroides is sometimes called by the name of *uvea*, and the term *iris* is affixed to the coloured part.

U'VERO. See **GUAIBARA**.

U'VULA, (a *dim. of uva*), *cion*, *gargareon*, *columella*, *columna oris*, *gurgulio interseptum*, *pinnaculum fornicis gutturalis*, *plectrum*, *caruncula*. From the middle of the palatum molle, the uvula hangs down into the throat, acting as a valve, by means of whose different actions we can breathe either through the mouth or the nose. It is of an irregular conical shape, and in part apparently glandular, though a small vermicular muscle, rising from the union of the palate bones, seems to descend to its tip. It is sometimes double, occasionally bifid,

deficient either naturally or from syphilitic affections; frequently relaxed and inflamed, exciting from its increased length a troublesome cough, or on laying back, a sickness. It is sometimes swollen, apparently from a scrofulous habit, and Hildanus describes it as scirrhus; Bartholine as ulcerated. For these reasons, we represented it as in part glandular. In inflammation and relaxation the strongest astringents are occasionally necessary, and sometimes fail, and in such cases the uvula may be punctured, in part, or wholly cut off.

Hildanus has described an instrument [by which a strong astringent powder may be thrown on it, which may, we think, be occasionally useful. Cent. ii. obs. 20. See Eyselius de Præcipuis Uvula Morbis. See CRASPEDON.

UVULA'RIA, (from its resemblance to the *uvula*), See LAURUS ALEXANDRINA.

U'XOR. See ADAMUS.

U'ZIFUR. See ADROP.

V.

V A C

VA'CCA MARI'NA, (from the Hebrew *vakar*). See MANATI.

VACCA'RIA, (from *vacca*, agreeable to cows). See UVA URSI.

VACCI'NA, (from *vacca*, a cow,) the cow pox, a disease originally of the cow, and conveyed by inoculation to the human subject, for the purpose of preventing infection from small pox.

This disease first attracted attention in the county of Dorset, about thirty years since, as a pustular eruption derived from infection, chiefly affecting the hands of milkers, who had milked cows similarly diseased. It had been found to secure persons from the small pox, and such was the general opinion, that the inoculator who attempted to convey the small pox to one who had been previously infected with vaccina was treated with ridicule. It was found, on trial, that the attempt was impracticable. At this time a farmer had the sagacity and courage to try the effects of what may be styled artificial inoculation on himself, and succeeded, it is said, completely. Many facts of this kind were communicated to sir George Baker, who, not long before, engaged in an unpleasant controversy respecting the cause of the endemial colic of Devonshire, was unwilling to tread again its thorny paths. Gloucestershire, another dairy county, had witnessed the same disease with similar consequences, and the same opinion generally prevailing in distant counties, affords some proof that it was not wholly visionary. Dr. Jenner of Gloucester, with great judgment, pursued the hint, at first foiled by not distinguishing the true vaccina; but, after some time, learning by experience the distinctive characters of the genuine pustule, he, in 1798, ventured to publish the discovery, and to recommend the inoculation of vaccina as a substitute for variola.

It is difficult to say whether the eagerness of the friends of vaccination, or the violence of its enemies, on the first appearance of his work, were most blameable, and those who did not range among the former, were quickly included in the latter class. The more temperate inquirers have generally filled the ranks of the friends of vaccination, while some of its earliest and most violent supporters appear willing to forsake their banners. Such changes are not uncommon in all disputed questions.

Vaccination soon made a rapid progress in every

V A C

quarter of the world. The new disease was conveyed from the arctic circle to the extremes of Asia and Africa, and the substitute was adopted by the hardy Fin, as well as the blameless Hindoo, and filthy Hottentot, with equal ardour. It is highly probable, that, within seven years, more persons have been vaccinated than ever received the variolous infection within six times that period, perhaps within the period of its actual practice. To America it was conveyed with the zealous care of a missionary, and carried along the vast extent of its coast from Newfoundland to the straits of Magellan, and again to that island or continent, the stepping stone between the old and new world, New Holland, in modern language Australasia. If then vaccination has failed, it is not from the deficient zeal or activity of its partizans. While Dr. Jenner, having produced the babe, waited for events, and seemed for a time unconscious of its improvements, and unwilling to superintend its progress, Dr. George Pearson cherished and eagerly introduced it to the world. To this very able and intelligent physician, the second parent of vaccination, we are greatly indebted for much information respecting this communicated disease, and the distinguishing characteristics of the true vaccine pustule; and the Jennerian Institution, since Dr. Jenner has taken a more active part in the subject he first introduced, has contributed by careful inquiries and anxious investigation, equally to establish truth, and avoid the errors which may obscure it. Vaccination has, however, continued to excite controversy; but its enemies have appeared uncandid and illiberal in their statements and language; the friends, too warm and zealous. The latter are advocates, often displaying a varnished tale; the former the porter, who abuses those whom he cannot convince. Among the enemies there are, however, careful, candid inquirers, who perhaps receive too credulously unfounded tales; but who are neither obstinate in error, nor deaf to conviction; neither uncandid nor illiberal: unfortunately these are few.

The disease, if it may be called such, is slight and transitory. It is unnoticed by the milkers, except as the pustules interrupt their labours. When conveyed by inoculation the appearances are peculiar and discriminated. We require no apology for selecting the description of Dr. Willan.

"Vaccination has been accounted perfect when recent

lymph has been carefully inserted beneath the cuticle, in a person free from any contagious disorder, and has produced a semi-transparent, pearl coloured vesicle, which after the ninth day is surrounded by a red areola, and afterwards terminates in a hard, dark coloured scab.—The form and structure of this vesicle is peculiar. Its base is circular, or somewhat oval, with a diameter of about four lines on the tenth day. Till the end of the eighth day, its upper surface is uneven, being considerably more elevated at the margin than about the centre, and sometimes indented by one or two concentric furrows, but on the ninth or tenth day the surface becomes plane, and in a very few instances the central part is highest. The margin is turgid, firm, shining, and rounded, so as often to extend a little beyond the line of the base. The vesicle consists internally of numerous little cells, filled with clear lymph, and communicating with each other. The areola, which is formed round the vesicle, is of an intense red colour. Its diameter differs in different persons from a quarter of an inch to two inches, and it is usually attended with a considerable tumour and hardness of the adjoining cellular membrane. On the eleventh and twelfth day, as the areola declines, the surface of the vesicle becomes brown in the centre, and less clear at the margin. The cuticle then begins to separate, and the fluid in the cells gradually concretes into a hard rounded scab of a reddish brown colour. This scab becomes at length black, contracted, and dry, but it is not detached till after the twentieth day from the inoculation. It leaves a permanent circular cicatrix, about five lines in diameter, and a little depressed, the surface being marked with very minute pits or indentations, denoting the number of cells of which the vesicle had been composed.

“During the progress of the vesicle some disorder takes place in the constitution, and there is frequently on the arms and back a papulous eruption, resembling some forms of the lichen and strophulus. These circumstances we should by analogy judge desirable; but they do not always occur, nor are they deemed requisite to ensure the full effect of vaccine inoculation, that effect, which, as ascertained and announced by Dr. Jenner, is allowed to be more important than any event which the history of medicine can furnish.”

We may add to these remarks that, in a few very rare instances, the fever, though short, has been smart, and that in children subject to convulsions, a fit has sometimes occurred. But we have neither seen nor heard of the slightest appearance of danger. It is of more consequence to notice the symptoms of imperfect vaccination, and we shall employ the same authority.

“Vaccination is imperfect, or insufficient, I. When the fluid employed has lost some of its original properties. II. When the persons inoculated are soon afterwards affected with any contagious fever. III. When they are affected, at the time of inoculation, with some chronic cutaneous disorders.

“I. The qualities of the vaccine fluid are altered soon after the appearance of an inflamed areola round the vesicle: and the fluid, although taken out of a vesicle in the best possible state, may be injured by heat, exposure to air, moisture, rust, and other causes.

“When scabs are formed over variolous pustules, and

vaccine vesicles, the matter they afford is often acrid and putrescent, and, if inoculated, it perhaps neither communicates the vaccine pock, nor the small pox, but produces a fatal disease, with symptoms similar to those which arise from slight wounds received in dissecting putrid bodies. Should the pustules of small pox remain entire till the twentieth day of eruption, matter taken from them, even at that period, will sometimes communicate, by inoculation, the disease in its usual form, though perhaps with considerable virulence. We are, however, now assured on good authority that matter improperly kept, or the thick matter taken from collapsed and scabbing variolous pustules, and used for the purpose of inoculation, does not always produce the small pox, nor prevent the future occurrence of that disease, although the persons inoculated may have had inflammation and suppuration of the arm, and pains in the axilla, with fever and eruptions on the ninth or tenth day. In like manner if the vaccine fluid employed be taken at a late period, as from the twelfth to the eighteenth day, it does not always produce the genuine cellular vesicle, but is in some cases wholly inefficient, while in others it suddenly excites a pustule, or ulceration, in others an irregular vesicle, and in others erysipelas. Similar appearances are observed, when fluid taken from a perfect vesicle on the sixth, seventh, or eighth day, has been injured, before its application, by some of the causes above enumerated. In addition to them, I may observe, that if the vesicle be ruptured, at an early period, by friction or scratching, the inoculation sometimes proves imperfect. Failures may have also been occasioned by repeatedly puncturing, or draining the vesicle, on two or three successive days. The fluid, which is afterwards secreted into the cells thus exhausted, may, by a difference of properties, or by too much dilution, be rendered incapable of acting fully, either on the person from whom it is taken, or on those to whom it is communicated. Some of the early failures in persons inoculated at different public institutions are, perhaps referrible to this cause, the demands for vaccine fluid in 1799 and 1800 having been very numerous, the cases to supply them comparatively few.

“II. Eruptive fevers, and other febrile diseases, interfere with the progress of the vaccine vesicle. The measles, scarlatina, varicella, typhus, and influenza, appearing soon after vaccination, either render it ineffective, or suspend the action of the virus, so that, in some cases, the progress of the vesicle is very slow, and the areola is not formed till the fourteenth day or later, and sometimes not at all. Dr. Jenner has recorded the case of a child, on whom the scarlatina, with a sore throat, appeared on the ninth day of vaccine inoculation. The vesicle enlarged as usual, “yet there was a total suspension of the areola, until the scarlatina had retired from the constitution.” In a sister of this patient, the fever and scarlet efflorescence took place faintly on the same day, but suddenly disappeared, the areola having been formed round the vesicle. Four days afterwards, on the decline of the vesicle, the scarlatina anginosa returned with its usual symptoms.

“III. The cutaneous diseases which sometimes impede the formation of the genuine vaccine vesicle, are herpes (including the shingles and vesicular ringworm), dry and the humid tetter, and the lichen, but especially

the porrigo (or tinea) comprising the varieties denominated crusta lactea, area, aches, and favi, all of which are contagious. To these perhaps should be added the itch and prurigo.

"Imperfect vaccination is not characterized by any uniform sign or criterion, but exhibits, in different cases, very different appearances, as pustules, ulcerations, or vesicles of an irregular form. The vaccine pustule is conoidal; it increases rapidly from the second to the fifth or sixth day, when it is of the appearance and size represented, being raised on a hard inflamed base, with diffuse redness extending beyond it on the skin. It is usually broken before the end of the sixth day, and is soon after succeeded by an irregular yellowish brown scab. The redness disappears within a day or two, and the tumour gradually subsides. According to Dr. Jenner, 'Its commencement is marked by a troublesome itching, and it throws out a premature efflorescence, sometimes extensive, but seldom circumscribed, or of so vivid a tint as that which surrounds the pustule (vesicle) completely organized; and (which is more characteristic of its degeneracy than the other symptoms) it appears more like a common festering produced by a thorn, or any other small extraneous body, sticking in the skin, than a pustule (vesicle) excited by the vaccine virus. It is generally of a straw colour, and when punctured, instead of the colourless transparent fluid of the perfect vesicle, its contents are found to be opaque.'"

The chief nicety and difficulty of vaccination consists in distinguishing the irregular vesicles, and we shall here apply to the same source.

"I have observed three sorts of these irregular vesicles. The first is a single pearl coloured vesicle, set on a hard dark red base, slightly elevated. It is larger and more globate than the pustule above represented, but much less than the genuine vesicle: its top is flattened, or sometimes a little depressed, but the margin is not rounded or prominent.—The second appears to be cellular like the genuine vesicle, but it is somewhat smaller, and more sessile, and has a sharp angulated edge. In the first the areola is usually diffuse, and of a dark rose colour: in the second it is sometimes of a dilute scarlet colour, radiated, and very extensive, as from the sting of a wasp; at other times it has the form and colour exhibited. The areola appears round these vesicles on the seventh or eighth day after inoculation, and continues more or less vivid for three days, during which time the scab is completely formed. The scab is smaller and less regular than that which succeeds the genuine vesicle; it also falls off much sooner, and, when separated, leaves a smaller cicatrix, which is sometimes angulated.—The third irregular appearance is a vesicle without an areola.

"The vaccine pustule, and ulceration, may sometimes arise from the insertion of effete or altered virus; but they mostly occur in persons labouring under the eruptive complaints formerly mentioned.

"The irregular vesicles are produced by some of the causes already enumerated.—The vesicle without an areola, takes place if the person inoculated have previously received the infection of the small pox, or if he be affected with some other contagious fever, during the progress of vaccination.

These irregular vesicles are sometimes a security from small pox, and the matter which they produce will occasionally excite a genuine vesicle, but they should in no instance be depended on.

It was for a time supposed that vaccina and variola were similar diseases, but that from accidental circumstances the former was the milder. It was cutting the knot rather than explaining the source of the susceptibility being destroyed, but the very existence of this susceptibility, not called into action for four thousand years, is a problem of much greater difficulty. It was found, however, on examination, that, when each disease was introduced at the same time, the one did not check the other; both proceeded in their own way, but the vaccina modified a little the appearance of variola; and it seems, from Dr. Willan, that it modified the pustule in the manner which variolous eruptions after vaccination, sometimes assume.

The great point, however, in dispute is, whether the most perfect vaccination is, in every instance, a complete security against variolous infection? We must in justice reply that it is not. The question will recur, to what extent then is it so? The general popular opinion in distant counties is, we have said, a strong presumption of the dependance to be placed on the security; and the immense number vaccinated, particularly in the army, where exposure to variolous contagion is so frequent and unavoidable, would, we think, have given a considerable shock to the fabric, if its foundation was very insecure. Another presumption in favour of the security of vaccination is, that those who have comparatively inoculated the fewest, have had the greatest number of succeeding variolæ; while in the great public institutions, where the numbers are often estimated by ten thousands, the failures appear to have been few. Great stress has been laid on the number and character of its supporters, compared with those of its antagonists; but this argument would have merited more attention had not these gentlemen appeared so early in its support, when the merits of the discovery must have been equivocal. We shall endeavour, however, to state this question in its different views, with all the impartiality in our power.

Cow pox is certainly a security to a very considerable extent, and for some, though an indefinite, time. Small pox has occurred within a few months, but most frequently, if we can say "*frequently*," respecting the few undisputed cases which have occurred, within about three or four years. From the number of recorded cases of subsequent variolæ, we must detract considerably in consequence of the suggestions of prepossession, of ignorance, and, we fear, designed misrepresentation. We must detract too a large proportion from the careless report of the appearances of the vaccination, when the genuine vesicle had not been distinguished, or when it was incuriously observed. If we would establish the position that vaccination secures from a *disease*, and not from a *name*, we must still deduct those cases where the variolæ are inconsiderable in their number, unimportant from the mildness of the inflammation or the attendant fever. We shall still find some authentic cases of small pox as a violent disease, after the most perfect vaccination; and we are very much inclined to suspect, that some circumstances essential to the security, have

yet escaped the attention of the most sagacious observers. But let us for a moment examine our present circumstances in this respect.

Had we been offered, twenty years since, an easy means of guarding against small pox for an indefinite period, though the security might not in one half of the instances have been unexceptionable, would it not have been received with avidity? would not the pregnant woman have seized on it in her emergency? would not the mother have caught at it while her child was exposed to variolous infection during dentition? would not the hypochondriac, secluded for years from an imaginary apprehension of variola, have gladly accepted a few months only of emancipation? would it not have been a temporary security for the scrofulous infant, till the disease by advancing years had lost a portion of its virulence? If we could gain no more, we should have considered mankind as having received an inestimable boon. We have now more. We possess a substitute, which, admitting every possible claim, secures one in 800, and which, within moderate computation, secures from a violent and dangerous disease, one in 20,000. Yet we eagerly continue a contest, because it is not an infallible security.

Supposing we gain only this temporary safety, we do not purchase it at the expense of the child's health, of pain, or of danger. In itself it is the most trifling of complaints; it is not pustular, and conveys no infection. In its consequences it is harmless; for, after all that we have heard of the cow faced boy, of cow pox mange, the ridiculous (we ought to use a harsher term) narratives of dreadful consequences, the records of public institutions offer no increase of cutaneous diseases, and no new species. Every person may be in possession of the facts; there can be no delusion; and though anomalous cutaneous complaints have sometimes, though very rarely, occurred after vaccination, every practitioner of experience is too well accustomed to such appearances as, at once, to accuse the preceding disease. Of three children inoculated in one family, two with variolous and one with vaccine matter, the two former were affected with anomalous cutaneous eruptions, and the last escaped. Yet one of the former had experienced the small pox in a very severe degree. That it is an exciting cause of scrofula we now know to be wholly without foundation.

But we think the advocates for the cow pox may assume a higher tone, and assert that the variolous disease is, in a great degree, conquered by its substitute. Prevented in a large proportion, disarmed of its violence in a still larger, and in a certain (indeed no inconsiderable) degree a perfect security, its supporters may justly claim a title to the civic crown, *ob servatos cives*; nor will it require any very strong arguments to show, that, admitting the degree of security which its enemies are willing to allow it, could vaccination be universally practised, small pox must be soon unknown. If actually introduced at a subsequent period, it would spread no more than a putrid epidemic under a well regulated police. A nurse or an attendant may be affected, and it would then be heard of no more. In a proper place this argument may be more strongly urged, and those who oppose it called on to account for the mischief they are unconsciously and inadvertently guilty of. It may be said that we are now advocating the question,

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but we are conscious only of having reasoned fairly from undisputed premises, or at least from premises whose foundation have been generally admitted. If we have erred, it is from no violent, no *early* prepossession in its favour.

Respecting the source of the vaccine poison we need say little. Dr. Jenner has unfortunately attributed it to the greasy heels of the horses, which the milkers had been dressing. We say "unfortunately," since the nauseous idea, which it conveys, disgusts us with the purest of beverages. The question was, at least, unnecessary, and had it the smallest foundation, those who had handled the greasy heels, without milking, would have been affected; and in dairies, where women only are employed, it would be unknown. Neither is the case; and every attempt to produce the cow pox, from this matter, has failed, except in a solitary and an equivocal instance. Whence then does it proceed? May not the poisonous drop be infused into the vaccine as well as into the human constitution? or to adapt ourselves to the pathology of others, may not the susceptibility of the vaccine teats require as much modification as the human skin? But it is idle to pursue a subject which must mock our investigation, and which certainly admits of no practical application. We know how to obviate the consequences, and this is sufficient.

The inoculation of vaccina is an operation of more delicacy than was at first suspected, and should never be considered as safe, except under the almost daily inspection of a man of experience. The virus is easily deteriorated, and then becomes a common poison, capable of producing a foul sore, an axillary tumour, fever, and its consequences. The same changes appear to have taken place in a less degree at an advanced period of the disease; and though we have the testimony of very respectable authors that it succeeds from the tenth to the twelfth day, it should generally be taken before that period. It is injured by even a slight degree of heat, so as to be in danger from the burning wax with which the packets are sealed, very certainly by being carried in the breeches pocket. To be certain of success, the child, from whom it is to be taken, should be present, and the cuticle raised by a clean lancet before introducing the infected one. If on glass, it should be diluted in the minutest drop of cold water, and mixed by the point of the lancet itself. By these precautions failure is very uncommon. In this way we have succeeded at once in a child who had resisted six former attempts, and in another who had not received the infection from five. The puncture should be in a single point, that the round distinguishing form of the vesicle may not be most slightly modified.

Mr. Bryce has offered a satisfactory method of ascertaining whether the constitution is affected when the fever is inconsiderable. This is to inoculate a second time after five or six days, when this second wound, if the constitution is affected, will hasten to maturity, and arrive at it as soon as the first inoculation. Mr. Hugo, a very intelligent and judicious apothecary at Crediton, has followed the same plan with equal success. If this second inoculation is performed later, about the seventh day, the pustule, we are informed by Mr. Pearson, will begin to die away as soon as the efflorescence comes on around the first. A second vaccine infection after the

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disease has passed, produces either a spurious pustule or only a common inflammation.

See Dr. Jenner's Enquiry and farther Observations; Woodville's Series of Inoculations, and on Cow pox; Willan on Vaccine Inoculation; Moor's Reply to the Antivaccinists; Dr. Pearson's Statement of Evidence; Medical Review; Medical and Physical Journal, passim, in every number, and almost in every page.

VACCI'NIA, (quasi *baccinia*, from its berries). The appellation of several sorts of the *vitis Idæa*, and *uva ursi*.

VACCI'NIA NUBIS VULGARIS, VACCINIUM LANCASTRENSE NUBIS. See CHAMÆMORUS.

VACCI'NIA PALUSTRIS. See OXYCOCCUS.

VA'GA, (from *vagus*, irregular). A wandering intermittent, returning at more than ten days from each fit. Its existence is now denied.

VAGI'NA. A SHEATH; *caulis*; the passage from the external pudenda to the mouth of the uterus, about five or six inches in length and two in diameter, though in its contracted state scarcely exceeding three inches. Its direction is upward and backward; its inside very vascular and villous, and the villi full of vessels and nerves, contracted at its orifice, as is said, by a sphincter, and in its whole length by the levator ani. Each side of the anterior portion of the vagina is covered externally by a thin broad expansion of vessels called the plexus retiformis; and these two planes run down on each side of the clitoris behind the nymphæ, covering the urethra like a collar before they are spread on the vagina. This plexus is capable of being erected, and in coition is necessarily compressed. In substance it is a membranous tube, lying immediately before the rectum, collapsed and compressed between it and the bladder. The structure of the vagina is not only very vascular, but on the inside it is very rugous, particularly at the fore and back parts; though by frequent parturition these rugæ are in a great degree obliterated. Some authors have described muscular fibres in it, but we perceive no irritability, and it seems never subject to spasm; even those which have been described as forming its sphincter are not strictly circular. The peritonæum covers only the upper and posterior part. The vagina passes beyond the os uteri, which hangs into it, and is joined to the cervix, but when the latter is dilated the uterus and vagina form a continued canal. It is sometimes too narrow, from conformation, or in consequence of a laceration after severe labour, of ulceration, erosion, or the use of styptic applications. The cure may be attempted by emollient fomentations, the steams of warm water, and by introducing a small tent of compressed sponge. If these fail, recourse must be had to the knife: though in the simple contraction of the cavity of the vagina, this expedient is seldom necessary, often dangerous; and should never be attempted until every other method hath failed. The dilatation has very often been accomplished by labour pains. Sometimes from a natural defect the vagina is either imperforated altogether, or a foramen only remains sufficient to transmit the menstrual blood. If, from a coalition of the parietes of the vagina, the passage be entirely shut up, an attempt to force it would be vain. The orifice, in the latter case, will afford a proper direction for the knife; but the operator must be cautious not to mistake the urethra

for the passage into the vagina. When the vagina is impervious altogether, the uterus has been sometimes found wanting, when double, it has led to a double uterus.

Fleshy, steatomatous, fungous, or polypous tumours arise from all parts of the vagina. They happen to women at every period, but most frequently towards the decline of life; and are more difficultly discovered or removed as their origin is high in the vagina. They sometimes are tender and mucilaginous, like those in the nose; at others firm and solid; occasionally their bases are large, but they generally adhere by a small neck. Like scirrhi, they sometimes continue indolent for many years, and degenerate often into cancer. In their mildest state they are attended with a leucorrhœal discharge, and sometimes with profuse and dangerous floodings. They are sometimes confounded with hernial tumours and prolapsus uteri, errors which should be carefully guarded against. Polypi, when curable by an operation, are most safely removed by ligature, as they are often supplied with large blood vessels; and for fixing the ligature the fingers of the operator will be sometimes sufficient. In other cases, Dr. Hunter's needle, or Mr. Levret's double canula, for applying and fixing the ligature over the tumour, are the most simple and successful expedients. The latter is a piece of flexible gold or silver wire, passed through a double hollow probe in the form of a noose, conveyed into the vagina, and carried over the tumour, till it reaches the base. The ends of the wire must be gently drawn, or it must be twisted round as tight as the patient can easily bear: the canula must afterwards be fixed to the thigh, and the wire tightened every day as it grows slacker. From the stoppage of the circulation in two or three days the polypus will drop off. In fixing the ligature the operator must be cautious not to mistake the tubercle of the os tincæ for the polypous tumour. See Hamilton's Outlines.

The vagina is sometimes inverted, in consequence of a relaxation of the upper portion, which consequently falls through the strait at its extremity. A case is mentioned in which this organical disease impeded delivery, when the stricture was dilated with a knife, and the wound healed. A similar relaxation, from dropsy, is recorded in the Medical Communications, i. 12. Morgagni has observed the same disease in brutes (*De Sedibus*, &c. xlv. 89 and 11). The vagina is sometimes ruptured from labour, and Dr. Goldson has published an extraordinary case of its laceration: Smellie, in his Collection of Cases, mentions its separation from the uterus, and it is recorded that it has been ruptured in coition (*Plazzoni de Partibus Generationi inservientibus*). The sides are sometimes concreted, either naturally, or from wounds, from scalds, and difficult labours. We remember a case where the mother of a large family had a tumour at the bottom of the abdomen of a peculiar kind, whose nature was not suspected till she informed us that she had had a hard labour, and not menstruated since. On further examination it appeared that a part of the symphysis of the pubis was exfoliated and the vagina accreted. On cautiously perforating in the direction of the canal, a large quantity of fluid blood was discharged, and the tumour subsided. The blood was *fluid*, though it was the accumulated menstruation of several months. The vagina is sometimes

inflamed, suppurated, and gangrened, but true abscesses are not common in it; and cancer of the vagina peculiarly rare. We have, however, seen an instance of it, which from the pain, the discharge, and the peculiar ragged feel of the sore, could not be mistaken.

Contracted vaginæ are relieved by sponge tents, or bougies, gradually enlarged. Cicatrices yield in time of labour, and though they delay, do not impede the birth.

The appellation is given to the capsula Glissonii, called *vagina portæ*; to a coat of the testes, *vaginalis tunica* (see TESTES); to a coat of the œsophagus, of the spinal marrow, and of the nerves when it appears to be a production of the dura as well as the pia mater. The *vagina* of tendons is a loose sheath, formed of cellular membrane, secreting an unctuous fluid, which sometimes hardens and forms the tumour styled a *ganglion*.

VAGI'NA. In botany, the sheath or covering of a bud; or a membrane investing a stem; hence

VAGINA'LES. The name of the 27th order in Linnæus's Fragments of a natural method in his *Philosophia Botanica*.

VAGI'NA PORTÆ. See CAPSULA COMMUNIS GLISSONII.

VALA'NIDA. See FAGUS.

VALERIA'NA, (from *Valerius*, its supposed discoverer). VALERIAN. In warmer climates the *setwall*, or *great garden valerian*, is preferred; but in colder the *valeriana sylvestris major* of Bauhine, *great wild valerian*, *valeriana officinalis* Lin. Sp. Pl. 46. This is a plant with channelled stalks, the leaves in pairs; each leaf composed of a number of long, narrow, sharp-pointed segments, indented about the edges, of a dull green colour, set along a middle rib, and terminated by an odd one; producing on the tops of the stalks umbel-like clusters of small monopetalous flowers, which appear in May, June, and July, each followed by a single naked seed, winged with down. The root consists of tough strings, with numerous small threads matted together, issuing from one head, of a dusky brownish colour, approaching to olive. It is perennial, and grows wild in dry mountainous places.

Valerian roots when dry have a strong, and to many an ungrateful odour, a warm, bitterish, subacid taste; the degree of each marking their genuineness. The roots have often a disagreeable smell from the urine of cats: and sometimes the roots of a species of crowfoot are mixed with them, which may be discovered by a caustic taste on chewing. The roots, if not taken up at a proper season, and properly preserved, become inert.

The powdered root impregnates both water and alcohol strongly with the smell and taste; water distilled from it smells strong of the root, but no essential oil separates, whatever be the quantity employed. The watery extract is strong, disagreeably sweetish, and a little bitter; the spirituous extract agreeable, and nearly resembles the root.

As a medicine, these roots are excellent antispasmodics, and rank amongst the mildest of the fetids. The powder has been extolled in epilepsy, and from ʒi. to ʒi. are given three times a day; but it hath been given to the extent of two ounces in the day by the sceptics in the powers of this medicine, without effect.

Dr. Cullen has found it useful in epileptic, hysteric, and other spasmodic affections, and most so when given

in substance, and in large doses. It has been most successful in cases proceeding from increased mobility, and irritability of the nervous system. We have found it in such cases most successful when combined with bark; and, having relieved fits by their combination, we have found them to return when either separately was given.

Valerian is said occasionally to procure sleep when opium has failed. It is also supposed to be diaphoretic, diuretic, an emmenagogue and anthelmintic; but has little claim to these virtues.

When the flavour disgusts, a little mace renders it more agreeable; and next to the powder, a strong tincture made with proof spirit is most effectual.

The tincture of valerian of the college is made by digesting four ounces of the root of wild valerian, coarsely powdered, in two pints of proof spirit, with a gentle heat for eight days. The dose two to four tea spoonfuls in nervous languor and flatulence. If to ʒi. of this tincture, ʒij. of the diluted vitriolic acid be added, it proves an useful remedy in those headaches which affect the studious, strengthens the stomach, relieves flatulence and spasm.

In the volatile tincture of valerian the menstruum is the compound spirit of ammonia, in the same proportions. If made doubly strong, it is an excellent remedy in similar cases, acting more suddenly and effectually: the dose is from forty to eighty drops. See Neumann's Chemistry; Medical Museum, vol. i. n. vii; Lewis' and Cullen's Materia Medica.

VALERIA'NA CAMPE'STRIS INODO'RA MAJOR, et VALERIANELLA. See LACTUCA AGNINA.

VALERIA'NA CE'LTICA. See NARDUS CELTICA.

VALERIA'NA PHU of Dioscorides and Linnæus Sp. Pl. 46, supposed to be useful in sciatica and epilepsy.

VA'LGUS, (quasi *falcus*, *crooked*). BOW or BANDY-LEGGED; *bleesus*. Some children are bow-legged from their birth, others become so if set on their feet too early, while still weak. The tibia is sometimes crooked; the knees often distorted from a fault in the ankle; the feet turned inwards (*vari*); and in others outwards (*valgi*). The best method of preventing these disorders in weakly children is to exercise them regularly, but not violently, by dancing in the arms and setting them on their feet, for a short period only, while they are supported by the arms. Boots of strong leather, with supports between the knee and ankle, so that the weight presses but lightly on the tibia, have been used; but cold bathing, carefully and duly regulated; exercise, with a moderately strengthening diet, will enable nature most effectually to repair the error. Hil-danus, Le Clerc, Solingen, and Heister's Surgery. See CYLLOS.

VA'LLUM, (*vallus*, a *hedge stake*, from the regular disposition of the hairs). The SUPERCILIUM, or EYE BROW, the most prominent part of which is called *geison*, a term applied to the eaves of houses. Also a species of bandage.

VA'LVA, (from *valvæ*, *folding doors*.) A VALVE, whatever opens and shuts over the mouth of a vessel.

In anatomy, a membrane which opens to admit the blood, and shuts again to prevent its regurgitating. See VALVULA.

VA'LVULA, (dim. of *valva*). A SMALL VALVE, a kind of doubling of the internal coat of red or lymphatic

veins, which, when the flow is in the proper direction, is applied to the sides, but when the fluid regurgitates is filled. As they are in pairs, opposite each other, they close the cavity of the vessel.

VA'LVULA. The outer coat, shell, or covering of a capsule, or the several pieces which compose it. An entire pericarp is said to be univalve; if divided, bivalve, trivalve, &c. The leaflets, composing the calyx and corolla in grasses, and the substances or scales which close the tube of some flowers, are also styled *valves*.

See CAPSULA.

VA'LVULÆ CONNIVENTES, are loose circular folds, productions of the villous coat, chiefly in the small intestines towards the stomach. They increase the secreting and absorbing surfaces, as well as retain the food till the digestion is completed.

VA'LVULA EUSTACHII, the semilunar valve, which separates the right auricle from the inferior cava.

VA'LVULA MA'GNA SY'LVI. See CEREBELLUM.

VA'LVULA MITRALES; SEMILUNARES; TRICUSPIDALES; ET TRIGLOCHINES. See COR.

VA'LVULA NO'BILIS. See COR.

VA'LVULA CÆ'CI; CO'LI; I'LII; ET TULPI. See COLON.

VA'LVULA PALA'TI. See PALATUM MOLLE.

VAMPYRI, VAMPARISMUS. A *VAMPIRE* is a large bat, which sometimes insinuates its teeth through the skin of those who sleep insecurely, without awakening them, assisted, it is said, by the refreshing coolness which it conveys by the fluttering of its wings. This circumstance has suggested the strange story, that men are sometimes permitted to wander near tombs, and suck the blood of those who are buried. We perceive that, within these twenty years, this ridiculous idea prevailed in Germany, even among those who assumed the title of philosophers. Jason a Pratis supposed that the vampires might return to their wives and claim the privilege of husbands; but it is a work of a dark æra, 1531.

VANI'LLA; banilia, aracus aromaticus, efidendrium vanilla Lin. Sp. Pl. 1347; **VANELLOES;** are the fruit of a climbing plant in the Spanish West Indies, used to give an agreeable flavour to chocolate; extolled as imparting cheerfulness and hilarity. See Medical Museum, vol. iii. p. 342, &c.

VAPORARIUM, (à vapeur). A VAPOUR BATH. (See BALNEUM.) We repeat the term to mention the proposal of a late author, who thinks the vapour more effectual if the pressure of the atmosphere be removed. The vessel therefore containing the limb is previously exhausted by an air pump. The invention, which was published by Dr. Blegborough, is claimed, we apprehend, by Mr. Smith of Brighton, who first employed it for sucking poison from wounds. We have given no plate of the machine, for those who have tried it do not speak very warmly in its favour.

VAREN. A disease first described by Henry a Bra, afterwards by Forestus and Heurnius. It was stiled a new one; but seems to have been only a lumbago with obstinate costiveness.

VARICE'LLA, (a dim. of variola, the small pox,) the CHICKEN POX; *variola lymphatica*. Dr. Cullen places this disease in the order *exanthemata*, defining it a synocha. After a slight fever of short continuance, spots break out, which somewhat resemble the pustules

of the small pox, but hardly advance to suppuration; and after a few days dry away in scales, without leaving any mark. The pocks break out in some cases without any previous illness, in others are preceded by a slight chilliness, lassitude, cough, broken sleep, wandering pains, loss of appetite, and feverishness for two or three days. On the first day of the eruption they are reddish; but on the second, on the top of each is usually a very small bladder, about the size of a millet seed, sometimes full of a watery and colourless, sometimes of a yellowish liquor. On the second, or, at the farthest, on the third, day from the eruption, those pustules which are not broken seem arrived at maturity; and those which are fullest of the yellow liquor resemble the genuine small pox on the fifth or sixth day, especially when a larger space than usual is occupied by the extravasated serum. In general, soon after the vesicle rises, its tender cuticle is burst by accidental rubbing, or to allay the itching; and a thin scab is formed at the top of the pock without maturing. In those which escape, the drop contained in the vesicle grows yellow and thick, and dries into a scab. On the fifth day of the eruption almost all are dried and covered with a slight crust.

The chicken pox may be distinguished from the small pox by the early appearance of the vesicle, full of serum upon the top of the pock, their incrustation on the fifth day, and the slight inflammation which surrounds them. The fluid appears to be only a serous exhalation. As the variolæ, which have occurred after vaccination, resemble the chicken pox, and in turn the varicella has been mistaken for subsequent variola, we shall select a more particular description from Dr. Willan's work.

"There are three varieties of the varicella, which, from the different forms of the vesicles, may be entitled the lenticular, conoidal, and globose, distinguished in different counties by the names of the *chicken pox*, the *swine pox*, and the *hives*. In the south, both the latter varieties are called *swine pox*.

"1. The lenticular varicella exhibits, on the first day of eruption, small red protuberances, not exactly circular, and having a flat shining surface, in the centre of which a minute vesicle is soon formed. This, on the second day, is filled with a whitish lymph, and it then somewhat resembles a miliary vesicle, but is not so prominent, so tense, or so regularly circumscribed; its diameter is about the 10th of an inch. On the third day, the extent of the vesicles continues the same, but the lymph they contain becomes straw coloured. On the fourth day many of the vesicles are broken at the most prominent part; the rest begin to shrink, and are puckered at their edges. Few of them remain entire on the fifth day, but the orifices of several broken vesicles are closed, or adhere to the skin, so as to confine a little opaque lymph within the puckered margins. On the sixth day, small, thin, brown scabs appear universally in place of the vesicles. The scabs, on the seventh and eighth days, become yellowish, and gradually dry from the circumference towards the centre. On the ninth and tenth days they fall off, leaving for a time red marks on the skin, without depression.

The eruption is generally first observed on the breast and back, and afterwards on the face and extremities. As fresh vesicles arise during two or three successive

days, and go through the same stages as the first, the duration of the disease is sometimes longer than I have stated above.

"2. In the conoidal varicella the vesicles rise suddenly, and have a hard inflamed border. They are, on the first day of their appearance, acuminate, and contain a bright transparent lymph. On the second day, they appear somewhat more turgid, and are surrounded by more extensive inflammation than on the preceding day; the lymph contained in many of them is of a light straw colour. On the third day, the vesicles are shrivelled; those which have been broken exhibit, at the top, slight gummy scabs, formed by a concretion of the exuding lymph. Some of the shrivelled vesicles, which remain entire, but have much inflammation round them, evidently contain on this day purulent fluid. Every vesicle of this kind leaves, after scabbing, a durable cicatrix or pit. On the fourth day thin dark brown scabs appear intermixed with others, which are rounded, yellowish, and semitransparent. These scabs gradually dry and separate, and fall off in four or five days.

"A fresh eruption of vesicles usually takes place on the second and third day, and as each set has a similar course, the whole duration of the eruptive stage in this species of varicella is six days; the last formed scabs, therefore, are not separated till the eleventh or twelfth day.

"3. In the swine pox or hives, the vesicles are large and globated, but their base is not exactly circular. There is an inflammation round them, and they contain a transparent lymph, which, on the second day of eruption, resembles milk whey. On the third day, the vesicles subside, and, as in the two former species, become puckered or shrivelled. They likewise appear yellowish, a small quantity of pus being mixed with the lymph. Some of them remain, in the same state, till the following morning, but, before the conclusion of the fourth day, the cuticle separates, and thin blackish scabs cover the bases of the vesicles. The scabs dry and fall off in four or five days.

"The eruption is usually completed in three days, but I have sometimes observed a few fresh vesicles on the fourth day; in which case, therefore, the eruptive stage occupied eight days."

See Medical Transactions, vol. i. art. xvii; Cullen's First Lines, edit. 4. vol. ii. p. 171.

VARICIFORMES PARASTATÆ, (from *varix*, a distended vein, and *forma*, likeness,) are convoluted vessels contiguous to the epididymides, appearing tortuous like varices.

VARICOCELE, (from *varix*, a distended vein, and *κελη*, a tumour). See **CIRCOCELE**.

VARI'CU'LA, (a diminutive of *varix*). An intumescence of the veins in the tunica adnata of the eye, when caused by black blood. Severinus.

VARI'ETAS; in botany means the changes produced in plants raised from the same parcel of seeds, from climate, situation, or soil; and the difference of their appearance is either in magnitude, plenitude, shape, colour, taste, or smell. In nosology a disease somewhat varied by accidental circumstances, is styled a *variety*.

VARI'OLA, (*quia variat corpus*). The **SMALL POX**; *bothor*; placed by Dr. Cullen in the order *exanthemata*,

who defines it a contagious inflammatory fever attended with vomiting, and pain upon pressing the epigastric region. On the third day an eruption of inflammatory papulæ begins, and is finished on the fifth, which in the space of eight days run into suppuration, and at length form scabs, often leaving behind them depressed cicatrices, or pits in the skin.

The *variola discreta* is that kind where the pustules are few, distinct, round, circumscribed, and turgid; the fever ceasing on the eruption. In the confluent kind the pustules are numerous; running together; irregular at their bases; flaccid; slightly elevated; the fever continuing after the eruption. In general it is an acute, eruptive, infectious disease, of a peculiar kind, accompanied with inflammation of cuticular pustules, terminating in suppuration. This disorder was first described by Rhazes, about the end of the ninth or the beginning of the tenth century, in a manner so complete that little or nothing was added for five hundred years after: he also used the cool method in the management of it. Rhazes quotes as his predecessor Aaron, an Alexandrian physician, who wrote A. D. 622. Sydenham, the next author who merits notice, observed that the slower the eruption the more favourable the disease. He greatly improved the management in the early period, that is, to the sixth or seventh day. At this period he observed that the pulse became regular, and all the pustules were full over the whole body; the urine was of a proper colour, or thick, the eyes cool, and free from the fiery lustre before observable; that the secondary fever came on at first slowly, but soon the eyes were inflamed and watery, a delirium supervened, the urine was pale, the pulse quick and hard, throat sore, &c. In this state the patient is taken out of bed, the air kept cool, the feet put into warm water, an opiate given, and repeated if necessary till the delirium abates.

Helvetius observed the utility of purging when the dangerous symptoms came on, which Sydenham had remarked in the last stage; and Dr. Freind introduced the practice in England. Boerhaave ventured to restrain the too sudden eruption of the pustules, and commends the attempt to cure the small pox without permitting the suppuration to come on. Many other useful observations have appeared, but they are almost superseded by the practice of inoculation: we trust they will be wholly so, by more general vaccination.

When the small pox is epidemical, it usually begins about the vernal equinox. Sydenham observes, that when irregular and dangerous it begins sooner, as in January or February. Boerhaave thinks that if the disease arises in a place where it hath been six years absent, and appears in January or February, the following summer will be distinguished by a fatal kind; but if it first appears in May, it will be of a gentle kind.

The distinct small pox begins with a chilliness and shivering, immediately followed by extreme heat, violent pain in the head and back, vomiting in adults, though not in children, a tendency to sweat, pain just under the scrobiculis cordis, if but gently pressed, sleepiness and stupor, sometimes convulsions, particularly in children; and if they happen after dentition is completed, small pox may be always apprehended, if the child has not been previously affected with such complaints. If, for instance, a convulsion fit attacks in the evening, the small pox often appears on the morning

following; and the small pox immediately succeeding such fits are usually mild.

The distinct eruptions of the small pox usually appear on the fourth day, inclusive, from the beginning of the illness; sometimes a little later, but seldom sooner, and the febrile symptoms then usually abate, or even disappear; but adults are subject to violent sweats, however lightly they are covered; and this disposition continues until the pustules begin to ripen, when it vanishes spontaneously: this sweating prognosticates a distinct sort. The eruptions are at first of a pale red, as large as the head of a small pin, appearing here and there on the face, afterwards on the neck, breast, and body; and, during this stage of the disease, the throat is often affected with a soreness that increases as the pustules arise. These grow every day fuller, and inflame the skin; for about the eighth day from the beginning of the disease, the spaces between the pustules begin to grow red, and swell in proportion to their number, with a throbbing pain, which continually increases, and, in the progress of the disease, the eye lids are so filled and distended as to close the eyes, and this tumour looks like a shining inflated bladder drawn over them. The blindness comes on sooner if many pustules fix on the eyes at the beginning of the eruption. Immediately after the face, the hands, the fingers, the body, and the feet swell, in proportion to the number of eruptions. The pustules on the face now begin to grow rough and whitish, the first sign of a commencing supuration, and they gradually discharge a yellow matter in colour resembling a honey comb. The inflammation of the hands and face, in the mean time, comes to its height, the spaces between the eruptions are of a pretty florid colour, when mild and genuine nearly resembling that of a damask rose. As the pustules in the face appear rougher and yellower as the suppuration advances, so those of the hands and other parts appear smoother and less white. On the eleventh day the inflammation and swelling manifestly abate; and the eruptions, both of the face and the rest of the body, now mature, and nearly the size of a pea, dry and scale off, and, in this kind of small pox, wholly disappear on the fourteenth or fifteenth day; but the eruptions on the hands remain a day or two longer, and, instead of scaling, burst. The pustules on the face are succeeded by a scurf, or branny scales, and those sometimes by pits or marks; for it is a distinctive character of a small pox pustule to have a slough in the middle.

The confluent small pox, *vesiculæ Divæ Barbaræ*, *variola Japonica*, is attended with similar but more violent symptoms, particularly fever, anxiety, sickness, vomiting, and pain in the head and back. The patient does not readily sweat, but a looseness sometimes precedes, and continues a day or two after the first appearance of the eruption. The confluent sort often comes out on the second, generally on the third, day, and the sooner they appear the more confluent they are; nor are they ever retarded but by some other violent topical inflammation. Nausea, a more violent pain in the back, drowsiness, and great debility, are constant symptoms of this variety.

The eruption often comes out like an efflorescence, without any distinguishing marks; and, when the pustules can be distinguished, they soon fill at the top, with a yellowish serum. This must not be confounded

with maturation, for the confluent variola seldom suppurates regularly or properly. The fever does not go off, on the eruption, as in the former variety, but frequently continues so mild as to give little intimation of danger for some days. The head is loaded, and the eyes red, but often with little delirium or coma. As the distemper increases, the pustules of the face do not rise so high as those of the distinct kind, but, running together, appear at first like a red bladder, and this swelling comes on more early than the salutary swelling of the distinct sort: at last they appear like a thin white pellicle, closely adhering to the face, and rising a little higher than the surface of the skin. In the milder kinds of confluent variola we can distinguish innumerable pustules rising above this pellicle, assuming a yellow hue, and maturing, though imperfectly; but they are small, and the tops are not only flattened, but often concave. After the eighth day, the usual pellicle grows gradually harder, and inclines to a brown, and not to a yellow colour, as in the distinct kind. The roughness and colour of the skin daily increase, until at length the pellicle falls off in large scales; but when the disease hath been severe it usually sticks to some parts of the face till after the twentieth day. The more violent the disease, the nearer the eruptions, as they ripen, incline to a dark brown colour, and the longer they continue, if untouched; but in proportion as they are distinct, the yellower is their hue, and the sooner they scale off. When the pellicle first falls off, no roughness is left; but the whole surface is ulcerated, and the cicatrices are proportionally numerous and contracted. The whole features are changed, and the perspiratory organs experience some modification, which leaves an unpleasant smell during the remainder of life. In the confluent small pox, the eruptions on the hands and feet are larger and less numerous than those of the other parts, and are gradually less as they approach the body and head, where they are chiefly confluent. Peculiar to the confluent small pox is a salivation in adults, and a looseness in children; the former always attends, the latter more rarely. The spitting begins as soon as the eruption appears, and sometimes a day or two after; the matter is at first thin, and easily and plentifully expectorated; but towards the eleventh day the saliva becomes viscid, and is voided with difficulty; the patient is thirsty, and from this time the salivation generally stops; though sometimes, but very rarely, it again returns. On the same day the swelling of the face begins to abate, and in the more favourable cases the swelling of the hands begins. The looseness of children, however, continues.

The period of danger in the confluent small pox is when the saliva becomes viscid, viz. on the eleventh day. The patient then becomes comatous and sinks apparently from debility, or purple spots come on, with hæmorrhages from dissolved blood, terminating the disease from the violence of the discharge.

The danger of this disease is proportioned to the number of the pustules on the head, and particularly on the face. If the pain in the head and eyes, which usually goes off on the appearance of the eruption, continues through the several stages of the disease, it leaves some complaint in these organs, in young children, terminating in hydrocephalus. A stoppage of the salivation, irregular and unexpected rigors, bloody

urine, and a discharge of blood from the lungs, are usually fatal symptoms; but a convulsion fit preceding the eruption in children, and a sweating coming on at the proper time in adults, are tokens of the distinct and mild sort.

The confluent small pox often leaves the most dangerous and disagreeable complaints. The constitution is in general greatly debilitated, the tendency to scrofula excited to action, lurking vomicæ in the lungs inflamed, and viscera either infarcted, or suppuration brought on in previous infarctions. It can scarcely be said that it ever leaves the constitution without at least the semina of violent disease.

It was for a time doubted whether the child in the womb could be infected by the mother's disease, and many disquisitions respecting the connection of the mother and child have been brought forward to approve or oppose the opinion. Facts have, however, decided that such infection is not common. When the disease of the mother, however, is violent, the fœtus is affected apparently at the time of the retrocession of the eruptions, when the matter accumulated in the pustules is returned to the habit. Children have been born with the marks of small pox, which must have originated about that period, or, when excluded by premature labour, in consequence of the violence of the disease, the eruption has appeared so early as to preclude the suspicion of infection after birth. Confluent small pox usually brings on abortion or premature labour.

It has been doubted whether small pox affects the internal parts. We know that they appear in the mouth and fauces, and on the tunica conjunctiva of the eye; but whether they are ever found in the stomach, intestines, or on the surface of the other viscera, is doubted. The most respectable evidence for their existence internally is Wrisberg in the new Gottingen Commentaries, v. 66; but Cotunnio and numerous other authors deny it. We have read a case where they seem to have been found in the course of the intestines, but after much search have not been able to discover the author; and perhaps in their track only can any internal pustules be expected. An instance is indeed recorded of their internal appearance after being repelled from the surface, but not on authority that commands our assent.

The seat of the small pox has occasioned some disputes. Among other singular fancies, it has been supposed to be situated in the convoluted arteries of the surface, and that this was the necessary change to be produced in the constitution. C. L. Hoffman contends that there are variolous glands, others that the poison is contained in renes succenturiatæ, &c.; Woodward that the source is in the stomach; but in reality the pustules are little cutaneous abscesses under the cuticle, and in the mild kind seldom ulcerating the cutis vera.

What the changes induced by this disease may be has greatly perplexed pathologists, because they at once concluded that some portion of our fluids was susceptible of change by the variolous matter, and that this change was produced by a ferment of an assimilating nature introduced from some person labouring under the disease. To this opinion many objections may be offered. It is not necessary, for instance, that there should be any eruption: if the fluids around are affected so that fever is produced at the regular time,

the eruption is not an essential part of the disease; but it may be alleged that the inflammation shows an assimilatory power, for the quantity of virus is considerably augmented; and that the absence of the eruption may be satisfactorily explained by supposing the matter to pass through the skin without being obstructed so as to produce pustules. This to a certain extent is true; but the quantity assimilated must be in a much less degree; for there is no secondary fever on the return of the matter, and the disease is much less infectious in degree. It appears then rather to be a peculiar state of susceptibility in the skin, which is changed by the disease, and this opinion has greater force since we know, that when infection has accumulated, as in nurses, when the child lies against their bosom, a local eruption only is produced. That fever is not again excited must arise in a great measure from the effect of habit in resisting an accustomed stimulus. If we refer the want of future susceptibility wholly to the latter cause, and the assimilation which takes place in the skin to the violence of fever, the view may be more simple, and equally satisfactory. In each case it is at least certain that the degree and extent of the assimilatory process has no influence on the future security, if any assimilation has taken place.

The treatment of distinct small pox is very simple. It is scarcely a disease; and by a due regulation of the degree of fever we lessen the number of eruptions, and mitigate the severity of the complaint. Among the remedies a free exposure to the cold air is the principal, and we have shown (see DIAPHORETICA), that by this means every poison is most successfully eliminated from the constitution. A moderate relaxation of the bowels is also of importance, though when it was supposed that the morbid matter must be discharged through the skin, and by means of pustules, a high temperature of the atmosphere and obstinate costiveness were enjoined.

With similar intentions tepid baths have been advised, and the veteran Fischer, at the age of eighty, gave us an account of the very great advantages derived from them, in a severe variolous epidemic in Hungary. In general, those nations who, from negligence or necessity, are most filthy, suffer most from small pox. Pallas.

It has been usual, after small pox of the mildest kind, to give laxatives, with a view of carrying off the relics of the disease; but if there have been no local accumulations, and the bowels have been kept freely open during its progress, these are unnecessary. In general, distinct small pox leave no unpleasant complaints; but often remove slight ones that have previously existed. To prevent the pits it has been advised to puncture the pustules and keep them bathed with milk and water, to remove the slough and the consequent erosion of the skin. Others considering that pits are less frequent in those parts of the body which are covered, have contrived a mask to keep the pustules of the face from the air; but we have not found either plan peculiarly advantageous. The constant applications of mild ointments is not more successful.

The confluent small pox is a disease of peculiar difficulty and danger. The simplest idea that we can form of it is an irregular and hurried determination to the

skin, either from the peculiar virulence of the disease, or from debility. The virulence *may* arise from the nature or quantity of poison infused; but, in general, there is little reason to suspect danger from either source, and it is more probably owing to the state of the constitution, or the infection having taken place from fomites, where all virus is in a more active state. The eruption appears particularly early from the violence of the fever, which, itself arising from debility, is attended with asthenic symptoms in a high degree. The head, as usual, suffers, and the eruptions are peculiarly numerous in the face. In every view *emetics* are of particular importance, as lessening the fever, and determining more freely, as well as more regularly, to the surface, and these should be followed by *laxatives*; for the advantageous period for *purgatives* is at some distance. A *blister* to the neck is also one of the earliest remedies, and it is peculiarly indicated by the coma and oppression; but repeated blisters to the arms and legs seem of little other utility than to harass and distress the patient; for the determination of the disease to these parts cannot be prematurely induced.

After these steps, the patient may be freely exposed to cold air. He is, in general, too weak to be carried into the air; but cold liquors, a current of cold air, with undrawn curtains, in a spacious apartment, are necessary. The indistinct crowd of pustules is, in this way, frequently lessened, and a few regular ones will often rise: the head will appear more free, the breathing less oppressed, and the food taken more readily. In this interval medicines are of little importance. Yet the camphor, with the volatile neutrals, by determining to the skin, and taking off irritability, are often useful; to which is often advantageously added Hoffman's anodyne. If the number of pustules is now considerably decreased; if those which appear in the breast and arms begin to rise in distinct and regular forms; if the fever becomes more moderate, we may indulge some sanguine expectations. Our next object is to look for the salutary discharge of saliva. This seldom fails; but, on the decline of the disease, when it naturally becomes viscid, we must support it by squills, or by ipecacuanha, which usually succeed for a time; and, on its cessation, or somewhat previous to it, the action of purgatives must commence; for at this period the secondary fever begins.

The use of purgatives was adopted very early; but was not generally known till the publication of Friend's works, and particularly his epistle to Dr. Mead. On the decline of the eruption, medicines of this kind were given in doses sufficient to procure two or three motions daily; and by this means the secondary fever was checked. We have always employed them with advantage when the saliva began to be viscid, and with difficulty excreted, and, though not always with success, generally with an alleviation of symptoms. But at this period of the disease the patient sinks too often from debility: the load thrown back on the constitution oppresses the powers of nature, already to much debilitated.

It has been common to give bark very early in confluent small pox, generally with vitriolic acid, sometimes with vitriolated, or the oxide of zinc (Hufeland). In the early period the head is too much loaded to ad-

mit of bark, and at a later there is danger of suppressing the salivation. Yet, if debility is urgent, lesser inconveniences must be disregarded; and, when given, it should be given freely, unless dyspnoea should come on. The acid of vitriol, of nitre, or muria is less objectionable, and may be given at any period of the disease: of the preparations of zinc we cannot speak from experience.

On a sudden sinking of the features, and retrocession of the eruptions, blisters have been applied to the arms and legs, sinapisms to the feet, and the warmest cordials with musk and ether prescribed—we believe, in vain. The numerous blisters would contribute to destroy the little excitability which remained, and the antispasmodics, we fear, fail to produce their only salutary effect, a diaphoresis. Few are the instances of success; yet every attempt should undoubtedly be made.

Two medicines we have designedly omitted; for, as not limited to any particular time, it seemed better to speak of them separately; we mean mercury and opium. An opinion prevailed very early, that, as mercury was an antidote to lues, it was also the same to the variolous virus, and Von Woensel has published a little tract to show that mercury will render the virus inserted by inoculation inert and useless. His experiments are striking, if not very satisfactory; but, with these or other views, mercurial preparations have been very freely used. A German author styles calomel the *remedium panchreston*; Dr. Fowler, in the *Medical Commentaries of Edinburgh*, thinks that the same medicine in the early stages lessens the number of pustules. Hirschel recommends it as the best medicine to restore the salivation when suppressed, and other practitioners have given it in different stages with different intentions. We cannot speak of it from experience; but suspect, that there is no period in which it can be injurious. If peculiarly adapted to any, we should suspect it to be in the confluent kind, given with laxatives previous to the secondary fever.

Opium is a remedy somewhat more equivocal. We know that it lessens irritation, determines to the skin, and assists suppuration; yet, in distinct small pox, it is required only to give occasional rest, and, in the confluent, it is unnecessary in the early stages while coma exists, and there is danger of inducing dyspnoea, and checking that most salutary of discharges, the saliva, if given in the later periods. The delirium is also, in many instances, exacerbated by this medicine, and the patient rendered furious. It should, therefore, be used with caution, and it may be most safely given in the form of Dover's powder. When the eruption is repelled, it may be given freely with the other stimulants and antispasmodics. Practitioners have not, however, been in general apprehensive of inconveniences. Drummond, in the *Edinburgh Medical Commentaries*, recommends large doses from the earliest period of the eruption, and De Haen (*Rat. Medendi*, ii. 42) employs it during the whole course of the disease. Many authors prescribe it in the putrid kind, and when the strength fails, particularly Storck and Hufeland; nor does Sydenham disapprove of it.

The varieties of small pox are numerous. From the appearance they are divided into the *crystalline* and *horny*. The former are white, filled with pellucid lymph, and

this form appears to be the most common appearance of the disease, when it is supposed to occur a second time. The eruptions in the second kind are hard and horny, and in this form the small pox of negroes often appears. The inoculated pustule, in this race, is distinguished by a peculiar hardness.

When a bilious epidemic prevails, the small pox partakes of its nature (Grant), and the disease then requires more frequent and more active laxatives. When a putrid fever is epidemic, the small pox is attended with a similar one, and very early in the eruption the interstices are filled with petechiæ. These alone are seldom attended with any bad consequence; but, when conjoined with extreme debility, passive hæmorrhages, deliquium, &c., the bark with the mineral acids, and the strongest cordials with wine, are necessary. We have spoken of the small pox as combined with measles, but with itch the disease is said to be more mild: with scarlatina and miliary fever it proceeds with little disturbance; but with violent catarrhs, or rather with asthenic influenzas, its periods are altered, and it becomes much more dangerous.

We have learnt, however, greatly to diminish the danger of this disease by INOCULATION; and in the more improved practice, instead of one in seven, not one in three hundred, probably not one in a much larger proportion dies. Unfortunately, however, the infection is thus generally disseminated, and though individuals are benefited, the community suffers. More than forty thousand are said to die annually of small pox; nor can we think that this alarming mortality should be permitted while the remedy in vaccination is so easy. If, for instance, each person of opulence was to pay five pounds for a license to inoculate, with a security to perform a rigorous quarantine, the sums thence arising would establish small pox hospitals for the poor, and indiscriminate inoculation might be prevented under heavy penalties. In this way, after no long period, the small pox would be comparatively uncommon; and, if then it were by accident introduced, it might, as already hinted, be easily prevented from spreading; and, though vaccina be not the perfect security it has been supposed, it would be so within a few years.

It is, however, our present business to speak of this method as it is usually practised. Its history need not detain us; but we may only remark, that the custom of "buying" the small pox was prevalent in Wales long before the introduction of inoculation by lady M. W. Montague. After an opposition equally violent and virulent with that which vaccination has experienced, it is at length established, and its advantages are better known than readily explained. Of these a considerable one is, that the disease is usually mild, and very rarely confluent; but if it should be so, it is less dangerous, because there is no secondary fever. The latter circumstance is a peculiar and distinctive character of inoculated small pox. In explaining these advantages, the choice of time, of matter, and of habits, has been insisted on; but by experiments, perhaps scarcely justifiable, we find the matter of the confluent or even a putrid kind will produce a favourable crop; that constitutions, exhausted by disease, do not suffer considerably; and that the time of life or the season, with moderate precautions, have little influence. The only dif-

ference we can perceive is, that in the inoculated small pox the infection is received under the skin; in the natural kind in the lungs or throat, perhaps the stomach; but the lungs or throat is the more probable seat, and the sensation felt in the stomach, after infection of every kind, seems rather from sympathy than actual impression. We know not that air, in any instance, except in combination, enters the latter organ.

The prevention of the secondary fever is a problem of peculiar difficulty. We have attributed it to the matter absorbed: but, though it occurs at the period of absorption, this cannot be the only cause; for even a considerable load of inoculated small pox disappears without its occurrence. We pretend not to solve the problem, but have distinctly stated it to excite attention.

Inoculation is not by choice practised on very old persons or young infants. If the mother is the nurse, her anxiety will often injure the milk, and add to the irritation; nor should we omit the consideration, that fits at this period are not uncommon, and, though usually the harbingers of a mild kind, may themselves prove fatal. After about six months the irritation of teeth offers another obstacle, which is not completely avoided until the second year, a period of considerable risk in a large town, where small pox is seldom absent. These precautions are, however, frequently overlooked without considerable inconvenience. Children are often inoculated within the first six months, and afterwards, if no swelling of the gums shows the near approach of a distending tooth. Unexpected occurrences sometimes undoubtedly derange our plans; but though these give often the appearance of danger, the disease is seldom rendered truly dangerous.

Advanced age offers no real impediment, and exhausted constitutions often go through the disease more mildly than others. We once, on an emergency, inoculated a whole family, and among the rest, an infant at the breast, then labouring under a severe fever, calculating, from the circumstances, that this might be checked before the variolous fever came on. Its crisis was only on the morning before the accession of the latter, and the child escaped better than seven others. We mean not to recommend the practice; but, surrounded by small pox, even in the house, it was the only chance which remained. We know of no constitutional disease that should prevent inoculation.

The season of the year is not important. We generally prefer the milder seasons, when free air, out of doors, may be constantly breathed, and when the temperature is sufficiently low to employ cold as a remedy. The spring is avoided by some practitioners as the period of inflammatory complaints; the autumn, by others, as that of putrid ones; the summer as too hot, the winter as too cold: but these are idle refinements, which merit no attention. The extremes of heat and cold, for the reasons assigned, are not to be selected by choice.

Equal refinement has prevailed respecting the preparation, and each practitioner had for a time his favourite medicine, of which calomel and tartarized antimony were usually parts. If a person is full, active, and strong, the diet may for a time be lowered, and as it is proper to prevent accumulations in the bowels, calomel may be employed as a purgative, as well as

any other medicine. As a vermifuge, in children, it may be superior to any other. In general, except in inflammatory habits peculiarly full, and children grossly fed, there is sufficient time for the preparation, after the matter is inserted. Should the wound inflame rapidly, our exertions in reducing the strength must be increased.

The operation itself is the simplest possible, consisting, like vaccination, only in raising the skin, and introducing under it the variolous matter. Sutton attributed much of his success to using fluid matter at an early period of the pustule, and it is certainly preferable; for at a more advanced stage, it partakes of the nature of common pus, and produces more inflammation than would arise from matter exclusively variolous. In general it is safer to procure a drop of blood, which should not be wiped away, but suffered to congeal.

The puncture sometimes remains many days, without the slightest change, and occasionally the mark appears to lessen. If the operation, however, has been successful it does not heal, and this is often the only foundation for supposing that the infection has taken place. In other circumstances it begins to inflame in a few hours, and after four-and-twenty becomes a highly inflammatory pustule: a rapid advance, which usually portends a violent disease. In the greater number of cases, after about twenty-four, or, at most, forty-eight, hours, a little swelling may be observed on the wound, and on examining it with a lens, a little orange coloured circle appears around.

On the fourth or fifth day a hardness may be perceived where the puncture was made, an itching is felt, and a slight inflammation observable. On the sixth day a pain and stiffness are generally felt in the axilla, which continue until the tenth or eleventh day, foretelling the near approach of the eruption, and a favourable progress. On the seventh or eighth day the eruptive symptoms appear, such as slight pains in the head and back, stiffness in the arm pits, transient shiverings, with alternate heats, &c. which continue more or less until the eruption is completed: the inflammation in the arm spreads, and little pustules surround the wound, which increase in size as the disease advances. On the tenth or eleventh day an efflorescence round the puncture sometimes extends half way round the arm; and the larger it is, the fewer the pustules and the milder the disease. When it accompanies the eruption, the fever and other uneasy symptoms subside, and all danger is at an end.

If none of the appearances on the arm appear before the eighth day, the inflammation, &c. about the puncture rise suddenly; and this is generally, though without reason, regarded as a mark of danger. Mr. Sutton repeats the evacuations from the time of infection to this period, and observes, that when the skin is hot and dry, repeated doses of salts are more useful than the mercurial medicine.

The favourable symptoms are, an orange coloured stain about the edges of the puncture on the second day, followed by an itching and a vesication, without much inflammation; on the third or fourth day, but not delayed beyond the sixth; a pain and stiffness in the axilla; the large efflorescence about the puncture on the tenth or eleventh day; a hardness which spreads

from the puncture as from a centre, and a little dry scab on the inflamed part when it rises to an apex.

The less favourable symptoms are, a purplish instead of a red coloured inflammation or a narrow deep red circle surrounding the puncture, and when the incrustation around it is depressed or concave in the middle.

When the fever has come on no particular medicines are required, but if every circumstance be not favourable, our conduct must be the same as in the natural small pox already described, where similar symptoms occur.

Boerhaave first suggested that an eruption was not necessary, and there is little doubt but that the real disease consists in the fever at the proper period after infection. Even after eruptions have appeared, we have seen them checked without maturation, by free exposure to cold air; nor did the patient experience the slightest inconvenience. If then a portion of our fluids is to be assimilated by the ferment, it is necessarily a small one, and soon disappears. In fact, however, the assimilatory process takes place only in the pustules.

We need not enlarge farther on this subject, and indeed we may appear to have been more full than the disease requires. We trust that in a future edition the whole article will be expunged as unnecessary, and our posterity read with surprise that such things have been. It is a consummation devoutly to be wished for.

On the small pox, see Sydenham and Mead's Works; Huxham on the Small Pox; Thompson's Enquiry into the Origin, &c. of the Small Pox; Tissot's Practical Observations on the Inoculation. See Kirkpatrick, Dimsdale, and Woodville's History of Inoculation; Percival on the Advantages and Disadvantages of Inoculating Children; Blake's Letter to a Surgeon on Inoculation: also Baker, Burges, Matty, Watson, Glas's two Letters; Bromfield; Gatty, and Chandler on Inoculation; Cullen's First Lines, edit. 4. vol. ii.; White's Surgery, p. 423.

VARI'OLA CHOLE'RICA. See MORBILLI.

VARI'OLA LYMPHA'TICA. See VARICELLA.

VA'RNIUM OS, (from *varius*, *unequal*). See BU'BOIDES.

VARIX, (from *varius*, *irregular*,) *ixia*; *bidella*; *cur-sos*; a preternatural distention of portions of the veins, between their valves, defined by Dr. Cullen a soft tumour not pulsating above a vein. When seated, however, over an artery it sometimes pulsates, and has been styled aneurismatic (Medical Observations and Inquiries, i. and iii.). When in the larger veins it is often fatal. Tozzetti discovered it after death in the vena azygos (Prima Raccolta di Osservazioni Mediche); and Michaelis in Richter's Bibliotheca describes a varix of the jugular vein which terminated fatally. Sometimes varices are formed in the legs, and are so large and troublesome as to require being removed. (See Gooch's Treatise on Wounds, p. 188.) They are common in the legs of pregnant women, and, it is said, of those who labour under a scirrhus liver. Generally a tight stocking, or spiral bandage, is only necessary for relieving the inconveniences occasioned by this complaint. Varices have sometimes burst spontaneously, and been sometimes punctured, when the cicatrix gives a firmness to the relaxed coat of the vein (Petit).

Astringents are sometimes employed with advantage. A very powerful one is the following, though we do not recollect its author. An ounce and a half of blue vitriol, with as much alum, is dissolved in a pint of rain water, to which half an ounce of vitriolic acid and a drachm of ærugo are added. The leg affected must be firmly bandaged, and the bandage frequently wetted with this embrocation. Severinus recommends the actual cautery, and Richter a solution of sal ammoniac in vinegar or wine. See Heister's Surgery; Bell on Ulcers, edit. 3. p. 260; White's Surgery, p. 125.

VA'RUS. A PIMPLE; *coSSI*; *ionthos*. See GUTTA ROSACEA. A bending of the legs inwardly. See VALGUS, CYLLOS.

VAS, a VESSEL, *entale*; *alkalia*; *angos*. In anatomy, those canals are called VESSELS through which the fluids are circulated, or by which some of them are absorbed, secreted, or excreted.

When we confine this general term to the circulating vessels, some observations worth recording occur. We have styled them primordial parts, and incapable of extension beyond certain limits, but have given full force to Mr. Hunter's opinions (see BLOOD), and Mr. Abernethy's (see TUMORES). We need not, therefore, resume the subject. Air has been sometimes found in them, but it appears to have separated after death, should it not have been its cause, since air injected into the arterial system soon induces convulsions.

The circulating system is sometimes confined by concretions either cartilaginous, osseous, polypous, or steatomatous, in their cavities. A steatom was found by Stenzel in the aorta, and the coronary artery sometimes cartilaginous, in other instances osseous (Crell and Parry); but we could not admit, with the latter, that this was the cause of ANGINA PECTORIS, q. v. The obstructions in the smaller vessels, usually producing indurations and scirrhi of the liver and other viscera, seem to arise from their want of irritability, either in consequence of shocks, too great excitement from previous repeated inflammation, indolence, the abuse of spirituous liquors, &c. Hence arises, as we have explained, the utility of mercury in small doses, long continued.

The only other disease of the vessels to which we mean now to advert is the inflammation of their coats. Mr. Hunter has explained how the internal surface of a vein is inflamed after bleeding, and we have been willing to refer rheumatism to this cause. We suspect it to be more often a cause of inflammatory pain than has been supposed; but can trace it but a little way. An author, whose work we have tried in vain to procure, may perhaps elucidate the subject. E. J. Smuck Observaciones Medicæ de Vasorum Sanguiferorum Inflammatione, Heidelberg, 1793.

In chemistry, *vessels* are employed for containing substances, and for the various processes, &c. viz. alembics, aludels, worm-still, receivers, cucurbits, sand-baths, cones, retorts, pelicans, &c. In botany, the vessels are of three species, viz. *vasa propria*; *utriculi*; and *tracheæ*. See PLANTA.

VAS URINÆ. See CUCURBITA.

VA'SA BRE'VIA. See SPLENICA ARTERIA, and SPLEN.

VA'SA LYMPHA'TICA. See LYMPHÆ DUCTUS.

VA'SA SPERMA'TICA. See SPERMATICA CHORDA.

VA'SA SUCCO'SA. See VAS.

VA'STUS EXTE'RNUS, and INTE'RNUS, (from *vastus*, *large*;) *crureus*. These may be considered as one muscle, whose outer part rises from the external, the inner from the internal, and the middle from the anterior part of the femur, in such a manner as to surround the whole thigh, except the linea aspera. The tendons are joined with those of the rectus. See CRUREUS.

VE'CTIS, (*à vehendo*, from carrying different kinds of ware,) the simple lever, not greatly differing from the single blade of the forceps. (See PARTURITIO). Dr. Hamilton is of opinion that it may be employed where a slight stimulus is sufficient to rouse the pains, or where little force is necessary to alter the position of the head, by introducing it in the same manner, and with the same precautions, as a blade of the forceps, either at the lateral parts of the pelvis under its arch, or diagonally; but as there is great hazard of bruising the mother by the resistance of the instrument, unless managed so that the hand of the operator is the fulcrum or support on which its action turns; and as it can only be used when the head is sufficiently protruded for applying the forceps, it has been considered as a dangerous instrument in the hands of a young practitioner. Dr. Bland, whose experience and judgment demand the highest respect, thinks that it may be in many circumstances highly useful.

VEGETABILIS, (from *vegeo*, to shoot out). VEGETABLE. (See PLANTA and CHEMIA.) Under the former of these articles we have considered the anatomy, the physiology, and pathology, of plants at some length; but, as was intended, under the latter only a general abstract of vegetable chemistry is inserted. Its imperfections we shall now supply, though in a general summary way.

The vegetable principles are the woody fibre, the extractive, tannin, mucilage, fæcula, volatile oil, camphor, resin, and balsam, gum resin, and vegetable acids. Alumen, fibrin and gelatin, benzoic and phosphoric acids, sugar and fixed oil, are common both to the vegetable and animal kingdom. Of these we shall speak in their order.

The *woody fibre* is the firm, solid support of the tree; and, if divested of the bark, which contains the substances to be afterwards mentioned, as generally insipid, though sometimes, as in the guaiacum, quassia, &c. (see LIGNUM), it possesses obvious and medicinal qualities. It yields, in distillation, hydrocarbonated gas, carbonic acid, empyreumatic acetous, or pyroligneous acid, with a little ammonia, and a small proportion of volatile oil. It consequently contains, with the other component parts of vegetables, a small proportion of azot, and indeed the minuter chemistry discovers this principle in many kinds of vegetable matter, where it was not before suspected. The remaining charcoal is in a large proportion, and there is no analogous substance in the animal system.

Extractive matter is a vegetable product, with a very slight decomposition, sometimes separated with little change. It seems a combination of the gum, the resin, and albumen, or gluten. It yields, however, ammonia

when combined with quick lime. In distillation the ammonia is covered by an empyreumatic acid, though separated by alkalis. In this vegetable principle we find also azot, and nothing analogous to it in the animal kingdom.

Tanin seems to contain no ammonia, though a principle resembling it is found in animal substances, as Mr. Hatchett procured it from many of these, previously charred by the action of the nitrous acid.

The *mucilage* of the vegetable kingdom seems analogous to the albumen of the animal, which we have supposed to be converted into gluten by the union of azot. It contains a large proportion of this last principle, which appears to disguise its acid. It is found in the substance of some plants, in the bulbous roots of others, and occasionally in the woody fibres of the roots.

The *fæcula* is nearly allied to the mucilage, and in many of the palms is contained in a separate state; but sometimes requires much artificial preparation to extract it. It is contained in all seeds, and, in a smaller proportion, in tuberous, bulbous, and other fleshy roots; but seems to contain no ammonia except by accidental impregnation. Some *fæculæ*, in this way, contain it in considerable quantity, as indigo.

Volatile oil also affords no ammonia, and there is no analogous fluid in animals, except in their secretions. It is found in the bark, the wood, and many seeds, and contains the usual principles of vegetables, except the azot. The cerumen of the ears and the bile may be considered as resembling in some of their chemical properties these oils.

Camphor, resin, and balsams are more compound vegetable principles, and seem to contain an acid, disguised by a superabundance of oxygen. They contain, as may be suspected from the excess of oxygen, no azot. The aromatic animal products, apparently resinous, as musk, civet, and ambergis, contain a large proportion of azot. The gum resins possess a large proportion of the same principle in their mucilage.

The *acids, truly vegetable*, are the *tartarous*, the *citric*, and the *gallic*. The *malic* and *oxalic*, evolved in the fruits and leaves of plants, the *acetic* the production of spontaneous fermentation, and the *prussic* contained in the bitter almonds, in the laurel and peach leaves, may also be separated from animal substances.

The *acids common to both kingdoms*, though more strictly connected with the animal than those last mentioned, are the *benzoic* and *phosphoric*. The former is found in the vegetable balsams and the urinary calculi; the latter combined with lime and potash occurs in the vegetable kingdom but rarely; though common in the animal, as the basis of bones.

Sugar is a vegetable oxide, and would have been arranged among vegetable productions, if it had not occurred in the milks of all animals. The saccharine matter in diabetes is the effect of disease only.

Gluten and *caoutchouc* are vegetable substances; but very nearly connected in their principles with the animal kingdom, as their proportion of azot is considerable without any acid.

Albumen, fibrin, and gelatin, though in general animal productions, are yet sometimes found in vegetables, and contain always a large proportion of azot.

Fixed oil, on the contrary, is more strictly vegetable, and is found only in the cellular membrane, the milk and the bile of animals, but very copiously in vegetable seeds and many fruits. All these vegetable principles may be resolved into oxygen, carbon, hydrogen, azot, and sulphur. These only seem essential to their existence as vegetable matter, and even sulphur may be perhaps abstracted. The varied forms of vegetables depend on numerous other ingredients, as the phosphoric and muriatic acids, oxides of iron and magnesia, potash and soda, lime, magnesia, silex and alumine.

As vegetables are the food of animals, it is much easier to trace the source of the animal products than of those which are derived from water and vegetable mould; a substance of no very intricate or complicated combination. But the vegetable, as the animal, forms its own juices, and the narcotic bitter does not differ more from the mould with which it is nourished than the semen from the blood, from whence it is secreted. Each is elaborated in organs too minute for our sight, in a manner that eludes the subtlest investigation.

VELAME'NTUM BOMBYCI'NUM, (from *velo*, and *bombyx*, a silk-worm,) the interior soft membrane of the intestines.

VE'LUM PE'NDULUM PALA'TI, (from *velo*). See FAUCES.

VE'LUM PUPILLÆ. See PUPILLARIS MEMBRANA.

VENA, a VEIN; a thin, ramifying, elastic tube, arising in the extremities of the body, and terminating in the heart or in the liver. The blood is distributed through the body by the aorta and the pulmonary artery; and it is returned by three kinds of veins, viz. the cava, the pulmonary, and the vena portæ. The arteries have their correspondent veins, and the course of one is known by that of the other. They begin where the arteries end, and proceed from the branches to the trunk, enlarging in diameter in their course.

The extremities of the arteries in the brain are continued into their veins, but the former enter the brain at its basis, and are soon minutely divided: the trunks of the veins, on the contrary, are extended on the surface of the brain, and discharge their blood into sinuses; nor do the veins of the brain accompany their arteries as in other parts, and as the arteries and veins, of the dura mater do. In the corpora cavernosa penis, and perhaps in the spleen, they are not continued from the arteries, but open, like lymphatic vessels, from cavities.

The veins subject to frequent compression, from the action of the muscles, have numerous valves, which open towards the heart to prevent regurgitation; and indeed in all the veins except those of the uterus, the cerebrum, and portæ, valves prevent the return of the blood when the course of the fluid is occasionally checked. The superficial veins prevent the circulation being interrupted by the action of the muscles compressing the more internal.

The coats of the veins are thinner than those of the arteries, but these fibres run in all directions, and are not muscular: their coats are thicker in the extremities than among the viscera, particularly in the saphena.

The capacity of the veins is much larger than the arteries, except in the pulmonary vessels, where the four veins taken together are not equal to the artery.

Veins are occasionally ruptured, and their internal surface sometimes inflamed from bleeding. See PHLEBOTOMIA and VASA. See Winslow's Anatomy; Haller's Physiology.

VE'NA SPLE'NICA BRA'CHII MEDIA'NA BASI'LICA. See BASILICA VENA.

VE'NA MEDINE'NSIS. See DRACUNCULI.

VE'NA SI'NE PA'RI and JU'GO. See AZYGOS VENA.

VENA CAVA. (See CAVA and COR). This vein is sometimes varicose (Morgagni Opuscula Miscellanea, i. 10), occasionally closed (Albini Annotationes Academicæ, vii. 9); in one instance was found ruptured, (Morgagni de Sedibus, &c. xvi. 27, 28). In this case the pulmonary vein was also ruptured. See Haller de Aortæ Venæque Cavæ, Gravioribus quibusdam morbis Observationes.

VE'NA JUGULA'RIS. (See JUGULARES VENÆ). We resume this subject chiefly to mention the advantages supposed to be derived from opening it. In children the other veins are often too small to admit of a sufficient discharge in a given time, and in cases of suffocation it is particularly advantageous, as it tends to deplete the neighbouring vessels, and, of course, to remove accumulations. Chabert in the History of the Academy of Surgery, ii. 94, has described a machine for this purpose, and Tralles has highly recommended a discharge from this vein in diseases of the breast and head. Tralles de Vena Jugulari frequentius secunda.

VENA RANINA. The vein under the tongue, not unfrequently opened in the diseases of children; but many inconveniences are recorded as resulting from this operation, and it should not, therefore, be attempted, as the advantages are equivocal.

VE'NÆ LA'CTEÆ. See LACTEA VASA.

VE'NÆ-SE'CTIO, (from *vena*, a vein, and *seco*, to cut). See PHLEBOTOMIA.

VENENUM, (βέλενον, from βέλος, a dart, as usually conveyed by darts). Poisons, as we have often had occasion to observe, differ from medicines, not in qualities, but in doses; and we usually annex the idea of poison to those things which produce deleterious effects in very small quantities, and of whose action we are imperfectly acquainted. What kills by its mechanical action externally is not styled poison. Medicines of a peculiar nature, which unavoidably kill, but whose bad effects are occasionally relieved by specifics, or for which we have no cure, are commonly called poisons.

In this way, though we speak of the poison of cancer, of variola, and of putrid fever in common language, it forms no part of the present subject; nor indeed when a person breathing the miasma of pestis confined in fomites falls down without life, is he properly considered as having been poisoned; for these are causes of disease which, if not violent and sudden in their termination, might be removed by medicines suggested by indications; yet when suffocated by carbone, by azote, &c. a person is said to be poisoned, because no specific disease results from a less degree of the application. The distinction is not perfectly correct and scientific; but it is unnecessary in this place to innovate on popular opinions and common language.

Poisons may be divided into animal, vegetable, and mineral. The volatile animal poisons are the vapours of putrefaction. Those from vaults have proved fatal

in France. The vapours of graves, hastily opened and incautiously breathed, have had the same effect; and the highly fetid vapours from numerous persons labouring under dysentery and putrid fever have proved very suddenly fatal. The breath of some serpents is said to prove fatal; but this idea is now left, with the other tales of the nursery, to ignorance and superstition; nor is it even admitted that the breath of the black snake fascinates birds. The more fixed animal poisons are those of serpents, of the scorpion, if really poisonous, of fish, and perhaps of the mad dog. The toad is said to be poisonous; but facts are wanting to establish its deleterious quality.

Of the serpents and scorpion we have already spoken (vide in verbis). Fishes of many kinds are poisonous; but few at all times, and in every constitution, so that, as in muscles, it seems to depend on their food. (See MYTILUS). The *cancer terrestris* also of the West Indies is only poisonous in dry seasons, when the deficiency of other food compels it to feed on the bark and leaves of the manchineel tree. The *lobster*, probably from its food, is occasionally poisonous. Fish, in the more strict sense, are sometimes dangerous; but the deleterious kinds are chiefly inhabitants of the tropical seas, and, in the fishermen's opinion, may be distinguished by their want of scales. The *yellow billed sprat* is highly poisonous, while the *black billed*, scarcely distinguishable from it by sight, is innocent. The *baracuta* is sometimes poisonous, though occasionally eaten without danger. The *cavallee* (the scomber of Brown) is usually poisonous; and the varieties styled bottlenose and ambar are the same, though the greenback is innocent. The *king fish* (xiphias of Brown) is highly delicious, and only at some seasons injurious. The *smooth bottle fish* (ostracion glabellum) is at times very dangerous. The *rock fish* (perca marina of Catesby) is apparently only dangerous when caught in particular situations.

In general, the poison of fish appears to lie in the intestines, as it probably arises from their food; for it is found that if these are immediately taken away, the fish well washed and salted, little danger results from even the baracuta. The symptoms are alarming, but not highly dangerous. Cardialgia and nausea are succeeded by severe vomiting and purging, cold sweats, fainting, and vertigo. The face is highly flushed, the eyes inflamed, and agitated by spasmodic contractions. A burning soon comes on in the face and eyes, extending to the extremities, accompanied, or succeeded, by a general efflorescence, with a pricking of the skin, and this affection of the surface attends the injuries received from every kind of fish; in some constitutions from even the most innocent. The skin at last peels off, and shooting pains in the joints often continue for some time, and at intervals for many years. The poison must be soon evacuated, and the vitriolated zinc is recommended for this purpose. The bowels must also be relieved, and after this the warmest cordials of every kind are alone sufficient. The capsicum in large doses is often highly useful, and as a remedy always at hand, when a ready active one is wanted, it is peculiarly advantageous.

The sea insects, the blubbers, and many other inhabitants of the ocean are undoubtedly poisonous; but

their effects are little known, for their appearance is too disgusting to allow of their being eaten. Of other insects the *meloe vesicatorius* (*cantharis*) is the only poison with which we are distinctly acquainted, but may add from Plenck's *Toxicologia* a list of the insects supposed to be venomous. *Furia infernalis*; *meloe majalis* and *proscarabæus*; *scorpio Africanus*; *phalangium aranoides*; *sirex gigas*; *buprestis*; *aranea domestica* and *tarantula*; *pulex penetrans*; *culex pipiens*; *pulicaris* and *lanio*; *apis mellifica*; *vespis vulgaris* and *crabo*. The poisonous worms are, *gordius medinensis* and *marinus*; *hirudo medicinalis venenatus*; *tethys marina*; *urtica marina*. Among the poisonous amphibia are, *rana bufo*; *lacerta goeko* and *salamandra*. The poison of many of these, however, consists only in their sting. To the fish formerly mentioned as poisonous we may add, from Plenck, the *tetraodon ocellatus* and *lineatus*, *perca venenosa* and *sparus pagurus*. Anderson in the *Philosophical Transactions*, lxx. 544.

Animal substances that have passed through a considerable part of the process of putrefaction are often highly deleterious, and the mildest in its natural state is the most injurious, when putrefied, the egg. It has been doubted whether animals killed with poisoned weapons may be eaten with safety; but we believe the innocence of such food is now well established, though some facts seem to oppose. It has been alleged that some poisons kill by their aroma, which spreads readily, and adheres tenaciously. This is, however, an apparent refinement of little utility in our inquiries.

The vegetable poisons are very numerous, and may be divided into the volatile and fixed. The former rather refer to medical police than to a practical treatise; but it may be of use to enumerate those vegetable substances which exhale an offensive, possibly an injurious, effluvia. The odours which we shall add are sometimes when diluted pleasing, but oftener injurious. These are the

HALITUS.

Anagrydis.
Dracunculi.
Juglandis.
Sambuci.
Santali albi.
Alceæ moscatæ.
Mancinellæ.
Cannabis.
Lini.
Toxicodendri.
Vernicis.
Dracontii polyphylli.
— fœtidi.

Hellebori albi.

The ODOURS are,
Violarum.
Rosarum.
Liliorum alborum.
Caprifolii.
Polyanthes.
Phaseoli.
Fœni recentis.
Oleandri.
Caryophyllorum.
Asæ fœtidæ.
Ambræ.

Moschi.

Castorei.
Zibethi.
Cantharidum.

Hyosciami.

Stramonii.
Opii.
Crocii.
Tabaci.
Lolii temulentii.
Cicutæ.
Conii maculati.
Fungorum venenatorum.

They are divided by Plenck, in which he is followed by almost every author, who is, however, anxious to keep him concealed, into narcotic, narcotico-acrid, mushrooms, acrid, and glutinous poisons. The two first distinctions we cannot perceive, nor do the effects of

the poisonous mushrooms appear to us to differ from those of the other narcotics. We shall include them therefore under the general title of narcotics, distinguishing each by the Greek letters α , β , γ .

I. NARCOTIC POISONS.

α *Papaver somniferum*.
Physalis somnifera.
Solanum lycopersicum.
— *mammosum*.
— *insanum*.
— *dulcamara*.
— *nigrum*.
Datura stramonium.
— *metel*.
— *ferox*.
— *tatula*.
Atropa mandragora.
Hyoscyamus niger.
— *albus*.
— *physalodes*.
— *scopolia*.
Azelea pontica.
Antirrhinum orontium.
Actæa spicata.
Lolium temulentum.
Ervum ervilia.
Lathyrus cicera.
Peganum harmela.

Chænopodium hybridum.

Taxus baccata.
Chelidonium glaucium.
Lactuca scariola.
— *virosa*.
Prunus laurocerasus.
Paris quadrifolia.

 β *Hippomane mancinella*.

— *biglandulosa*.
Menispermum coculus.
Coriaria myrtifolia.
Strychnos nux vomica.
— *colubrina*.
Ignatia amara.
Nerium oleander.
Atropa belladonna.
Nicotiana tabacum.
— *rustica*.
— *panicula*.
— *glutinosa*.
Bryonia alba.
Chærophyllyum sylvestre.
— *bulbosum*.

Chærophyllyum temulentum.

Æthusa cynapium.
Sium latifolium.
Cicuta virosa.
Conium maculatum.
Mercurialis perennis.

 γ *Agaricus muscarius*.

— *integer venenatus*.
— *lactifluus venenatus*.
— *viscidus*.
— *piperatus*.
— *fimetarius*.
— *pustulatus*.
— *necator*.
— *sanguineus*.
— *viscidus*.
— *clypeatus*.
Boletus versicolor.
— *elegans*.
Boleti parasitici.
Phallus impudicus.
— *mukusin*.
Lycoperdon carcinomalis.

II. ACRID POISONS.

Delphinia staphisagria.
Semen sabadilli.
Rhododendron corysanthemum.
Fritillaria imperialis.
Colchicum autumnale.
Pedicularis palustris.
Digitalis purpurea.
Lobelia siphilitica.
 ——— *longiflora.*
Cyclamen europæum.
Plumbago europæa.
Convolvulus scamonea.
Cucumis colocynthis.
Momordica elaterium.
Cambogia gutta.
Cerbera ahovai.
 ——— *manghas.*
Cynanchum erectum.
 ——— *vimiale.*
Apocynum androsæmifolium.
 ——— *canabinum.*
 ——— *venetum.*
Asclepias gigantea.
Hydrocotyle vulgaris.
Oenanthe fistulosa.
 ——— *crocata.*
Scandix infesta.
Thapsia fœtida.
Alisma plantago aquatica.
Clematis vitalba.
 ——— *flamula.*
 ——— *erecta.*
 ——— *integrifolia.*
Anemone palmata.
 ——— *pulsatilla.*
 ——— *pratensis.*
 ——— *narcissiflora.*
 ——— *nemorosa.*
 ——— *ranunculoides.*
Helleborus albus.
 ——— *niger.*
 ——— *fœtidus.*
Veratrum nigrum.

Caltha palustris.
Aconitum napellus.
 ——— *cammarum.*
 ——— *lycoctonum.*
 ——— *anthora.*
Pastinaca sativa, annosa,
Polygonum hydropiper.
Sælanthus quadragonus.
 ——— *glandulosus.*
 ——— *forskali.*
Jatropha curcas.
 ——— *multifida.*
 ——— *manihot.*
Ricinus communis.
Phytolaca decandra.
Croton tiglium.
Daphne mezereum.
 ——— *thymelæa.*
 ——— *laureola.*
 ——— *cneorum.*
 ——— *gnidium.*
Cneorum tricoccum.
Amyris toxifera.
Rhus vernix.
 ——— *radicans.*
 ——— *toxicodendron.*
Scilla maritima.
Excæcaria agallocha.
Anacardium occidentale.
 ——— *orientale.*
Caryota urens.
Arum maculatum.
 ——— *dracunculus.*
 ——— *dracontium.*
 ——— *colocasia.*
 ——— *esculentum.*
 ——— *virginicum.*
 ——— *arborescens.*
 ——— *seguinum.*
Calla palustris.
Euphorbia officinalis.
 ——— *antiquorum.*
 ——— *canariensis.*
 ——— *tirucalli.*
 ——— *peplus.*

Euphorbia lathyrus.
 ——— *helioscopia.*
 ——— *verrucosa.*
 ——— *platyphyllos.*
 ——— *esula.*
 ——— *cyparissias.*
 ——— *pallustris.*
 ——— *hiberna.*
 ——— *characias.*
 ——— *amygdaloides.*
 ——— *sylvatica.*
 ——— *exigua acuta.*
 ——— *mauritanica.*
 ——— *nerifolia.*
Ranunculus sceleratus.
 ——— *thora.*
 ——— *flamula.*
 ——— *lingua.*
 ——— *ficaria.*
 ——— *illyricus.*
 ——— *bulbosus.*
 ——— *alpestris.*
 ——— *polyanthemos.*
 ——— *acris.*
 ——— *arvensis.*
 ——— *gramineus.*
 ——— *asiaticus.*
 ——— *aquatilis.*
 ——— *platanifolius.*
 ——— *breynius.*
 ——— *sardous.*
Raphanus raphanistrum.
Secale cornutum.
Ustilago frumenti.
Caries frumenti.
Rubigo frumenti.

III. GLUTINOUS POISONS.

Gluten aucuparium.
 ——— *visci querni.*
Fungus cynosbatus.
Spongia marina.

Mr. Wilmer in his Observations on the Poisonous Vegetables found in Great Britain distinguishes, 1st. Those from which maniacal symptoms are to be expected, or different nervous affections from a vertigo to a fatal apoplexy, including the *HYOSCYAMUS NIGER*, *SOLANUM LETHALE*, *ACONITUM*, *MERCURIALIS SYLVESTRIS*, *STRAMONIUM*, *CICUTA MAJOR FÆTIDA*, *AGARICUS MUSCARIUS*, *AGARICUS PIPERATUS*, q. q. v. Secondly, Those which produce epileptic symptoms, a loss of understanding, speech, and all the senses, within a few minutes after they are taken in the stomach: the muscles will be convulsed, and death will close the scene in a few hours. *ŒNANTHE CHÆROPHYLLI FOLII*, *CICUTA AQUATICA*, and *LAUROCERASUS*, q. q. v. The danger of the last is very great, as they do not offend the palate, nor produce any sickness in the stomach, so that they are not likely to be discharged without the assistance of art; and are so

quickly active, that they scarcely afford an opportunity for assistance.

He adds, that poisonous vegetables appear to act by oppressing the nervous system, rather than by inflaming the stomach and duodenum; and that these vegetable poisons, in different constitutions, will have various and sometimes opposite effects.

The antidotes of the narcotic poisons are said to be the vegetable acids, given by the mouth, or in clysters, and coffee: blisters to the neck, rubefacients, and stimulants of every kind must be added. As the face is full and flushed, bleeding has been generally recommended; but the plethora is venous only from relaxation, and bleeding decidedly injurious. Of the effects of mushrooms, and their treatment, we have already spoken at some length. See *AMANITA*.

The effects of the acrid vegetable poisons are relieved chiefly by narcotics and by demulcents. If we know

that they are naturally determined to any particular excretory, the discharge from the same organ must be promoted by the mildest means to dilute the acrimony which will be soon brought there, and every means of soothing general irritation adopted. Oils, as demulcents, are perhaps inferior to mucilages, and better adapted to mineral poisons; and soap, as containing an alkali, is the appropriated antidote of the latter. We need not add, that the chemical nature of vegetable poisons is too little known to enable us to add an antidote from affinity.

The *mineral* kingdom, as it affords the most active remedies, so it abounds with the most deleterious poisons, which are sometimes fatal in the form of gas, more frequently given with the most wicked designs, or accidentally injurious when prescribed by quacks, or the most indiscriminating inexperience.

The vapour of calcareous earth we have already mentioned in a former part of this article, under the title of carbonic acid air; the vapour of arsenic is often diffused in smelting houses, and undermines the health of the workmen; of mercury in the quicksilver mines of Almaden and Idria; of lead in various manufactures. Copper is not apparently raised into vapour in an injurious form.

Internal poisons are sometimes mechanical, as the filings of tin, given as anthelmintics, leaden bullets, and quicksilver, the supposed remedy of ileus. The others act by their violent irritation chiefly on the primæ viæ, but occasionally on the secretory organs, or their excretory ducts. We need not, however, be anxious on the latter point, as our chief attention must be directed to them while still retained in the stomach and bowels. They may be divided into alkaline, earthy, acid; neutral alkaline, neutral earthy, neutral metallic; metallic oxides; metals, and inflammables.

The pure *alkalis* are highly caustic; nor can they be swallowed without discovery, so that the victims are the incautious and the suicides. Their obvious antidotes are the acids, and, if the throat is not so much excoriated as to bear them, the vegetable acids soon relieve from immediate danger. Should the excoriation be considerable, water impregnated with fixed air, or diluted acids sheathed with mucilaginous substances, must be taken. The consequences are, however, often highly inconvenient. Digestion is impaired; the stomach seems a cold heavy mass; the bowels are constipated, and the strength decays. For many months these inconveniences have remained, though they gradually recede, and are in a great degree, though not wholly, removed.

The *earthy* poisons are little known. Pure *lime*, by its causticity, may be poisonous if swallowed, and there is much reason to suppose the *barytes* highly dangerous. Of the *strontia*, as a medical agent, we know little, and the effects of the other newly discovered earths on the human body have not been ascertained. The *amianthus*, under the name of plumose alum is sometimes injurious from its spiculæ, which produce itching on the surface, and may, therefore, be wholly referred to mechanical action.

The poisonous *acids* are the stronger mineral, and the effects are the same, though the antidotes are more ready and easy. Alkalis may not be easily swallowed; but soap diffused in milk, oils combined with water by

means of pure alkalis, will always relieve. The effects, like those of alkalis, arise from excessive excitement.

Neutral alkaline salts are seldom injurious, and we have preserved this title only to remark, that *nitre* swallowed in large doses is often poisonous. It seems to act as an indirect stimulus; but is chiefly fatal by producing violent hæmorrhages.

Neutral earthy salts are the *calcareous sulphat* (gypsum) and the *muriated barytes*, perhaps, if incautiously administered, the *muriated lime*. History has recorded the treachery of one of the Byzantine emperors who mixed powdered gypsum with the meal designed for the army of Conrad III. by which the greater part is said to have been destroyed. It sometimes produces inconvenience when found in water, in that proportion which constitutes it *hard*, by bringing on constipation; but it is seldom, in common life, dangerous or fatal.

Neutral metallic salts are highly injurious, and their number is almost as great as that of the metals whose medical power is known. The *vitriolated copper* and *zinc* are well known; nor is the *vitriolated iron* in large doses innocent. *Nitrated* and *muriated silver* are highly caustic and injurious. Dr. Fordyce remarked, that *gold* is only a cordial in the pocket, so it is only a poison to the mind. It is innocent of all bodily good or harm.

The *muriated antimony* is extremely caustic, and the *oxymuriat of mercury*, the corrosive sublimate, equally so. The other preparations of these metals are not equally active and deleterious, though the saline compounds of each possess considerable acrimony, particularly the *vitriolated* and *nitrated mercury*; and in large doses are often injurious. *Lead* is chiefly offered to us in a saline form as combined with the *vegetable acid*; and so many are the opportunities for this union, that its bad effects are supposed to be extensively diffused. This unreasonable apprehension we have endeavoured in part to remove. (See PLUMBUM.) *Copper* is soluble in such a variety of menstrua, that its introduction into the system has been universally dreaded, and we are taught to guard against it in our culinary vessels, our medicines, and our spirit, as well as in the construction of our reservoirs for water. The fears of mankind are sufficiently alive to prevent them from incurring these perils, unless from accident, and the taste of copper is too striking to prevent its incautious introduction. It is discovered by the *aqua ammoniæ*, which precipitates the copper in a blue colour, except when combined with spirit. In this case soap is the criterion, and it dissolves in the spirit in greenish striæ. (See CUPRUM.) The *arsenicated soda* is highly deleterious.

The *oxides of mercury and antimony*, in particular circumstances, are highly acrid. The red and white precipitates of mercury are dangerous, and often poisonous: the *crocus metallorum*, the *powder of algaroth*, and the *glass of antimony*, scarcely less so; but the most destructive of the oxides is ARSENIC, q. v.

The only dangerous metal that we are acquainted with is *lead*, and the only poisonous inflammable *phosphorus*. Copper, if it meets with no acid, is innocent, but from the accidental occurrence of an acid in the stomach, may become violently deleterious. There are, however, very few circumstances in which it is likely to be swallowed, and no inconveniences seem to have

been observed, where swallowing is almost unavoidable.

The counter poisons are chiefly sulphur, in different forms; but the power of the metallic salts is weakened by the addition of those acids which have a stronger affinity to the metal than that with which it is combined, and which form a milder combination; or alkalis, which leave the metal in a comparatively inert oxide. Our chief dependance, however, is on emetics and laxatives, first to discharge what may continue to irritate, and afterwards to sheath the bowels by demulcents. Oil with milk, soap dissolved in water, mucilaginous fluids of every kind, often with opium, when the pain is violent, will succeed, if success remains in our power.

Some other poisons remain, of whose composition history has fortunately left us no traces. The aqua toffana was pure and tasteless, but certainly fatal, and might be given in any liquid. The "powder of succession" was sweetish, adapted for children, and equally certain. Infernal miscreants, whose poverty rather perhaps than their wills consented, mixed freely in this horrible traffic from the tenth to the fifteenth centuries; but we trust that the formulæ are now lost for ever, and those acquainted with the powers of natural bodies, who may approach the composition, would do well to conceal it. The upas, the celebrated poison tree of Java, is now known to be fabulous; and the tincunas is much less virulent than it has been represented, or it has lost its powers by keeping. (Fontana.) The stories told of the formidable preparation of poison in South America are, we understand, very greatly exaggerated, perhaps wholly invented.

It is necessary to add, that the power of poisons, as we have seen in those of fish, are relative to the habits and constitution of the patient. Like the tyrant of antiquity, who used himself to all kinds of poisons that he might be proof against their attack, some may feed on what would be destruction to others. This immunity is, however, limited. No constitution is proof against the great variety of mineral poisons which we now possess; but we can fortunately trace their symptoms, their progress, and even detect the substance in the stomach of the victims. No POISONER CAN NOW ESCAPE WITH IMPUNITY.

Animals are singularly exempt from the powers of some medicines highly deleterious to man. A horse can take a drachm of arsenic daily, and improve in his coat and condition; and the nux vomica is not peculiarly dangerous to man, except in considerable doses, though it soon destroys brutes. The aloes is a poison to dogs and foxes, and somewhat virulent in a horse; for it is his only certain laxative. The coculus indicus is deleterious to fish and lice; yet it makes, we believe, a very salutary ingredient in the best London porter. The phellandrium aquaticum is fatal to horses and innocuous to oxen: the doricum kills dogs; but fattens antelopes, thrushes, and swallows. Parsley seed is injurious to birds, and pepper to swine. Bitter almonds kill foxes, cats, and chickens. The seeds of hemlock are eaten without injury by stares, of stramonium by pheasants, of the lolium temulentum by jays, and the roots of henbane by pigs.

We are generally led to suspect the exhibition of a violent and active poison by the sudden attack. If a

healthy man, after a plain dinner, a common drink, or an unsuspected medicine, is soon seized with vertigo, cardialgia, colic, vomiting, cholera, spasms, convulsions, great debility, faintings, or coma; or, if the lips, the tongue, the fauces, and the stomach swell, with a sense of heat, we may suspect that poison has been swallowed. If the discharge from the stomach given to a dog or cat kills it, or produces some violent disease, the suspicion will be strengthened. We must, however, keep in view what we have just said, that animals will often safely eat what is deleterious to man.

If death ensues, and we have an opportunity of inspecting the body, the suspicion will be farther confirmed if the stomach is inflated, or spasmodically contracted, gangrened, or spotty, without any previous disease to occasion these changes. If in the contents of the stomach, on dissection, we find any seed, root, leaf, or vegetable powder which we know to be dangerous; or if any such are found in the house of the deceased, the suspicion will almost amount to a certainty. Should the poison be of the mineral kind, modern chemistry has resources to discover it from the smallest quantity, however disguised. The peculiar properties of each occur in the respective articles from which a discovery may be made, and many circumstances will lead to a probable suspicion of what it may have been.

See Sprogel Experimenta circa Venena; Fontana sur le Venin de Vipere, &c.; Grævius de Venenis: Plenck's Toxicologia; Gmelin de Venenis; Murray's Apparatus; Thomas in the Memoirs of the Medical Society, vol. v.; Puihn Materia Venenaria regni Vegetabilis; Mead on Poisons; Baccius and Androynus de Venenis; Bell's Surgery, vol. i. p. 312; London Medical Journal, vol. iv.; Houlston and Wilmer on Poisons; Edinburgh Medical Commentaries, vol. iii. p. 121; Morgagni de Sedibus, &c. iii. 59.

VENO'SUS, (from *vena*, a vein). Botanically applied to a leaf, covered with anastomosing vessels.

VE'NTER, (from *νῆσπον*, *intestinum*). In the most extensive sense it is taken for a remarkable cavity, in which any of the principal viscera is contained; and the whole body is consequently divided into three venters, viz. the head, the breast, and belly. (See ABDOMEN). Hippocrates applies the word *κοιλία* sometimes to the cavity of the breast and abdomen, and sometimes calls the thorax the upper, and the abdomen the lower, belly; *venter* is a term usually confined to the lower belly. Among the chemists, *venter* is the same as *terra*, and *venter equi* is HORSE-DUNG. Among lawyers, it is the fruit of a single marriage.

VENTRI'CVLI MO'RBUS. See CÆLIACA PASSIO.

VENTRICULO'SI. See CÆLIACA PASSIO.

VENTRI'CVLUS, (a dim. of *venter*). See STOMACHUS.

VENTRI'CVLUS SUCCENTU'RIATUS. See DUODENUM.

VE'NUS, (from the Hebrew term *jonah*, *concubitus*), *affrodyne*; the venereal appetite; hence *venus nimia*, *venus parca*, as it is indulged or repressed. On its due regulation the vigour of the constitution greatly depends, and too great continency often induces the languor which usually attends too great fulness, particularly felt from a turgescence of the seminal vessels.

In females too great continence often induces hysteric complaints, cachexy, and even hectic, though not the pulmonary hectic. It is the languid fever of hope delayed. The delicate and tender are soon injured by slight excesses of this kind. The alchemical name also for copper. See *Æs*.

VEPRECULÆ, (from *vepres*, a briar). **BRAMBLES**. One of Linnæus's natural orders; but by no means a natural association. The genera are, *dais*, *daphne*, *dirca*, *gnidia*, *lachnæa*, *passerina*, *quisqualis*, *stelleria*, *thesium*.

VERA'TRUM ALBUM, (*quod mentem vertat*). See **HELLEBORUS ALBUS**.

VERA'TRUM NIGRUM. See **HELLEBORUS FETIDUS**.

VERBA'SCUM, (quasi *barbascum*, from *barba*, beard, in consequence of its hairy stalk,) **MULLEIN**, *candela regia*, *candelaria*, *lanaria*, *verbascum thapsus* Lin. Sp. Pl. 252. The GREAT BROAD-LEAVED MULLEIN HIGH TAPER, or COW'S-LUNG-WORT, a biennial plant found under hedges, covered with oval, soft downy white, and woolly leaves, with a single woolly stalk, producing long spikes of yellow monopetalous flowers in July. The leaves have an herbaceous, bitter, substringent taste, without any peculiar smell; but on chewing they manifest a mucilaginous quality, and are recommended internally and externally as emollients. They relieve, in fomentations or cataplasms, hæmorrhoidal tumours, and promote the resolution or suppuration of glandular indurations. The plant has been esteemed in consumption, catarrhs, and dysentery; but Dr. Home succeeded with it only in diarrhœa, where it apparently acts as a demulcent, and probably as a gentle astringent. The decoction is made of two ounces of the leaves to one quart of water, and a quart must be drank daily.

VERBA'SCULUM, (dim. of *verbascum*). See **PALYALYSIS**.

VERBE'NA, and **VERBENACA**, (quasi *herbena*, the name of all herbs used in sacred rites,) *verbena mas et carulea*, *sacra herba*, *hierobotane*, *cephalalgia*, *herba mensa Jovis*, *verbena officinalis* Lin. Sp. Pl. COMMON VERVAIN.

The roots are fibrous, of a light brown colour, hard, bitterish, and irregular, sending up many stalks half a yard high, angular, solid, rough, of a purplish green colour, and branched; the leaves stand on the stalks in capsules opposite to each other, are hairy on both sides, wrinkled, deeply indented, and wide at the end next the stalk, of a deeper green above than below. The flowers, which blow from July to October, are ranged in long spikes, of a pale purple colour, divided into five parts at the top, succeeded by four small longish seeds joined together. It is found in highways, in chalky, gravelly, and uncultivated grounds, and has been celebrated for virtues of which its sensible qualities afford little expectation. It has no remarkable smell, and hardly any taste, and its credit is supported only by superstition. A modern author has, however, continued to recommend a piece of the root hung at the pit of the stomach as a cure for the scrofula; and an ointment made by boiling the whole plant in lard is recommended as useful in scrofulous ulcers. In the form of a cataplasm it has been said to relieve headachs. (De Haen.) See Raii Historia; Lewis's Materia Medica.

VERBE'NA Fœ'MINA. See **ERYSIMUM**.

VERBESI'NA. See **BIDENS**.

VERBESI'NA ACMELLA, and **LAVENIA**. See **ÆMELLA**.

VERMES, (from *verto*, to twist about). **WORMS**; *elminthes*, most commonly found in the intestinal tube; but occasionally in almost every other part of the body particularly in the secreted fluids.

With worms were formerly confounded animals, but slightly connected with them, as the larvæ of insects, and some other animals; but worms, strictly so called, are divisible into two classes; those which have external organs, and those deprived of them. The latter are the most simple in their structure, and of these the intestinal worms are still more simple than the others. Worms, however, possessing external organs have been found in the bowels, and even the undisputed records of medicine notice the discharge of some singular worms of this kind. It is not improbable that ova may have been swallowed, and as whatever possesses life is unchangeable by the powers of digestion, the animal may have attained its larvated state when the irritation excited has brought on disease, or procured its evacuation. Numerous cases are recorded of peculiar animals, discharged from the bowels, of the most singular shapes; and what we have styled the "collections of wonders" increase the list to an incredible amount. To attempt to describe even the most remarkable kinds would be a tedious and an useless labour; for the forms and shapes are endless. The principal intestinal worms are confined to a few only, and the others must be considered as accidental, changed probably in their external appearance by their new situation and unnatural diet.

The worms of the human body are those which live in the intestines, and those found in other organs. Those of the intestines seem to be coeval with our existence, and a part of our constitution. It is, therefore, as useless to account for their generation as to explain that of the various pediculi or other parasitic animals. If they are more common in children, it is probably from their bowels containing a larger proportion of mucus. Intestinal worms may be divided into the round and flat, each of which forms, according to the strict rules of classification, a genus. The species of the round worm are the lumbricus, the ascaris, and the trichuris, the round, the thread, and the caudated thread worm. The species of the flat worm are the cucurbitinus and the tænia. Of the lumbricus and tænia we have already spoken. Vide in verbis.

The ascarides are small worms of a yellowish white colour, resembling threads cut in small pieces. The head is obtuse; the tail pointed; and at the head are three vesicles, between which the mouth of the animal is placed. A little below are two stigmata, apparently the organs of respiration. The sexes are distinct; but the male organs have not been discovered. The female is viviparous, and the young are excluded at an aperture about one eighth of an inch from the head.

The ascaris generally resides in the rectum, convoluted in mucus and fæces; but it has been styled the maw worm from its occasionally occurring in the stomach, and it has escaped farther into the colon, or from the rectum, into the pudenda.

Though the ascarides seldom appear but in the rectum, they are very frequently attended with a pain in the stomach, which has probably procured them the

name of maw worms, producing an itching in the anus, which often occasions such uneasiness as to induce faintness, and sometimes to deprive the patient of sleep. The irritation is occasionally so great as to cause a sensible tumour round the anus; but as these worms are voided in the stools, their presence is always certainly known by seeing them there; for every symptom is wanting in some patients.

The *trichuris* is scarcely specifically distinct from the *lumbricus* and *ascaris*, differing only in the tail, which is twice as long as the body, and filiform. The animal has a proboscis, which he can withdraw at pleasure. Goeze considers the proboscis as the male organ; but the observations are not sufficiently extensive to ascertain these uncertain points. This worm inhabits chiefly the ileum; but occasionally every portion of the canal.

Strictly speaking, there is but one flat worm, the *tænia*; but one of its varieties, the *tænia solium* of Linnæus, *t. osculis marginalibus* of Dr. Hooper, suffers its joints to be readily separated from the parent head, and these are evacuated in separate worms, resembling a gourd seed, possessing, for a time, independent life, often escaping involuntarily per anum. They have been consequently called *cucurbitini*; but until the whole worm, including the head, is separated, there is no security against their return. The joints themselves, as Dr. Hooper observes, do not increase. This animal is by no means single, as has been represented; but even a single one occasionally occupies a large portion of the ileum. Their motion is undulatory by the successive contraction of the joints. The food is propelled through the alimentary canal in the same manner, often with considerable rapidity. The *tæniæ* are hermaphrodite, and the oscula are the apertures for the passage of the ovula. Carlisle in the Linnæan Transactions, ii. 225.

The true *tænia*, which we have already described (*vide in verbo*), is that with superficial oscula down one side, and there is a variety with a double row of oscula (*Amœnitates Academicæ*, ii. 28). In this species the ovaria are stellated round the oscula. The joints are shorter and flatter, and on this account it is styled the flat tape worm. Both kinds are whitish; but this of the darker hue. It is always in the small intestines, and seldom exceeds five yards in length.

Worms seem to form a part of a healthy constitution, and are scarcely injurious but from accidental circumstances. This circumstance forms a striking distinction between animals and plants. Parasitic animals attack only debilitated plants; but the healthiest animals are chiefly affected with worms; and the observations which seem to contradict this arise from a neglect of the distinction between the existence of worms and their appearing a source of disease from their accumulation. Their formation is assisted by accumulations of mucus, and consequently in children, sometimes in cachectic patients, they become inconvenient; but are soon destroyed by every kind of fever. Sugar, fruit, and a variety of aliments, have been supposed to contribute to their formation or increase. It is not, however, the existence of worms, but their accumulation, and consequent irritation, that constitute disease. The signs of worms are few and equivocal: a pale complexion, picking the nose, grinding of the teeth during sleep, foetid breath, a swelled hard belly, a swelling of the upper lip attend scrofula, and particularly accumu-

lations in the stomach and bowels. There is no decided symptom but the discharge of worms; nor is it then certain but that all the tribe may be removed. Even a *lumbricus* has been found single.

The remedies of worms we have seen (*MATERIA MEDICA* and *ANTHELMINTICS*) are such as destroy or evacuate the animals. The male fern root undoubtedly kills the *tænia*, the *helleborus foetidus* the *lumbrici*; but for the *ascarides* we have no certain medicine, though many which are of singular utility: oily injections, infusions of tobacco, of *hepar sulphuris*, solutions of *asafoetida*, and of aloes, followed by calomel or aloetic purgatives, soon evacuate immense numbers; and, if continued, appear to discharge the whole mass. But, for the reasons assigned, the *seminium morbi* seems in the stomach; and warm tonics, with occasional aloetic purgatives, are necessary to prevent the return. These, however, will not wholly succeed.

The medicines which poison worms we have enumerated at some length in the catalogue of the *materia medica*, as it was supposed we have really so few. We scarcely, however, want more than those at present mentioned; for they are very generally certain. The Indian pink, which is often trusted, frequently deceives in this climate, probably from a loss of its virtues in keeping; but with this, and every other of the poisonous anthelmintics, laxatives, generally active ones, must be frequently interposed.

With all our care in compiling the catalogue of anthelmintics we find some medicines of importance omitted. Among these is sulphur in substance, or infused with magnesia (Kenney in the *Irish Transactions*; and Stoll *Prælectiones*, i. 50); the *salix laurea*; the *aralia spinosa* (Greive in the *Medical Commentaries*, Edinburgh); the *sabadillæ* semen; *sedum minus* (Stoll *Prælectiones*, i. 50); copper and its preparations; turpentine, with the animal oil from horns (styled *Chabert's medicine*); the gall of an ox; petroleum; pisse-læum; and Herrenschwand's remedy, which consisted chiefly of the gutta gamba.

In other parts of the body there is scarcely a cavity or a stagnating fluid which does not occasionally contain worms, nor need we minutely follow the disgusting catalogue. The worms of the intestines are discovered often in the cavity of the abdomen, escape at the navel, into the biliary ducts, or sometimes through the œsophagus; but the indications which such appearances afford are easily followed. The other worms chiefly show the necessity of preventing stagnations of fluids, and the great advantages of the most nice cleanliness. The *fasciola* sometimes appears in the liver, particularly of sheep, said to be affected with, or die of, the rot; and a similar cause has been supposed to occasion cachexy in the human species. The position, however, is gratuitous; nor, if admitted, would it probably lead to any practical consequence.

Dr. Biss extols the bastard black hellebore as a most certain destroyer of the round worm; but purging, by lessening the slime, always relieves; and probably the worms that are not forced away by this quickened motion of the intestines may, for want of mucus, languish and die. It does not appear that one kind of purge, if active, is preferable to another, let the kind of worms be what they will; the worms being always defended from the immediate action of the medicine by the slime; and,

therefore, purges which act briskly, and of which a frequent repetition can be borne, are the best. Of this sort are purging waters, particularly the sulphureous, jalap, &c. Dr. Stork says that he hath destroyed all sorts of worms, viz. the round, ascarides, and the tape-worm, by the following mixture, repeated as here directed. R. Sal. polychrest. pulv. rad. jalap. et rad. valer. silv. āā ʒ i. ox. scillit. ʒ iv. m. exhibeatur adultis quater per diem ʒ ss. junioribus vero ʒ i. aut. ʒ ii.

See Andry on Worms; Doeveren Observaciones Physico Medicales sur les Vers qui se forment dans les Intestines; Dionis sur le Tænia; Hoffmann de Animalibus Humanorum Corporum infestis Hospitibus; Stoll Prælectiones, i. 252; ii. 417; Ejusdem Ratio Medendi, vi. 7; Edinburgh Medical Commentaries, vol. iv. p. 283, &c.

VERMINO'SA FE'BRIS, (from *vermis*, a worm,) a disease of children, supposed to arise from worms, and to be peculiarly obstinate and dangerous. It is often attributed to worms when the cause of the disorder is of a very different nature; for though their irritation may produce a fever, these cases are peculiarly uncommon. This also was the opinion of Dr. Hunter, who found no worms in dissecting those who were supposed to die of this fever. The most common cause is a diet of substances not easily digested, particularly pastry and sweatmeats. When the cause has gradually accumulated, the patient grows, slowly, weak, and languid; his colour becomes pale and livid, his belly swells and grows hard, appetite and digestion are destroyed, the nights are restless, sleep disturbed, and fever soon comes on, attended with coma, and occasionally with convulsions. The pulse at the wrist, though quick, is never strong; but the carotids beat with violence, and their action may be distinctly seen at a distance. The heat is at times considerable; but when the brain is much oppressed, little more than natural. It is sometimes accompanied by a violent pain in the epigastric region, though more commonly the pain is slight; but some degree of it distinguishes this disorder from other comatose affections. Where a large quantity of fruit has been eaten at once, the attack is said to be instantaneous, and its progress rapid; but discharges, either natural or artificial, soon relieve it with little danger, and from fruit alone, independent of the stones, no inconvenience, except colic pains, seems to ensue.

We certainly see few such complaints as this wormy fever at present. The common fever of indigestion seems to have been raised into importance by this name; sometimes the hydrocephalus appears to have been mistaken for it; and occasionally the pampered minion of the nursery may, from accumulated crudities, experience the chronic kind of the disease first described. The plan of cure formerly employed was not adapted to lessen the complaint. An emetic and a gentle laxative were reluctantly admitted, and a dose of calomel of three or four grains was then supplied by prepared pearls, Gascoyne's or the countess of Kent's powder; remedies which could not always boast even an absorbent power. It is not surprising that the disease was often fatal; for the inert or injurious medicines just mentioned were not very powerfully seconded by the warm oils applied to the pit of the stomach, or the bitter decoctions as fomentations to the abdomen.

Dr. Butter denies that this disease is occasioned by

worms, and thinks that they merit no consideration in practice. He distinguishes the infantile remittent fever by drowsy exacerbations, wakeful remissions, pain of the head and belly, total loss of appetite, little thirst, and slimy stools; adding, that this fever is accompanied with many symptoms which seldom occur together in the same case, and constitute three varieties. These varieties he names the acute, the slow, and the low infantile remittent fevers, of which the causes are irritability and indigestion. The fever may be accelerated by cold, fatigue, &c.; but the principal causes are crude accumulations in the first passages, which irritate the intestinal canal, and soon induce fever. The two symptoms commonly attributed to worms, loss of voice and speech, he refers to debility. In the cure, Dr. Butter thinks that one indication only is to be regarded, viz. the removal of the febrile irritation by rest, quietness, and stillness. The bed room should have little light; diluting and nourishing drinks be frequently given; and solid food not allowed. The neutral salts are supposed to be useful by abating the intestinal stricture, and rendering the bowels rather lax. For a child of five years old, a drachm of the salt dissolved in four ounces of water may be divided into doses, and given so as to keep the bowels open; in general, when the fever is low, one stool should be produced every day, two in the slow and three or four in the acute kind. When the bowels are rendered soluble, nitre may be used instead of the purging salt. If a looseness attends, five grains of the extractum cicutæ, with a drachm of sugar, may be diffused in four ounces of water, and an ounce given every four hours. In the slow kind of this fever the cicutæ is preferred to that with the salt, and an additional grain for every year of the patient's age may be given, as already directed. If required to keep the belly lax, when the extract is used, the sal polychrest may be given twice a day, or as much rhubarb every night as may be required.

This management is not, however, generally adopted, probably from its inefficacy. In fact, the bowels of children are not easily moved with effect, and slight laxatives agitate and irritate without benefit. The resin of jalap, gutta gamba, but, above all, calomel, produce large and effectual stools, with certain relief, nor do we gain any essential benefit without such evacuations. If these are procured, the child nourished with a suitable diet, in free cool air, he generally recovers.

Various wormy epidemics are described by authors, particularly by Van den Bosch (Constitutiones Epidemicæ Verminosæ quæ, Anno 1760, ad 1763, grassatæ fuerint); by Ballonius (Opera, i. 25); Huxham (i. 284); Van Swieten (Commentaria, iv. 720), and others; but they seem to have been only common fevers, attended with considerable discharges of worms, though Bosch endeavours to reduce every fever to this cause. In short, there is only slight evidence that fever ever arises from worms as such, though occasionally from the loads of mucus which they accumulate. See Medical Transactions, vol. i. p. 45—59.

VERMICULA'RES, (from *vermis*,) long and slender like a worm. See LUMBRICALES MUSCULI.

VERMICULA'RIS. See SEDUM.

VERMIFO'RMIS. A prominence of the cerebellum, shaped like a worm. See CEREBRUM.

VE'RMIS RE'PENS, et **MORDICANS**. See HERPES.

VE'RNIX, (*quod veruo tempore fluat*). See JUNIPERI GUMMI.

VERO'NICA, (from the Arabian word *verukah*,) *betonica Pauli*, *thea Germanica*; *chamædrys angustifolia spuria*; *chamædrys latifolia Europæa*, FLUELLIN, and MALE SPEEDWELL. *Veronica officinalis* Lin. Sp. Pl. 14, is a low, hairy, trailing plant, with firm leaves set in pairs. From the joints arise slender pedicles, bearing spikes of blue monopetalous flowers, each of which, like the cup, is divided into four segments, followed by a flat bicellular capsule, which opens at the upper broad part, and sheds small brown seeds. It is perennial, grows wild on sandy grounds and dry commons, and flowers in June.

The leaves have a weak but not disagreeable smell, which in drying is dissipated, and which they yield in distillation to water, without any separable oil; to the taste they are bitter and rough. They yield their virtue most perfectly to spirit.

An infusion of the leaves drank as tea is diuretic, and considered as salubrious in disorders of the breast; the water distilled from them is called European tea, and sometimes preferred to the Asiatic. See BETONICA.

VERO'NICA AQUA'TICA, &c. See BECCABUNGA.

VERRICULA'RIS TU'NICA, (from *verriculum*, a net. See AMPHIBLESTROIDES.

VERRU'CÆ. WARTS, are small sarcomata rising on the cutis, and supplied by the little arteries of the surface, which, however, seldom extend far into its substance, as the surface, when of any bulk, is hard, ragged, and insensible. When it arises with a broad basis, it is called *verruca sessilis*; and when a few capillaries sprout and enlarge into a greater compass, the pensile tumour which they form is called *acrochordon*. The extreme sensibility of the base of a wart renders its connection with a subcutaneous nerve highly probable.

Warts are generally removed by incision, by ligature, a caustic, the juice of celandine, of esula, the gall of the pike, or of the eel, the mineral acids; and after the surface is destroyed, by savine powder. Muriated ammonia, moistened and rubbed frequently on a wart, aqua kali, and ammoniæ, have been employed; but the most serviceable remedies are a tincture of muriated iron, or a solution of nitrated silver. Oils, pyroligneous acid, the meloe proscarabæus, the milk of a fig, &c. have been employed. The warts of young people often at a certain period naturally decay, and this has given credit to a variety of charms. Yet so many appear to have been of service, that we are almost tempted to think that the power of imagination has some effect. We have already remarked their connection with the subcutaneous nerves, and when a wart is removed by a caustic or a ligature, the pain is by no means confined to the part, but is often more severely felt in an adjoining one. After the wart is removed, a little suppuration should be encouraged. Venereal warts are cured in the same way; but are not influenced by mercury.

When warts are on the joints, they are with difficulty separated without hurting the tendons, and the livid and bluish warts on the face, lips, or eye lids, occasionally become cancerous. These should not be disturbed. See Heister's Surgery; Tissot's Advice to the people; Bell's Surgery, vol. v. p. 532; White's Surgery, p. 80.

VERSICA'RIA VULGA'RIS. See ALKAKENGI.

VERTEBRALIA OSSIA, synonymous with the PARIETALIA; q. v.

VERTEBRALIS ARTERIA. A branch of the subclavian passing through the vertebræ within the cranium. It there joins with the vertebral artery of the opposite side, forming the basilar, the internal auditory, and the posterior artery of the dura mater.

VERTEBRÆ, (from *verto*, to turn). See SPINA. The spine is sometimes carious from a blow (Cheston), occasionally from other causes (Medical Transactions, ii. 18). In many cases, the vertebræ have been found ankylosed (Morgagni de Sedibus, lvi. 36; Callisen in Actis Hafniensibus, ii.). A vertebra is sometimes fractured, either with or without luxation; and one instance is recorded in the Medical Commentaries, where a vertebra of the neck was broken by the shock only of a fall (Morgagni de Sedibus, lvi. 35). Luxations of the vertebræ are either partial, occasioning distortion, or general. The latter are most commonly fatal. Dr. Hall, in the Medical Commentaries, has described a case in which the vertebræ spontaneously receded, lessening the compression on the spinal marrow; a circumstance which probably happens more frequently than has been supposed, since, as we have mentioned, paralysis from distortion gradually amend.

VERTEX, (from *verto*, to turn). The crown of the head, where the hairs turn, *coryphe*.

VERTICILLATÆ, a natural order, containing the herbaceous vegetables which have four naked seeds, and the flowers placed in whorls around the stalk. Mint, sage, and thyme are of this order, and they are all warm and fragrant.

VERTIGO, (from *vertendo*, turning round). SWIMMING OF THE HEAD, *dinos ilingos*; when accompanied with a mist before the eyes, *scotodine*; when with a sensation of sparkles, *scotomia*. It is generally symptomatic, and differs chiefly in degree; for in a simple vertigo, there is only a transient and short gyration of objects; in the dark vertigo, or scotomia, the sight fails as if several colours were before the eyes; and in the kind called *caduca*, the patient falls insensible.

The causes often exist in the brain, and are either a depression of the cranium, an extravasation of blood, serum, purulent matter, or water; sometimes hydatids or a distention of the larger vessels, an unaccustomed motion, as of a ship at sea, or riding backward in a carriage, and even the sight of a cataract, or a view from a precipice, will produce it. On the other hand, causes of debility, which, as we have observed, prevent the free communication between different parts of the brain, will occasion the same symptoms. These are the deleterious gases, great evacuations, excess of drinking, and different narcotics. But the most frequent causes are an accumulation of saburræ in the primæ viæ, and the stoppage of some accustomed evacuation, repelled eruptions, and retrocedent gout. When the cause is ascertained the cure is easy, and has been already described in the different articles to which the disease must necessarily be referred.

VESA'NIÆ, (from *vesanus*, mad,) *dementiæ*, ALIENATION OF MIND, the fourth order of the class *neuroses* in Dr. Cullen's system. An injury of the functions of the mind in judging, without pyrexia or coma. Under this order are arranged AMENTIA, MELANCHOLIA, MANIA, and ONEIRODYNIA.

VE'SICA URINA'RIA, (dim. of *vas*, a vessel). *Cystis urinaria*. The URINARY BLADDER, is of an oblong form, membranous and muscular, lying between the symphysis of the pubis and the upper portion of the rectum. In a moderate state it is wide, and rounded above, lessening as it proceeds towards its aperture, which is formed without the little sack below, observable in the bladders of brutes. In fact, though the neck of the bladder is employed as an appellation of the lower portion, there is no part which strictly merits that name. When full, it is somewhat broader below than at its upper part, styled the fundus.

The peritonæum covers the bladder at the sides and on the posterior part; but only a short way beyond the fundus in front (see LITHOTOMIA). Within the peritonæum is the muscular coat, the greatest part of the external fibres of which are longitudinal, arising from near the prostate gland. These diverge in different directions till they become circular, and on the inside a very complex net-work of fibres, running in all directions, is conspicuous. The prostate gland seems the fixed point, but, in general, the bladder contracts, like every round muscle, till it overcomes the resistance of the fibres at the aperture, which is styled the sphincter, though in reality there is no regular organization which deserves that name. The fibres are only somewhat more numerous and more firmly compacted in that part. The inner coat is a firm thin membrane, to prevent transudation. Winslow describes it as glandular, though, on a strict examination, no follicles are discoverable. A mucus is, however, separated from it, and in a contracted state of the bladder this internal membrane is rugous, and in danger of injury from an imprudent use of the catheter.

The bladder is subject to a variety of diseases, many of which have been mentioned under the appropriate heads (see ISCHURIA, DYSURIA, CATARRHUS VESICÆ, CYSTITIS, CALCULUS, &c.). It is sometimes subject to *suppuration*; but the matter discharged, though apparently purulent, is often mucous; if pus, it may be separated from the kidneys, may find its way from the intestines, or from metastasis. The previous diseases will ascertain its source. In some of the monsters exhibited to the public, the bladder is *deficient*, and the ureters terminate near the naval; and it is sometimes so much *distended* as to rival the uterus at the seventh month. In a few instances it has been found *divided* by a septum (Fothergil, in London Medical Observations and Inquiries; Ruysch Observations, No. 8), occasionally forced into the umbilical region, or through the parietes of the abdomen.

On the other hand, the bladder has been unusually *contracted* by a thickening of its coats, the effect of a difficulty in voiding the urine when long continued, particularly in calculous cases (Morgagni de Sedibus, &c. xl. 4; Ruysch Obs. 89): it is sometimes cartilaginous, coalesces with the colon, is filled with coagulated blood or hydatids, or contracted by spasm. In the difficulties found in moving the catheter round the bladder, each cause should be kept in view, and our conduct varied according to the information obtained of the preceding circumstances.

Extreme sensibility and pain of this organ sometimes arise from slight chronic inflammation, occasionally from excess of stimulus, as after repeated dysuria in

consequence of blisters, or catarrhal inflammation; from excoriation or sarcomatous tumours. These are chiefly relieved by opium with camphor, by warm applications or blisters to the perinæum, and, according to Ramazzini, by petroleum. *Wounds* in the bladder are rarely fatal; but they sometimes leave intractable fistulous sores, through which the internal membrane appears to slough off.

The bladder, though often apparently, is sometimes really, *ulcered*, and we then find a highly fetid smell in the urine, and pus indisputably discharged. Though such ulcers sometimes arise from calculi, they are often depositions in the decline of life, or arise from the irritations of foreign bodies, which we shall soon mention. The constitution by the discharge is much debilitated, and the patient soon sinks under the disease. The Spa and Bristol waters are supposed to be peculiarly beneficial in this complaint. The bark, the balsam Peru, uva ursi in large doses, lime water, with a milk diet, and mucilaginous injections, are also recommended. The ulcer sometimes opens into the colon, the rectum, or the perinæum; but seldom with advantage. If the abscess is from violence, in a young and otherwise strong constitution, it may heal; but this salutary termination is rare.

A *rupture of the bladder* has been occasioned by the rash incautious introduction of a clyster pipe, by difficult labour (Van Doeveren Specimen Observationum Academicarum, p. 83), by a fall, by ischuria in a pregnant woman (Medical Observations and Inquiries, iv. No. 4 and 36), by calculi and external violence. If the bladder had not been long previously distended, so that its irritability be uninjured, a cure may be expected; but, in the opposite circumstances, it is soon fatal. A puncture of the bladder, either above the pubes, through the rectum, or vagina, we have already mentioned among the remedies for ischuria.

Foreign bodies are often found in its cavity. They are of almost every kind which can be forced through the urethra, or generated in this organ. A portion of a bougie, a piece of a leaden catheter, a needle, a leaden shot, the lash of a whip, worms, hydatids, bones, and hair, have been mentioned. These soon become nuclei of calculi, and, unless removed, may induce the disease. They have been often found in the centre of the hardest urinary concretions.

The ligamentous vestige of the urachus upon the fundus of the bladder is seldom, except from disease, pervious. The ureters pass obliquely through the coats of the bladder, and thus the effect of valves is produced. The arteries are from the hypogastric or internal iliac, branching from the arteria sciatica, epigastrica, and umbilicalis, on each side. The nerves are from the crurales and the sympathetici maximi, by means of their communication with the crurales, though some branches are from the plexus mesentericus inferior. See Haller's Physiology; article RENES; Winslow's Anatomy.

VE'SICÆ RA'RUS MO'RBUS, *Hoffmanni*, a copious discharge of mucus with the urine. See CATARRHUS VESICÆ.

VE'SICÆ DISTILLATO'RIE. See CUCURBITA.

VESIC'ANTIA, VESICATO'RIA, (from *vesica*, a bladder; because they raise bladders on the skin). See EPISPASTICA.

VESICA'RIA MARINA NI'GRA. See ALCOYNIUM, FARRAGO.

VESICATO'RIA EMPLA'STRA. See CANTHARIDES.

VESICATO'RIVM. See CATAPLASMA, EPISPASTICA.

VESI'CU'LA, (a dim. of *vesica*, a bladder,) *folliculus fellis*, the GALL BLADDER, is placed a little to the right under the great lobe of the liver, in a sulcus on its under side, in the fissure between the two lobes, attached to the substance of the liver, and receiving a coat from the peritonæum. In a standing posture it lies forwards and downwards, and its fundus is raised by a fulness, or depressed by the emptying of the stomach. Its coats resemble those of the intestines, except that the inner is neither villous nor papillous, but a net work of folds in every direction. The hepatic and cystic ducts run almost parallel, and quite contiguous to it, and uniting, form the ductus communis choledochus, which joins, in its course, the ductus pancreaticus, and opens into the duodenum, in the most depending concave part of the intestine. The gall bladder is sometimes of an enormous size, and occasionally ruptured, either by the distention of its contents, or by a calculus. In Hautesierk's collection is a case in which it was found more than seven inches long, appended to an infarcted liver; and Petit, in the Memoirs of the Academy of Surgery, speaks of its being distended to such a size as to resemble an abscess of the liver. It is sometimes inflamed (Stoll's Ratio Medendi vii. 226), sometimes deficient, occasionally filled with calculi (see CALCULUS), the seat of abscesses. Worms, it is said, are sometimes found in it. Winslow's Anatomy; Haller's Physiology. See JEJUR.

VESI'CU'LA, (from *vesica*). Elevations of the cuticle irregularly circumscribed, containing a transparent fluid. When the fluid is dark they are styled *phlyctenæ*.

VESI'CU'LA DI'VE BA'RBARÆ. See VARIOLA CONFLUENS.

VESI'CU'LA GINGIVA'RUM. The THRUSH. See APHTHÆ.

VESI'CU'LA MALPIGHIA'NÆ. See ASPERA ARTERIA.

VESI'CU'LA SEMINA'LES are two membranaceous cellular tubes, lying on each side between the bladder and the rectum, on the outside of the vasa deferentia; they are in length about three inches, and one broad, convoluted like the intestines, and kept in their situation by a ligamentous membrane, the internal fibres of which are apparently muscular. The inside of the vesiculæ seminalis is cavernous and villous. In some instances calculi have been found in them.

VESPA, (a wasp). The sting of this little insect, like that of a bee, conveys a venom, which often leaves an inflammation, and a troublesome suppuration, sometimes, it is said, a gangrene. The aqua ammoniæ or the aqua kali are the quickest and most successful remedies.

VESTI'BULUM, AN ENTRY; an irregular round cavity between the cochleæ and semicircular canals, not quite so large as the tympanum, and situated rather more inward and forward. See AURIS and SONUS.

VESTI'GIUM, (from *vestigo*, to seek). See METATARSus.

VESTITUS, (à *vestiendo*). DRESS. In considering this subject we must first notice the materials, and then the forms, of our garments; but on these subjects we have anticipated the most material topics, and we were long in doubt whether it were necessary to resume at any length the consideration, or to connect the scattered fragments into one view. We were determined, by reflecting that the subject had not yet been offered to the public eye free from gross errors.

The materials of our dress are, wool, cotton, flax, silk, and fur. Woollen garments are undoubtedly the most salutary in this climate, whose perpetual changes are by its means resisted; and it is remarked that hectics have become incomparably more common in Scotland since the plaid was disused. From their structure, as explained in the article CALORIC, q. v., heat penetrates slowly, and the cold air is effectually guarded from the body, so that it preserves the same steady temperature. Another advantage is the affinity of woollen to water, which it retains rather in the form of a vesicular vapour than of a fluid, so attenuated are the fluid particles by its minute fibres, which even the unassisted sight can discover. This quality renders it highly useful when sweating naturally comes on, or is artificially induced. The water is immediately absorbed, and its coldness concealed. If no longer in contact with the body, flannel is not cold, nor does it induce any chill.

An inconvenience arises from its warmth, which is debilitating, and this effect is increased by the perspiration which it excites. As its dirt is hid, the excrementitious fluids are allowed to remain; as they are not seen, it is not duly changed. The former inconvenience is lessened by choosing the thinnest flannels, and the latter by frequent washing in a manner which prevents its thickening, viz. by employing water of a very moderate temperature, not exceeding 98°. The constant stimulus which it keeps up on the surface is rather inconvenient than injurious.

Cotton partakes of the advantages of flannel, though in a very inferior degree; yet, if the texture be loose, as in the calicoes, it is often a convenient substitute. But we still want a fabric which shall come near the swanskin (flannel) in substance, and preserve the softness of cotton. Raising the pile on the internal surface, as in the fleecy hosiery, makes it too warm for general purposes, and the common calicoes are neither sufficiently soft nor thick. Cotton is now used as a substitute for linen in shirts, and we think the change highly advantageous; but to accommodate this material to prejudice or fashion, its texture is too compact, and it is wove and finished in a manner too nearly resembling linen. Thread, as a material of stockings, holds a middle rank between cotton and silk.

Whatever may be the dictates of health, however wise the voice of the charmer, the comforts of linen will always secure a demand for this article. The luxury of a clean shirt of this material was one that the Romans, in the plenitude of their power, could not obtain, and to the healthy it is safe and salutary. To change it at night, and again in the morning, is a modern refinement, which merits our commendation. It not only secures cleanliness, but, by renewing the air between the linen and the body, becomes an air bath, which greatly assists insensible perspiration. The advantage of renewing the air is sensibly felt by nurses,

and all those obliged to sit up a whole night; for they find themselves always relieved by relaxing the ligatures, and even shaking their linen, if they do not change it.

Silk has no affinity to water, and should never be worn next the skin. A silk stocking will indeed keep the feet cool; but the foot is chafed by the perspiration, and, on cooling, a shiver is soon induced. Above the linen it may be worn with safety in hot climates; but the frequent changes of temperature in these regions render it highly dangerous, unless the disadvantages of sudden cold are guarded against by flannel below. Oil silk retains the heat of the body, and keeps up constant perspiration; it is used, however, only as a topical diaphoretic, and not as an article of dress.

Fur is seldom worn next the skin but for the same purpose. It partakes of the disadvantages of flannel, at least those which arise from its stimulus; but does not possess the advantages derived from its affinity to water. It is dirty also; for it does not easily admit of cleaning, and is a harbour, not only for insects, but for infections of the most fatal kinds. It is necessary in the higher latitudes, where the cold is intense; but should be banished from the more temperate. We now allude to its use next the skin, not to its employment as an external ornament and defence.

The changes of dress should be adapted to the seasons, being cautious to wear the winter clothes in this country, till summer be fully arrived. Our ancestors thought the limits very extensive, when they advised keeping on "the winter clothes till May be done;" but the seasons are at present later, as is evinced even by the *May-duke* cherries, which seldom ripen in the southern districts of this island till the middle of June. The period should, therefore, be extended; but modern refinement has interposed a *demi saison*, in which the winter dress is partly changed. This too we consider as highly salutary; for the change is not then too great at once, and the frequent change of clothes admits of their being at least aired, if not washed. We may be considered as advocates for modern fashions, and, like the authors on fleecy hosiery, to have a secret communication with Bond street. In fact, however, it is a subject which we have for years considered with attention. Within our own remembrance, a man of fifty was sallow, dirty, often diseased. At this time the father and son appear scarcely to differ, and often differ very slightly. Though much may be ascribed to the art of the friseur and dentist, the change which time really makes is inconsiderable in comparison, and we ascribe this slight alteration in a great degree to the frequent changes of dress, on the principles already described. It was not unusual to wear the same suit from the gloss of novelty till it was no longer decent; and to change the linen three times a week was an extraordinary sacrifice to appearance. The other circumstances of cleanliness, particularly in the hair and teeth, undoubtedly contribute to preserve health; but the frequent changes of clothes and linen, with the use of such as require washing, has highly contributed to the prevention of disease and premature old age. The disuse of snuff and tobacco has also had its share in the event. Let us, however, repeat, and strongly inculcate, that the changes of dress should not be sudden, that the first appearance of a sunny day should not

draw us from our woollen clothes, into nankeens and silks.

Dryness and warmth of the extremities are circumstances of the utmost importance to health, and in gout, any complaint of the head or breast, or a disposition to cutaneous diseases, particular attention should be paid to the feet. The shoes should be carefully guarded, so as to admit no moisture, the stockings warm, and frequently changed, the feet often washed, and daily rubbed. The water employed should be temperate only, and very little exceeding the heat of springs, about 62° of Fahrenheit. The stockings most salutary are of worsted; but cotton may be allowed, if changed daily; silk should not be worn, at least without woollen or cotton socks.

The natural covering of the head is the hair, and in every view, this should be worn, if nature has not denied it. The substitute, a wig, is dirty, unhealthy, and inconvenient. It is not adapted to absorb perspiration, which is consequently confined, and occasionally cold, nor does the discharge really compensate for the natural one of the hair and the mucus of its bulbs. A wig has all the inconvenience of a silk dress, and not a single advantage, except saving a little time and trouble. The hair must be daily combed: the wig is dressed in a shop, though often on the head. In general the head should be kept cool; for all salutary perspiration is promoted by coolness. Even our common felt black hats are too warm for summer.

The *form* of dress requires some attention. All strait ligatures should be avoided, particularly about the neck; and, in general, the breast should not be exposed to the air. The coat, for we now chiefly attend to the gentlemen, may be cut as fashion dictates, if its tyrannic sway does not order too strict confinement in the arms, and a consequent compression on the axillary artery. The waistband of the breeches usually surrounded the *ossa ilea*, which prevented any injurious pressure on the hypogastric region. We have now exchanged with the softer sex, who have rejected the pressure of the stays on the abdomen, and our breeches are raised to the pit of the stomach. They are, however, wisely supported by braces over the shoulders, and, instead of ligatures, the stockings, if any are worn, (for the constant use of boots renders it doubtful,) should be kept up in a similar way. Garters over the knee do not compress any vessel of importance, as the tendons of the flexors of the leg guard them; but below the knee they occasion varices, swelled legs, ulcers, and a train of evils.

Of shoes much might have been said; but fashion has wisely interposed, and both sexes now tread firm on the foot as nature made it. We follow too the advice of Camper, and have a shoe for each foot. It is fortunate when fashion is content to follow the dictates of health. Boots compress the calf too much, and impede the circulation. Nothing can be more inconvenient and unsuitable as a walking dress.

Of female dress, we had intended to speak; but we find little to add, except the application of the principles already laid down. The female form is now permitted to expand luxuriantly; but to give it fulness, the shoulders are forced back so as to impede the circulation in the upper extremities, and the clothes tightly bound around the lower part of the sternum. Much

inconvenience is, however, avoided by supporting them over the shoulders by braces. The covering of the bosom is too close by day, and too inconsiderable in the evening; for, though the drawing room and the opera house are warm, carriages and lobbies are cold, and many a victim is thus sacrificed to the shrine of fashion. The custom of wearing drawers is convenient; but we think not salutary. The chief female diseases of those regions are from relaxation, and the free access of cool air is useful. We shall not interfere with the moralist in the reasons which he may adduce in their favour.

VETERINARIA ARS. The art of medicine as applied to horses. See White's full and excellent Treatise on Veterinary Medicine.

VETE'RNUM, (from *vetus*; a disease attendant on old age). See **ANASARCA**.

VETE'RNUS, (from the same). See **CAROS**.

VETO'NICA, also **VETO'NICA CORDI**. See **BETONICA**, and **CARYOPHYLLUS RUBER**.

VI'A LACTE'A. See **GALAXIA**.

VIÆ PRIMÆ, the first passages, generally include the stomach and duodenum; and when we speak of the consent of the stomach with other parts we often include the duodenum.

VI'BICES, (from *βίβημι*, because they resemble the marks or stripes on the skin raised by beating with whips or other instruments). Purple spots and weals under the skin, of a scarlet colour, sometimes called *stigmata*.

VIBRATIO, (*à vibrare*), applied to the supposed undulating tremulous motions of a nervous fluid.

VIBISSÆ, (from *vibro*). Hairs growing in the nostrils.

VIBU'RNUM, (*vicio, to bind with twigs*; from its use in making bands,) *lantana, camara, viburnum lantana* Lin. Sp. Pl. 384, PLIANT MEALY TREE, WAYFARING TREE, an arborescent shrub, whose wood is fungous, the leaves resembling those of alder, the flowers in umbells, small, like those of elder, white, and quinque petalous, succeeded by berries, at first green, then red, and at last black, sweet, and viscous. This shrub is found in hedges, and clayey uncultivated grounds. The leaves and berries are astringent, but it is never used. See Raii Historia.

VI'CIA, (from *βίβημι*, a fitcher; from the shape of its pods). The TARE OR VETCH, *bicion, cracca major, vicia cracca* Lin. Sp. Pl. 1035. The pod is full of roundish or angulated seeds; the leaves are numerous, pinnated, and generally conjugated by pairs to a rib which ends in a tendril. Vetches are considered as heating and astringent; and a decoction with raisins, figs, and liquorice, has been given in the suppurative state of the small pox to fill the pustules.

VICTORIA'LIS, (*victoria, victory*, from the sword like shape of its leaves). *Allium victorialis* Lin. Sp. Pl. 424. See **OPHIOSCORDON**.

VIDA'MARAM. See **SEBESTEN**.

VIGILANTIA, (*a vigilo, to watch*). **VIGILANCE**, **SLEEPLESSNESS**. See **PERVIGILIUM** and **SOMNUS**.

We resume this subject to remark that watchfulness is often of itself a disease, which we cannot explain. In fevers we perceive a constant irritation from an increased determination to the brain, and, as already hinted, literary persons, from the increased sensibility of the sensorial organs, in consequence of continued attention, do not experience the recurrence of the re-

gular collapse. Those used to deep investigations when the cause is removed, do not recover that equilibrium which disposes to returning sleep. The deepest thinker, who could dispossess himself of his cares and calculations, was the late much lamented Mr. Pitt. We sometimes find this watchfulness in children without an evident cause, and sometimes without danger; but it generally gives a most decided indication of internal disease, and ought to call forth all our attention. In general, vigilance blunts the sensations, prevents the regular associations of thought, the deductions of reason, and impairs the sound decisions of judgment. It induces fevers, apparently hectic, with dyspepsia, costiveness, &c.; while the latter in hypochondriac persons apparently brings on sleeplessness.

VI'NCA PERVI'NCA, (*vincio, to bind*, from its use in making bands,) *clematis, vinca major* Lin. Sp. Pl. 304, the GREATER PERIWINKLE. From a stringy, creeping, fibrous root spring smooth, long, creeping, slender stalks. The flower is monopetalous, followed by two pods, containing oblong, sulcated, and almost cylindric seeds. The plant grows on banks at the sides of ditches; and an infusion of the leaves is recommended in fluor albus, hæmoptoe, hæmorrhoids, and excessive menstruation. See Raii Historia.

VINCETO'XICUM, (from *vinco*, and *toxicum*). SWALLOW WORT. See **ASCLEPIAS**.

VI'NISPI'RITUS TENU'IOR and **RECTIFICA'TUS**. See **VINUM ADUSTUM**.

VINUM, (*οἶνος*, from the Hebrew term, *ion*). WINE, *Bacchus*. (See **CENUS**). The juice of fruits, chiefly applied to the fermented juice of the grape.

It is not now necessary to engage in the doctrine of fermented liquors; but it is sufficient to remark, that the thinner wines are more subject to fermentation, and possessing a smaller proportion of saccharine and extractive matter, hasten more rapidly to the acid state. To correct this tendency, they are sometimes boiled, and thus rendered richer; or the progress of fermentation is checked by the fumes of sulphur.

These means are well adapted to preserve, for a time, the weaker wines; but, if neglected, they soon become acid, though, if the same plans be adopted to check the fermentation of the richer wines, in their earlier periods, the spirit will not be produced in sufficient quantity, and they will become vapid.

The ancients had a considerable variety of wines, and were peculiarly attentive to the management of the fermenting process. To detail the directions of Pliny, Athenæus, Varro, &c. at length, would be improper in this place, and it is sufficient to observe, that, in the early period, they accelerated the fermentation by artificial warmth. This was really the design of the *fumaria*, not to check the fermentation, as in the modern method of smoking a cask. The taste and smell of the smoke were, however, imbibed by the wine, and the slightly baked amphoræ were the best means of destroying both. This seems to be evident from the lines of Horace, which have not always been rightly understood.

Hic dies anno redeunte festus
Corticem, astrictum pice, dimovebit
Amphoræ, fumum bibere, institutæ
Consule Tullo.

It seems also that in the amphora the wines grew foul, probably from the evaporation through its substance, and it may be doubted whether the "languidiora vina," and "nec Bacchus languescit mihi," may not refer to this turbidness rather than to mellowness, as has been supposed. But this is from our present purpose.

The wines of the ancients were so much varied by their management, that it is not easy to ascertain their real qualities. In general, the Falernian (*vinum massicum*) was the more austere and stronger wine, the hock probably of the moderns; the cœcubum, the lighter nectar, wine of the warmer districts, though Galen speaks of a lighter weak kind of Falernian, and in one place the cœcubum, as a more generous beverage, or any old wine. The *vinum sentinum*, the favourite wine of Augustus, was light and grateful; we suspect of a weaker quality. The Sabine wines, "vile Sabinum," the common *vin de pays*, was occasionally, under proper management, though light, generous, or it would not have been styled by Galen *ενυειρη Σαβινος*. Horace mentions it as estimable at four years, and Galen remarks that it was properly matured only in six.

Of the Greek wines, the Pramnian and the Maronean were distinguished for their strength. Homer informs us that the Maronean required twenty parts of water to dilute it, and Hippocrates, except the copies err, orders an equal dilution of the Thasian wine. Pliny informs us, that, at a later era, it was usual to mix eight parts of water to reduce it to the strength of common wine. The Cretan, the Chian, and the Lesbian wines were rich and generous; the latter pleasant, and not heady.

The ancients generally diluted their wines, and in a singular manner. They first added warm water in the due proportion, and then cooled the mixed fluid in snow. This might probably have produced a more perfect union between the water and wine; but we cannot think that the cold would produce the generous race which we find in pure unmixed wines. Indeed they were not always cold (Senecæ *Epistolæ*, 73); but this seems to have been a precaution among valetudinarians only.

We have engaged in this short disquisition, chiefly to elucidate some passages in the ancient medical authors, and we may here express a wish that this subject were taken up by an elegant scholar, who would explain it without the redundant, irrelevant, and uninteresting disquisitions of Baccius, and in a manner more satisfactory than the diffuse, pompous, inanity of Dr. Barry.

Wine, we have said, is the fermented juice of the grape, and generally contains the extractive, tartar, some portion of unchanged saccharine matter, ardent spirit, and the aroma of the fruit. On the proportions of the first, and the different quality of the last, all the variety of wines depends. Wines may be divided into the sweet and dry. In the former is the greatest proportion of extractive and saccharine matter, often the least of the ardent spirit, though, in a few instances, this is rather softened and disguised than absent. Of this kind is the Malmsey Madeira, the Canary wine, the Constantia from the Cape of Good Hope, the *vino tinto* (tint of Hungary), Frontignac, some kinds of Florence, many of the Spanish white wines, as the pa-

cherotti, &c. The dry wines are the hock, the *Vin de Grave*, Madeira, Vidonia, port, both red and white, mountain, sherry, &c. Many of the Portuguese, Spanish, and Italian wines hold a middle rank, as the Buccellos, the Lisbon, some kinds of Florence, &c.

It has been usual to consider an acetous acid as an ingredient in wines; but if it be ever found, the wine is imperfect, and a decomposition must have begun. The smartness, which has suggested the idea, and which led the fabricators of made wines to employ a portion of acid, seems to be owing to an admixture of the carbonic acid air, generated during fermentation. This seems to give the pungency to claret and Burgundy, as it more evidently does, in a more evolved state, to Champagne. We must not indeed deny, that wine may, from the grape, contain some malic or citric acid, as Chaptal informs us (*Annales de Chimie*, xxxv, &c.), that even the sweetest wine reddens the juice of litmus. He adds, that the remains, after the distillation of brandy, becomes sour, and this cannot be denied to be vinegar; but it is of a posterior production, the effect of the acetous fermentation. The quantity of alcohol varies from one third to one sixteenth. Tartar we have already spoken of, not as a product of fermentation, but as originally contained in the must. The extractive matter is gradually deposited by age.

One part of wine we have omitted, viz. the colouring matter; because it is wholly extraneous, and does not add to the qualities of the wine. It is a resinous substance, soluble in alcohol, and deposited as the quality of the wine is deteriorated by age. It is destroyed also by powdered charcoal. Lowitz.

Wine is highly grateful to the palate and stomach, giving an immediate and agreeable warmth to the whole system, and its peculiarly pleasing stimulus is felt, even at first, in the mouth. It completely answers the idea formed of an analeptic, as it appears immediately restorative. When we pursue its effects farther, we shall find the strength and spirits renewed; the perspiration and other secretions, which may have languished from fatigue, restored; the thoughts follow each other with more freedom, and every motion is carried on with ease and comfort. If we examine this series of symptoms with a marked attention, we shall at once perceive the combination of a stimulant with a sedative power; in other words, an indirect stimulus. The freedom, the serenity rising to hilarity, point out the narcotic influence, and show that wine cannot be considered as strictly and properly a stimulant. When we pursue still farther its effects, we shall find the ideas are irregularly associated; the face, though flushed on the cheeks, is pale, round the nose and lips, the hand unsteady, the legs tottering, or spasmodically contracted. After sleep every symptom of debility in a considerable degree follows.

Wine, however, in moderation is, like tea, salutary, and its noxious portion is guarded by the extractive matter, perhaps the acid, from being, in general, injurious. In this it differs from ardent spirits, which not only want this sheathing, protecting ingredient, but seem to acquire additional deleterious properties from the fire, particularly by the evolution of an acrid, often an empyreumatic, oily principle.

Wines differ in their salubrity from the difference of their properties. The dry strong wines, as old hock,

are stimulant, with little mixture of the narcotic; or the austerity which accompanies the ardent spirit seems to correct its injurious properties. Some portion of this is preserved in the Maderia, and a less in Vidonia, sherry, and mountain, successively, of which the last is sometimes sweet. The sweeter wines are cordial and nutritious, especially when they combine, with the saccharine matter, a larger proportion of spirit. The Malmsey Maderia, the vino tinto, and the sweet Florences are of this kind. The Frontignac and Constantio are less nutritious, and cordial in a lower degree. The lighter sweet wines are generally drunk with the desert, as the sweetness of its dishes would destroy the flavour of the dryer wines. Port and sherry belong rather to the dry than the sweet wines. The astringency of the former counteracts, its narcotic powers, and the latter approaches, in a slight degree, the austerity of the German wines.

Claret, Burgundy, and Hermitage seem to be progressively more generous in the order mentioned. Claret combines, at least, the effect of an acid. The race of Burgundy renders it more generous, and the Hermitage has, in general, a superior body. If the stomach can bear with impunity either, they are highly salutary, as they contain a very inconsiderable degree of ardent spirit, and the malic acid probably, though disguised, in a considerable proportion. The aroma of Hermitage shows it to possess an additional principle, which we suspect renders the acid less injurious. In many cold, flatulent, weak stomachs, each is, however, injurious. Champagne is more so: for its body is inconsiderable, and the quantity of air evolved renders it often inconvenient in the stomach, not to mention that its effects on the head lead to a suspicion that it combines some more deleterious principle than the carbonic acid gas.

The constant use of wine is "a custom more honoured in the breach than in the observance." Its advantages are lost from habit, and, when we want it as a cordial, we must employ a dose which will render its narcotic powers too sensible. If it be asked, which is the most wholesome wine? we would say, with a few exceptions, that which is the best; in other words, that in which the fermentation has been regularly conducted, in which its spirit is fully evolved, but still sheathed by the remaining extractive, if not some portion of the saccharine matter. The exceptions are the rich wines in a weak over-loaded stomach; and the thin acid ones in a cold and flatulent habit. Port, in general, unless kept until attenuated, is heavy, injures digestion, and is injurious from the quantity of spirit generally added to make it bear the motion of the ship; and, on this account, the wine which has twice crossed the tropics is preferred. The spirit is, by the voyage, more intimately combined, or evaporated. In our anxiety, however, to procure a generous attenuated wine, we must not wait till its colour be lost. When the brilliant red at the bottom of the glass changes to a brown, even when almost imperceptible, the quality of the wine is injured. Fashion or prejudice in vain insists that it is of a superior kind; for the chemist knows that a decomposition has begun, and the physician, that it is no longer the generous cordial it once was.

The good effects of wine are shown by the cheerfulness and hilarity which it excites, by a free perspira-

tion, the mouth not hot or dry; the intellectual functions free and well connected, without rapidity or irregularity. If the quantity is not in excess, the sleep is easy, sound, and undisturbed; the morning not clouded by headach, the mouth not dry, and every occupation, mental or corporeal, resumed with freedom and alacrity.

Wine, like cyder, is sometimes adulterated with lead. See PLUMBUM.

In pharmacy the following wines only are ordered: the *vinum album Hispanicum*, or mountain wine; *vinum album Gallicum*, or French white wine; *vinum Canarinum*, Canary or sack; *vinum Rhenanum*, or hock; *vinum rubrum*, or red port. The qualities of each we have already mentioned; but we do not perceive that the choice of wine, as a menstruum, is regulated by any fixed views, and it is now scarcely employed. As a vehicle for the more convenient division of the doses of metallic salts the mountain is preferable; but, in general, a portion of spirit should be added. Indeed, in every case the dry stronger wines are preferable to the sweet or weak.

As a medicine, wine is a most valuable cordial in languor and debility, particularly useful in the low stage of typhus, raising the pulse, supporting the strength, promoting a diaphoresis, and resisting putrefaction more quickly and certainly than any other medicine. Delirium, from excessive irritability, and a defect of nervous energy, is often relieved by the judicious use of wine; during the prevalence of an intermittent epidemic, or putrid sore throat, a moderate use of wine has proved a salutary prophylactic. In malignant angina; in the small pox verging to putrescency, with great debility; in gangrenes and the plague; wine is considered an important remedy, and in almost every case of great prostration of strength is a most grateful and efficacious cordial. Dietetically it is said to be beneficial to the weak and aged, and to those who are exposed to a warm and moist, or to a corrupted, air. Externally it stimulates, strengthens, and resists putrefaction. Dr. Harris orders ulcers to be washed with warm wine; and external inflammations are said to be sometimes removed by it. In an erysipelas, warm wine and fomentations with the spirit of wine are sometimes useful. Wine in fevers is, however, often too heating, and to an equal proportion of milk and water as much wine may then be added as will occasion coagulation. A wine whey, mildly cordial and diaphoretic, is thus formed, and may be given with good effect; or water may be added to wine for the same purposes. See Baccius de Naturali Vinorum Historia; Barry on the Wines of the Ancients; Galen Libellus de Vinis. Opera, vii.; Hoffmann de Vini Hungarici eccellente Natura; Ejusdem de Natura et Præstantia Vini Rhenani; Neumann's Chemistry; Lewis's and Cullen's Materia Medica.

VI'NUM ADU'STUM, *vinum ardens*, SPIRIT OF WINE, and, when rectified, *alcohol cuculatum majus ænostagma*. In France it is drawn from wine; in England and Germany from malt liquors, sometimes from molasses; and in America from the sugar cane. The spirit from each source, if equally pure, is the same.

Alcohol, when pure, is perfectly limpid, with a penetrating smell, and a hot fiery taste. When shaken in water it forms bubbles, which almost instantly disappear, and it moves in the vial without the slightest

apparent lentor. Its specific gravity is 0.825 at 60°; but it may even be brought to 812. It resists the intensest colds hitherto known, evaporates before the point of boiling, which is, however, so low as 165°, and, on evaporating, forms a gaseous fluid, leaving a high degree of cold. It mixes slowly with water if at rest; but rapidly on shaking, separating numerous bubbles: the united bulk is smaller than that of the separate portions, and the specific gravity, of course, greater. Alcohol burns on being touched with an ignited body: and the flame is pale blue on the outside, though white in the centre. Salts of copper render the flame of a beautiful emerald green, borax a greenish yellow, nitre a dun yellow, and the soluble salts of strontian a deep blood red. The strongest alcohol is consumed so perfectly as to inflame gunpowder, if placed at the bottom of the vessel in which it burns. When alcohol has burnt away on cotton, and inflames it, chemists call it rectified spirit of wine. Equal measures of this rectified spirit and of pure water form *spiritus vini tenuior*, proof spirit. If to the rectified spirit as much well dried and yet warm alkaline salt be added, as that a part of it remains undissolved at the bottom, it will absorb the remaining aqueous humidity, and the spirit may be poured from its surface. After which, if a little calcined vitriol or burnt alum be added to this dephlegmated spirit, and it be again distilled, it will arise pure and free from either superfluous phlegm, or any of the alkaline salt that may be detained in it. This is called alcohol. The college of physicians direct the following process: Take of rectified spirit of wine, one gallon; kali made hot, one pound and a half; pure kali, one ounce: mix the spirit with the pure kali, and afterwards add one pound of the hot kali: shake them, and digest for twenty-four hours. Pour off the spirit, to which add the rest of the kali, and distil in a water bath. It is to be kept in a vessel well stopped. The specific gravity of the best alcohol is to that of distilled water as 815 to 1000. But, as we have said, it may be rendered still stronger. An empyreumatic flavour, however, often remains from the first incautious distillation, and a fetid oil, from an accidental or a designed impregnation. The former disappears by age, especially if the spirit be kept in charred casks; but the oil is seldom separated. It may be discovered by rubbing some of the spirit on the palm of the hand. Alkalis and lime, with a subsequent distillation, remove it; but a portion of the spirit is in this way decomposed. Baume, who thinks this oil more common when the spirit is prepared from the rich Spanish wines, found that the first product of the distillation was not oily, and on this observation founded his process of purifying. This was to distil the spirit successively, reserving all the first portions, then to mix them and distil off one half.

Fiscal operations have rendered it a problem of peculiar advantage to ascertain the comparative strength of different spirits. Shaking the fluid, and marking the period at which the bubbles disappear, becomes, from habit, a good test of its strength; but art will supply the means of imitating what has been attributed to the proportion of alcohol. The quantity of water left after burning is a better criterion. Good rectified spirit should leave about 0.25, French brandy 0.56, common malt spirit 0.65. Another test is the quantity of water which good dry carbonat of potash carries down,

and one usually employed of rum is its swimming in olive oil; but all are liable to objections, and the most certain means of ascertaining the proportion of alcohol, in a given quantity of spirit, is by ascertaining its specific gravity. The immense and minute labours of sir Charles Blagden and Mr. Gilpin on these subjects may be found in the seventy-ninth and eighty-second volumes of the Philosophical Transactions; but, though we think a more minute attention to the strength of spirits in pharmaceutical processes highly desirable, the disquisition is by far too remote from our present object to detain us. The complicated circumstances in this inquiry afford many curious subjects of hydrometrical investigation, which, to a philosophic mind, must be highly interesting. It appears, in general, that the greatest diminution in bulk, or concentration, in proportion to the quantity of ingredients, which takes place between alcohol and water, occurs, when equal bulks of each are used, being more than $\frac{1}{6}$ th of the whole. But the greatest possible diminution, obtainable by any admixture of water, happens when two parts of the latter are added to one of alcohol, being 6.81 parts where one hundred of alcohol are employed. This last is the highest term of actual diminution, as it is again less than 6.81 in one hundred, if still more water is added.

Alcohol has been analyzed in a variety of ways; but we have not hitherto attained greater accuracy than from the experiments of Lavoisier, who concluded that one hundred parts of alcohol contained 63.6 of water; 28.53 of carbon; and 7.87 of hydrogen. In the strongest alcohol, water already formed probably exceeds one-half its weight, which in burning is carried off by evaporation.

Pure alkalis are soluble in alcohol; but carbonated alkalis only attract the water. The solution is of a high red brown colour, and recommended as a resolvent by Van Helmont, under the appellation of *tinctura tartari*. The proportion of pure alkali, dissolved by the strongest alcohol, is about 0.187 of its weight; but, as already hinted, the spirit is in part decomposed; for the alkali attracts the carbon, and rhomboidal or spicular crystals are deposited. If this solution is repeatedly distilled, the whole spirit is decomposed, leaving carbonat and acetate of potash. Lime has a similar effect. Pure ammonia dissolves in alcohol, and the carbonated ammonia to a certain extent, especially by means of distillation. When alcohol, however, is added to a saturated solution of ammonia, in water the latter is precipitated in confused crystals, called *offa Helmontii*. The action of the stronger acids has been already noticed in the article ETHER, q. v.; and the weaker ones dissolve in it or decompose it imperfectly. Howard's *fulminating mercury* is procured by means of alcohol, which when digested with nitrat of mercury, is decomposed, and becomes the oxalat of this metal, in which state it fulminates. The other neutrals are dissolved by alcohol, with different degrees of affinity, and it furnishes a ready method of approximating the saline contents of mineral waters. Lavoisier found that pure spirit did not dissolve carbonated or sulphurated soda, sulphurated or muriated magnesia, or even common salt. When mixed with half its weight of water, it dissolved a considerable quantity of common salt; but sulphat of soda was not dissolved in any mixture in which the quantity of spirit

exceeded that of water, without boiling. On cooling, the whole of the salt was deposited. The result of Wenzel's experiments we shall add. The spirit was the best spirit of commerce, about 0.830, the heat of boiling 180°, and the quantity 240 grains. These dissolved, of

	Grains.
Nitrat of potash	5
— soda	23
— ammonia	214
— lime	288
— magnesia	694
— allumine	240
Muriat of potash	5
— ammonia	17
— lime	288
— magnesia	1313
Fluat of ammonia	1
— alumine	1

	Grains.
Borat of ammonia	1
Tartrite of potash	1
Cream of tartar	7
Tartrite of ammonia	7
— alumine	7
Oxalat of alumine	7
Acidulous oxalat of potash	7

Mr. Kirwan's experiments were made with five different kinds of spirit. That of the specific gravity of .900 is equal, according to Gilpin, to one hundred of spirit, with about fifty-nine grains of water; .872 to as much spirit, with twenty-seven of water; .848, with about eleven grains of water; and .825, with five grains of water. The temperature was about 80°, the time of digestion three days, and the salts were deprived of the water of crystallization. See Kirwan on Mineral Waters, p. 266.

One hundred grains of alcohol dissolved.

	.900	.872	.848	.834	.817
Sulphat of Soda	0	0	0	0	0
— magnesia	1	1	0	0	0
Nitrat of potash	2.76	1	0	0	0
— soda	10.5	6	—	0.38	0
Muriat of potash	4.62	1.66	—	0.38	0
— soda	5.8	3.67	—	0.5	—
— ammonia	7.5	4.75	—	1.5	—
— magnesia, dried at 120°	21.25	—	23.75	36.25	.50
— barytes	1	—	.29	.185	.09
— crystallized	1.56	—	.43	.32	.06
Acetite of lime	2.4	—	4.12	4.75	4.88

When alcohol is added to a solution of salts they are precipitated in proportions which furnish some information of importance in the same analysis. The precipitation takes place, as may be expected, soonest with the purest alcohol, and the most saturated solution: the quantity of spirit must be at least equal in bulk to that of the solution, often much larger. Mr. Kirwan found that if water contained selenite in the proportion of 0.001, it would be completely precipitated by spirit of the specific gravity of .850, or somewhat below it. Alkaline sulphats are equally precipitated by a spirit of .817 in a somewhat longer time. Alum must be in a greater proportion than 0.05 to be precipitated by a spirit of .834, unless triple the bulk be used, assisted by heat. Sulphat of magnesia must be in greater proportion than 0.240 to be immediately precipitated by a spirit of .834. Phosphorus dissolves in alcohol and sulphur by the process of distillation.

Pure resins are soluble in alcohol; but the gum resins only in part soluble in the pure spirit, though more so in the diluted. The purer resins are precipitated from spirit by the addition of water. Gum copal and amber, though styled often resins, do not dissolve in alcohol. Camphor dissolves in nearly an equal weight of good alcohol, and the essential oils are dissolved in it in proportion to its strength. It extracts the colour and smell from fat oils without dissolving

them; but, if empyreumatic, rendered *drying*, rectified by distillation, or united by an alkali into soap, they become in a greater or less degree, soluble in spirit. Alcohol dissolves about one third of its weight of good soap, if not overloaded with oil, and the solution is limpid, chiefly used as a test for earthy salts in mineral waters. It dissolves equally the green matter of vegetables, and sugar in about three times its weight, if the spirit be of a moderate strength. As the alcohol does not dissolve the mucilage, it is useful for separating the purely saccharine part. Animal secretions of a resinous nature, as well as wax and spermaceti, are dissolved by spirit, which separates albumen from the serous fluid with which it is combined, by coagulation. It slowly extracts the blood from the muscular fibre, leaving the flesh shrivelled, white, hard, and not susceptible of putrefaction. On this account good alcohol is of essential service in the preservation of anatomical preparations.

This spirit, from the properties recited, is of extensive use in chemistry, separating the medicinal parts of vegetable and animal substances from the inactive matter, extracting their flavour and colour, dissolving resins and oil for varnishes, &c. and extracting them from the woods which contain them.

As a medicine, alcohol, externally applied, constricts the vessels, and coagulates the fluids, and thus restrains

hæmorrhages. As a powerful narcotic it eases pain, but renders the parts paralytic. If received into the stomach in an undiluted state, it produces the same narcotic effects so often described; and if the quantity taken be considerable, a palsy or apoplexy often follows. All spirit taken internally is injurious; and though a moderate quantity, the injury is trifling, yet its use should be regulated with the greatest care.

Externally, as a topical astringent, it is useful in bracing relaxed organs, and, as a narcotic, in lessening increased action from strains, &c. In inflammations from excess of stimulus, as in burns, it has been useful, as a less stimulus, to bring the vessels to a proper tone without too far detracting from their irritability. See Neumann's Chemical Works; Lewis's Materia Medica.

VI'NUM, wine, a pharmaceutical title from its use as a menstruum in pharmacy. It will be obvious that wine takes up the extractive matter with less decomposition than spirit, though perhaps more changed than by the medium of water. As it is not kept without spontaneous changes, it is a form now disused, except as a menstruum for mineral substances.

VI'NUM RHABA'RBARUM. See RHABARBARUM.

VI'NUM HORDEA'CEUM REGIO'NUM SEPTENTRIONA'LIIUM. See ALLA.

VI'NUM FAL'E'RNIIUM. See AMINÆUM VINUM.

VI'NUM EME'TICUM, et BENE'DICTUM. See ANTIMONIALE VINUM.

VI'NUM CHALYBEA'TUM, vel FE'RRI. See FER-RUM.

VI'NUM HIPPOCRA'TICUM. See CLARETUM.

VIOLA, (*Ion*, from its supposed native country, *Ionia*), *viola odorata* Lin. Sp. Pl. 1324. The SWEET VIOLET. The flowers have a very agreeable smell, a weak, mucilaginous, bitterish taste; and, if in a dose of two drachms, they are gently laxative: according to Bergius, they possess an anodyne and pectoral quality. The seeds are somewhat more laxative, gently emetic, said to be strongly diuretic, and useful in gravelly complaints. The flowers yield to water both their virtues and fine colour, but impart to the spirit their fine flavour, without their colour.

A syrup made with the blue flowers is useful in some chemical investigations, to detect an acid, or an alkali, and it is said to be a laxative for infants; an effect probably derived from the sugar.

Syrup of violets is made by macerating two pounds of the fresh petals of the flowers in three pints of boiling distilled water, for twenty-four hours. The liquor is then strained through a fine linen rag without expression, and the clarified sugar added to make a syrup. (Ph. Lond. 1788.) Both the flowers and the syrup lose their fine colour by long keeping. See Lewis's Materia Medica.

VIOLA CANINA, Lin. Sp. Pl. 1324. The root is both emetic and cathartic, when dry, in the dose of a scruple; but is not used in this country.

VIOLA TRICO'LOR, Lin. Sp. Pl. 1326, β . is to the taste mucilaginous and somewhat rough, and in quality somewhat purgative; half a drachm of the dried herb, boiled two hours in milk, is recommended to be taken night and morning in milk for the crusta lactea. The decoction is formed into a poultice with bread, and applied to the part, but is a trifling remedy, and at present disused.

VI'OLA LUNA'RIS. See BULBONACH.

VI'OLA LUTE'A. See CHEIRI.

VI'OLA MARIA'NA. See CERVICARIA.

VI'OLA MAR'INA. See EPERLAUNUS.

VI'OLA PALU'STRIS. See SANICULA EBOR.

VIO'RNA, (from *vico*, to bind with twigs, from the flexibility of its branches). See ASTRAGENE.

VIPE'BA. See CASSADA.

VI'PERA, (*quæd vi pariat*, from the tale of the young ones eating through the mother's bowels). The VIPER, *coluber berus* Lin. Systema Naturæ, is a viviparous reptile, about an inch in thickness, and from twenty to thirty inches in length; distinguished from the snake by an undulated black line on its back, and the smallness of its tail; found in the heat of summer under hedges, and in winter retiring into holes in the earth. Its poison is at the basis of its fangs, or long teeth, through which it is emitted by a furrow when the animal bites. A small portion of this poison, communicated to the blood by a wound, produces violent effects, though inoffensive in the stomach. The mode of relief is rubbing the wound with olive oil, taking it freely, internally, with ammonia; but in this country the bite of a viper is seldom fatal. Various other remedies have been recommended, but they are of little value, and derive their chief credit from the comparative innocence of the poison. These are acids, both externally and internally, the expressed juice of the leaves of the ash, theriaca, the actual cautery, baum, &c. Fontana contends that the volatile alkali is useless, and that the poison is of a gummy nature; but in general his experiments deserve more attention than his reasoning. The viper's fat is of little value beyond any other axunge. See SERPENS and BOICIN-INGA.

Neither as a medicine nor aliment does the flesh of vipers appear to excel that of eels. The supposition of its virtues is a mark only of the credulity of the ancients, and of their blind implicit followers. See Cullen's and Lewis's Materia Medica; Mead on Poisons.

VI'PERA INDICA, PILEATA. See COBRA DE CAPELLO.

VIPERA'RIA, (because it was thought effectual against the bite of a viper). See SCORZONERA.

VIPERINA, (from the serpentine appearance of its roots). See SERPENTARIA VIRGINIANA.

VI'RES NA'TURÆ. See ARCHÆUS.

VI'RGA AU'REA, (from its form and colour,) *doria herba*, *conyza*, *symphitum*, *petræum*, *elichrysium*, *consolida Saracenicæ*, *Jacobæa palustris*. COMMON GOLDEN ROD, *solidago virga aurea* Lin. Sp. Pl. 1235, is a plant with long and somewhat oval leaves, pointed at both ends, slightly or not at all indented, with upright spikes of small yellow flowers, followed by small seeds winged with down. It is perennial, grows wild in woods and on heaths, and flowers in August. The leaves and flowers are styled corroborant, aperient, and diuretic, communicating all their virtues to water and to spirit. The taste is bitter and moderately astringent, and they are consequently considered as useful in debility of the viscera, and its effects, but they are a medicine of weak powers, and now disused. The extract is the best preparation. See Lewis's Materia Medica.

VI'RGA MA'JOR. See CONYSA MAS THEOPHRAS-TI.

VIRGA'TA SUTU'RA. See SUTURA SAGITTALIS.

VIRGINIA'NUM RU'BURUM. See PHYTOLACCA AMERICANA.

VI'RIMUM LA'PSUS. See LIPOTHYMIA.

VI'RIDE Æ'RIS. See ÆRUGO ÆRIS.

VIRI'LIS Æ'TAS. See ÆTAS.

VIS CONSERVA'TRIX, (*ἰσχυς*, from the Hebrew *aish*). The preserving power, or the efforts of nature directed to preserve health, and correct accidental deviations from the sound state.

VIS ELASTICA, *mortua*, the elastic principle inherent in parts of animal bodies, as dead matter.

VIS GENERATRIX. The generative power.

VIS INSITA. The *inherent power*, or the irritability which exists in the muscle independent of the will and independent of the nerves, seemingly from organization. It certainly continues some time after life, but is not apparently distinguishable from the *vis nervea*.

VIS MEDICA'TRIX. The healing power, or the plastic power employed in restoring health, often expressed by the words *nature*, and *natural cure*. See VIS VITÆ, and CALIDUM INNATUM.

VIS NERVEA or NERVOSA, the property of contraction inherent in muscles, independent of their organization, by the nerves which supply them. Whytt and Monro.

VIS PLASTICA. See PLASTICUS.

VIS VITÆ. See CALIDUM INNATUM.

VISCA'RIA, (*viscus, gluc*, from the gluciness of its leaves). See MUSCIPULA.

VI'SCERA, (from *ἰσχυς*, *strong*.) The BOWELS. The *viscera* in the head are the brain, eyes, ears, nose, mouth, tongue, &c.; in the thorax, the heart, lungs, larynx, trachea, pleura, mediastinum, pericardium, thymus gland, and diaphragm; in the belly, the peritonæum, omentum, œsophagus, stomach, intestines, mesentery, liver, spleen, pancreas, kidneys, uterus, bladder, and the female parts of generation.

A knowledge of the situation of the abdominal viscera is of great advantage to the medical practitioner. The body may be considered as divided into three regions, the chest, the abdomen, of which the superior part is under the bastard ribs, the middle region, and the pelvis. These three regions form one large cavity, containing all the viscera of the lower belly, but their extent varies in different ages, in different subjects, and from disease. In new born infants, the distance between the sternum and the pelvis is nearly a third of their whole length; in adults only one fifth. This difference is confined entirely to the middle region, which, in children, is also much more extensive in every respect than in adults. In the former it is wider from before backwards, for as the age advances the spine is almost entirely straight, but becomes considerably crooked in more advanced life. In children, too, the ribs bend more outwards than in adults, which adds to the lateral diameter. Although this middle abdominal region is in them so extensive, yet both the superior and inferior divisions are comparatively small. In the pelvis the under extremity of the os sacrum bends considerably towards the pubes; the horizontal branch of the pubes is both short and flat, and the tuberosities of the ischia turn backwards. In young children, therefore, all the viscera of the lower belly are contained in what we have termed

the middle division, and remain there until they gradually pass into the other two regions, as these, in course of time, are enlarged. Before treating, however, of the changes the viscera undergo in point of situation from the infantine state to that of adults, it will not be improper first to give a more particular description of their several situations in the former. The stomach in infants, instead of being situated transversely as in adults, hangs almost perpendicularly. It extends from what is commonly called the epigastric region to the umbilical, inclining a very little to the left above, and to the right below; having its convex side or great curve turned to the left, and the small curvature towards the right. In consequence of this situation the omentum, which is always attached to its great curvature, lies more towards the left than the right side; and, from want of attending to this circumstance, practitioners have often treated as diseases of the colon complaints in children, which, on dissection have been found seated in the omentum. The liver is very large in the fetus, in proportion to its size in adults, and is situated almost entirely in the middle region of the abdomen. It appears to the touch externally, indeed, much nearer the linea alba than it is ever found in a more advanced age. At this period the duodenum is placed almost entirely behind the stomach. The spleen in infants is always easily discovered by the touch immediately below the false ribs; but in adults it is only felt when in a diseased state. In the former a considerable part of it is situated in the middle region of the abdomen; but in the latter its seat is always in the left hypochondrium. In very young subjects the urinary bladder is situated entirely without the pelvis, is remarkably large in proportion to the other parts, and extends to within a very small distance of the navel: when full of urine it makes a very evident prominence near the middle and inferior part of the abdomen. This position of the bladder, above the os pubis, ought to be particularly attended to; for, when in infancy it is necessary to have recourse to lithotomy, the high operation may be more safely performed. In young girls the womb, with its two ovaria, are considerably raised above the os pubis; and when swelled, which, however, at this age, seldom occurs, it can easily be distinguished by the touch externally.

Such are the situations of the viscera in childhood. In a more advanced age the ribs become less crooked, the diaphragm more vaulted, and the liver rises higher, so that about the fifteenth year it is almost entirely covered under the ribs, when in a horizontal posture. This change of situation, in the liver draws the stomach from the perpendicular to the horizontal line; and, according to its change of situation, the omentum recedes entirely from the left side, and occupies the middle part of the lower belly. Although the horizontal lobe of the liver can be distinguished by the touch in adults, it is not so evident as in children. The pelvis also enlarges; the pubes become considerably longer, and acquire a greater height; the os sacrum stretches farther back, and the tuberosities of the ischia push outwards, and to a greater distance from the os coccygis. Such a considerable augmentation in the cavity of the lower part of the abdomen gives rise to such changes in the position of the different viscera as deserve from practitioners very particular attention. The bladder, in

falling down, has its superior part carried forward, and the urachus, which had been attached to the fundus, is torn away, and never again connected with it. This fact was first taken notice of by Lieutaud, but is still doubted by many anatomists. The womb, which in childhood was placed above the pubes, by degrees falls into the pelvis, so that in adults not pregnant it is always, in a sound state at least, entirely sunk in it. Both the bladder and the uterus acquire an oblique situation in the pelvis, owing to the descent of the intestines; and this very slight obliquity, in some degree natural to both these viscera, was observed by Gunzius and Camper.

A strange confusion, inversion, or transposition of the viscera is mentioned by different authors, viz. Roemer in *Sylloge Opusculorum Italicorum Fasciculus*, i.; Stoll *Ratio Medendi*, i. 290; De Haen *Ratio Medendi*, xiv. 1, 2; Haller *Opera Minora*, 14, 15; Baillie in the *London Medical Journal*, 1789; *Edinburgh Commentaries*; Ludwing *de Causis Præternaturalis Viscerum Abdominalium Status*, &c.; Sue in *Memoires Présentées*, &c. i. 292, &c. They are subject also to many diseases, as hidden varices, hydatids, &c. (Baglivi, 386). They sometimes, as we have seen, are propelled through the fibres and rings of the muscles, sometimes are naturally covered only with the peritonæum. In ulcers of the viscera Dr. Healde, in "two papers," mentions the good effects of oleum asphalti.

Infarctions of the viscera include all scirrhusities which prevent a due circulation through their vessels, and are, therefore, noticed under different heads, to which they more particularly belong. We now notice them to mention a peculiar remedy by a German physician, Kempff, viz. the visceral clysters, chiefly composed of what the Boerhaavians styled the deobstruents and resolvents, or the purer bitters. Kempff has had many imitators and eulogists in Germany; but the practice has not reached this country, so that we cannot speak of it from experience. Other remedies are wormwood, bark, steel, the greater celandine, gum ammoniac, neutral salts, sulphur, and mercury.

See *Edinburgh Medical Commentaries*, vol. ii. p. 152, &c. from M. Portal's paper in *L'Histoire de l'Académie Royale des Sciences de Paris*, année 1771, 4to. Paris.

VI'SCUM. BIRD-LIME. See VISCUS.

VI'SCUS, (from *ἴσος*), *boxus*, MISSELTOE, *viscum album* Lin. Sp. Pl. is a bushy evergreen plant, bearing imperfect white flowers, followed by transparent whitish berries. It grows only on the trunks and branches of trees. Formerly bird-lime was made of the berries, by boiling them in water until they burst; they were then well beat in a mortar, and afterwards washed in water until all the branny husk was separated; but now bird-lime is made from the bark of the holly. (See *AQUI-FOLIUM*.) The misseletoe hath been famed for its medicinal virtues. Superstition, in former ages, held it in veneration, hanging it about the neck to prevent the effects of witchcraft, and giving it internally to expel poisons. As a specific in epilepsies, palsies, &c. it has been recommended; but is seldom noticed in the present practice, though an effort has been lately made to introduce it. Colbatch gave from half a drachm to a drachm of the wood or leaves. See Raii *Historia Plantarum*; sir John Colbatch's *Treatise on the Misseletoe*.

VI'SIO, (from *visus*, sight, and that from *video*, to

see). The SIGHT. Of the physiology of vision we have spoken at some length, when the structure of the organ was before us, as well as of those diseases which depend on that structure. (See *OCULUS*.) Some other defects of this function we shall now notice. Imaginary objects are often the effect of a diseased structure of the brain, sometimes a vitiated state of the vessels of the retina (Morgagni *de Sedibus*, &c. xiii. 4). Weakness of sight consists not only in indistinct vision, but in an inaccurate judgment of shapes, of distances, and colours. Sometimes there is no power of distinguishing colours, and two instances of this kind are recorded in the *Philosophical Transactions*, viz. vol. lxvii. and lxviii. In short, the accurate distinction of colours is as much a peculiar property of vision as a musical ear is of sound.

The causes of weak sight are chiefly those of debility, viz. excesses of every kind, repelled eruptions or gout, excessive discharges, particularly of the saliva from mercury, narcotic poisons, &c. The complaint is relieved by tonics, general and topical, cold bathing, topical discharges by errhines, if not violent, and moderate stimuli to the eyes. Some singularities of vision are recorded, as a loss of sensibility in one half the nerve, short-sightedness of one eye, and the opposite defect to the other. Percival, in the *Memoirs of the Medical Society of London*, ii. 5, mentions an unpleasant sensation arising from square objects: in pregnancy we have seen an equal aversion to particular colours.

VI'SNAGA; *daucus visnaga* Lin. Sp. Pl. 348, *gini-dium Hispanicum*, SPANISH PICKTOOTH, is an annual plant, growing in Italy, remarkable for the agreeable scent and stiffness of the pedicles of the flowers, used for picking the teeth only. The virtues of the plant are similar to those of fennel. See *FENICULUM*, and Raii *Historia*.

VI'SNAGA MI'NOR. See *SELINUM MONTANUM*.

VI'SUS DE'BILIS; HEBETUDO. See *AMBLYOPIA*.

VITA, (from *vivo*), LIFE. We have stated that life consists in that animation of the primordial germ, which it receives at the moment of impregnation. Mr. J. Hunter considered it as seated in the blood, following, in this instance, the opinion of an Italian philosopher, in the early part of the last century (Haller *Bibliotheca Medicinæ Practicæ*, iv. 358). Of the BRUNONIAN and CULLENIAN systems on this subject we have already spoken. Vide in verbis. See also *BLOOD*.

VI'TÆ LI'GNUM. See *GUAIACUM*.

VI'TÆ A'RBOR. See *THUYA* and *CEREBELLUM*.

VI'TÆ AFFECTIO'NES, VI'TA PROPOSITA. See *EPITEDEUMA*.

VITALBA. *Clematis vitalba* Lin. Sp. Pl. 766, β . TRAVELLER'S JOY, is pungent and acrid to the taste. The young sprouts are esculent, and a decoction of the leaves is given in rheumatism, lues, and scrofula.

VITE'LLUS, (because it contains the life of the chick). The YOLK OF AN EGG, is a part of the chicken, and gradually drawn into its abdomen, forming or supporting the different viscera. We have already spoken of its chemical nature, and its uses as an aliment. In pharmacy it is employed as a medium for uniting oils, resins, and balsams, &c. with water.

VITIA. A class of cutaneous, external, or palpable diseases, in the nosology of Linnæus, and a synonym of the *locales* in the system of Cullen.

VITIA TUMOS. See **CARIES**.

VITILA'GO, (because it is white like the skin or flesh of veal). A species of **WHITE LEPROSY**. See **ALPHUS**.

VITIS, (*vico, to bind*, from the flexibility of its branches). The **VINE TREE**, *vitia vinifera* Lin. Sp. Pl. 293. Its leaves are astringent, and were formerly used in diarrhœas, hæmorrhages, and other disorders requiring refrigerants and styptics. These leaves were called *framini*, and the tendrils *capreoli*. The juice and sap of the vine (*lacryma*) have been recommended in calculous disorders, and said to be an excellent application to weak eyes, and to remove specks of the cornea. The unripe fruit has a harsh, rough, sour taste; and its expressed juice, *verjuice*, was much esteemed by the ancients, but is now superseded by that of lemons: for external use, however, particularly in bruises and strains, verjuice is still employed, and said to be a very useful application. The dried fruit, called *Uvæpassæ majores*, and *minores*, q. v. are useful in pectoral decoctions as demulcents. They form part of the decoctum hordei compositum, tinctura sennæ, and tinctura cardamomi composita. If the trunk is wounded in spring, it affords a watery juice, used as a diuretic and refrigerant. The flowers have a grateful smell, which is raised with water in distillation, and contains a small portion of essential oil, which possesses, in a high degree the flavour of the flowers. The unripe fruit, *agrestæ*, are sour and harsh, but from them *omphacium*, a cooling and astringent liquor is expressed. The ripe fruit is called *uva*; the largest kind, *damascenæ passulæ*, and *uvæ* afford wine (*vide VINUM*); and when these are dried in the sun they are called *uvæ passæ*, or *passulæ*. See Lewis's *Materia Medica*.

VITIS ALBA, vel **SYLVESTRIS.** See **BRYONIA ALBA**.

VITIS IDÆA. See **VACCINIA** and **OXYCOCCUS**.

VITISAL'TUS. See **CHOREA SANCTI VITI**.

VITRARIA, (from its use in glazing vessels). See **PARIETARIA**.

VITREA TU'NICA, (the membrane of the vitreous humour of the eye). See **ARANEÆ**.

VITRIOLICO'LCOTHRAR, *chalcitis officinalis, colica, colcotor, crocus martis*, the substance which remains after the martial vitriol has been calcined and distilled for a long time by an intense fire; and by that means reduced to a blood red. Mr. Le Fevre mixes two parts of filings of iron with one of sulphur, and a little water; and after the acid of sulphur has dissolved the iron, by exposing the paste to the air, it changes into colcothar. It is used in polishing glass, and other substances, by artists.

VITRIOLICUM A'CIDUM, (from *vitriolum*,) *oleum vitrioli, stigma, acidum frimogeneum*. See **ACIDA** and **SULPHUR**.

VITRIOLA, (from its likeness to glass; but it is said also to derive its name from the initial of the following words, *Vade in Terram rimando invenies optimum lapidem veram Medicinam*). In the chemical alphabet, vitriol is expressed by the letter D. the best species of which is called *lonchoton*; other kinds, *calcadinum, calcatar, calcotar, calcanthos, calcanthum, calci-*

tea, alee, or alech, altinuraum, asagi, asamaz, azeg, calcotor, VITRIOLS, combinations of metals with the vitriolic acid generally styled copperas, as if all vitriols contained copper only.

The vitriols of iron are styled green vitriol; of copper, blue vitriol; and of zinc, white vitriol. The term is sometimes applied to all combinations of vitriolic acid; but these appellations have never been generally adopted.

Vitriols are prepared in Sweden, Germany, England, and in many other countries where pyrites are plentiful.

VITRI'OLUM ABORTIVUM. See **OCHRA**.

VITRI'OLUM VE'NERIS. See **ÆRUGO ÆRIS**.

VITRI'OLUM VI'RIDE, (*atramentum sutorium, et melantoria*, because used for blacking leather). In preparing this salt the pyrites are exposed to the air, and reduced to a vitriolic earth, which is washed with rain water, and the liquor conveyed by pipes into cisterns. It is then boiled to a due consistence in large leaden vessels, adding a quantity of old iron, as the acid is in excess, and at last the liquor is set to cool in other vessels furnished with sticks, on which the vitriol crystallizes. It is made in London by a direct combination of its ingredients, as the salt is purer, and the process more quick and easy. The acid must be diluted; for if concentrated it will not act on the metal.

When made from pyrites, vitriol contains two kinds of salts, the green sulphat, and the red. The former a very beautiful salt, of a pale green, styptic and sensibly acid. It is soluble in twice its weight of water, in the temperature of 55°; but in less than its own weight of boiling water; is insoluble in alcohol, and does not strike a black colour with galls, nor a blue with Prussian alkalis.

The other salt is styled by Proust, whom we follow, the red sulphat of iron, from which the usual properties of green vitriol are derived. This salt cannot be crystallized by the usual means, is soluble in alcohol, yielding with galls a black precipitate, and with Prussian alkali a blue. It may often be distinguished by the eye in the vitriol of commerce, and is in that state which the green sulphat assumes when exposed to the air. The first contains 0.27 of oxygen, the last 48. Each is, therefore, changed into the other by deoxygenation or oxygenation. The red is readily converted to the green sulphat by tin, zinc, or mercury, or by the contact of sulphurated hydrogen. Green sulphat of iron absorbs nitrous gas, and becomes an useful agent in eudiometrical experiments. The red sulphat has been lately exhibited in a crystalline form by M. Huissman.

The best green vitriol appeared to contain about one half of water, three eighths of iron, and more than 0.10 of pure acid. The English vitriol is purely ferruginous; but the others have always some admixture of copper. Sixteen ounces of Goslarian vitriol were found to contain $\frac{3}{5}$ vii. of water, $\frac{3}{5}$ iii. of acid, $\frac{3}{5}$ v. nearly of iron, and about $\frac{3}{5}$ ii. of copper; but it often contains much less of the acid.

The vitriol of iron dissolves in its own water of crystallization, or in about twice its weight of water, and shoots in thick rhomboidal crystals. A watery solution deposits a part of its metallic basis; but the precipitation is greatly increased by a boiling heat. As the proportion of water is less, the more freely do they part both with their water and with their acid.

From this kind of vitriol, the vitriolic acid was formerly extracted, by distilling it when calcined in earthen retorts with long necks, in a strong fire continued for two days. The distilled spirit appears of a dark blackish colour, and contains a quantity of water in proportion to the degree of calcination of the vitriol. On a second distillation, in a sand heat, the water rises first together with a portion of the acid, and the remaining strong acid becomes clear. This is the usual mark for discontinuing the rectification; but at present this acid is extracted from SULPHUR, q. v. The residuum, after calcination and distillation for a long time forms *colcothar*.

In the distillation of green vitriol a sulphureous gas is copiously given out, and, with it, the sulphuric acid saturated with sulphureous acid gas, which concretes in long striated rays, called the *smoking vitriolic acid* of *Northausen*.

The medicinal uses of green vitriol are the same as those of the other preparations of iron. (See *FERRUM*.) The acid of vitriol retards fermentation and putrefaction, but in a less degree than the nitrous and marine acids. When largely diluted with water it is employed for preventing putrefaction, correcting bilious acrimony, abating heat, quenching thirst, and strengthening the stomach.

VITRIOLUM CÆRULEUM. BLUE, ROMAN, OR CYPRIAN VITRIOL, VITRIOL OF COPPER, *cæruleus lapis*, is prepared in Sweden, Germany, &c. from the pyrites and copper. It contains much less water than the vitriol of iron, and requires about four times its weight for solution. Its taste is strongly styptic, somewhat acid, and peculiarly nauseous. On drying it loses about 0.36, which is water only. If calcined with a strong heat, the acid is expelled, but not decomposed, and about 0.33 are lost in the process. The remainder is the perfect black oxide of copper, of which one fifth is oxygen. A subsulphat of copper is prepared by adding potash, which absorbs in part the acid, and throws down this salt in the form of a green precipitate. If saturated with the alkali this precipitate is blue, and is a compound of oxide of copper with water, which Proust calls *hydrat of copper*. The subsulphat loses by distillation only 0.14 of water: the residue boiled with pure potash leaves 68 of black oxide. The sulphat is decomposed by common salt and acetite of lead. It has proved an useful tonic, if continued in epilepsy, hysteria, pertussis, and intermittent fevers; on some occasions it has proved diuretic and anthelmintic. The dose is from a quarter to half a grain, according to the age of the person, twice a day, increased to what the stomach will bear without vomiting; but it should be increased till a nausea or sickness is occasioned. If, however, in about a month no benefit is obtained, we should desist from its use, as large quantities of copper, though gradually introduced may be injurious. Dr. Cullen, therefore, in cases of periodic epilepsy, after employing the medicine constantly during one interval, if the disease still continues, gives it only for some days before an expected accession, and has thus succeeded. In the beginning of fevers it has been given in nauseating doses, and as a diuretic in dropsies; but as an emetic it seems to be inferior to the tartarized antimony, and is more unmanageable. As an escharotic it has been sufficiently known, and it sometimes brings

on a good digestion, when mercurials and arsenic have been unsuccessful. It has also been used for restraining hæmorrhages, and for removing films from the eyes, externally applied. See Lewis's and Cullen's *Materia Medica*.

VITRIOLUM ALBUM, gilla vitrioli, calcadis, WHITE VITRIOL, OR VITRIOLATED ZINC, sometimes contains iron, and then hath an ochry appearance on its surface. It is colourless when pure, crystallizes in compressed tetrahedral prisms, terminated by tetrahedral pyramids, is styptic and nauseous to the taste, dissolving in little more than twice its weight of water. Its specific gravity is 1.912, and in a dry heat it first melts in its water of crystallization, becoming an opaque mass: in a stronger heat the acid is carried off in the form of the sulphureous acid gas. It is decomposed by all the alkalis and the alkaline earths. Its proportion of water is about thirty-nine or forty parts; but the quantity of oxide has been differently estimated from twenty to fifty hundredths. The white vitriol of commerce is of a bluish white, with ochry stains, of a granular texture, in irregular lumps, prepared in Germany by roasting blende, and then exposing it to the air. The English white vitriol is prepared by a direct combination. All these salts may be purified by dissolving the zinc, and evaporating it in an open vessel with some metallic zinc, which will decompose all the sulphats except that of lead: the last falls to the bottom.

In a medical view it is a quick active emetic, and consequently preferred where an immediate discharge from the stomach is wanted, particularly in cases of poison. As it acts without any distressing nausea, it is preferred in debilities of that organ, to which perhaps its astringent quality has contributed.

It is principally used, externally, in defluxion and inflammation of the eyes; is a powerful and safe errhine, useful in obstructions of the nostrils from indurated mucus. In small doses it is considered as an astringent and a tonic, not inferior to the flowers of zinc, and superior to them as an antispasmodic, if joined with camphor. From ten to twenty grains, dissolved in water, operate quickly as an emetic; and is on this account an useful remedy where poison has been swallowed. In the chincough, and other spasmodic complaints, it is administered with good effect in doses from half a grain to one or two grains. Dissolved in water in the proportion of 3 i. to a pint, it is used as an injection in fluor albus, gleet, and seminal weaknesses.

The *linimentum zinci vitriolati* is made by mixing a scruple of powdered vitriol of zinc with half an ounce of axunge; is useful in chronic inflammation of the eye lids, to which old people are subject.

Two drachms of this salt, combined with as much turpentine as will make a mass, are to be divided into sixty pills. One or two of these night and morning are said to be of service in gleet, gonorrhœas, &c. See Neumann's Chemistry; Lewis and Cullen's *Materia Medica*.

VITTA, (from *vico, to tie*). A HOOD. See *PRILEUS*.

VITRUM PRÆPARATUM. Glass is rubbed down to an impalpable powder, in a mortar that will resist the mechanical action of its particles; and this powder is wholly confined to the treatment of opacities of the transparent cornea: it is most conveniently

applied when mixed with a small portion of honey or mucilage.

VI'TRUM ANTIMO'NI, stibium. See **ANTIMONIUM VITRIFICATUM**.

VI'TRUM ANTIMO'NI CERATUM, oxydum antimonii vitrificatum cum cera Pharmacopœiæ Edinensis. The glass of antimony finely powdered, melted with wax to sheath its acrimony. It is a preparation first mentioned in the Medical Essays of Edinburgh, and recommended for dysenteries. It is now neglected, we suspect with little reason.

VOLA'TICA. See **LICHEN**.

VOLSE'LLA, (from vello). LITTLE FORCEPS. See **FORCEPS**.

VOLU'TTA. See **MANDARU**.

VO'LVA, (from volvo, to roll up). The membranous calyx of fungi.

VO'LVULUS, (from the same). See **ILIACA PASSIO, COLICA**.

VO'MER, (vomo, to turn up, from its resemblance to a ploughshare). A bone which forms the posterior and inferior part of the septum nasi, and is placed between the ossa sphenoides and palati, receiving at its superior part the spine of the body of the os sphenoides, and the perpendicular plate or nasal lamella of the ethmoid, below the cartilaginous part of the septum.

VO'MICA PULMO'NUM, (from vomo, to spit up,) by Hippocrates and Celsus styled **ABSCCESS OF THE LUNGS.** (See **ABCESSUS, SCROFULA, and PHTHISIS**.) Vomicae, we have said, are hardened conglobate glands of a scrofulous kind, which, as they do not admit of a regular suppuration, so they do not heal. The cyst, however, suppurates, and the contents are discharged. This is called an open vomica; but when entire it is styled occult. In the latter state vomicae are often attended with great irritability of the arterial system; but when suppuration begins, all the symptoms of real phthisis rapidly supervene.

If the abscess is not deeply seated in the lungs it bursts into the cavity of the breast, and forms an **EMPYEMA, q. v.**; but if deep, the matter will be discharged into the bronchiæ. If the orifice be small, or the whole quantity inconsiderable, the patient discharges what is contained in the lungs, and is sensibly relieved; but if large, its orifice wide, and the quantity of pus considerable, he dies suddenly from suffocation.

Dr. Reid, from Dr. Stark's manuscripts, has observed, that tubercles are found, on dissection of those who have died of phthisis, of all sizes, from the smallest granules to the bigness of a horsebean, and commonly in clusters. On cutting into them they appear of a white, smooth, cartilaginous substance. In the smallest, no cavity or opening appears; in those farther advanced, on the divided surface we discover small cavities, which in the progress of the disease are enlarged, and some contain a fluid, which may be pressed through small apertures at the bottom. The larger tubercles, when emptied of their contents, appear like a small capsula, into which a branch of the aspera arteria has entered.

Vomicae, according to this author, are larger tubercles, and of various sizes, from half an inch to two or three inches in diameter, usually oviform. When entire their contents are whitish, yellow, ash-coloured, greenish, sometimes fetid, and when ruptured more or

less reddish. Several branches of the aspera arteria are said to open into these vomicae, and they also communicate with those contiguous: the apertures of the latter are ragged and irregular, of the former round and smooth. The larger vomicae are usually found empty; but on pressing the lungs matter issues into the bronchiæ. The branches of the pulmonary artery and vein running upon the vomicae are found much contracted, sometimes filled up with a fibrous substance, and their pendulous ends hanging loose in the cavities of the vomicae, completely shut up and covered with a thick slough. This seems to explain why hæmoptoe does not more frequently happen when so great a part of the substance of the lungs is destroyed, and when it does take place, the manner in which the mouths of the bleeding vessels are closed. The parts of the lungs contiguous to the vomicae are found inflamed, more or less solid and impervious to air blown into the trachea; nor is air admitted into the vomicae, except in very small quantities. Wherever tubercles or vomicae are found, they firmly adhere to the portion of the lungs near them, preventing a communication between their cavities and that of the thorax.

A cough may be suspected to arise from tubercles when it does not occur from evident cold, or begin with symptoms of catarrh; when attended with shortness of breath, particularly on motion; when it is not violent, but trifling, so as even to be denied by the patient, and when it continues many months. Our suspicions are rendered much stronger if the lungs have been severely injured by the measles, local inflammations, or other complaints; and they are altogether confirmed, if, with the above circumstances, the patient be of a thin scrofulous habit, of a fine delicate complexion, with swelled lips, glandular swellings in the neck, and a hectic fever. See Percival's Observations, p. 223.

VOMITO'RIA, (from vomo, to vomit). See **EMETICA**.

VO'MITUS, (from vomo). **VOMITING,** an inverted motion of the œsophagus and stomach, attended with increased, often convulsive, action of the muscles of the belly and the diaphragm. See **EMETICA**.

The matter discharged has given different denominations to this disorder: a mucous evacuation with the reliques of undigested food is called a pituitous vomiting; a bilious one constitutes a bilious vomiting: blackish, corrupt, green, æruginous, and porraceous discharges are generally bilious, changed in their colour and qualities from the matter contained in the stomach. When black blood is thrown up it is called **MELÆNA, q. v.** and when the cause is distant, as from a stone passing the ureter, it is called a symptomatic vomiting.

In the article of emetics we have rendered it probable that the action of the stomach is irregular and convulsive, arising chiefly from debility, and its consequence, irregular action. Vomiting can, therefore, only be styled an idiopathic disease, when its source is debility. This simple cause, however, branches into numerous others, more remote, viz. inflammation, ulcers, scirrhi, cancers, and indurations of this organ, bile, putrid or indigestible food, diseases of the liver, gall-bladder, pancreas, spleen, duodenum, and mesentery, repelled gout, hæmorrhoids, and eruptions, herniæ of the stomach, narcotic poisons, &c. Though some of these causes are

referrible to irritation, yet, as they originate in debility often of the stomach, they may be considered as causes of idiopathic vomiting. Various are the causes of symptomatic vomiting. These are an irritation on the brain, a passage of a stone through the ureters, or its irritation in the pelvis of the kidneys, pregnancy, unaccustomed motions, antipathies and associations, worms, &c.

The most frequent causes of idiopathic vomiting are repelled gout and eruptions, fever, narcotic poisons, particularly excess of drinking, connected also with local diseases of the stomach itself, the liver, or the adjoining viscera. In each instance the warmest cordials are necessary, especially such as determine to the surface, since we have seen that the state of the stomach is intimately connected with that of the extreme vessels. It is necessary, however, previously to evacuate any matter which may occasion the vomiting, and for this purpose we may refer to the remarks lately made (*vide STOMACHUS*), that different portions of this organ may be excited independent of the rest, and that only the most active emetics will, in many cases, induce the action of the whole, including the greater curvature.

When any offensive matter is introduced which we are unable wholly to evacuate, we must endeavour to dilute, to render it harmless by chemical agents, or to sheath the stomach from its action. Thus we dilute bile in cholera by chicken and mutton broth, often by toast and water. We sheath mineral acids by magnesia and alkalis, and precipitate the oxides of metals from the acrid metallic salts in a milder form. When we cannot, wholly succeed in this way, we sheath the stomach by demulcents.

When the exciting cause is removed, the stomach, as formerly mentioned, must be restored to its former tone; but if connected with scirrhusities or indurations of the stomach or liver, we can only lessen irritability by warm opiates, until we can produce some effect on the more immediate cause.

The more common remedies for vomiting are chiefly of the stimulant kind. The carbonic acid air is highly serviceable, and more so in the saline neutral of Riverius, which is in itself an anti-emetic; cold is highly useful, and cold water, by its sudden action, often relieves it. Aromatics are in general advantageous, and the irritability is sometimes repressed even by narcotics, of which we have mentioned opium, and must now add hemlock. The steel and zinc are less doubtful remedies, and the purer bitters are often useful, though bark is generally injurious. The powdered camomile flowers, the columbo, Winter's bark, and some medicines of this kind, are chiefly advantageous. Mercury seems more peculiarly useful when vomiting is connected with scirrhi, cartilaginous hardness, and other organic diseases of the stomach and neighbouring viscera; but we observe in the *Acta Helvetica* crude mercury given in the quantity of four ounces, with two ounces of oil of almonds. Aconite is confined wholly to scirrhusities of the stomach.

External stimuli to the pit of the stomach are often useful. Cupping glasses have been applied by Rumler, cataplasms of nutmeg, and rubefacients by other authors.

The inverted motion is sometimes continued through the whole track of the intestines; and clysters injected, as well as the suppositories, with the contents of the bowels have been thrown up. In this case all action

must at first be checked by the free exhibition of opiates, and then the usual associated motions may be induced by stimulating the rectum, afterwards the stomach (*see ILEUS*). In all vomitings, food should be given in the smallest quantities, and some obstinate chronic discharges of this kind have been relieved by taking the mildest food in the smallest quantity at once: sometimes the dose that could be retained has not exceeded a table spoonful. Toast and water taken by sips has often also quieted the most violent convulsive action, while a glass of brandy or a beer glass of Madeira has had a similar effect.

As the facts are sufficiently known, we have not crowded the page with authorities, and shall for another reason omit an enumeration of the wonderful substances and more wonderful animals discharged from the stomach. Such may have been taken in accidentally with the food, but fancy, ignorance, and superstition, have greatly enlarged the catalogue; and we fear the desire of collecting wonders has sometimes rendered authors less willing to discriminate than they ought to have been.

Other secreted fluids taken up by the absorbents are sometimes discharged by vomiting, and in jaundice we have seen bile vomited which has been deposited by an evacuation from the exhalents. Urine is sometimes discharged in the same way. (*Senter in the Philadelphia Medical Transactions.*)

Vomiting of blood, *HÆMATEMESIS*, is known by dark-coloured clotted blood being thrown up from the stomach, usually mixed with much phlegm. The discharge is usually preceded by a tensive pricking pain in the stomach, or the left hypochondrium, and almost always attended with a nausea, anxiety of the præcordia, a compressing pain on the same side, and faintness. For the distinction between discharges of blood from the lungs or stomach, see *HÆMOPTE*.

Bloody vomiting is sometimes the effect of an indurated spleen, a varicous state of the vasa brevia of the arteries in the upper left portion of the stomach, or of the neighbouring vessels. Women are particularly subject to this complaint on a suppression of the menses, from passion, frights, grief, pregnancy, &c.; men from suppressed hæmorrhoids.

The bloody vomiting, which happens about the middle of pregnancy, in some plethoric habits is rarely injurious; and during labour, or even in child bed, if the quantity be small, it is not hurtful. If without fever, if the habit be plethoric, if any usual evacuation is obstructed, it is not dangerous; but if a fever attends, if the blood discharged be black and fetid, or if induced by either an enlargement of the spleen or an induration of the liver, or attended by violent syncope, there is little hope.

Unless there is manifest inflammation or plethora, bleeding is unnecessary. A cooling diet, nitre in cold water, with opium, often a blister to the stomach, with absolute rest will be useful. Mild demulcent drinks are sometimes useful, but astringents are unnecessary or injurious. Gentle purgatives should afterwards be employed to carry off the blood, and the circulation should be promoted in the extremest vessels by medicines which will not stimulate.

When the vomiting ceases, and the patient seems gripped from the stagnant blood, a table spoonful of cas-

tor oil will be useful. See Meibomii Dissert. de Vomitu; Hoffman's Pract. of Med.; Cullen's First Lines, vol. iii. p. 51—66. edit. 4.

VOX, (*ab ηχη, sono*, with the digamma prefixed). **The voice.** The gift of speech is the peculiar privilege of the human race, while sounds are common apparently to every animal that breathes with lungs. The subject is, therefore, divided naturally into *tones* and *articulation*; the former possessed by animals, the latter peculiar to man. The organs by which they are produced are also different; for tones depend on the form and structure of the larynx, articulation on the muscles of respiration, on the tongue, the palate, and the lips. Articulation, however, is not our object, though, as nihil humani is beyond our province, we shall add a few words at the end on this subject.

In describing the larynx (see *ASPERIA ARTERIA*) we gave a general account of the parts, their figure and situation. A more minute one is now requisite; but, as in the ear we shall not describe every cavity or cartilaginous projection, as the application is not obvious. It will be sufficient in this place to notice some of the more distinct portions of this organ which seem to have a connection with the function.

The larynx is one third larger in males than in females, and the eminence on the thyroid cartilage is more considerable. The epiglottis seems to have no share in giving either tone or articulation; for birds sing without it, and it is apparently necessary only in animals to prevent substances from falling into the trachea. Behind the epiglottis is the first cavity of the larynx, of which the larger diameter is in front, the smaller behind. This cavity is filled with membranes passing to the aretænoïd cartilages, at the sides; but is not, strictly speaking, the glottis. Two pair of ligaments proceed from these cartilages to the posterior concave surface of the thyroid. The upper and exterior ones are less tendinous and elastic, pass from above the middle of the aretænoïd cartilage to about the middle of the scutiform. The inferior ligaments are strong, elastic, and tendinous, covered by the membrane of the larynx, and proceed from below the middle of the aretænoïd cartilage, though far above its base, to the plane angle of the thyroid about its middle. This portion is more strictly styled the glottis, and the ligaments, apparently from necessity, have been supposed muscular; but it will be obvious that a muscular structure is unnecessary; for, by drawing the aretænoïd cartilages down, or raising the larynx while the thyroid cartilage is drawn forward, they may be stretched, and for these purposes numerous muscles are provided. The small cavity between the ligaments is styled the *rima glottidis*. This is so accurately closed in birds, in amphibious and cold blooded animals, that air can neither pass out from, nor water enter, the trachea except at will. In this way frogs confine the air in the lungs, and live without any accession of fresh air for a considerable time. Birds, instead of these ligaments, have sometimes other cartilages, sometimes bony shells, which can be closed with considerable accuracy.

Between these two ligaments, and above the glottis, is a cavity of a semicircular or a parabolic form, whose opening is elliptical, and whose surface is covered with many mucous cellular sinuses. It is very large in ani-

mals distinguished for vocal powers; but constantly wanting in infants.

There are other ligaments joining the cartilages of the larynx, which are sometimes tense and shining, at others membranous. They are too minute to merit particular attention; but the former probably assist the voice. The whole larynx may be certainly raised; but it has been doubted whether its parts can be moved independent of each other. Ferrein contends, that the thyroid cartilages may be drawn forward while the aretænoïd cartilages are moved in a contrary direction, and that the ligaments are thus kept tense. This motion may be perceived, it is said, by the finger, and the cartilages, it is reported, have been separated by a sound too acute. These opposed motions come, however, before us in a suspicious shape, since the fact is adduced in aid of a theory; but it certainly has received some support from other anatomists. Haller appears to deny them, and thinks that if the scutiform cartilage is drawn forward, that the whole larynx follows; but a similar suspicion attaches to his evidence.

The arteries of the larynx are the superior and inferior. The former is the superior thyroid artery, a branch of the external carotid, and often not inferior in size to the cerebral or interior carotid: they appear three almost equal branches; but sometimes the thyroid arises a few lines above the separation of the cerebral. It descends in a tortuous direction, forming a circle with its opposite, and sinking into the surcula of the lobes of the thyroid gland, as is usual in conglomerate glands. Branches go to the aspera arteria and the neighbouring organs; but the laryngeal artery, which often rises separately from the trunk of the external carotid, sometimes from the pharyngeal, is most frequently a branch of the thyroid, passing to the larynx between the thyroid cartilage and the os hyoides.

The inferior thyroid is equal to the vertebral artery, sometimes larger, and even larger than the whole subclavian from whence it arises. It has sometimes sprung from the arch of the aorta, and in one, perhaps one instance only, from the carotid.

The veins do not always follow the arteries; the first order is that of the inferior thyroids, which are frequently double, and rise from the left subclavian, accompanying the lesser branches of the lower thyroid artery. Another vein is connected with the jugular, and a principal branch passes with the artery under the scutiform cartilage. The middle thyroid veins, usually two belong to the internal jugular, between its origin and the superior jugular. The superior thyroid is single, or arises from two roots which quickly unite.

The principal nerve of the larynx is the recurrent, whose course we have carefully described, page 244 (see *NERVI*). It is the largest branch of the eighth pair; and, though it sends branches to the muscles of the larynx and the different plexuses, which supply organs not wholly subservient to the will, it seems to preserve its own medullary substance without addition. Having ran a long course, for this purpose, it returns to supply the larynx with powers entirely voluntary.

We have engaged in this disquisition, which, though apparently minute, might have been rendered much more so, to show that the organ of the voice is peculiarly constructed; that the arrangement of its arteries and nerves

is uncommon; and we have seen that the motions of its parts are free, and the muscular organs numerous and minute. A more complicated structure is scarcely found in the eye or ear. Voice consists in the passage of the air through the glottis in expiration, though some sounds are made as in pertussis and croop, during inspiration. In cases of wounds, however, where the air does not pass through the glottis, the voice is lost, except in birds, which have an additional organ at the divarication of the trachea, viz. dense membranes placed parallel to each other. The air, in its passage, produces tremors in the cartilages of the larynx, and the tenser ligaments already described; for, if these are covered with an additional quantity of mucus, as in a cold, or, if the air is forced through the glottis after death, the sound is neither clear nor distinct. The deepest roarings are produced by animals which have the cartilages of the trachea entire; and, if not entire, imbricated, or which have bones instead of cartilages, as the lion, elephant, and peacock. On the contrary, the voice is weak in the hedgehog and casowary, unpleasantly deep and harsh in aquatic birds, in which the elastic membranes in the second larynx repeat the sound. The vibration, which is partly in the whole larynx, may be felt with the finger, and the tremor, probably conveyed with the ligaments, excites the same tone in other vibrating bodies, as in glass. By continuation these tremors may be increased so as to break the glass. Ferrein also found, that if the whole larynx was removed, except the ligaments, air forced through them produced the same sound as in the animal when alive.

It is not easy to explain why in a structure which consists chiefly of ligaments distended by powers of different force, so great a variety of voices and tones can be produced. Ferrein indeed tells us, that, by only contracting the glottis, he could produce the sounds of an ox and a man. The fact is, however, incredible; and the experiment has not succeeded in other hands. It may appear still more difficult to explain why the ligaments of the glottis should sometimes move more quickly, so as to produce acute tones; sometimes more slowly, so as to sound graver ones. Observation, however, has afforded us some clue. We have seen, that the larynx is moveable, and it has been seen to rise in acute sounds, and to descend in grave ones. Hence those whose voices are naturally too grave, conquer the defect by raising the larynx. In producing musical sounds after ten tones, we commence a new octave. Some men, however, can produce twelve; very fine singers exceed sixteen, descending equally far below the gravest tone. To produce this variation of four octaves the ascent and descent must be very considerable, amounting to an inch in each direction, or two in the whole. In the greatest efforts of the singer the head is thrown back, to admit of the greatest possible elevation of the larynx.

Though the facts be admitted, the application is not easy. If the difference of the tones is owing to the increased or diminished length of the larynx, we ought to find, from the rules of phonics, that raising the latter so as to increase the length should produce grave sounds, while shortening it must occasion acute ones. Dodart, who suggested this distinction, supposed, therefore,

that the larynx in its ascent contracted the glottis, and in descending admitted of its expansion. Some muscular contraction has also been suspected in the ligaments, an idea countenanced by Morgagni (*Adversaria Anatomica*, ii. 31). Thus the larger glottis of the male is calculated to afford graver sounds than the more contracted one of the female. Animals also, which have deep-toned voices, have very large glottes, as the phoca, the ox, ardea stellaria, &c. Birds, on the contrary, who sound the acutest notes, have the glottis capable of the greatest contraction. From this, in Dodart's opinion, all the varieties of tone are derived; and a variation not exceeding one fifty-fourth of a silkworm's thread or one-three-hundred and fifty-fourth of a hair, will, in his opinion, produce a difference of tone.

Dodart was, however, aware of the effect also of the tension of the ligaments; but in his system it had only a secondary office. Ferrein, by his experiments, first raised its importance, and he contended, that, though by the construction of the glottis the force of the sound was increased, the tone was not changed; he observed that when the ligaments vibrated more rapidly, the sound was more acute; when all vibration was prevented, that the sound was suspended. If by any impediment, one half of the ligament was only suffered to vibrate, the sound was increased an octave, and to a fifth if a third part of its length only was free; if divided by a kind of bridge, in the middle, it formed two cords, each of which was an octave more acute than the original tone. If divided into two unequal portions, the voice will ascend unequally. If the middle part of one ligament only is left free, while the other is entire, there will be a symphony of two tones, differing by an octave; and if every other part of the glottis is destroyed, except the connection of the ligaments, they will produce the same tones as before. Yet, it is difficult to show by what mechanism these changes are induced in the living body; for, though the tension may be increased, and in part the length, yet no mechanism is adapted to limit the length of the cord, or to divide it; nor are the experiments of Ferrein wholly uncontradicted, even by the members of the French Academy before whom they were made.

The consequence of these experiments, which have occasioned a considerable controversy, extended to a great length, is obvious, viz. that the glottis is not only a wind but a stringed instrument. It is evident in birds, where it can be closed so accurately that not the smallest drop of water can penetrate, and whose notes, though within a limited scale, ascend high, and by the most minute divisions, that the rima must be a principal agent. It is equally certain, from the effects of disease, that the tension of the ligaments is not less necessary. Yet, together, they go but a little way in explaining the very minute and complicated variation of the tones of this most exquisite instrument, the human voice. Auxiliary organs are undoubtedly required, and these are the nose, the palate, perhaps the uvula and the lips. The latter in particular vary the acuteness of the sound from a bawl to a whistle, though by no means the cause of acute sounds in general. These organs, however, greatly influence, indeed are the sole cause of, articulate sounds, as philologists particularly

show, and who, from the influence of each organ, divide letters into labial, palatal, nasal, &c.

The voice is greatly injured by causes which seem to affect the tension of the ligaments, and the action of those very minute muscles which move the parts of the glottis on each other. A catarrh produces inflammation of the larynx, and destroys the voice, not only by diminishing the elasticity of the ligaments, but by the mucus secreted, which apparently prevents their vibrations. We have seen that inflammation increases the tension of nerves, and consequently their sensibility. This change, therefore, shows that the ligaments are only simple solids, acted on by the muscles as living organs. The influence of the muscles is particularly felt in this part, from diseases arising from debility. We have remarked the change of voice in fevers, and the true copy from nature in the pages of our great dramatic bard, who represents Cæsar, when in a fit of an intermittent, as crying with the "voice of a sick girl." In hysteric diseases the sound of the voice also is greatly changed, and sometimes wholly destroyed. A singularity, however, not easy to explain is, that the voice will be sometimes recovered for a few minutes, perhaps for a few hours, without any evident cause, and be again lost. It has happened also that a sentence begun in a grave tone has been involuntarily continued in an acute one.

In palsy, not only the voice is weakened, but the articulation in a great degree lost. The former arises from the weakness of the muscles of the larynx, the latter from the same affection of the tongue, lips, &c. Each is, in some degree, recovered, and the articulation is apparently again learnt. Words are mistaken from the injured recollection, often from a disturbance of the usual associations: and sometimes when the proper word is pronounced with difficulty, a more easy one, which leads to, rather than expresses, the meaning is preferred. The mind recovers slowly and spontaneously; in the recovery of the articulation, it appears that muscular fibres, different from those usually employed for a given purpose, are called in to the assistance of such as are injured, as the rotators of the thigh are employed to raise the leg.

It will be more easy to understand how, from the elevation of the larynx, and the continuation of an acute tone, the lungs may be diseased, the vessels of the head filled, and vertigo, or even apoplexy, come on; for if the rima glottidis is closed, and the acute tone continued with slow expiration, all the effects of impeded respiration will ensue. Bartholine has mentioned a case in which the cartilages of the larynx were torn asunder by a similar effort; and Pliny records a story of a nightingale dying, from extraordinary exertions to excel a rival. Plutarch records of Gracchus, that, from violent exertion in speaking, his voice sunk into a feminine treble, from which he was recalled by a servant giving the proper tone with a pipe.

If any one wishes to sound a graver note than the structure of his larynx will permit, his voice will fail, and no sound be produced; for the ligaments will be relaxed by the extreme exertion, and the rima glottidis no longer closed by the action of the muscles. Singers require frequently some fluid to moisten the mouth; for the rapid motion of the air exhales all the moisture,

and though the fluid does not reach the glottis, yet moistening the parts around supplies the secreted fluid, as washing out the mouth will take off a dryness in the throat.

The subject of singing would carry us beyond the proper object of this work; yet we must, as anatomists, remark, that the perfect singer must have a most accurate ear so as to discover the minutest error; a perfect symmetry of the organs of voice; the ligaments of the larynx equally tense, and balanced most nicely by the powers of the muscles in each side; the cartilages of the larynx perfectly equal, a circumstance by no means constant; the cavities on each side equally deep, for they are sometimes unequal; and the cornua of the os hyoides of the same length. In case of any considerable defect in this equilibrium, the two sides of the larynx will not produce the same tone. Tissot remarks that after puberty the fibres of the glottis are thicker, and emit a graver tone, but not equally or the same in every part, from which a false voice often follows. Taglini remarks, that in a celebrated female singer the cartilages of the larynx were peculiarly firm.

See Morgagni *Adversaria*, v. 67, vi. 529; Caldani *Syndesmologia*; Amman de Loquela; Eustachii *Tabulæ*; Fabricius de *Larynge*; Dodart dans les *Memoires de l'Academie*, 1700; Ferrein dans les *memes*, 1741; Santorini *Lettres sur la Nouveau Systeme de la Voix*; Dodard *Lettre a, M. D. sur le Nouveau Systeme, &c.*; Runge de *Voce ejusque Organis*; Halleri *Elementa Physiologiæ*, vol. iii.; Wedel de *Voce et ejus Affectibus*.

VOX ABSCESSA, (from *voco*, to call, and *absedo*, to be taken away). See ABSCESSIO.

VULNERA'RIA, (from *vulnus*, a wound,) *traumatica*; VULNERARIES; medicines suited to promote the cure of wounds. As this, however, is wholly an operation of nature, the surgeon has hardly any other object than to avoid or remove the circumstances which might impede it. No internal medicine can be of use to obviate or remove recent wounds; and, at least, what are styled *vulneraries* can have no effect. It is indeed possible that the Peruvian bark, and other tonics, may be sometimes useful in correcting the weakness of the system: but as they are intended to answer a particular indication, they should be included under that title. Cullen.

VULNERA'RIA A'QUA. See ARQUEBUSADE.

VU'LNUS. A WOUND; *punctura*, a recent bloody solution of continuity in the soft parts, made by a hard, sharp instrument. When inflicted by obtuse instruments it is styled *lacerata*. Dr. Cullen defines it a recent solution of continuity, bloody, of some soft part, occasioned by violence done to the part.

Superficial wounds, when cleaned from the blood, &c. are perceptible to the sight; but when beyond its reach they are better examined with the finger than the probe; where too small for the finger, a bougie is preferable from its flexibility; but it gives no information of the state of the bone, or the nature of any foreign body lodged there. In examining a wound we should know the attitude of the patient when he received it, the kind of weapon, its direction, force, and the nature of the discharges.

The danger of the wound is in proportion to the size of the vessels divided, and the importance of the injured

part to life. The nearer a wound is to a vital part the more dangerous; and those in the joints, or in any part subject to constant motion, as in the lungs or belly, are supposed to be healed with peculiar difficulty. But for this decision there is little real foundation. The attending symptoms, the age, constitution, customs, and habits of the patient should influence our prognostic, and the probable consequences at least hinted at. If a principal artery or nerve is wounded, a fatal hæmorrhage or a future palsy may be apprehended, and the separation of the tendon destroys the motion of a joint. An immoderate suppuration in a deep wound may cause a hectic fever, or consume the patient in a marasmus, while great loss of blood endangers a dropsy.

But to be more particular. The size of wounds is by no means a criterion of their danger, for in the Copenhagen Transactions and Medical Commentaries there are many instances of the cure of the most formidable injuries of this kind. If, however, the heart, perhaps, the spleen, the liver, near the vena portæ, or any large vessel is wounded, death will soon, if it do not immediately, ensue; and the same fatal event will follow wounds of the more considerable vessels in either extremity, as well as of the intestines, diaphragm, or mesentery. Even the small vessels, if wounded where the hæmorrhage can neither be stopped by pressure or a suture, as in the brain, sometimes the radial artery of the fore arm, &c. will soon be fatal. A division of any considerable nerve, as of the spinal marrow, a deep wound of the cerebellum, are of course fatal; and should the great cardiac plexus be deeply wounded, the event would not be different: but a wound in any other nerve of the internal organs is of less importance, as they are so minutely mixed and again separated, so that a weakness rather than a destruction of the functions of the part will ensue. Wounds which interrupt the function of respiration, or those which prevent the passage of chyle to the blood vessels, must be equally fatal.

A wound is, in the first instance, merely a simple division of a soft part, and if the lips are again brought together and confined, either by a plaster or a suture, they will unite with little difficulty. This is what the surgeons style *healing by the first intention*. If, however, neglected, the parts around swell, the lips become fuller, red, and retracted, the bottom of the wound is more conspicuous, inflammation and fever ensue. A cake of coagulated blood accumulates, below which a thinner fluid exudes, which soon becomes purulent. The cake is then thrown off, new flesh is apparently formed under the purulent matter, which soon fills up the cavity, and even rises above it. Should the wound be lacerated, the process of suppuration is attended with greater pain and inflammation; it extends to the ragged edges of the wound, and the cavity is greatly enlarged by the destruction of those parts whose organization by the bruise or laceration has been destroyed. If a muscle has been divided, the retraction of the parts is more considerable, and they must be brought together by a few stitches, or the time required in healing will be very considerable. If the muscle is wholly divided, the use of the part which it supplies will be in a great degree lost, though by the union which takes place it will be partly again recovered. Surgeons have been greatly divided respecting the propriety or advantages of sutures. While some authors,

particularly Mr. Bell, think them always advisable, except in the slightest cuts; others endeavour to supply their place by slips of sticking plaster. The latter will not, however, always succeed, and the former acting as irritating substances often increase inflammation. We have mentioned the stitches cursorily, as we always wish to avoid them for this reason; but the sticking plaster will not always retain the lips of the wound in their proper situation without the assistance of the stitches. When they are necessary, however, they should be as few as will answer the purpose.

The granulations which fill wounds rise in small protuberances, from which their name is derived. They have been styled new flesh, an idea to which their red colour has given birth. It is not, however, an organized body; though vessels are freely distributed through it from an extension probably of the serpentine arteries around. The proof of its not being an organized body is, that it has no functions; when its growth is at an end it assumes the form and appearance of a condensed cellular substance, and it expatiates beyond its boundaries in a fungous substance, vulgarly styled *proud flesh*. It extends, however, but slightly beyond its limits, and is soon covered with skin, but the cicatrix is tumid and unequal. When the parts are not brought properly together, the cicatrix is depressed, seamed, and uneven; but in each case vessels are plentifully dispersed through the covering, which is not the real cutis, for in wounds this is never regenerated; and when the skins of animals are prepared, there is always a hole where a former wound has been inflicted.

The wound of an artery is known by observing the blood thrown out in regularly returning jets, synchronous with the pulse. If the artery is considerable, and cannot be secured, it is, as we have said, fatal. If so great only as to induce faintness, the sides of the vessel collapse, and a coagulum of blood closes the wound. The limb below is at first colder and weaker, but the anastomosing branches soon supply it, and the natural warmth returns. Any artery, however, so large as to induce considerable palsy from its wound would be fatal from the discharge: palsy is only seen when the vessel is tied above an aneurismal sac.

When extraneous bodies are extracted, if it can be done with safety, the hæmorrhages suppressed, all morbid tension in the wounded part, if possible, removed, and the lips of the wound brought properly together, the dressings may be pledgets of soft lint, covered, if necessary, with tow, spread with some digestive ointment. These may be secured by bandages, and the first dressings are usually allowed to remain two or three days, or until the discharge of matter renders their separation easy. After the first dressings are removed, they may be repeated every twelve or twenty-four hours, in proportion to the degree or acrimony of the discharge. If a warm digestive is required, a little of the oleum terebinthinæ vel balsami capivæ may be added to the unguentum resinæ flavæ. When the wound is dressed it should be gently pressed with soft lint, and not rudely wiped, as was formerly the custom, when it was supposed that the pus was injurious. We now know that the granulations shoot most successfully under its protection.

Mr. Sharp observes that the principal interruption to the healing of a wound made with a sharp instru-

ment is the fungus, which he suppresses by dry lint and a proper compress. If it advances above the surface of the skin, he recommends touching the edges only with some gentle escharotic. A general relaxation is, however, a more frequent impediment to the healing of a wound, which then assumes a glassy appearance, with white lips, and resembles in its nature an ulcer. Tonics internally, and the bark, with lime water externally, are in this case the best remedies. When all impediments are removed, nature soon forms a cicatrix. If, however, the instrument has passed obliquely through the skin, and the extremity of the wound is above its orifice, the sinus may be sometimes united by pressure, or the whole may be opened, at least so far as to make the orifice the depending part.

These are chiefly the appearances of simple wounds, where no adventitious circumstances give a colour or a variety to the symptoms. If the patient be strong, vigorous, and of a full habit, the wound is attended with considerable inflammation, and violent fever ensues. If not kept at rest, if the mind be not calm and composed, but agitated by anxiety or passion, the fever is still more violent. The topical injury is increased by the fever, which is in turn augmented by the inflammation of the wound. In this case, the strictest diet, the most cooling plan, with camphor and opium, soothing the mind by every consolatory prospect, and avoiding every source of additional distress, are highly necessary. In the opposite circumstances, the wound is ichorous, the lips pale, the discharge thin, as already mentioned, and the opposite course must be pursued.

When the artery has been tied, there are often small bleedings from almost imperceptible vessels, which a bandage will frequently relieve. When they occur in the young and strong, they arise from fulness, and nature will in general heal the orifice by the coagulation of the discharge. If, however, it continues, it has been sometimes useful to take some blood from a vein, or, by taking off the ligature from one of the smaller arteries, to encourage topical bleeding. When these hæmorrhages arise in feeble habits, the bark with wine are necessary, and the wound may be sprinkled with starch, or the powder of gum arabic. If this should fail, the tincture of myrrh, or pure alcohol saturated with this gum may be applied, or indeed any other resinous tincture, which deposits its contents on the addition of a serous fluid, the coagulation of which also the alcohol assists. A steady pressure is afterwards necessary, and if a bandage cannot conveniently be applied, the hand of an assistant must supply its place.

Wounds in the principal internal blood vessels are all deemed mortal; but blood is sometimes discharged from smaller vessels into the cavity of the breast or of the belly. If in the breast it occasions a difficulty of breathing, increased in an erect posture; though, if blood is discharged into both the cavities of the breast, the patient can only lie on his back, or stand in an erect posture. If the wound is in the lower part of the breast the patient must be laid on the wounded side, and the lungs replaced, that the blood may pass out; but if in the upper part of the breast, an opening must be made behind and below, about five inches from the spine; but until the hæmorrhage appears to have ceased, which may be judged of by the strength and equality of the pulse, and the warmth of the patient's extremities,

the operation will be useless. When the opening is made, the expulsion of the matter is assisted by the efforts of respiration. In these cases the patient must be kept still, and gentle opiates given if a cough attends.

Wounds of the abdomen require a particular attention lest the viscera be protruded, or the air have access, which will produce inflammation. If the viscera are not protruded, it is easily perceived if they are wounded, by the acute pain and fever, with faintness, anxiety, hiccup, &c. The external aperture must be carefully closed, but another inconvenience then follows, for the cavity of the abdomen receives the extravasated blood and the contents of the intestines, from whence cold sweats, fainting, and death, soon ensue. Yet when the intestines have been wounded and protruded, if soon replaced, the wound contracts, and sometimes heals, by adhering to the parietes of the abdomen, sometimes by passing a few stitches through it, leaving the extremities through the external wound as formerly directed. The whole process must be hastened, for in proportion to the time the intestine is exposed to the air the danger is increased.

Wounds in the cavities of the joints are equally injured by the access of air, and should be immediately closed; but if attended with fracture or severe dislocation, Amputation cannot be avoided: vide in verbo. Wounds of the nerves, if the nerve is not wholly divided, are often attended with symptoms of irritation, which makes the division of the whole nerve necessary. (See TETANUS). Where this is inexpedient or impracticable, large doses of opium internally, with its topical application, or the topical application either of narcotics or indirect stimulants will sometimes succeed. In these, and in wounds of the joints, every thing soothing and calming is peculiarly useful.

In the general conduct of wounded persons some regard should be paid to former habits. The coal heaver cannot be fed so low as the more abstemious student, and in general every plan should be regulated by former customs and its effects. Purgatives are generally avoided, principally from their inconvenience; but a moderate discharge from the bowels is highly necessary in the robust and inflammatory constitutions. Cold water and cold air are highly recommended, but must be employed with caution in cases of violent inflammatory action, as likely to bring on sphacelus. Of the spirituous applications we have already spoken, and of the sympathetic cures we shall not be expected to speak. The apartment should be large, and the air free. In hospitals we should avoid the vicinity of putrid diseases, as these often give a putrid character to wounds.

When a small artery is punctured, or partially divided, if to be reached conveniently, it may be wholly divided, or the wound enlarged, and the artery tied, should proper pressure have proved ineffectual. When a large artery is punctured or divided, it must be taken up and secured with the needle and ligature. Wounds in the axillary artery, and also of the femoral, if near the body, generally demand an amputation of the limb, if it be practicable.

Gun-shot wounds. See SCLOPETOPLAGA.

See Celsus; Wiseman's Chirurgical Tracts; Manoni Trattado sopra la semplicità di medicar i mali d'attenza alla Chirurgia; Paræi Opera, lib. viii. &c.;

Memoires de l'Academie de Chirurgie, passim; Stahl de Æstimatione partium et læsionum. Theden N. Bemerkungen und Erfahrungen, &c.; Heister's Surgery; Gooch's Practical Treatise of Wounds; Dease on Wounds of the Head; Bell's Surgery, vol. i. p. 97, 105; vol. iii. p. 253; vol. v. p. 9—356; White's Surgery, p. 82, 175.

VULPA'NSER, from *vulpes*, and *anser*, because though a *goose*, it has the habits of a *fox*,) *chenalopex*, *tadorna*. The SHELL DRAKE, or BURROW DUCK, a very beautiful species of duck common on some of our coasts, but dry, fishy, and hard of digestion.

VULVA, (quasi *valvæ*, folding doors). The pudendum muliebre, or external female organs, whose labia

are folded together. These valvæ are merely duplicatures of the skin, to admit of distention in labour, when the duplicature disappears. They are consequently subject to rupture, ulcers, inflammation, anasarous tumours, excoriations, cancers, excrescences, warts, fungi, plica, &c.; in short every disease which can arise from pressure, bruises, or acrid discharges. As they consist, however, only of the common integument, with a loose cellular texture, and generally some adipose substance, its diseases yield to common treatment, and any tumour may be with safety extirpated. See also CEREBRUM.

VULVARIA, (from its use in disorders of females). See ATRIPLEX FÆTIDA.

W.

WIN

WADT. See PLUMBUM NIGRUM.

WARNE'LLA. See HURA.

WILLI'SII GLA'NDULÆ. See CEREBRUM.

WINTERA'NA CANE'LLA; JAMAICENSIS.
See CANELLA ALBA.

WINTERA'NUS CO'RTEX, (from captain Winter, who first brought it to Europe). *Cortex Magellanicus*, et *antiscorbuticus*, *cinnamomum Magellanicum*, *laurifolia Magellanica*, the wild, or WINTER'S CINNAMON TREE. It has been considered as a species of *Wintera* Linnæi, of the order *dodecandria monogynia*, a genus which Willdenow has rejected from this order, retaining only the *canella*. He has inserted the *Wintera aromatica*, to which the Winter's bark has been constantly referred in the *polyandria tetragynia*, vol. ii. p. 1239; but the French naturalists have referred it to a distinct genus, *drymis*. It is evidently different from the *canella*, and more highly aromatic.

Captain Winter brought it from the straits of Magellan in the year 1579; and in 1691, Mr. George Handasyd brought some specimens of branches, &c. from this tree, and gave them to sir Hans Sloane, who has described it in the *Philosophical Transactions* for 1693. But a more perfect description has been obtained by the joint aid of captain Wallis, sir Joseph Banks, and Dr. Solander, who, in the year 1766, observed it in its native countries. See *Medical Observations and Inquiries*, v. 46; *Linnæan Transactions*, i. 96.

WOR

The bark is said to be of different degrees of thickness, from a quarter to three quarters of an inch, of a dark cinnamon colour, having, if rubbed, an aromatic odour, and a pungent, hot, spicy taste; its effect on the palate is slow, but durable.

Dr. Morris in the fifth volume of the *London Medical Observations and Inquiries* has shown that it is an astringent, soluble freely in water, as well as in rectified and proof spirit. It covers the disagreeable taste of senna and some other drugs very effectually.

Captain Winter's sailors used it as a spice, and afterwards found it useful in the scurvy; but its substitute, the *canella alba*, hath been most commonly employed, an error apparently of little importance. Winter's bark is useful to promote digestion, in palsy and dropsy, and in some instances of remitting and intermitting fevers, but seems to have little superiority to other stimulants.

The Winter's bark is in larger pieces than the *canella alba*, of a more rugged surface, a deeper colour, more agreeable smell, a warmer taste, more pungent, and less bitter. The *canella alba* is in rolls, somewhat thicker than cinnamon, and is the double bark of the tree from whence it is taken. Perhaps, however, they may differ only from the age of the tree.

WISMUTHUM. See BISMUTHUM.

WORMIA'NA O'SSA, (from Wormius, who first described them). See TRIQUETRA OSSA.

X.

XER

XA'LAPA, (from a province of New Spain). See JALAPA.

XA'NTHIUM, (*ξανθος*, because it is said to make the hair yellow). See BARDANA MINOR.

XANTOLI'NA. See SANTONICUM.

XERA'SIA, (from *ξηρος*, dry,) a species of alopecia, consisting in a dryness and powdery appearance of the hairs, for want of due nourishment. They are in these circumstances generally split at the tops.

XEROPHTHA'LMIA, (from *ξηρος*, and *οφθαλμία*,) *lippitudo* and *ophthalmia sicca*; a DRY OPHTHALMIA, when the eye is dry, hot, and rough, the eye lids covered with dry scales. The sclerophthalmia, from *σκληρος*, hard, and *οφθαλμος*, is an inflammation of the eye, attended not only with a hardness and slowness of motion, but with a pain and redness. The eye lids are hard and dry, never effusing any moisture, with small, contorted, dryish, mucous concretions in their corners, and a difficulty of opening them after sleep.

XYR

The xerophthalmia is said, by James, to be a lesser degree of the sclerophthalmia. In Cullen's *Nosology* it is a variety of *ophthalmia tarsi*, and synonymous with Sauvages' *ophthalmia sicca*. See OPHTHALMIA.

XI'PHIUM, (from *ξίφος*, a sword, from the sword-like shape of its leaves). See GLADIOLUS.

XIPHOIDES CARTILAGO, (from *ξίφος*, a sword, and *εἶδος*, a shape). See ENSIFORMIS.

XITO'MA. CAPOLIN, a sort of cherry. See CAPOLIN MEXIC. HERNAN.

XYLOA'LOE. See AGALLOCHUM.

XYLOBA'LSAMUM. See BALSAMUM.

XYLOCO'CCA. See SILIQUA DULCIS.

XYLOCA'SSIA, (from *ξύλον*, wood, and *κασσία*, cassia). See CASSIA LIGNEA.

XYLOCINNAMOMUM, (from *ξύλον*, and *κιννάμωμον*). See CINNAMOMUM.

XY'LON. See BOMBAX.

XY'RIS. See IRIS-FÆTIDA.

Y.

Y A W

YABA'CANI. See APINEL.

YAM. An esculent root, procured from three species of dioscorea, viz. *d. alata*, *bulbifera*, and *sativa* Lin. Sp. Pl. 1462, 1463; farinaceous, and when dry easily preserved. The colour, size, and weight greatly vary, but the quality does not differ.

YAWS. *Frambæsia*; placed by Dr. Cullen with the *impetigines*, without any definition, though he mentions two varieties, that of Guinea and America. It is apparently endemic in Guinea, and carried by the negroes to America.

Whether there is any foundation for supposing the disease to be different on the coast of Africa and in America we greatly doubt. The appearances are nearly the same, though the disease of St. Domingo is said to appear first on the leg, a variety seemingly of little importance. The subsequent eruptions do not differ. The disease is said to attack but once in the life, to be attended with specific fever, and to have its regular increase, state, and declension (Ludford Dissertatio Inauguralis); and therefore to be more nearly allied to the exanthemata than the *impetigines*.

The first symptom of the disease is a shivering, followed by a slow fever, often unobserved. The lassitude however, want of appetite, pains in the head and loins, so great as to prevent sleep, force themselves on observation. The skin then begins to swell, the sure precursor of an eruption. When the disease advances more slowly, it appears by obstinate ulcers, which while open seem to preserve the patient from the eruptions, for the latter appear on healing them. They begin with little spots, like the prick of a pin, and extend around till they rise in pimples. The epidermis then separates, discovering a white spot, under which a fungous excrescence forms of different sizes, from a small strawberry to a mulberry. During their growth the hairs become white and transparent.

It is singular that this endemic disease of Africa should not have been known to the ancients; but their descriptions, though animated, and often clear, are not always discriminated. We find, however, a similar disease in the Molucca islands (Bontius Methodus Medendi in Indiis), and we think in the sibbens in Scotland (Adams on Morbid Poisons, p. 176, and 196); nor is it improbable that Galen and Dioscorides mention it under the name of *terminthus*, *tereminthus*, and *terevinthus* (Galen in lib. vi; Hippocratis de Morbis vul-

garibus, Mathiolus in Dioscoridem, lib. i. 108). Severinus (de Recondita Abscessum Natura) has traced its appearance in succeeding authors, with a greater or less degree of probability, in which we need not follow him.

The disease generally attacks the poor, those badly fed, and worn down by distress and labour. The ulcer appears always of a malignant kind, extending insensibly, and resisting the most active remedies. The excrescences resemble the berries of the Phœnician cedar, at first green, and verging by degrees to a greenish black, or a deep violet, like the berries of the juniper. The eruptions proceed slowly, scarcely making any remarkable progress in many weeks. When they follow their usual route, they appear first in the axillæ, anas, and around the genital organs, particularly in the face and neck, where they become larger than in any other part. After the eruption, the fever lessens, the appetite returns, and every inconvenience appears to vanish. The patient is apparently cured, excepting the pustules which give little pain, if not exposed to external violence.

In this deceitful interval of rest the disease seems to acquire fresh strength internally. The pustules increase and throw out a sanious, at least a corrosive, matter, and one of the earliest crops, styled the *mother yaw*, becomes a malignant spreading ulcer, which destroys all the surrounding parts, not excepting the bones; and medicines which are, in slighter degrees of the disease, salutary, seem only to increase the voracity of this monster. The excrescences are more rapid in their appearance in proportion to the degree of fever and the strength of the constitution, and the disease in consequence milder.

Those who are weak and relaxed soon fall into cachexy and ascites; the stronger habits sink in an atrophy. The last stages of the disease are horrible. The heads of the bones are consumed by carious exostoses, the pains excruciating, the debility extreme, and so dreadful is the state, that an incurable palsy, in one part, is esteemed a desirable crisis. It is said, if cured, never again to attack the same person.

The eruption is usually completed in three months; but in the best circumstances the cure is seldom finished within the year. The disease is infectious, and frequently communicated in the commerce of the sexes, or by sucking. The seminum is, in the former way, communicated to the fœtus.

Y A W

This detail of symptoms shows, as already hinted, that the disease is truly exanthematous, and that it is neither connected with diet nor with lues. The latter idea has been peculiarly unfortunate, since it has led to the use of mercury: a remedy, except under particular circumstances, little adapted to the complaint (Bayon).

The great objects of the physician are to support the strength and to determine to the surface, avoiding, at the same time, all acrimony in the diet. The latter should be wholly of vegetables, and as barley often purges negroes, this should be avoided. Salt, spices, and spirituous liquors, should be studiously forbidden. The affected negro can do little work, but he should not be wholly idle, and his task should be adapted to his strength; damp weather and damp situations should be avoided, as they tend to diminish the salutary diapnoe, of which we see strongly the influence in this disease.

When the eruption is completed, medicines which determine to the skin are highly proper, and the chief of these is the decoction of sarsa, and of the woods. Yet these should not be drank, it is said, in large quantities, or strongly impregnated, especially in wet weather, when their tendency is to the urinary passages rather than the skin.

The applications to the sores are chiefly mercurial, and these are said, by the European practitioners, to be successful; but the negroes themselves prepare a liniment with filings of iron moistened with the juice of lemons. In rainy seasons an anasarcaous swelling of the head comes on, which, in conformity with the views mentioned, the negroes remove by shutting themselves up in a warm stove at night, and applying warm stimulating cataplasms to the part. When by the most careful attention to this plan, both dietetic and medi-

cinal, the disease disappears, except the mother yaw, which requires only topical treatment, sea bathing completes the cure. Other remedies are indeed sometimes employed, as the sulphurated, salts, antimonials, &c.; but mercurials are said rarely to succeed. Perhaps moderate doses of calomel, or the hydrargyrus muriatus, may assist the above plans; but, if any confidence can be placed in the train of symptoms above recited, which has been selected from the best authors, large doses of mercurials must be dangerous.

The disorder is not dangerous if skilfully managed, though infectious: on this account the patient must be separated from his companions, and it is supposed that the infection may be even communicated by flies.

See Edinburgh Medical Essays, vol. vi. p. 312; Mungo Park's Travels in the Interior of Africa; Hunter on the Diseases of the army in Jamaica; Peyrilhe *Precis theorique et pratique sur la Piau*, &c.; Hill's Surgical Essays; Schilling *Diatrise de Morbo in Europa pæne ignoto*; Hillary on the Diseases of Barbadoes; Bayon *Memoires*, ii.; Adams on Morbid Poisons; Ludford's Inaugural Dissertation.

YE'RBA DE CA'MINI—DE PALOS. See CASSINE.

YOI'DES OS. See HYOIDES OS.

YPSILOGLO'SSI, (from *ὕψιλον*, the *ypsilon* bone, and *γλῶσσα*, the *tongue*). See HYOGLOSSUS.

YPSI'LOIDES, (from the Greek letter *υ*, *upsilon*, and *ειδος*, *likeness*). See HYOIDES OS.

YU'CCA. INDIAN BREAD (see CASSADA), is a plant with a thick tuberous root, and leaves resembling those of the aloe, growing in America. See Raii *Historia*.

Z.

Z E D

Z Z. See MYRRHA and ZINZIBER.

ZA'ARA. See PERVIGILUM, SOMNUS, and VIGILANTIA.

ZACINTHA. *Cichoreum, verrucarum, lafsana zacantha* Lin. Sp. Pl. 1141; WART SUCCORY, grows in Italy; and is noted for its power of destroying warts.

ZA'FFARAN, (from *zafran* of Zafar, *yellow*). See CROCUS.

ZA'FFER. See COBALTUM.

ZA'GU. See PALMA JAPONICA.

ZAIL. See BOROZAIL.

ZANTHO'XYLON, (*ξανθος, yellow, and ξυλον, lignum*). PRICKLY YELLOW WOOD, or YELLOW HERCULES. *Zanthoxylum clava herculis* Lin. Sp. Pl. 1455. The powder from the bark of the root of the tree is recommended as an useful antiseptic in ill conditioned ulcers. Chamberlain in the Memoirs of the Medical Society, v. 40.

ZA'LAPA. See JALAP.

ZARZAPARILLA. See SARSAPARILLA.

ZARNICH. See ARSENICUM ALBUM.

ZA'RUTHAN. See CANCER.

HAZARHE'NDI HE'RBÄ. See ORIGANUM.

ZE'A, (*ζωω, to live; from the nourishment it affords*). See ADOR.

ZEDOARIA, (*vox sinensis, gedwar, malankua, colchicum Zeylanicum, haronkaha, arnabo, zedoary, Kæmpferia rotunda* Lin. Sp. Pl. 3. It is brought chiefly from Bengal, in oblong pieces, about the thickness of a little finger, and two or three inches long; or in roundish ones, called *zerumbeth*, about an inch in diameter, of an ash colour on the outside, and white within. The long and the round are the roots of the same plant, the body of which is round, and the protuberances long.

The best is dense, solid, of a fine taste and smell, bitterish, moderately acrid, emitting an aromatic flavour in powdering or chewing, neither wrinkled nor perforated.

It impregnates water with its smell and a light bitterish taste. The spirituous tincture is weaker in smell than the watery, but stronger to the taste: distilled with water, it yields a ponderous, hot, and pungent essential oil.

This root is a warm stomachic; and its spirituous extract is the best preparation. In colics, attended with a diarrhoea and pain in the intestines, ʒ i. of the powder,

Z I N

taken three times a day, often relieves. In flatulences it is very useful if joined with opium; and in general the dose is from gr. v. to ʒ ss. Notwithstanding the extravagant commendations of Cartheuser, who considers it as a general remedy for the greater number of chronic complaints, Cullen allows it only the virtue it may possess as containing camphire. It has, however, still a place in the *confectio aromatica* of the London Pharmacopœia. See Cullen's and Lewis's *Materia Medica*.

ZE'RNA. An ulcerated impetigo, sometimes synonymous with lepra. See LICHEN.

ZE'RTA. See CAPITO ANDROMACHUS.

ZERU'MBETH. (See ZEDOARIA.) A species of ginger, also *amomum zerumbet* Lin. Sp. Pl. 1; BROAD LEAVED WILD GINGER.

ZI'BACH. QUICKSILVER. See ARGENT VIVUM.

ZIBE'THUM, (from the Arabic *zobeth*). CIVET, *civeta algatia*, is an unctuous odoriferous substance nearly of the consistence of honey or butter, of a whitish, yellowish, brownish, or blackish colour, brought from the Brazils, the coast of Guinea, and the East Indies. It is a secreted fluid preserved in its peculiar follicle, in the lower part of the belly of the *viverra zibetha* of Linnaeus. Its smell is fragrant, and disagreeably strong, unless diluted. It hath an unctuous and subacid taste, not dissolving in spirit or water, but uniting with oils both expressed and distilled, and with animal fats. Water by distillation is impregnated with its odour, and spirit by digestion. Rubbed with mucilage it mixes with water.

The black civet from India is not so good as that from America; but the latter is often adulterated. The chief use of this drug is as a perfume; it is rarely, if ever, employed for any medicinal purposes. See Neumann's Chemistry; Lewis's *Materia Medica*.

ZI'MENT. See CEMENTUM CUPREUM.

ZI'NCUM, (from *zink*, Germ.) TUTENAG, SPELTER, BLENDE, BLACKJACK, and ZINC, is a semi-metal, of a bluish white colour, of a high metallic lustre, somewhat brighter than lead, of considerable hardness, and so malleable as not to be broken with the hammer, though it cannot be much extended. Its structure is foliated with sharp points, which renders it harsh to the touch.

Zinc crackles during bending, apparently from the adhesion of the sharp points, and in small pieces, easily breaks; but large masses are not divided without iron wedges. Under rollers, with care it may be extended into plates of considerable thinness and elasticity, or drawn into wire. Of this a wire 0.40 of an inch in diameter will support twenty six pounds. If hammered at a temperature of 300°, its malleability is increased, and it will bear much bending: its fracture is thin, fibrous, and steel grained, and it may be drawn into wire $\frac{1}{16}$ of an inch in thickness, nearly as tenacious as that of silver. Its specific gravity is somewhat below 7.0; but by hammering is increased to 7.2. Held in a warm hand, it exhales a metallic odour, resembling that of iron; in a temperature of 400° becomes brittle, and capable of being powdered; at about 70° melts, and, in a full red heat, is volatilized. Its crystals are tetrahedral, or compressed hexaedral, prisms.

In the air it is soon covered by a grey oxide, which prevents any farther oxidation; but when melted this oxide covers the metal as with a pellicle, which is renewed when scraped off. It is a criterion of this oxide, and of the sublimed flowers of zinc, to turn yellow by heat. In a red heat its colour is a greenish yellow; in a white it vitrifies, forming a yellow glass. Zinc takes fire at the lowest period of ignition, and sublimes in a yellowish white powder, called flowers of zinc, nihil album, pompholyx, philosophical wool, &c. These, when first prepared, are phosphoric; a quality which they communicate to water, passing through them, giving it superficially a dazzling white, and internally a sky blue colour. The quantity of oxygen in the oxides of zinc probably varies; at least they have been very differently estimated. It does not exceed apparently 0.20.

Pulverized zinc, if moistened, decomposes the water. If filings of zinc are immersed in very pure, strong, liquid ammonia, a combination takes place, called ammoniuret of zinc, with the separation of an ammoniacal alliaceous gas. The solution, after filtration, is yellow, and the new salt, by evaporation, concretes into feathered crystals. As may be expected, it is decomposed by acids, and, with tincture of galls, the precipitate is grey. The pure fixed alkalis act also on zinc; but do not dissolve the oxide, though they dissolve that which is precipitated from the salts of zinc.

Of the sulphat of zinc we have already spoken. (See VITRIOLUM). The nitrous and muriatic acids act violently on it, and the oxymuriatic acid inflames it. The muriate of zinc will not crystallize, and it sublimes in the form of butter, from whence it is sometimes denominated. All the other acids dissolve zinc; but the acetat has only been employed in medicine.

The calcined zinc, formerly *flores zinci*, are made by melting eight ounces of the metal in an ignited large and deep crucible, placed declining or half upright, and covered with another crucible, so that the air may have free access to the burning zinc. The calx, as soon as it appears, must be taken out, and its white and lighter part separated by sifting. The operation must be repeated till all the zinc is oxidated.

Vitriolated zinc is purified by dissolving a pound of white vitriol in three pints of boiling distilled water, adding a drachm of vitriolic acid. The solution is filtered, evaporated, and crystallized in the usual way.

The preparations of zinc are employed in external

applications, as ophthalmias, and as astringents; an effect which they produce, if the zinc is finely levigated, without irritation. Taken internally they prove emetic. The following ointment is used for the same purposes as that called Pellier's ointment. See OPHTHALMIA. $\text{R Zinci usti } \mathfrak{z} \text{ i. unguenti ceræ albæ } \mathfrak{z} \text{ vi. m.}$ See VITRIOLUM ALBUM.

The flowers of zinc were first used as an internal tonic medicine by Glauber, and externally in cancerous and other malignant ulcers. In this he has been followed by Theden, Justamond, Martini, Crell, and Brown (Medical Communications). In an ointment they have been used in excoriations, particularly of the nipples and lips. Internally they were little known till Gaubius gave an account of their virtues in his *Adversaria*, where he showed that they constituted the empirical remedy of Ludeman, called the *luna fixata*. They have been much employed in convulsive and spasmodic diseases, and sometimes with good effects. Even obstinate epilepsies have been rendered much less violent by their use, and very numerous are the authorities for their efficacy in every species of convulsion; but, like all other medicines in such diseases, their effects are unequal, and the benefit often temporary only. Almost equally numerous complaints are made of their inefficacy; among the Danes, by Tode and de Meza; in this country by Bland and Wilson (Medical Commentaries); among the French by Lassone; the Swiss by Odier; the Italians by Carminati; the Germans by Selle, Bloch, Pelison, Hartman, and Richter; a variety of opinions which can only be reconciled by reflecting on the various and opposite causes from which such diseases proceed. In fact, however, it was at first too highly extolled, and in the numerous instances we have seen that a medicine is rejected because its efficacy is not so great as its first advocates boasted.

When the flowers are genuine, a grain or two generally at first excite a nausea or sickness; but by degrees a considerable dose may be taken with little or no sensible effect. As they are liable to be adulterated, it may be proper to mention, as tests of their purity, that they make no effervescence with acids; and that when exposed to a strong heat, they become yellow; but, on cooling, white again.

The *calx zinci* of old authors does not differ from the *flores zinci*; and the *calx zinci precipitata*, precipitated from a solution of white vitriol by an alkali, was in the time of Neumann celebrated as a remedy for epilepsy. The *tinctura zincæ* of Martini is a solution of the acetat of zinc in the sweet spirit of ammonia, and said also to be useful in the same disease.

Nihilum album is a common calx of zinc, and used, like it, in inflammations, excoriations, &c. With axunge it was formerly styled *unguentum diaphompholygos*, and *unguentum nihili*. The *spodium* of Galen and Dioscorides is a more impure calx: the former is collected by sublimation; the latter from the ashes.

Tutia, nihil griseum, and *cadmia botrytes* is a calx of zinc, with a considerable mixture of copper. It is freed from these, and then styled *tutia præparata*. With axunge it forms an ointment, *unguentum tutiæ*. The *lapis calaminaris* is the ore of zinc, and the *cadmia fornacum* not essentially different.

By a mixture of zinc with copper, in different proportions, are made the compound or artificial metals,

called brass and prince's metal. See Neumann's Chemical Works; Lewis's Materia Medica, edit. 6th.

ZINCUM CALCINATUM. FLORES ZINCI. See ZINCUM.

ZINCUM VITRIOLATUM. See VITRIOLUM ALBUM.

ZINGI. See ANISUM INDICUM.

ZINGER, (Indian). GINGER. The character for this is Z z. *Zinziber, gingihil famina, chilli Indiæ orientalis, iris latifolia tuberosa, mangaratia, amomum zingiber*, Lin. Sp. Pl. 1. COMMON OR NARROW LEAVED GINGER, is the root of a reed like plant, growing spontaneously in both the Indies, in China, &c. It is brought to us in knotty, branched, flattish pieces, freed from the outer bark, of a pale colour and fibrous texture, and distinguished into white and brown. The former is the root cleaned and dried; the latter is scalded, more shrivelled, and less aromatic. That which is the least fibrous is reckoned the best.

Ginger is warm and aromatic, but its stimulus is more local than might be expected from its sensible qualities. It yields all its virtues to rectified spirit of wine, and the greater part of them to water. In distillation water conveys its whole flavour, but spirit leaves nearly the whole behind. It is used in cold and flatulent disorders, particularly of the stomach, with advantage; in torpid and phlegmatic constitutions, to excite brisker vascular action; and to correct the griping quality of purgative medicines; for which purpose its effects are more durable than those of pepper. The London College order syrup of ginger, to be made by macerating four ounces of bruised ginger for four hours in three pints of boiling water, strained and made into syrup with the addition of clarified sugar. Ph. Lond. 1788. See Lewis's Materia Medica.

ZINGEN. See GENSING.

ZI'ZIPHUS, ZI'ZIPHA. See JUJUBA, AZADARACH, and LACCA.

ZODOA'RIA CA'NDIDA. See AZEDARACH.

ZODOA'RIE SEM. See SANTONICUM.

ZO'NA, (from *ζωννμι*, to bind,) *cinzilla Paracelsi*. A kind of herpes, which encircles the body, like a girdle. See ERYSIPELAS.

ZOO'PHYTON, (from *ζωον*, animal, and *φυλον*, *planta*). A ZOOPHYTE, or PLANT ANIMAL, supposed to be an intermediate body between plants and animals, but now known to be a congeries of the habitations of animals.

ZOOLOGIA, from *ζωον*, and *λογος*. The natural history of animals.

ZOO'NOMIA, (from *ζωον*, and *νομος*). The laws of animal life: the title of Dr. Darwin's work, on principles not very different from the BRUNONIAN SYSTEM, q. v.

ZOTO'MIA, (from *ζωον*, an animal, and *τεμνω*, to cut). The dissection of animals.

ZO'STER ERYSIPELAS, (from *ζωννμι*, to gird). See ERYSIPELAS.

ZO'STER HERPES. See ERYSIPELAS PHLYCTENODES, and HERPES.

ZU'CHAR, (from the Arabic term *sachar*). See SACCHARUM.

ZYGO'MA (from *ζυγος*, *jugum*, a yoke,) a bone of the cheek, forming with the other bones a bridge like a yoke, under which the tendon of the temporal muscle passes.

ZYGOMA'TICA O'SSA, (from *ζυγος*, *jugum*, a yoke. See MALARUM OSSA.

ZYGOMA'TICÆ SUTURÆ, the sutures uniting the processes of the temporal and cheek bones.

ZYGOMA'TICUS MUSCULUS, *zygomaticus major*, of Albinus and Winslow, *distortor oris*, arises fleshy from the zygomatic process of the cheek bone, and is inserted into the corner of the mouth, which this muscle draws outwards and upwards.

ZYGOMA'TICUS PROCE'SSUS. From the anterior middle part of the temporal bone a process arises and joins another from the cheek bone. Together they form an arch. See TEMPORUM OSSA, and ZYGOMA.

ZYTHOGA'LA, a posset drink made with beer and milk often recommended by Sydenham. We cannot conclude with a more respected name—MANEANT SEMPER HONOS NOMENQUE SUUM LAUDESQUE—.

APPENDIX, INDEX,

AND

PLATES,

TO THE

LONDON MEDICAL DICTIONARY.

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CURÆ POSTERIORES.

ABDOMEN.—Page 2, col. 2, line 55; “*useful in the colic are without effect in this complaint.*”—Blows on the abdomen are often dangerous, though no wound be inflicted, and they seem to act by destroying irritability of the stomach, as they are more fatal, the nearer the shock is to that organ; for immediate percussion is not always necessary. Fluids of different kinds also are often effused from a rupture of different viscera, or from the bursting of an abscess in any contiguous part. Purulent matter is most frequently found in the interstices of the muscles, or on the peritonæum. David (*Mémoires pour le Prix*, vol. x.) describes the operation for an abdominal empyema, and Fabricius drew from the abdomen eleven pints of purulent matter. Blood, bile, urine, fæces from the colon (*Histoire de la Société de Médecine*, an. 1786), have been found in the cavity of the peritonæum, from ruptures of the containing receptacles of these fluids, and such accidents are usually soon fatal.

Tumours of the abdomen are frequent from scirrhi of the different viscera; from cartilaginous tumours, and steatoma; from water or flatus. After intermittents they were formerly frequent, in part from their continuance, as they were supposed to be salutary, and little attended to, in part perhaps from the abuse of the Peruvian bark. The tumours from flatus appear sometimes to be general, when only a small portion of the intestine is distended; but in that case the distention is so considerable as to occupy the whole abdomen. Steatoma are often in the mesentery, sometimes in the omentum; and bodies of an anomalous nature are found in different parts of the cavity. There is a curious story of a woman at Strasburgh who could produce, at pleasure, a considerable distention of the abdomen, which she conducted with an ingenuity and address not inferior to the famous rabbit woman. Tumours sometimes appear preternatural, from some change in the situation of the viscera; and there is a very useful dissertation on this subject in Haller's *Practical Collection*, iv. 118, by Troschel, originally published at Frankfort.

The diseases of the ovaria often render this part so large as to occupy the whole abdomen, and the real complaint can only be distinguished by the patient's report of the original situation, and the progressive increase of the swelling. It sometimes contains a fetus, occasionally irregular ossifications, masses of hair, hydatids, and a watery fluid. Every organized substance, contained in an enlarged ovarium, is probably a part of

an imperfect conception. The kidneys (Martinau in the *Medical Commentaries*), and the urinary bladder (Morgagni de *Sedibus*, xxxix. 33), sometimes form considerable tumours. See SPLENALGIA, HEPTALGIA, SCIRRHUS, VESICA. See Pemberton on the Diseases of the Abdominal Viscera.

ABORTUS.—Page 5, col. 1, line 10; “*stated time of the woman's pregnancy.*”—Violent exertions in lifting weights, and every action of the abdominal viscera, even the straining to void the fæces and urine have induced abortion. Every thing which checks the circulation suddenly, or produces faintness, has a similar effect. It is consequently occasioned by passion, terror, anxiety, sorrow, and even immoderate joy; by unpleasing smells, as rotten eggs, or carbonic acid air, by harsh sounds, &c. Venereal complaints often induce abortion; and excess of venery, small pox, malignant fevers, a blow on the abdomen, a shock by a fall, tight stays, and even the bite of a viper, have had a similar effect.

ABROTANUM.—Page 8, col. 1, line 38; “*Santolina Chamæ Cyfarissus L. 1179, Fol.*”—The female southern wood is bushy, hoary, with oblong, slender leaves, composed each of four rows of little yellow knobs, set along a middle rib; naked, discous, yellow flowers, standing solitary on the tops of the stalks; a native of the southern parts of Europe, evergreen, flowering from June till the winter approaches.

The male of a shrubby plant, with woody brittle branches, numerous, greyish green leaves, divided into slender segments; small, yellow, naked, discous flowers, hanging downwards in clusters; a native of open mountainous districts of warm climates, flowering in July and August. In this country it is raised from cuttings, and seldom produces seed: the leaves fall off in winter.

Both are used in fomentations, as discutients and antiseptics; in liniments and ointments for cutaneous eruptions and incipient baldness. Heister uses a decoction in salt water as an antiseptic. Each is a warm, perhaps an useful, stimulant, though seldom employed internally. They may be probably carminative; but have little pretensions to the virtues so liberally assigned them, of relieving obstructions, and restoring the menstrual discharge.

ABSCESSUS.—Page 8, col. 2, line 29; “*abscess is the*”

consequence of inflammation."—But, though abscesses are the consequence of inflammation, yet there are many remote causes which contribute to it. A frequent one is what authors have styled a metastasis, and diseases in situations the most remote, and circumstances the most improbable, have been relieved by the sudden formation of an abscess, with little previous inflammation, while, on the other hand, purulent matter has been as suddenly taken up, and thrown out by the urine or some secretory organ. Abscesses also often occur with very indistinct and obscure inflammation, as we have found from falls and shocks. These occur in internal organs, where the circulation is languid, particularly in the liver. Other languid inflammations, with little pain, are those of the joints, which depend on a scrofulous diathesis.

One frequent cause of abscesses are foreign bodies introduced into the system, and afterwards deposited in the cellular substance; or passing under the skin and appearing in distant organs. Such bodies are sometimes also formed by disease. Of the first kind, more strictly, are the causes of exanthemata, and if the tales of living animals found in abscesses be true, their ova must have been taken in, and again separated. This at least must be the case with the fasciola which sometimes infests the liver, and occasions little abscesses. Hard substances swallowed have forced their way through the skin and formed abscesses in the umbilicus, the groin, or the epigastrium. Needles swallowed, or penetrating through the glutæi, have been taken out of an abscess at the top of the shoulder, and even a beard of wheat has passed from the stomach to the side of the spine (Wathen), and to the right hypochondrium, (Haller Dissertationes Chirurgicæ, v. 127.) It is not difficult to explain the cause of their progress, for, since the resistance at the point is less than at the extremity, every motion assists rather the other progressive than the retrograde course.

Bodies generated in the system from disease are chiefly calculi, which form abscesses in the side when biliary; in the lumbar region when renal; in the perinæum or rectum when vesical; and in the joints when arthritic. Numerous instances of each kind might be adduced from respectable authorities.

In general, abscesses proceed from some disturbance of the balance of the circulation; and, therefore, to avoid them, rest, a gentle diaphoresis, and particularly a discharge from those organs where the abscess is threatened, with every remedy which will prevent too great excitement of the arterial system, will be highly useful. Emetics which assist absorption often prevent the formation of abscesses, and the cooling laxatives repress with certain effect the febrile tendency.

To the references in the text the following may be added: Baglivi Praxis Medica, i. 9; Stahl de Abscessu et Furunculo et Ejusdem de αποστασις and υποσπυγματος Hippocratis Differentia; Memoires de l'Academie de Chirurgie, i. 118; Petit Traite des Maladies Chirurgicales, a posthumous work.

ABSINTHIUM.—Page 17, col. 2. line 34; "often substituted for it."—Wormwood is a perennial plant, with hoary divided leaves, firm woody stalks, which die in winter, small yellow, pendent, discous flowers. The common wormwood grows in hedges, hath large leaves,

divided by deeply indented segments, of a light green above, and whiter underneath; flowers in June and July, and dies almost wholly to the ground in winter. The leaves of the Roman wormwood are numerous, finely divided, dark coloured, and hoary underneath. The stalks are purplish, and all the parts comparatively small. The leaves of the sea wormwood are also finely divided, and hoary all over.

The preparations of wormwood were, by accident, omitted. These are a tincture, an extract, an essential oil, a conserve, and a salt. The tincture of wormwood is retained only in the Edinburgh Pharmacopœia, and made by macerating four ounces of the dry flowering tops of wormwood in a quart of rectified spirits for two days. After pressing out the tincture, it is poured on two ounces more of wormwood and macerated for four days, then filtered.

The extract is made from a strong aqueous decoction, evaporated in the usual way, and it contains all the bitter of the herb, without its ill flavour, which resides in the oil, so that this may be separated before the decoction is inspissated. A spirituous extract contains the flavour, as well as the bitter.

The oil comes over with the distilled water, and may be easily separated. Ten pounds of the herb will, in favourable seasons, yield two ounces of oil. In rainy seasons, and moist situations, the oil is most copious; in dry ones most resinous.

The conserve is made from the tender tops of the Roman wormwood, with triple the weight of lump sugar. The salt is made by burning the dry herb to ashes in a close vessel; but the salt of tartar is usually substituted for it.

ACEPHALOS.—Page 22, col. 1, line 3; "modern collections contain similar instances."—See NERVUS, and the distinction between the cerebral and the ganglionic systems.

ACHOR.—Page 26, col. 1, line 8; "has appeared more effectual than the oil skin cap."—When the roots of the hair are not affected, the disease is more certainly a general one, and various complaints have arisen from its repulsion, or drying it by astringents. It has appeared in numerous instances almost critical, so that in Baldinger's collection there is a proposition to communicate it by inoculation. Stoll (Prælectiones, p. 48.) and Morgagni (de Sedibus, &c. l. v. 3), record many dangerous diseases arising from its retrocession, and epilepsy, apoplexy, and even death, have been said to follow rapidly.

The remedies, in such cases, have been antimony, sulphur, the viola tricolor (Strack de Crusta lactea Infantum), the seeds of the lycopodium, hemlock (Fischer de Morbis Cutaneis, sp. 1), the bardana, and, above all, the soda. But, in general, the cooling saline purgatives, with a moderate exercise in the open air, will complete the cure. See also TINEA CAPITIS.

ACOUSTICA TUBA, in common language, the ear trumpet, is an instrument contrived to augment the sounds, so that the impression on the ear may be more considerable, when the powers of the organ are diminished. The speaking trumpet is a similar instrument, by increasing the intensity of sounds to

render them audible at a greater distance. We find (see *SOXUS*) that sound is propagated in straight lines, so that unless the acoustic tube is nearly straight, sounds will be lost or taking a new direction will be suffocated. If, however, it is only bent in the segment of a very large circle, which is often done to render its use more convenient, the distinctness is not greatly lessened: it is always, however, more advantageous to preserve the straight line. The aperture is wide at the extremity to take in a larger volume of sound, the whole of which is conveyed with increased force, in proportion to the diminution of the diameter to the ear. The instrument itself is made of some sonorous metal, that no portion of the sound may be suffocated or lost.

ACUMEN. A sharp point; an appellation in Daventer's Midwifery of the protuberances of the ossa ischii. The coccyx he also calls *acumen ossis sacri*.

ADHESIVUM (emплаstrum). Adhesive plaster is of the greatest importance to confine dressings, to preserve the union of lips of wounds, and to bring the edges of ulcers nearer together. (See *VULNUS* and *ULEX*.) It is formed by adding five or six parts of resin to the litharge plaster; but, for less important wounds, an elegant adhesive plaster is prepared by spreading isinglass dissolved in brandy, generally with the addition of gum or flowers of Benjamin, on black silk, styled *court plaster*.

ADIANTHUM.—Page 34, col. 1, line 26; "*expressive of a capillary herb.*"—Maidenhair is an evergreen, low plant, with slender, smooth, shining, blackish stalks, without any manifest flower. The seeds resemble fine dust, lying in roundish specks about the edges of the backs of the leaves, which curl around to protect them. The first species mentioned is the true maidenhair, *adiantum foliis coriandri*; the second is the Canadian, *adiantum fruticosum Brazilianum*, *avenqua*, *adiantum Americanum*, cultivated in our gardens, the strongest and most agreeable of all the species.

The *a. nigrum*, *onopteris mas*, *adiantum foliis longioribus*, *filicula*, *caliphylllum asplenium trichomanes* Lin. Sp. Pl. 1540, grows wild on old walls and shady places, and is in taste roughish and mucilaginous, though with but little flavour. Two other capillary plants are mentioned under this title; the *a. album* (*osmunda crispa* Lin. Sp. Pl. 1522) and the *a. aureum* (*mnium polytrichoides* Lin. Sp. Pl. 1576); but they merit no particular notice.

ÆGOPODIUM.—Page 35, col. 2, line 46; "*is tender and esculent*"—the *æ. podagraria* Lin. Sp. Pl. 379.

ÆORA.—Page 37, col. 1, line 47; "*assisted, perhaps, by the nausea.*"—In these passive exercises, the constant renewal of the fresh air probably assists the discharge of that insensible perspiration, which we have distinguished by the appellation of diaphnoe, and which, in every circumstance, is most essentially beneficial. See *DIAPHORETICA*.

ÆRIS.—Page 42, col. 1, line 3; "*the best detergent of foul ulcers.*"—See *CUPRUM ÆRUGO*, and *ÆS*. The reference to the dictionary of chemistry, retained by

accident, has no object. It was meant for Mr. Nicholson's, now wholly superseded by Dr. Aikin's publication, which appeared only near the conclusion of the present work.

ÆSTUARIUM.—Page 43, col. 2, line 50; "*machines for conveying heat to rooms.*"—A vapour bath, designed according to its construction either to produce a partial or a general sweat.

ÆTHIOPS JOVIALIS.—Page 46, col. 1, line 61.—Read as tin *often* acts mechanically only. See *STANNUM*.

Page 55, col. 1, line 4.—For *QUIESCENT* and *DWELLENT*, read *DIVELLENT*.

Page 56, col. 1, line 28.—For *AMANTIA*, read *AMANITA*.

AGERATUM.—Page 56, col. 2, line 37; "*as a remedy for palsy.*"—The maudlin tansey is a perennial, slender plant, with indented, narrow leaves, and yellow, naked, discous flowers, set in umbels, on the tops of stalks. It is a native of the southern parts of Europe, cultivated in our gardens, flowering in July and August.

AGITATION.—Page 57, col. 1, line 43; "*spasmodic attacks.*"—It has also been recommended as a remedy, and older authors have gravely directed us to agitate a hectic patient to break the abscess. Modern practitioners have recommended agitation to rouse a person when torpid, and often dying. It was not an uncommon practice with the followers of Brown; and many candles have been brought round the bed, loud noises made, the patient has been forcibly taken from bed and put into a carriage to rouse, when the sleep of death was oppressing him. It was the consequence of that most pernicious principle that life was a forced state. We have said that it was not an uncommon practice. We fear, indeed we know, that with all its inhumanity and absurdity, it is not yet wholly disused.

AGUE CAKE.—Page 58, col. 2, line; 53 "*bark has been generally employed.*"—Farther examination has led to a somewhat different conclusion from that in the text, which is the common opinion of authors; and there is greater reason to suppose that these tumours arise from the too early and indiscriminate use of the bark before proper evacuations have been employed. See *FEBRIS*.

ALABANDINUS.—Page 59, col. 2, line 64; "*Probably black-lead.*"—This account is full of error. The alabandine of Aldrovandus, mentioned by Wallerius, i. 232—*i.*, is the quartz hyalin rouge, noiratre of Haüy, a precious stone of a deep red, properly classed between the ruby and the hyacinth. Pliny mentions a black stone under this title, xxxvi. 8.; but this was apparently a garnet.

ALÆ VESPERTILIONUM. The broad ligaments of the uterus, supposed to resemble a bat's wings.

ALEDO.—Page 60, line 12, col. 1, for (from *ALBIS*) read (from *ALBUS*).

ALBI. SUBLIMATE, &c.—Page 60, col. 2, line 21. —read MERCURIUS CORROSIVUS ALBUS.

ALBUGO. M. Pellier's ointment consists of the red nitrated mercury, and prepared calaminaris, of each a drachm and a half; levigated litharge a drachm; prepared tatty, half a drachm; red sulphurated mercury, a scruple; balsam of Peru, fifteen drops; made into an ointment with two ounces of axunge. The unguentum citrinum and the unguentum cerussæ acetatæ, in the proportion of eight to one, or sometimes a larger one, will often succeed, to which opium may be added. A drachm of the red nitrated mercury, with twelve grains of powdered opium, made into an ointment, with six drachms of axunge and two of wax, is often highly useful. The great object of all the forms is to combine the stimulant with the sedative applications, so as gently to excite the action of the vessels without too greatly irritating them.

ALCHEMILLA VULGARIS, Lin. Sp. Pl. 178. It flowers from May to August, and the leaves seem as if folded together, from whence its name is derived.

ALCYONIUM.—Page 67, col. 1, line 42; “used to remove spots on the skin.”—The opinion of this substance being the dried froth of the sea is truly ridiculous. It is, as the English name imports, a kind of sponge, the residence of a polypus, or of polypi. The internal part is fibrous, rough, hard, and almost horny, encrusted with a fleshy covering, which becomes firm, coriaceous, and almost earthy, when dried pierced with innumerable holes or polypiferous cells. In its freshest state the alcyonium gives no marks of sensibility, but is apparently composed of longitudinal fibres, in such as resemble ramified stalks; and diverging from the centre to the circumference in those whose form is more nearly globular. The animal, when it appears beyond the holes, appears to be cylindrical, terminated above by ciliated tentacula, which form a star round an opening in the centre. These organs do not vary in the same species, and are apparently destined to seize their prey, and convey it to the mouth. One species, the sea-fig, is delineated by Ellis, tab. 17, fig. 6; another, the devil's hand, by Seba, vol. iii. tab. 97, fig. 3. The alcyons are sometimes found in a fossil state.

ALGA.—Page 69, col. 1, line 14; “a species of alga is gathered and dried to feed oxen.”—Algae are employed, when bruised, as applications to scrofulous swellings, and are often rubbed on the hip-joint in the morbus coxarius, white swellings of the knee, and those diseases of the joints which are apparently connected with scrofula. They are supposed to act not only from their stimulus, but the supposed solvent power of the sea-salt (see SCROFULA); and whatever be the mode of their operation, their good effects are indisputable.

ALKEKENGI.—Page 78, col. 1, line 10; “*physalis alkekengi* Lin. Sp. Pl. 262.”—It is a low plant with unbranched stalks, heart-shaped acuminate leaves, standing in pairs on the joints, and whitish bell-shaped flowers. The flower-cup changes to a pentagonal bladder, concealing a red fruit, like a cherry, containing under a juicy pulp many small seeds.

ALLIARIA.—Page 79, col. 1, line 12; “*crysimum alliaria* Lin. Sp. Pl. 922.”—The leaves of the alliaria are roundish, heart-shaped, and slightly indented; the stalks upright and firm, on the tops of which, and in the bosoms of the leaves, clusters of white flowers proceed, followed by oblong bivalvous pods full of black seeds. It is biennial, grows in shady wastes, and flowers in May.

ALLIUM. Page 79, col. 1, line 36; “it flowers in July.”—Garlic hath long grass-like leaves, a single strait hollow stalk, bearing on the top a cluster of small white flowers, each of which is followed by a fruit about the size of a pea, full of dark coloured, roundish seeds. The roots are bulbous, of an irregular, roundish shape, fibrous at the bottom: the smaller bulbs are inclosed in a common coat, and styled *cloves*. A root resembling garlic not divided into cloves is called *molyza* and *diaitides*; but these are neither species of allium, nor medicinal.

The root of the garlic is full of a limpid fluid, of which it yields one fourth of its weight by expression; and according to some authors, it loses half its weight, occasionally two thirds, on drying, though scarcely any of its smell or taste. Neumann found that nine hundred and sixty parts yielded three hundred and eighty to water, the remainder twenty-seven to spirit. Inversely the alcoholic extract contained a hundred and twenty-three, and the watery a hundred and sixty-two parts. The former was unctuous and ropy. Mixed with oils, and applied externally, it resolves indolent tumours, is useful in stiff joints, and applied to the pubes, in the form of a cataplasma, sometimes relieves suppression of urine.

ALNUS.—Page 80, col. 1, line 58; “*Avnus*.”—The common alder is tall and coniferous, grows in watery places with little branches: its leaves are clammy, the bark of a dark brown, and the wood reddish.

ALOIDES, (from *αλος*, and *ειδος*). *Stratiotes aloides* Lin. Sp. Pl. 754. WATER-ALOES, FRESH-WATER SOLDIER, *aloe palustris*, *aizoon militaris* *aixoides*, *stratiotes*. It grows in water, or in watery places; the leaves, which resemble those of the aloes, are always above water. It is found in England, and flowers in July and August. It was formerly used as an emmenagogue; but the roots, inclosed in phials of water, by which they are magnified, are shown by worm doctors as vermes discharged from the intestines.

ALOPECIA.—Page 82, col. 1, line 60; “gentle stimulants should be continued.”—Some of the phenomena of this disease show that the state of the hair has some connection with that of the genital system. It is remarked that eunuchs are never bald; women, and children before puberty, very rarely. Alopecia, a name apparently derived from the fable of its being produced by the urine of a fox, is owing, it is said, often to venereal excesses, to the intemperate use of tobacco, to lues, and exposure to the sun. It is more certainly owing to copious perspiration from the head, and violent headaches, sometimes to apprehension or fright. Topical stimulants, and some of the most disgusting kind, have been

recommended for its relief. The myrrh, leaves of box, the oil of paper, the fat of a serpent, tar, white hellebore, Hungary water, and oil, with rum, are frequently employed, but seldom with any good effect. Numerous washes and liniments for this purpose are supplied by the perfumers.

ALTHÆA.—Page 83, col. 2, line 12; "*Columnacæ*."—*Althæa* is a soft hoary plant, with oblong, undivided leaves, and pale, flesh-coloured, monopetalous flowers, cut deeply in five sections, set in a double cup, the outermost of which is divided into nine parts, the innermost into five. The fruit consists of numerous capsules, set in the form of a flat disk, with each containing a single seed; the roots are long, slender, and fibrous, the fibres yellowish without, and white within. It is perennial, grows wild in moist places, and some of the more beautiful varieties are cultivated in gardens.

The *althæa* of *Theophrastus*, *althæa indica*, *abiscus Theophrasti*, *abutilon*; the YELLOW MARSHMALLOW, *sida abutilon* Lin. Sp. Pl. 963, does not differ from the official *althæa*.

ALSTROMERIA SALSILLA, Linnæi Sp. Pl. 462. The root is considered as a diaphoretic, and inferior to the *sarsa*.

ALTUS, high, used in medical authors to express superior degrees, as *altus sopor*, the sleep of lithargic persons; *alta salus*: we preserve its force in the last by styling it *high health*.

ALUMINE. Clay is scarcely to be considered as a medicinal substance; but the term is introduced merely to suggest whether it may not be useful as a demulcent. The boles formerly employed for this purpose are almost wholly of the nature of alumine.

ALUMINOSÆ.—Page 85, col. 1, line 41; "*with alum would induce us to conclude*."—The only mineral water of this kind which we recollect is that of Somersham, which contains also iron and selenite, probably sea-salt.

AMARA.—Page 88, col. 2, line 4; "*reside in the greater number*."—Bitters, though not strictly lithontripitic, are highly useful in calculous cases, probably, as we shall find, from the effects on the stomach; nor is the virtue confined to the *uva ursi*; that they injure the sight may be attributed to their narcotic power, if the fact be admitted.

Bitters are distinguished into the *amara simplicia*, *calida*, and *narcotica*. The simple bitters are the gentian, the camomile flowers, the quassia, the columba, the aloes. The *amara calida* are those which contain some aroma; and the *narcotica*, the bitters which more decidedly combine a narcotic principle. We mention this particularly, as we perceive some confusion to have crept into this part of the list of the *materia medica*. The limits between the first and last kind are not easily fixed, and the narcotic power seems to differ only in degree. Yet if the bitters here mentioned are separated from the *amara calida* and *narcotica*, no material error can ensue.

AMAUROSIS.—Page 88, col. 1, line 61; "*species of this complaint*."—It is of consequence to point out more distinctly that the pupil is not always dilated and immoveable. Numerous are the observations by Plenciz, Caldani, Richter, Hey, De Haen, &c. where it was either contracted, or at least affected by a strong light. It is sometimes also pale and cloudy; but in these cases a cataract seems coming on; indeed, a cataract often supervenes, and in the latter case it is always of importance to ascertain whether amaurosis has not preceded. Among the causes which we have omitted, or at least not mentioned with sufficient distinctness, are contusions and concussions of the brain, in some cases from a leaden bullet passing near the head. Compression, when a cause of amaurosis, has arisen from steatoma in the cavity of the cranium, from accumulations of blood, serum, or purulent matter, from an excrescence in the thalamus of the optic nerve on that side (Medical Communications, i. 4.), from a greyish substance pressing on it (De Haen Ratio Medendi, vi. 271), from a dissolution of the *copora striata* (Petit) from a wasting, and various other diseases, of the optic nerve (Morgagni de Sedibus, &c. ix. 20): in some instances the optic nerve was become of a bony hardness (Haller Pathologia Obs. 65; Morgagni, lii. 30). Various cases are recorded of its following severe headaches, which may perhaps have been owing to some of the other causes; and the eyes, as well as the rest of the nervous system, have suffered from the poison of lead, the abuse of spirituous liquors, mercurial salivation, asthenic fevers, coup de soleil, repelled gout, suppressed hæmorrhages, and excess of venery. In some instances the vitreous humour is said to be of an unusually loose texture. The disease, according to Piso, is common among the Brazilians.

Among the remedies we have omitted several on which the foreign, and particularly the German, physicians rest with much confidence, as the hemlock, the smoke of tobacco, belladonna, the aconite, pulsatilla, iron, arnica, bark, volatiles dropped into the eye, cold topical effusions, small doses of mercury, and anthelmintics. Evacuations from the head are promoted by every means, viz. leeches, setons, blisters, the actual cautery, errhines, exciting bleeding from the nose, frictions on the eye, and rubbing the frontal nerve (Morgagni). The suppressed evacuations, whatever they may have been, are with the greatest anxiety restored.

Add to the references, Trnka Historia Amauroseos; Stoll Prælectiones; Plenciz Acta et Observationes Medicæ.

AMBLYOPIA. See MYOPIA, PRESBYTIA, and OCULUS.

AMBUSTIA.—Page 92, col. 1, line 28; "*known by the practitioner*."—The principle of Mr. Kentish is, to apply a stimulus, somewhat inferior only to the cause, since, if the excess of action is at once destroyed, the irritability is also lost. On the same principle, the use of the volatile alkali, recommended by Sage, may be explained, and even of common vinegar, as well as its different forms of preserved cabbage, &c.; the spirit of wine used by Sydenham; the goose and pigeon's dung of Rulandus. Various other applications may be found in authors, as sliced potatoes, the juices of leeks, of onions,

of the sedum semper vivum, of the hypericum, of white lily roots, &c. &c.; trifling remedies, though of boasted value.

AMENTIA.—Page 92, col. 2, line 4; “*for performing a cure.*”—Amentia, however, sometimes arises from topical injuries and diseases of the brain or cranium. Bonetus mentions as a cause a thickness of the skull; Spon, in his Travels through Italy, speaks of the sutures separating; but this seemingly arises from hydrocephalus; for water in the head is usually enumerated among the sources of the complaint. Haller, in the Göttingen Commentaries, mentions, that in a case of this kind he found the brain of a soft pultaceous consistence, and in the Philosophical Transactions is a case where the pineal gland was apparently petrified. Morgagni mentions different cases where the brain was hard, or the cerebellum soft and flaccid. Excess of spirituous liquors or of venery, long continued cold, and the immoderate use of opium, and other narcotics will produce the disease.

In the greater number of these cases medicine is useless; but we may expect the greatest benefit, if benefit is to be obtained, by topical evacuations from the head, warm tonics, the greatest temperance, cold bathing, and frequent exercise in the open air in proportion to the strength.

AMMITES. See BEZOAR FOSSILE.

AMMONIACUS, SAL.—Page 94, col. 1, line 44; “*long shining spicule.*”—The sal ammoniac of commerce crystallizes in quadrangular prisms, terminated by short, quadrangular pyramids. When sublimed, it sometimes appears in rhomboidal crystals, and the concave surface of the cakes is occasionally covered with crystals of this form. The taste is acrid, penetrating, and urinous; it yields to a slight blow, and does not deliquesce in the air, though the salt described by Pliny and Agricola attracted humidity from the atmosphere. One part of sal ammoniac dissolves in three and a half parts of water. One hundred parts contain fifty-two of acid, forty of ammonia, and eight of water.

When purified it is somewhat less soluble in water, and it dissolves in four and a half parts of alcohol. By gentle heat it may be deprived of its water of crystallization, and reduced to a dry powder. In that state its crystals are six or four-sided pyramids, connected so as to resemble feathers, and it contains 42.75 of acid, 25 of ammonia, and 32.25 of water.

AMMONIACI VEGETABILIS.—Page 94, col. 2, after line last, “*under ALCALI.*”—The importance of this preparation is so considerable, at least its use is so frequent, that a somewhat fuller account of it is necessary. As it is usually made with distilled vinegar, its strength is unequal, and the process of crystallization is troublesome and expensive. When it succeeds happily the crystals are long and slender, flattish, of a pearly white, melt at 70°, and sublime at 250°. A more uniform preparation is that of Mr. Lowe, who saturates four ounces of carbonat of potash with distilled vinegar, and evaporates the solution to thirty-six ounces. Two ounces of muriat of ammonia are then added, and

the acetat of ammonia is separated by distillation. In the last edition of the Prussian Pharmacopœia a strong acetic acid is first prepared by dissolving acetat of soda in two parts of water, separating the acetic by the sulphuric acid, and then distilling it. The solution must be diluted, so that it shall weigh twenty-four ounces.

Mr. Lynam prepares it by filling a bottle with two thirds of distilled vinegar, and then adding the ammonia in moderate lumps, as quick as possible. The stopper must be confined by a strong pressure, so that the carbonic acid gas may combine with the water. This preparation is probably an improvement. It is said to be much more pleasant than the common acetated ammonia, to sit more easily on the stomach, and to be slightly laxative.

According to Bergman, ammonia contains nearly half its weight of carbonic acid gas, so that in a pint of the aqua ammoniæ acetatæ, containing four drachms of ammonia, there are about a hundred and eight grains, or nearly a hundred and sixty cubic inches of air.

The aqua ammoniæ acetatæ is used in fevers, chiefly of the inflammatory kind; and in the early periods of others. It is supposed to promote perspiration, and occasionally to become diuretic. It is given in doses from one drachm to six, or even an ounce. Less than six drachms can do little service, and perhaps an ounce would not be too large a dose.

AMNESIA.—Page 95, col. 1, line 10; “*AMENTIA.*”—The causes and cure do not greatly differ from those of amentia. In fact, this is a loss of one intellectual function, while, in the other, more important ones are destroyed. Weak memories are strengthened by moderate exercise, and good ones are seldom overburdened. Like Milo bearing the ox from first carrying the calf, a memory, if trusted, is coextensive with the demands made on it. The artificial helps to memory often destroy it.

AMOR.—Page 95, col. 2, line 35; “*constitute the sad catastrophe.*”—The inverted commas designed to show, that this strange rhapsody was taken from the authors quoted below, were by accident omitted.

AMPHEMERINOS.—Page 96, col. 1, line 29; “*twenty four species.*”—The term amphemerina undoubtedly means the quotidian remittents, and authors have applied the appellation to those returning fevers which arise from debility, from internal abscesses, and scirrhus viscera. The greater number of fevers, however, which have been thus distinguished, appear to be truly tertians, and often double tertians. Thus the amphemerinæ of marshes are the worst kinds of remittents, and strictly tertians, though they appear to return daily; but, if minutely examined, the alternate paroxysms only are equal. See FEBRIS and INTERMITTENS.

AMPUTATIO.—Page 97, col. 2, line 29; “*now introduced or improved.*”—The author, who first published the improvement of the operation by the flap was a Mr. Young of Plymouth, whose letter, is dated in 1678, and it is there attributed to Mr. Lowdham, a surgeon of

Exeter. Verduyn's *Dissertatio Epistolica de Nova Artuum Decurtandorum Ratione*, appeared at Amsterdam, in 1696; but we introduced these remarks chiefly to observe, that the proposal did not meet with general approbation: Koenerding, Acrel, and Nannoni (*Discorso, Chirurgico, &c.* 39), opposed this plan, and, though mentioned by numerous surgical authors, it was neglected till the time of Allanson.

Amputation at the joint appears to have been more extensively practised than has been stated in this article. Numerous instances are recorded of the arm having been taken off at the joint of the shoulder; of the leg at the articulation of the knee; of the fingers and toes at their different articulations. The amputation of the thigh at its articulation is an object much more terrific. The subject was proposed by the Academy of Surgery, in 1756, in the following words. "To determine, in cases where amputation at the joint of the thigh appears the only method of saving the life of a patient, if this operation may be attempted, and to point out the most advantageous method of performing it." The question was again proposed in the year 1759, and Barbet succeeded in ascertaining the cases in which it might be attempted, though he does not venture to determine the method of performing it. The emergencies in which it may be attempted are, in his opinion, a gun-shot wound, or any other violent contusion which would leave few parts to separate; a complete sphacelus, terminating near the articulation, having destroyed a great part of the substance. It would not be equally advisable if the femoral artery was opened near the ligament of Fallopius, or if an aneurism had been formed in this place: for the depth and extent of the wound would render it highly dangerous. An instance seems to support his ideas. In 1748, a lad of fourteen was brought to the hospital at Orleans, with a sphacelus in both legs, and one thigh, by eating ergot corn. It terminated, however, on the right side, round the articulation of the thigh, and on the left, near the great trochanter. The suppuration almost wholly separated the right thigh, which was held only by the round ligament of the femur and the sciatic nerve. The connecting parts were divided, and the operation succeeded so well that the surgeon amputated the left thigh four days afterwards. The operation was attended with neither pain nor hæmorrhage, and granulations were springing on the right side, on the tenth day, when fever came on, which checked the suppuration. Another instance occurred at Ormes, in 1773. The right thigh of a young man, aged twenty-one, was broken, and excessively bruised by a carriage against a wall. The pain, swelling, and fever were considerable, and a gangrene came on in three days. By an active employment of the usual remedies the gangrene was stopped; but the soft parts were destroyed, and the thigh was dissected on every side. Little remained to be divided, and the operation was performed without any bad consequence. The ulcer cleaned, the teguments advanced, and the cure was completed in eighteen months. The man was alive in 1796, had married, and had one healthy child. He was cook at an inn in St. Maure.

In this country the same operation has been performed by Mr. Ker of Northampton, (*Medical Commentaries*, vi. 337), in the case of a girl exhausted by

an abscess, near the great trochanter. It seems to have been conducted with great steadiness and ability; but little expectation could be entertained of its success, from the previous state of the patient. In fact, the acetabulum was carious, the ligamentum rotundum destroyed, an abscess had taken place on the psoas, and the lungs were, in a great part, lost in a mass of purulent matter. The operation, however, was completed with little difficulty, though Mr. Ker candidly acknowledges that he should probably have experienced greater embarrassment, had the round ligament been sound.

To prevent hæmorrhages, modern surgeons make their ligatures by means of flat crooked needles with cutting sides, furnished with threads, more or less numerous, waxed and flatted in the form of a ribband. With these they compressed the artery, usually taking in some of the surrounding flesh to prevent the thread cutting through the vessel. In general, when the vessels are large, more of the surrounding substance is taken in, and the ligature is made less strait; for in the smaller vessels the ligature may be allowed to separate more quickly. Mr. Broomfield, however, restored the old method of Paré to draw out the vessel, and tie it by a thread passed around.

When ligatures are not employed, buttons of lint, filled with flour, and a proportion of blue vitriol, or a bit of allum applied to the mouths of the vessels, or introduced into them, are recommended; but the security they afford is not great, and the eschar often separates before the vessel is sufficiently firm. Compression, if not made by the hand, is effected by a mass of lint secured by slips of sticking plaster, with bandages crossing in every direction over them; but this method, which prevents the swelling that the necessary inflammation would produce, often brings on inflammation above, with severe fever. The difficulty attending these methods has introduced the agaric (see *AGARICUS QUERCUS*), which we perceive the original author, Brossart, used to sprinkle with gun powder. The agaric did not act by its astringent powder, as was at first supposed, but from its softness and elasticity, properties in which it was excelled by sponge. This the surgeons of this country for some time employed; but found it adhere strongly to the wound, from which it was separated with difficulty.

The situation of the patient after the operation has been described with too great refinement. Louis (*Mémoires de l'Académie de Chirurgie*, ii. 268, iv. 40), contends that it should be the same as during the operation; others, that it should be horizontal for the first fourteen days, and then more elevated (*Mémoires de Dijon*). The object of these regulations is to prevent the projecting bone, which the modern methods of performing the operation render no longer important. An author in Richter's *Bibliotheca* contends that the position, during the operation, should be that of the member at rest; Valentine, on the contrary, that it should be so changed that every muscle should be cut in their strongest action, when most retracted.

After the operation of amputation the patient should be laid in bed, and the stump placed on a soft pillow to guard as much as possible from the effects of involuntary startings; or it may be fixed to the bed by two straps. The patient should immediately take an anodyne draught; and a large dose of the tincture of opium

is sometimes given, previous to the operation, to lessen the pain. The spasms generally arise from the irritation of some nerve included in the ligature. The patient should be carefully watched, lest any bleeding should occur. If a little oozing only appears, no alarm will be excited; but if it is found to come from a large artery, a ligature should be immediately applied. A strict antiphlogistic regimen should be observed, and the bowels kept gently loose.

If the stump swells considerably, the bandages should be somewhat slackened, and a saturnine lotion employed. To which may be added the loss of a few ounces of blood. If, on opening the wound, the parts appear loose and flaccid, they should be brought more carefully together, secured more firmly, and a little of the bark may be given. In about a week the ligatures separate with ease; but if they do not, they may be gently pulled at every dressing. After this time the patient should be supported by tonics and strengthening diet.

AMYLUM.—Page 103, col. 2, line 22; "*its lightness, newness, and smoothness.*"—This fœcula is separated by fermentation, and forced through the interstices of a canvas bag by beating. The proportion of starch in wheat is a little less than one half. It is contained in a variety of vegetables with different substances: in wheat and rye for instance, with gluten; in beans, pease, and lupins, with extractive matter; in the potatoe, and some other roots, with mucilage; in germinating corn, the parsnip, Jerusalem artichoke, &c. with sugar; in almonds, with oil; in the bardana *jatropha manihot*, arum, asarum, and other tuberous roots, with an acrid matter.

ANÆMIA (from *a*, non, and *αἷμα*, sanguis). It has been remarked, that animals bled to death still retain so large a proportion of this fluid, that the redness of the muscles is scarcely diminished. It has occurred, however, in numerous dissections, where no very discriminated complaint had preceded, that the large vessels were found peculiarly empty. C. L. Hoffmann has published a singular case of this kind, and similar ones may be found in De Haen (vi. and ix.), in Lieutaud, Freytag (Dis. de Anæmia Gottingen, 1782), and Schwencke apud Halleri *Dissertationes Practicæ*, vii. 469). Lieutaud (Synopsis Medica, i. 52) has noticed this disease at the greatest length, and observed that no preceding evacuations will point out the cause, as these are fatal before any large quantity is lost; and if death is not immediate, plethora rather than inedia is the consequence, from the suppression of the secretions. The symptoms, in his opinion, are languor, great debility, loss of appetite, a noise in the ears, and a peculiarly resplendent complexion. Many, he remarks, are worn down by profuse perspirations, diabetes, or diarrhœa; and dropsical exudations close the scene. These are, however, the symptoms of general debility, or, as it may be styled, cachexy only. Sometimes the vessels are full of air, sometimes like wax, and in one instance, which opposes indeed his general doctrine respecting evacuations, not a drop of blood was found in the vessels of the brain of a young woman, who was bled, for some unknown reasons, one hundred times within the year. It occurred also in a man who died suddenly after having recovered of a peripneumony, in which he had been bled freely.

In the case recorded by Schwencke, the person had been long insensible in consequence of a fall; and he drops a casual observation which merits some attention, that, when the function of the brain is injured, the sanguification is checked.

ANÆSTHESIA.—Page 104, col. 2, line 22; "*dysæsthesiæ of Cullen.*"—While, however, we cannot perceive that any nerves are so distinct in their office as to supply simple sensation (that is, sensation independent of what is modified by peculiar organization), or muscular action exclusively, it is not easy to explain anæsthesia when it occurs as a symptom of palsy. Yet we have found that, when this disease is general, the sensation is sometimes destroyed with little injury to the moving powers, and at others, motion is lost, while the sensibility remains, or is increased. It is also an observation as old as the time of Galen, that the sensation of the fingers has been restored by stimulating applications to the spine.

We can only perceive with distinctness the cause of this complaint when it arises from the application of narcotics or sedatives topically. Yet even in these there is apparently a distinct action. Cold, with numerous sedatives; opium, with many other narcotics; will destroy the sensibility of the skin. Belladonna, on the contrary, will produce a dilatation of the pupil, without impairing the sensibility of those parts of the eye to which it is applied. We must leave, therefore, this subject among many of the arcana of the nervous system, and be contented with reflecting, that topical stimuli will often restore the feeling completely, when not connected with any disease of the brain or spinal marrow.

ANAGALLIS.—Page 104, col. 2, line 28; "*anagallis arvensis* Lin. Sp. Pl. 211."—The plant is low and succulent, differing in its appearance from chickweed, by the spots underneath its leaves, in having no pedicles; the seed vessels opening horizontally; the colour of the flowers, which is red or blue: it is annual, flowers from May to August, and grows wild in cultivated grounds.

ANAGYRIS.—Page 104, col. 2, line 47; "*Fetida* Lin. Sp. Pl. 534."—The species is erroneous. It is the *cytiscus laburnum* Lin. Sp. Pl. 1041.

ANALOGIA.—Page 105, col. 1, line 32; "*from their similitude.*"—Analogy is of considerable use in our reasoning in medicine where certainty is often denied. In anatomy the comparative structure of organs in animals, destined to a different mode of life, will often lead to a knowledge of their functions in the human body, when this difference is considered. In the practice of physic the analogy of a medicine with one known to be advantageous, and which cannot be procured, will lead to an useful substitute. When we find an intermitting disorder, whose nature we are unacquainted with, the same principle leads us to try those remedies which relieve intermitting fevers. Analogy should not, however, be too securely trusted, nor indeed should it be employed but by a practitioner of judgment and experience. The advantages, for instance, of balsams in external wounds, led our ancestors to employ them in hectic cases: and the astringents, which would stop external hæmor-

rhages, were absurdly given to remove internal ones. Each was injurious.

Page 106, col. 2, line 28, read *which open* into the cellular membrane. At the end of the following paragraph, read for DROPSY, HYDROPS.

ANASTOMOSIS.—Page 107, col. 1, line 53; “*the discharge is per diabolosin, erosion.*”—Anastomosis, in its first and strictest sense, viz. the union of different arteries, either by the connection with the common trunk, or by their mutual inosculation, is of the greatest importance, as when even a considerable branch is destroyed, the circulation is supported either by the enlargement of the smaller ramifications which arise from above, or of those which communicate below with these smaller branches. Thus the coldness and paralytic state of a limb, after an operation for an aneurism, are gradually lessened, till almost the former healthy warmth and motion are restored. There are, however, more important advantages from the union of the larger circles in the arterial system, which we shall shortly mention.

We have observed (see NERVUS) that there is little communication between the two sides of the body except by the intercostal, which we have styled the ganglionic, system. It is necessary, however, at present, to remark, that the two sides are not wholly distinct in the distribution of the arteries. The femoral and mammary arteries communicate on the fore-part of the abdomen, by their extreme branches, a circumstance not unobserved by anatomists, who from thence have, with little foundation, explained the secretion of milk when a supply was no longer wanted for the fœtus. M. Paris, however, has shown that this communication may be important in supplying any obstruction to the circulation through the aorta. He found this large artery contracted a little below its arch, and the anastomosing vessels considerably enlarged.

A very striking anastomosis takes place in the smaller ramifications of the arteries of each extremity, contrived to support the circulation in the limb, when the principal branch is obstructed. In the upper extremity, for instance, the subclavian artery, before it enters the axilla, sends off the thyroid and cervical arteries, which ramify round the joint, and anastomose with the extreme branches of the brachial artery. In the lower extremity, the ischiadic, thyroid, and pudic arteries anastomose with the smaller branches of the profunda, and will supply the limb if the external iliac is destroyed. The elbow and the knee are equally surrounded by arteries, which anastomose in their extreme branches.

ANATOMIA.—Page 107, col. 2, line 41; “*did honour to their profession.*”—The history of anatomy, for the reasons afterwards assigned (see CHIRURGIA), we have united with that of surgery, and the objects of the anatomists we need not point out at present, as every part of the human body, whether solid or fluid, are the subjects of his attention. On examining our list of anatomical plates we perceive that we have omitted Sue’s Osteology designed to illustrate the first Dr. Monro’s work on the Bones; Meckel on the nerves; Caldani on the Ligaments; Zinn and Soemering on the Eye;

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Cotunnus and the younger Meckel on the Ear; Mascagni on the Lymphatics; Walther on the Nerves of the Thorax and Abdomen; Bidloo or Cowper on the Muscles; and Loder on the minuter Structure of many Parts of the Body. But on this subject we have already spoken (see Plates), and shall probably return to it when we explain the sources, and the objects of those which contribute to illustrate the present work.

We have omitted, we perceive also, some authors of value on the subject of COMPARATIVE ANATOMY, particularly a very early work, Blasius on the Anatomy of Animals; Camper; Blumenbach’s Comparative Anatomy; the works of Pallas, Scarpa, Comparetti, and above all, D’Aubenton, the companion and assistant of Buffon. The remaining part of Cuvier’s lectures are since published, and the whole is comprised in five volumes. Mr. Bell’s anatomy is in four.

ANATOMY VEGETABLE. See PLANTA.

ANAUDIA.—Page 109, col. 1, line 6; “*aphonia signifies the loss of voice.*”—The loss of speech must arise generally from a paralysis of its organs, while the loss of voice is owing, as we have seen to a relaxation of the ligaments and muscles of the glottis. We find instances, but on no very good authority, of speech being lost by drinking cold water when heated, and in another case it was recovered in consequence of a fever. Neither fact is incredible. The loss of speech, while the voice is retained, should be more properly denominated the loss of articulate sounds.

ANCHUSA TINCTORIA, Lin. Sp. Pl. 192.—The anchusa tinctoria is rough, hairy, and perennial, with unbranched procumbent stalks, resembling the bugloss, but differing from it in the colour of the roots. It grows in the south of France and in the Levant; but is raised in our gardens, though the roots in this country are of a lighter colour.

ANCHYLOSIS.—Page 109, col. 2, line 62; “*are considerably beneficial.*”—Many instances have occurred of an universal anchylosis. Columbus (De Re Anatomica, xv. 489) mentions a case of this kind; another is described by Connor (De Stupendo Ossium Coalitu Oxoniæ, 1695), and another is recorded in the Memoirs of the National Institute. Lues is mentioned among the causes, and Morgagni describes it, in one case, as arising from the formation of a firm membrane (De Sedi-bus, lxi. 12). Among the remedies we find the hemlock, the aconite, the pulsatilla, and mercury, recommended internally. Burning with moxa, galvanism, and electricity, externally. We perceive an instance recorded by Sandifort (Exercitationes Academicæ, p. i. &c.) of an anchylosis of the occiput with the atlas, and of the latter with the epistropheum.

ANDIRA.—Page 111, col. 1, line 55; “*It does not occur in the system of Linnæus.*”—It is a tree of the class diadelphia and order decandria. The calyx is urceolated with five indentations, the corolla has two petals, the legumen fleshy, with a single seed. The leaves are alternate, with an unequal one, the foliicles lanceolated, and nine in number. La Marck thinks that it may be

referred to the vouacapoua of Aublet; but it is a different species from any yet described.

ANDROSACES.—Page 111, col. 2, line 62; "*The species is uncertain.*"—On examination we find it the *androsace maxima* Lin. Sp. Pl. 203.

ANDROSÆMUM.—Page 112, col. 1, line 3; "*It grows in hedges and thickets.*"—It is a slender plant with thin, bitter stalks, without leaves, but with small pods on the top of the stalks, containing the seeds.

ANEMONOIDES.—Page 112, col. 1, line 44; "*resembling in virtues the garden anemone.*"—*Anemone nemorosa* Lin. Lp. Pl. 762.

ANETHUM.—Page 112, col. 1, line 58; "*anethum graveolens* Lin. Sp. Pl. 337."—It is an annual umbelliferous plant, with finely divided leaves, and yellow flowers. The seeds are oval and brown, flat on one side, convex, and marked with three longitudinal ridges on the other, surrounded by a yellow leafy margin. The plant is a native of Spain and Portugal; but flourishes in our gardens, and flowers in July.

ANEURISMA.—Page 114, col. 1, line 42; "*formed in consequence of ruptured veins.*"—We shall divide our additional observations in aneurisms as they relate to the causes and diagnosis, or to the treatment. We have not, we perceive, noticed one circumstance which has occasioned some controversy, viz. whether in aneurisms the external, the muscular, or the internal coat is ruptured or dilated. It is generally admitted that the whole canal is occasionally dilated, and that in some instances, one of the coats at least, in others all, are ruptured. It was the opinion of the ancients, that all the coats were ruptured, and Fernelius, we believe, first supposed that the tumour arose from dilatation only, while Sennertus admitted that the outer coat was dilated, and the muscular one ruptured. It is not easy to ascertain the facts, as in aneurismal sacs the coats are thickened and confounded; but, in general, the internal coat, though strong, is composed of annular fasciculi; which will admit of rupture between the rings, and the muscular coat will, of course, admit of the separation of its fibres. If the distention be sudden, we should doubt whether the muscular coat would burst, as distention is the stimulus exciting the action of hollow muscles; but we know that they will admit of gradual distention, without any excitement; and Haller, as well as Dr. Monro, have found the muscular coat distended only, and sound. Dr. Nichols, in an experiment tried before the Royal Society (Philosophical Transactions, N° 402), burst the internal coat of the pulmonary artery by blowing into it, and the external was distended in "aneurismous sacs." From this sudden distention, the muscular coat, instead of yielding, suffered the air to escape between its fibres; and in aneurisms at the curve of the aorta, where the muscular fibres are strong, the same appearance is observed. It is highly probable, therefore, that, in the greater number of instances, the internal and the muscular coat are ruptured when the whole canal has not yielded. This is decidedly Scarpa's opinion, whose work we unfortunately did not see until this sheet was in the press.

Among the causes, those of debility are usually enumerated. We find a singular instance of what we have styled the eneurismatic diathesis in De Haen (*Ratio Medendi*, iv. 2, § 7), in a boy of seventeen, accustomed to work in gardens; and Lancisi has observed, that the larger the eneurisms near the heart, the more distant arteries are weaker and smaller. The causes of debility, supposed to induce this diathesis are, gout and rheumatism, apoplexy and palsy, a sedentary life (*Lancisi de Subitanea Morte*, 160), and syphilis (*Guatani de Aneurismatibus*; *Morgagni de Sedibus*, lviii. 13). To these causes Mr. Freer adds, in a late work, inflammation of the coats of the arteries. Worms found in the arteries of animals by Morgagni, Ruysch, &c. are supposed to be occasionally the cause of this disease, by gnawing the internal coats.

Aneurisms may be distinguished from palpitations of the heart, which are sometimes so violent as to produce a pulsation equally strong, by the intermissions of the latter. If there are moments when the heart can be felt in its proper situation, and regular both in strength and frequency, no aneurism has probably taken place. In the advanced stages of aneurisms, however, when the coats thicken, and polypous concretions are formed, there is often no pulsation. The symptoms of suffocation in hysteria are also not constant. Varices in the veins are usually soft, and do not beat unless seated on an artery; and emphysema or echymosis is scarcely in any instance found to pulsate. Abscesses may be mistaken for aneurisms, if their first appearance and the progress of maturation are not watched. Aneurisms are often painful; but the pain is not, as in abscesses, confined to the tumour. When the skin is distended by aneurism, inflammation comes on; but the beating is then so strong and distinct in the greater number of instances as to preclude mistake. In the extremities we can always distinguish aneurism by stopping the circulation in the artery above, and in the larger vessels the strength of the pulsation, its constancy, the dyspnoea with which it is attended, the languor, debility and syncope which generally accompany the disease, will point out its nature. It is necessary, however, to add, that even experienced practitioners have been deceived.

The palliative cure recommended in this article, has sometimes succeeded when carried to a great extent, in proving a radical one. It was first employed by Valsalva; but published by his friend Albertini, in the *Bologna Transactions*, and communicated to Morgagni at that city in 1728. A considerable bleeding was premised, and then the aliment gradually lessened, till the patient could scarcely move from his bed. A little more food was at this time allowed, but given sparingly till the symptoms disappeared. In one instance, where the patient died from another disease, the tumour was found considerably lessened, and even callosous. Sabatier (*sur la Médecine Opératoire*, iii. 206) relates a case in which the same method succeeded under his care. We have not mentioned the osteocolla given by Valsalva, or the alum pills of Sabatier, as they had probably no particular effect in reducing the tumour. The astringent fomentations directed by the latter may have been useful.

The advantages of compression, in this article, are chiefly confined to early pressure, when the accident

is known. The same means of relief, however, have been employed in aneurisms from an internal cause; but this mode is chiefly applicable to those in the extremities. Pressure is of two kinds, viz. on the aneurismal sac, and on the artery above. The older surgeons employed a plate of lead; we find it still recommended by some modern authors, and Vicq. D'Azyr, in the History of the Royal Society of Medicine for 1779, has proposed a new tourniquet for this purpose. It certainly sometimes succeeds in small aneurisms, where an equable force can be obtained in the neighbourhood of a bone; but, where the tumour is surrounded by soft parts, it escapes the effect of the pressure, by passing between the muscles, or the force is exerted unequally. Mr. Freer, in a late work, has proposed what he considers as a new mode of compression, viz. on the artery above. This method, however, is by no means a new one. It was employed many years since in Italy with some modifications, which we shall soon notice, and is mentioned by Sabatier in his operative Medicine, iii. 219, published in 1796. It seems not to have succeeded very perfectly in Mr. Freer's hands; but the Italian method, which combined the effects of the bandage above with compression on the tumour, promises to be more advantageous. It appears probable, that if the current of the blood could be checked rather than stopped in the artery above, while a compression, just sufficient to prevent the tumour from enlarging, was made on it, we should gain the desired end with little inconvenience to the patient; and we have now, also, in our power a medicine which represses very actively the force of the circulation (digitalis), which will render the starving plan of Valsalva less necessary. We know, from Mr. Hunter's operation on the popliteal aneurism, that the sac, when no longer within the course of the circulation, is often absorbed.

When in the operation the wound of the artery is discovered, the hæmorrhage has been sometimes checked by the argaric and the vitriol buttons; but the application of these is limited to small wounds, though, if cases occur in which they will probably succeed, the circulation will be in some measure preserved. The ligature is, however, now constantly employed. There has been much apprehension of wounding the artery with the needle, and blunt ones, or different contrivances to raise the artery, have been suggested (Petit). There is, however, little reason for the caution, and the laceration from a blunt needle is more injurious than any wound, which can be at once perceived, and the effects easily guarded against. To avoid the medium nerve in the operation of the humeral artery, where it sometimes closely accompanies the vessel, Sabatier advises the surgeon to carry the needle from the internal to the external condyle of the humerus; but, in general, there is little danger in including the nerve in the ligature, if we except the pain on tying. Thierry made many experiments on dogs of different sizes, where he purposely included the nerve, without any inconvenience; and it is of consequence to keep this fact in view, as the nerve is with difficulty discovered from the effusion of blood. Mr. Abernethy advises two ligatures, and the division of the artery between; because when the artery is tied in the middle of a detached portion, so as to cause the death of the part which it incloses, there will still be a portion of some extent both above and below liable to ulcerate, particularly in

unsound arteries; and in these chiefly aneurisms take place. The greatest inconvenience of the plan is, that it requires farther dissection; but the advantages of this precaution seem to overbalance the disadvantages; or, as we have observed, the arteries are sometimes ossified, more frequently preternaturally weak. Petit, who adopted the plan of two ligatures, employed a needle with a double eye; but this method was not particularly advantageous, as the ligatures were so near each other.

After the operation the parts below are for a time cold and insensible; but, it is said, they soon recover their heat, chiefly from the dilatation of the collateral branches. This opinion has been repeated, like ten thousand others, from one author to another, with little inquiry, probably because it was sanctioned by Haller, in an early work, the Commentary on Boerhaave's Lectures. Morgagni, however, records a fact of importance from the communication of Molinelli, where the operation was performed on the brachial artery. The pulse was no longer felt, and the arm lost its feeling and motion, both of which in part returned after about fifteen days, and wholly in nine months. On dissection the humeral artery was obliterated about the breadth of three fingers, and there was no communication between the portion above and the radial artery, but by a very small tortuous branch. (Morgagni de Sedibus, l. 8; Molinelli in the Bologna Transactions.) The nerve, where it was included in the ligature, had swelled to the size of a ganglion.

Desault adds his testimony on the same side, for he never found the collateral branches enlarged; yet it is well known that the pulse often returns, so that probably the numerous capillaries supply the place of the artery which has been tied without any change in their dimensions. It is often a long time before the pulse returns, and in some instances a gangrene comes on, which makes the operation of amputation indispensable.

Rest, and a cooling regimen, are constantly necessary after the operation: the dressings must be removed with the greatest precautions, and the separation of the ligatures must be prevented with care. They generally separate from the twelfth to the fifteenth day after the operation, and they usually bring with them the extremity of the artery which they have apparently cut through. This is evinced by the difficulty of removing them when they have been tied too slack, and remain so long as to impede the cure. In the operation of the aneurism of the femoral artery, where the coats are so thick as to be with difficulty brought together, M. Deschamps invented an instrument to draw the knot tighter, and the ligature was made with a flat lace, which would not cut through them; but this instrument is now disused.

We might add some additional remarks on the dilations of the arteries in different parts of the body; but the judgment of the practitioner will easily apply these general observations, and we must not fill a disproportioned space with one subject.

Lauth's collection contains the treatises of Lancisi, Guattani, Verbrugge, Mattani, Weltinus, Murray, Trewe, and Asman.

ANGELICA SATIVA.—Page 116, col. 1, line 52; "*virtues of the dried roots reside.*"—The English angelica is mostly employed in this kingdom, particularly by

the confectioners. The root is brown, oblong, about two inches thick, acrid, and fragrant, though to many the smell is unpleasant. The leaves are large, composed of pinnated foliicles, of an oblong oval figure, dentated at the edge, and the odd leaf at the end of the pinna is lobated. The umbels are large and globular, the flowers very small, and greenish. Those of the foreign archangelica are yellow, and the leaves larger. The roots retain their flavour longer than the leaves, but lose it by keeping. The fresh root wounded early in the spring yields an odoriferous, yellow juice, which, when dry, concretes into an elegant gum resin, containing all the virtues of the angelica. When the root is dried this resin appears to be distributed in little veins, and is soluble in spirit only.

ANGINA.—Page 117, col. 1, line 11; "*a species of quinsy to which children are subject, called pædanchone.*"—We are reminded by an observation in Riedlin's collection (*Linea Medicinæ*) of a species not uncommon, but which may be termed symptomatic. It is that angina which arises from inflammation of the muscles, and may be styled cynanche rheumatica. We perceive also that we have omitted, among the remedies, calomel and opium, recommended by Dr. Hamilton. Rush mentions calomel, in what he styles angina humida; and Hoffmann mentions the utility of mercurial ointment rubbed in externally.

Tournefort, in his Travels through the Levant, observes that it appears to be an endemic disease in the islands of the Archipelago, apparently belonging to the angina maligna, viz. an anthrax in the back part of the throat, which is quickly fatal, attacking most commonly infants.

Page 121, col. 2, line 33, for *washing*, read *wasting*.

ANGINA PECTORIS.—Page 121, col. 2, line 24; "*are peculiarly apt to return, or to be aggravated.*"—The causes to which this disease has been attributed are various. Dr. Haygarth (*Medical Transactions*, iii. 6) thinks it owing to an abscess in the mediastinum; Dr. Hooper (*Memoirs of the Medical Society*, London, i. 19, 21), to blood effused into the pericardium; Wall to an ossification of the cartilages of the ribs; Butter, Macqueen, and others, to a gouty diathesis. The former opinions are not, however, supported by dissection; and the last, though more probable, has not been established by observation.

Dr. Smyth, in the Medical Commentaries of Edinburgh, has observed some advantages from the occurrence of the hæmorrhoidal discharge; and, in the same collection we find that arsenic has been useful as a remedy.

ANGUSTURE CORTEX.—Page 122, col. 2, line 32; "*proved to be very different.*"—Wildenow, it is said, suspects it to be the production of the magnolia Plumieri, vol. ii. 1256; but there is not the slightest hint of it in his edition of the species plantarum, and this tree is a native of the American islands. Mr. Brande found that 3840 parts yielded to alcohol, 144 of resin, and 300 of an acrid unctuous substance: the residuum gave to water 1500 of dry gummy extract. Inversely he obtained 2110 of a clear brown extract, bitter, but not acrid, and 161 of a light brown resin, extremely acrid. By distillation it yielded 26 of essential oil. The tincture is

of a deep yellow, reddens the infusion of turnsole, and becomes turbid and white on the admixture of water. It is not precipitated by gelatin, but by galls, and, therefore, according to Dr. Duncan, it does not contain tanin, but cinchonin. He adds, that it has the peculiar property of acquiring a deep red colour with red sulphat of iron, and depositing a purplish slate coloured precipitate.

As a bitter it seems to possess a peculiarly soothing quality, checking irritation, without increasing dyspnœa. In this respect it resembles the myrrh; and, since the printing of the article, we have found it peculiarly beneficial in hectic, though not powerful as a general corroborant.

ANHIMA.—Page 123, col. 1, line 20; "*is esteemed an antidote against poison.*"—The anhima of Ray and Willoughby is the palamedea cornuta of Linnæus and Latham (*Index Ornithologicus*, p. 669). Besides its distinguishing horn, it has two strong triangular spurs, directed forward when the wing is closed: these are the apophyses of the bone. The bird, which is of the order Grallæ, is, however, mild and peaceable, except in the season of its amours, and then the males only attack each other.

Page 125, col. 1, line 15; "*from vegetables.*"—See CHEMIA, versus finem.

ANISUM.—Page 128, col. 1, line 33; "*are generally the most esteemed.*"—The herb is small, annual, and umbelliferous; the seeds rounded, striated, flat on one side, and pointed at one end, of a pale greenish colour: the upper leaves are divided into five segments, the lower entire, roundish, and serrated about the edges.

ANISUM INDICUM.—Page 128, col. 1, line 21; "*Indian or stellated anise.*"—The seed vessel of this species consists of brown, hard, wrinkled capsules, more than half an inch in length, joined at their bases, forming a star: the number is usually six, and each contains one seed, externally glossy, of the colour of lintseed, internally white.

ANOREXIA ATONICA.—Page 131, col. 1, line 40; "*mint and its preparations.*"—Anorexia sometimes arises from other causes, viz. from the use of narcotics, as smoking or chewing tobacco, drinking frequently strong tea and coffee, a defect of saliva, or too great discharge of it from any cause; from grief, terror, inactivity, expectation, disappointment, ulcers, scirrhi, &c. of the stomach. It is often also a symptom of various disorders of the chylopoietic viscera; of the pancreas (*Boneti Sepulchretum*, iii. 1, obs. 16), of the spleen (*Ejusdem*, 10, 15), of the stomach (4, 9), of the mesentery (16), and of the liver. When it has continued long, the cure is peculiarly difficult, and the progress slow. Garlic has been recommended; and, with many authors, steel is a favourite medicine. Wormwood and the mineral acids are also often highly useful.

ANOSMIA ATONICA.—Page 131, col. 1, line 56; "*cause will lead to the means for relief.*"—Among the causes may be also enumerated inflammation from cold, and we perceive that it has been attributed to a stimulating fluid injected into the nostrils in an errhine. A

destruction of the bones of the nose, and ulcers, from lues, are alike injurious in this respect.

It is seldom an object of practice, except when it arises from catarrh or lues. A thin acrid defluency, independent of catarrh, is spoken of, but so vaguely that its existence is doubtful. In such cases, warm, stimulating vapours are usually employed, as those of frankincense, &c.; nor is the practice very different when the mucus is supposed to be too viscid. The fumes of vinegar are, however, more successful. The best sternutatory, in such cases, is the vitriolated mercury, with ten times the quantity of any mild powder, as that of liquorice. In the venereal anosmia the fumes of cinnabar may be drawn up the nostrils. In the atonic anosmia we must depend on general stimulants, or, where the vessels are loaded, on topical evacuates. The nerves are too distant to be affected by stimulating applications.

ANSERINA, (from *anser*, because geese are fond of it). *Potentilla anserina* Lin. Sp. Pl. 710; SILVER CINQUEFOIL, or WILD TANSEY. It was supposed to be an astringent, as the *p. reptans* is slightly so, and was consequently recommended in diarrhœa, and in hectic. It was sometimes also employed in calculous complaints; but its sensible properties are inconsiderable, and it is now wholly disused.

The different species of chenopodium, a genus which affords the bonus, henricus, &c., are collected by the French naturalists under the term *anserine*. To this genus they refer the quinoa, a plant carefully cultivated in Peru; for the leaves are eaten as spinach, and the seeds as millet. The latter make excellent beer. The seeds hitherto brought to Europe have not germinated.

ANTACIDA.—Page 131, col. 2, line 8; “for which purpose.”—Bitters have been considered as antacids, and, in a chemical view, seem to have some effect; but their chief utility in acid stomachs arises from their tonic power. They are undoubtedly often beneficial, and, by their effects on the stomach, we have chiefly found them advantageous in gout and calculus.

Acid not only abounds in weak stomachs; but in those also where vegetables have been employed in too large a proportion, or where tea, and similar infusions, but weakly alimentary, have been used instead of animal food. There is not the slightest evidence that acid is found beyond the duodenum: it certainly never enters the circulating system. See MORBI FLUIDORUM.

The present practice, when antacids are required, is confined to magnesia, chalk, lime water, or the different alkalis. We have not yet sufficient experience of the alkaliescent earths to employ them freely, or have not yet conquered the apprehension of their deleterious power. The common opinion that chalk, with the acid in the stomach, forms an astringent, and magnesia a laxative neutral, is doubted by Dr. Cullen. Such, however, is the general idea, and we suspect that it is not without foundation.

ANTALIMUM.—Page 131, col. 2, line 23; “the same with the shells of oysters, &c.”—It is a coral, the *dentale entale* of Dargenville. The dentalia are sometimes found fossil.

ANTALKALINA.—Page 231, col. 1, line 26; “Such medicines as resist or destroy acids.”—In the Boerhaavian school, among the diseases of the fluids, an alkaline acrimony held a distinguished place; but, if an alkali appears in the circulating system, by the laws of the animal economy, it must be the ammonia, and an ammoniacal neutral occasionally prevails. This salt cannot, however, be destroyed by any acids, for they cannot be conveyed unchanged into the arteries, nor is it probable that, if this were practicable, any advantage would result. The only disease, in which observation still supports the existence of an ammoniacal salt in excess, is in scurvy (see SCORBUTUS); and in that article we have sufficiently considered the subject.

In the stomach alkali may be more readily found; but, except as mentioned in the article, we see no traces of it. What has been styled alkaline, or putrid, saburra consist chiefly of bile. Nidorous eructations, which resemble in smell rotten eggs, arise generally from this fluid escaping, by a retrograde motion, into the stomach; for the powers of life will render even putrid substances sweet.

ANTEMETICA.—Page 132, col. 1, line 2; “a glass of wine, or even brandy.”—In some instances, vomiting is so obstinate as to continue, notwithstanding these remedies, and occasionally from the harassing action, as well as from the want of a due supply of nutriment, the patient sinks. To be more distinct, we must divide these cases into the more acute and chronic. The more acute cases sometimes arise from inflammation of the stomach; often from bile, brought back by the inverted motion of this viscus, communicated to the duodenum; sometimes from irritability only. In the former case, there is generally fever, but very constantly a soreness on pressing the epigastric region, the latter we distinguish by the bile brought up, by the season in which bilious discharges are most troublesome and violent, and by the constitution of the patient. When there is soreness in the epigastric region, the best antiemetic is a blister, and moderate draughts of lukewarm gruel, with a small proportion of the syrupus e mecomo. It must be remarked, that bile is often discharged by vomiting when brought into the stomach by this action only, and it must not then be considered as a cause, but as a symptom of the disease. In such circumstances it is not uncommon to give an emetic; and if what is taken in be again discharged with little violence of effort, it is not improbable that some exciting cause remains at the bottom of the stomach (see VOMITUS); but, if the bile is brought up by violent straining, the emetic will only increase the distress. In this case, the effervescing draughts and opiates are chiefly applicable; but these are often again rejected, and even a single grain of opium, in a pill, is sometimes returned. When the vomiting has been so violent, we have found a tea spoonful of the tinctura opii camphorata swallowed, alone, effectual. It is scarcely sufficient to reach the stomach, but is lost in the back part of the throat; and, by thus checking one of the train of associated motions, it by degrees lessens the others. Sipping, in the same way, a little water with toast, is grateful, refreshing, and often useful. The vomiting from irritability chiefly occurs in PREGNANCY, perhaps in SEA SICKNESS, q. v.

The more chronic species of vomiting is found in

exhausted constitutions, in scirrhus or ulcers of the stomach. In this kind the indirect stimuli are indicated, but the opiates are often required, and the blister to the pit of the stomach is sometimes necessary. In such circumstances the vomiting is frequently connected with eructations of wind, and it is probable that the oxide of bismuth, recommended by Dr. Bardsley, may be of service. But we cannot speak of it from experience. In this kind of vomiting the most powerful antiemetics are palliative only. See STOMACHUS and VOMITUS.

ANTHELMIA.—Page 132, col. 1, line 38; "*the other windward islands.*"—The spigelia anthelmia springs from a small tapering root, fibrous on every side, by a strait, smooth, roundish, and hollow, stalk, rising sometimes to the height of nine inches. At the top are four leaves, almost equal, oblong, and sharp pointed, with veins running obliquely towards the edges, terminating in the point. From the centre of these leaves rise two or three spikes bearing flowers, which, with the seeds, are numerous on one side. The principal stalk has generally two or three joints, out of which spring twice as many leaves, opposite, resembling those on the top, with as many branches in alternate order.

ANTHELMINTICA.—Page 133, col. 2, line 15; "*inimical to the general health.*"—Dr. Heberden (Medical Transactions, vol. i.) records a case in which common salt was very useful in discharging ascarides, with a flat worm resembling the botts in horses. Two pounds were taken within the hour, and repeated the following day. See ASCARIDES, LUMBRICUS, and VERMES.

ANTHERA.—Page 133, col. 2, line 28; "*collyriums, dentrifices, &c.*"—In botany, the antheræ are the enlarged extremities of the stamina, the male organs coloured by the pollen, or the fecundating farina.

ANTIHECTICUM.—Page 135, col. 1, line 2; "*see Lewis's Dispensatory improved.*"—As this excellent collection of the more valuable portions of the older pharmacy is now scarce, we shall transcribe, in an abridged form, the process. Six ounces of martial regulus of antimony are melted together, with half as much fine tin, poured into a warm greased mortar, and when cold, powdered. The powder is deflagrated with three times its weight of pure nitre; calcined for an hour and half, and finely powdered. Water is then successively poured on the powder, and triturated, till it becomes no longer milky, and the part suspended in this milky fluid is the medicine. The regulus should be melted before the tin is added, and, if a bluish colour be required in the antihectic, as some authors describe, it must be calcined after its separation from the water. As the antimony is too much oxidated to be useful as a medicine, the chief dependance is on the tin, whose medical powers have not been sufficiently appreciated. See STANNUM.

ANTIPATHEIA.—Page 142, col. 1, line 18; "*disproportion, excite it.*"—If sympathy or a peculiar attraction in the air, the countenance, and the manner of any individual exists, we must also admit of the existence of antipathy; and it is singular that it is sometimes found in very unexpected circumstances. A father has felt it

for one of his children; and, after paroxysms of mania, though the mind is completely restored, it has been experienced towards those who have been particularly kind and attentive. In pregnancy also antipathies are not uncommon, though concealed by sensible women with peculiar anxiety. We have known women who have suddenly and unexpectedly fainted, who have in confidence confessed that it was at the sight of an object, or of a colour, peculiarly disagreeable; these have been females neither fanciful nor affectedly delicate, and the cause has been carefully concealed. The antipathy to some foods is well known, so that even their appearance or smell excites horror. If then antipathy exist, why may it not be felt on the appearance of objects confessedly disgusting to every one, as serpents, toads, &c.? We should have added *women*, as we could adduce our authority (Ephemerides Naturæ Curiosorum, An. vi. and vii. Obs. 14;) but that it is one of those collections which we have said rather excite our wonder than command our confidence: unaccountable antipathies are certainly felt by horses and dogs.

ANTIRRHINUM.—Page 142, col. 2, line 10; "*snaf dragon, and calf's snout.*"—Since this ridiculous medicine has been retained, we may add that the species is the *a majus* Lin. Sp. Pl. 859.

ANTISEPTICA.—Page 142, col. 2, line 60; "*a considerable degree of torpor in the system.*"—See PUTREDO and SCORBUTUS. In the list of the MATERIA MEDICA, q. v., we have offered a different, probably an improved, arrangement.

ANTIVENEREALIS AQUA PRESERVATIVA.—Page 144, col. 1, line 25; "*we have not found such consequences.*"—From a farther inquiry we can, with respect to lues, speak more confidently, since we have endeavoured to show that this disease is distinct from gonorrhœa. As hernia humoralis is exclusively an inflammatory complaint, the inflammation may be transferred, or so much increased as to extend to the testicle. Since, however, we have resumed the subject, we may add, that the inflammation excited by the antivenereal water is often more violent, more lasting and dangerous, than that of gonorrhœa.

ANTRUM PYLORI.—Page 144, col. 1, line 54; "*stomach approaching the pylorus.*"—This article has unaccountably crept in between the two parts of the preceding one. The subsequent paragraph refers to the former article, ANTRUM GENE.

ANUS.—Page 144, col. 2, line 35; "*wind from the anus are called crepitus.*"—Abscesses often form near the rectum, and are with difficulty cured. If neglected, they are apt to become fistulous, and Petit, therefore, with great propriety, directs them to be opened early. Other surgeons are very cautious in this respect, and are apprehensive of the bad effects of opening them too soon. They sometimes leave ragged foul ulcers, which require stimulating applications, and the mercurial ointment is often of service.

Condylomata, fici, and various tumours, often arise on the edge of the anus, most commonly connected with lues, and removed by the appropriate remedy of this disease. They will not, however, always yield to

the mercurial friction, and must be extirpated, like the other excrescences, mentioned in the article, by ligature. See FISTULA.

Inflammation of the anus is sometimes a troublesome disease, and it arises from acrid discharges; from the discharge of foreign bodies; sometimes from ascarides, occasionally from the causes of pruritus in excess. The irritability of the part renders all violent remedies dangerous, and the most emollient fomentations with poppy heads, the saturine applications, with sometimes brandy, or a proportion of camphorated spirit, are most useful.

The prolapsus ani has been noticed under "RECTUM," of which it is rather a disease; but we may remark, in this place, that the extent of the prolapsus is sometimes almost incredible. Morgagni mentions from the letters of Haller, that the valve of the colon was within sight (De Sedibus, xxxiii. lxx. 6), and Hagan describes a prolapsus of the whole colon. A paralysis of the sphincter is a frequent disease of old age, and is said to have arisen from anodyne injections in dysentery.

ANUS.—Page 145, col. i, line 55, "*all inconvenience will generally be ended.*"—The rectum sometimes terminates in the urethra (Histoire de l'Académie Royale des Sciences, an. 1752); in the bladder (Kalchmid de Raro Casu, &c., and Wrisburg Commentaria Göttingens, 1778); in the perinæum (Winkler); and in the vagina. These are instances which do not admit of relief, as the termination of the rectum cannot be ascertained, and the sphincter is probably wanting.

AORTA.—Page 145, col. 2, line 60; "*aneurisms, ossification, &c.*"—Aneurisms of the aorta are not uncommon, and are generally distinguishable by a fulness on one side of the chest, a violent motion of the thorax, synchronous with the action of the heart, livid countenance, and dyspnoea. When the tumour compresses the vena cava, it produces occasional irregularities in the respiration, and in the case described by Dr. Simmons (Medical Communications, i. 7), at times spasms of the diaphragm. In this instance also, as in the cases recorded by Ruysch and Morgagni (De Sedibus, xvii. 17—20), there was no pulsation observable; for it was obscured by the accumulated coagulable lymph. In general, the pulsation is felt under the clavicle or in the epigastric region, according to the portion of the aorta affected. The symptoms, as Morgagni observes (De Sedibus, &c. xvii. 16), are often relieved by flatulent eructations, and the disease is, of course, considered as nervous or dyspeptic. In the latter stages it is often mistaken for hydrothorax. Littre, in the Memoirs of the Royal Academy, describes an immense aneurism of the aorta, rising so high as the jaw; and Morgagni (l. c. lxiv. 13, &c.) an enormous aneurism of the abdominal aorta, in which the posterior coats of the artery were destroyed, and the support supplied by adhesion to the neighbouring parts. The fatal event is usually brought on by a caries of the adjoining bones, more often by a rupture. The causes are, blows, violent efforts, and according to Morgagni, coughs, and playing on the flute. See ANEURISM.

There are numerous instances of *polypti* in the aorta, though those, usually discovered on dissection, are probably produced in the last moments. It is not easy to

ascertain the distinguishing symptoms of these concretions, nor indeed of importance, as we have no method of dissolving or removing them. Their usual effects are said to be anxiety and palpitation; but these symptoms are common, from a variety of causes.

Ossification of the aorta is not uncommon in persons advanced in life, and bony scales within the coats, are frequently found when no previous disease could be traced. These are generally discovered in the arch of the aorta. Guattani, in his tract on aneurisms, describes a case in which he found the whole aorta osseous of a man whom this disease had confined to an upright posture, and Genga (Anatomia Chirurgica) speaks of a dissection in which the whole abdominal aorta was bony. Morgagni (l. c. xxiii. 2. &c.) describes the valves as ossified, in a case where neither palpitation nor dyspnoea was observable; and, in general, there are no symptoms to point out the morbid change, nor remedies of power to alter it.

The aorta is sometimes indurated, and apparently cartilaginous, sometimes obstructed by steatomas or calculous concretions at its base; in some instances, contracted. Meckel (Mémoires de Berlin, 1756), and Weitbrecht (Petersburgh Commentaries, iv. 263), have found it in a suppurating state. Guattani mentions its being wounded, but that the fatal termination did not take place till after eight years; in another case, recorded in the Journal de Médecine, death followed in eight days.

AOVARA, AVOIRA, *elais*, an African palm, the calyx of which is divided into from three to six pieces; the corolla has six divisions, and there are six stamina on the male flowers. A superior ovary is surmounted by a thick style, terminated by three stigmata in the female. The fruit is an oval nut, somewhat triangular, enveloped by a fibrous parenchyma, unilocular, with three obscure holes at its base.

There are several species, but the botanical characters have not been sufficiently attended to. The chief, according to Aublet, is the largest palm that grows in Guiana. Within the external covering of the nut is a yellow, unctuous, substance, eaten by apes, cows, and other animals. After macerating in water for some time, an oil may be expressed from it, used for seasoning food, in medicine, and for burning. From the almond a species of butter of a good flavour, and highly emollient, may be extracted called *quoquo*, or *thiothio*; and the oil is styled palm oil. The nut of the avoira has been confounded with the cocoa nut; and at Cayenne the cocoa nut of Guinea is styled the avoira canne.

APARINE.—Page 146, col. 1, line 23; "*galiam aparine* Lin. Sp. Pl. 157."—It is a rough, slender, annual plant, adhering to and spreading over bushes, and sticking to whatever it meets. The stalks are square, brittle, and joined; the leaves oblong and narrow; the flowers white, followed by little round burs.

APHONIA ATONICA.—Page 148, col. 1, line, 20; "*ligaments from the artæoid to the thyroid cartilages.*"—Even in this extensive list of the causes of a disease, which, except as a symptom, is peculiarly rare, we perceive some circumstances omitted. Aphonia sometimes

arises from a shock, independent of any wound, which appears, as we have seen, to destroy the irritability of muscular fibres. It has arisen from deleterious exhalations, from eating mushrooms, and, in a singular case recorded in Hufeland's Annals, by repeatedly rubbing the wound, made by a poisonous insect, with saliva, for which purpose the finger was successively applied to the mouth. The disease sometimes attacks suddenly, and it is said to be occasionally periodical. See Vox.

APHTHÆ.—Page 149, col. 2, line 26; "*and strength.*"—Though aphthæ are undoubtedly sometimes epidemic, yet the fever has no regular type, nor does the appearance or the recession of the eruption preserve any fixed period. In one epidemic, where it attacked almost every boy in a very large school, the fever was so inconsiderable as to be unobserved; and in children where it is more obvious, it has not a distinct form. It is an affection of the internal membrane of the mouth; and Sidren, in the Upsal Transactions, had long before the time of J. Hunter, pronounced aphthæ to be papulous eruptions, not ulcerations. Stoll thinks that aphthous eruptions are connected with the milary; but they are communicated from the fauces to the œsophagus, from thence to the stomach, the small and large intestines in succession, appearing at last at the anus, and never attack the skin. When a symptom in the end of long continued fevers, the course appears to be in an opposite direction, if the observation of Stoll is well founded, that the surest presage of aphthæ is a sense of heat and pain at the pit of the stomach. From their extending through the alimentary canal, children in whom aphthæ appear in the throat must be carefully attended to, as gangrene often suddenly comes on; and though the papulæ may have disappeared in the fauces, yet the remaining inflammation will point out the progress of the putrid state, which the appearance of the stools will confirm. The disease has been attributed to the filthy custom of old nurses tasting the pap, and it is certainly more common among children who do not suck.

Among the applications, strong astringents, and escharotics are often recommended, and we perceive, in one author, the red arsenic, with alum, lime and galls, advised. In general, if the astringents are active they separate the sloughs, which return again in a greater degree, or produce more considerable inflammation. The more emollient and refrigerant applications are preferable, unless where there is considerable relaxation, and a tendency to putrescency, and in these cases the bark, with the mineral acids, must be freely employed. A weak solution of the white vitriol is recommended in Selle's collection; but it is an old remedy taken from Sala. See Ketlaer de Aphthis Nostratibus Leidæ; Mémoires de la Société Royale de Médecine, tom. viii; Stoll's Prælectiones, ii. 436, and Ratio Médendi, ii. 167; Columbier dans l'Histoire de la Société de Médecine, 1789.

APIUM.—Page 149, col. 2, line 57; "*Apium graveolens* Lin. Sp. Pl. 379."—Smallage is an umbelliferous plant with bright green, winged leaves, cut slightly into three-winged portions, serrated at the edges; the seeds are small, oval, plano-convex, furrowed, of a pale brown or ash colour; the root long, about the thickness of a finger, with a number of fibres of a pale yellowish

colour on the outside, and white within, biennial, flowering in August, grows wild in moist places, and is frequently cultivated in gardens.

APOPLEXIA SUFFOCATA.—Page 152, col. 2, line 17; "*the gout, &c.*"—In some cases, as in palsy, though the heat and the power of motion are lost, the sensation remains; the respiration is not always difficult (Morgagni de Sedibus, &c. iii. 20), but the natural functions are generally injured. It is preceded often by head-achs, loss of memory, dimness of sight, Morgagni, l. c. iii. 8.), double vision, flashes of light before the eyes, particularly at night (Lancisi de Subitanea, morte, 69), in one instance by an excruciating pain of the arm. It sometimes seems to be epidemic (Baglivi), and it appeared strikingly so at Rome in the years 1705 and 1706 (Mistichelli Trattato dell' Apoplessia); but this probably depends rather on the air and the dampness of the season, for it is observed to be more common in rainy seasons and in winter (Lancisi, 69, 90; Morgagni, ii. 3). Its appearance is sometimes periodical. Quarin thinks it dangerous if the patient puts his hand to one part of his head; and that sweats, if they do not relieve, are often alarming symptoms. Morgagni adds, that a fever coming on in sanguineous apoplexy is rather injurious than beneficial.

Among the remote causes, as just mentioned, the state of the air must be considered; to cold and moisture Morgagni adds a sudden change from cold to warm, from the expansion of the blood, a cause admitted too inconsiderately in the article, for we have shown that the blood is by no means an expansile fluid, and that the swelling of the external vessels is rather from the relaxation of the skin than from the expansion of their contents. During the prevalence of the sirocco, which we have endeavoured to show consists of a large proportion of hydrogen, we are informed by Mistichelli that apoplexies are frequent.

Alberti has observed, that learned men are more subject to apoplexy than others, and the predisposition to apoplexy is often induced by intense study, perhaps combined with inactivity, and its consequences, bilious accumulations. Diseases of the stomach and bowels are frequent, remote causes; and repletion is stated, by Dr. Fothergil (Medical Observations and Inquiries), to produce it by its pressure on the aorta, more probably by a greater degree of that cause, whatever it may be, which disposes to sleep after meals.

We have not sufficiently insisted, in the article, on the effects of repelled discharges, or repelled gout, in inducing apoplexy. Of the hæmorrhages, the suppression of those of the nose and of the hæmorrhoidal vessels is apparently most dangerous. The stoppage of the lochia and the menses has often induced the disease, as well as the omission of bleeding, when from frequent and repeated practice it has become habitual. Drying up old ulcers, repelling the plica polonica, or the itch, and checking every habitual evacuation, have had a similar effect. Gout, we think, is a deposition on the joints, which, when regular, is highly salutary to the general constitution (see ARTHRITIS). Repelling it by cold has certainly induced apoplexy, and we suspect that every topical application which checks the natural progress to be equally dangerous. It is not easy to say how rheumatism repelled, or spontaneously changing

its seat, can have the same effect, unless it was gout in disguise; but we cannot reject the authority of Plenciz in the *Acta et Observata Medica* 156, and of Weikard *Vermische Schriften*, i. 91, unless a fact recorded by Stoll be admitted as an explanation. He found (*Ratio Medendi*, iii. 133) that, in a case of this kind, an effusion of serum had taken place in the brain.

Among the causes more distant in their effects, we may mention those which by pressure or other means influence the state of the circulation in the brain. Diseases of the lungs, the kidneys, bilious accumulations, distention of the urinary or gall bladder, gall stones, scirrhi of the different viscera impeding the circulation in the descending aorta, or in the neck, preventing the return of the blood in the jugular veins, and obstructions in the external carotid, are remote causes of this disease. The most frequent, however, and the most important, are the affections of the head. Blows and depressions of the cranium, concussions of the brain from any violent shock, bony concretions in the sinuses, and other vessels of the brain, exostoses of the cranium, scirrhus glands, fungous and polypous excrescences, vomicae, steatoma, ulcers, hydatids, effusions of blood, or a serous fluid in different parts of the brain, the ventricles, and the cavity of the spine, sometimes an enlargement only of the vessels have been found, on dissection, to have induced apoplexy. For these causes no authorities need be adduced; but when we find the only change to be a peculiarly florid fluid blood (*Reil Memorabilia Clinica*, vol. 1. Fasc. 1.; *Vieussens's Histoire des Maladies internes*); the vessels of the brain empty (*Pizzold de Apoplexia*, Gotting. 1783); the brain unusually soft on one side, mixed with a sanious fluid (*Morgagni de Sedibus*, v. 6); the brain itself peculiarly soft and flaccid (*Lancisi de Subitanea, morte* 120, *Morgagni*, l. c. iv.), it is necessary to add the names of respectable anatomists, as practitioners are not in general aware of the disease proceeding from such sources. The brain itself has been sometimes found scirrhus, almost cartilaginous (*Histoire de la Société de Montpellier*); swelled and indurated; and the pia mater considerably thickened.

One of the more immediate causes assigned by Bosch is a nervous spasm, a solecism apparently in pathology. Another author, in a work appropriately entitled "*Paradoxa*," attributes it to an obstruction of the influx of the spirits into the brain: from whence should they come? *Morgagni*, with sounder judgment and more acute observation, remarks, that a predisposition to apoplexy takes place if the vertebral artery arise from the arch of the aorta (iii. 23); if the brain is unusually solid, resisting the impulse of the blood, which is consequently thrown on the more yielding cerebellum (iii. 32); and in proportion to the brain having a less relative space (lxii. 13).

The prophylaxis depends on topical stimuli and evacuations, on free discharges from the bowels, regular exercise, free air, and a temperate diet. A seton, or a perpetual blister, are the best evacuates, and the discharge should be from the neck or vertex, certainly as near to the head as possible. One of the collections we have lately reprobated speaks of the effects of a good beating, which we dare not recommend. As a laxative the unbruised mustard seed has been highly commended.

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Besides the remedies mentioned in the article, arteriotomy has been thought highly useful; and an author of the school of Montpellier has proposed tying the carotid. A refinement on arteriotomy has been suggested, viz. at the same time opening the jugular vein on the opposite side; but it must be recollected that while apoplexy arises from such different causes, while the shades between the sanguineous and serous are so imperceptible, we must be cautious of acting with indiscriminate rashness, unless the nature of the disease is clear. If the patient is young, strong, and robust; if the neck is short, the face full, and the disease has followed violent blows, or peculiarly active exertions; we may confidently employ evacuations in all their rigour: but in proportion as we recede from such a pointed case, we must proceed with more deliberation and more careful discrimination. Portal, however, recommends bleeding, even in the serous apoplexy, while Fothergill seems to think it always injurious. Cold applications to the head, which have been recommended, must also be conducted with caution. *Quarin* thinks that sometimes they fix the disease, and more certainly produce palsy: they are supposed to be more efficacious if the patient is seated in the warm bath. Burning with moxa, or with a hot iron, has been sometimes advised, and, as a means of inducing artificial ulcers, this, as well as setons and blisters, may be useful. When from injuries in the brain, the trepan is the only effectual remedy.

After the more immediate danger is passed, the *arnica* is recommended by *Quarin*, and the chalybeate mineral waters, especially those which are slightly laxative, by *Thillenius* and others. The laxatives and the topical evacuations must be continued.

Add to the references *Wepfer Observationes et Observationes Anatomicæ de Apoplexia*; *Piso de Morbis ex Serosa Colluvie*; *Portal Memoires de Paris*; *Hoffmann, Opera Supplementum*, ii. 2; *De Haen de Apoplexia et Ratio Medendi*, iv. 5; *Ferrara delle Malattie Subitaneæ*; *Hueber de Casibus improvisis apud Eyerel Dissertationes*; *Stoll*, iv. 14.

APOTHECARIUS. An apothecary, in its original meaning a dispenser of medicines; but within these last fifty years the education of the apothecaries has been liberal, and they now form a highly respectable class of practitioners. We can say, with great justice, that we know among them men whose discernment, judgment, and knowledge of their profession would not disgrace a higher rank. We have indeed spoken with some contempt of those who step from the counter into the chariot, and chiefly for this reason, that the routine of practice, imbibed from their professional education, does not adapt them for those extensive and scientific views which we seek for in a physician; and the time spent in a disgraceful, sometimes a servile, apprenticeship, is necessary for those branches of knowledge which a man of science would blush to be ignorant of. We must recollect also, that the first men of this class are not anxious to raise a step. Diffidence is the constant companion of knowledge; for he who is unacquainted with the various *Eaeces* of error cannot be conscious that they exist. *Triaccho* have anxiously claimed the honours of a degree which is most disgracefully sold with little inquiry, are men whose softer

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manners have made them favourites with the ladies, whose connections have fixed them in a superior circle, often those whose confidence is overbearing and too powerful for more modest merit. To speak more particularly from ourselves might be invidious, and we shall, though unused to copy, transcribe the opinions of the modest, humane, and enlightened Dr. Percival.

"I. In the present state of physic, in this country, where the profession is properly divided into three distinct branches, a connection peculiarly intimate subsists between the physician and the apothecary; and various obligations necessarily result from it. On the knowledge, skill, and fidelity of the apothecary depend, in a very considerable degree, the reputation, the success, and usefulness of the physician. As these qualities, therefore, justly claim his attention and encouragement, the possessor of them merits his respect and patronage.

"II. The apothecary is, in almost every instance, the precursor of the physician; and being acquainted with the rise and progress of the disease, with the hereditary constitution, habits, and disposition of the patient, he may furnish very important information. It is in general, therefore, expedient, and where health or life are at stake, expediency becomes a moral duty, to confer with the apothecary, before any decisive plan of treatment is adopted, to hear his account of the malady, of the remedies which have been administered, of the effects produced by them, and of his whole experience concerning the *juvantia* and *lædenda* in the case. Nor should the future attendance of the apothecary be superseded by the physician: for if he be a man of honour, judgment, and propriety of behaviour, he will be a most valuable coadjutor through the whole course of the disorder, by his attention to varying symptoms; by the enforcement of medical directions; by obviating misapprehensions in the patient, or his family; by strengthening the authority of the physician; and by being at all times an easy and friendly medium of communication. To subvert these important purposes, the physician should occasionally make his visits in conjunction with the apothecary, regulating by circumstances the frequency of such interviews. If often repeated little substantial aid can be expected from the apothecary, because he will have no intelligence to offer which does not fall under the observation of the physician himself: nor any opportunity of executing his peculiar trust, without becoming burdensome to the patient by multiplied calls, and unseasonable assiduity.

"III. This amicable intercourse and co-operation of the physician and apothecary, if conducted with the decorum and attention to etiquette, which should always be steadily observed by professional men, will add to the authority of the one, to the respectability of the other, and to the usefulness of both. The patient will find himself the object of watchful and unremitting care, and will experience that he is connected with his physician, not only personally, but by a sedulous representative and coadjutor. The apothecary will regard the free communication of the physician as a privilege and mean of improvement; he will have a deeper interest in the success of the curative plans pursued; and his honour and reputation will be directly involved in the purity and excellence of the medicines dispensed,

and in the skill and care with which they are compounded.

"The duty and responsibility of the physician, however, are so intimately connected with these points, that no dependance on the probity of the apothecary should prevent the occasional inspection of the drugs which he prescribes. In London the law not only authorizes, but enjoins a stated examination of the simple and compound medicines kept in the shops. And the policy that is just and reasonable in the metropolis, must be proportionally so in every provincial town throughout the kingdom. Nor will any respectable apothecary object to this necessary office, when performed with delicacy and at seasonable times; since his reputation and emolument will be increased by it, probably in the extraratio of professional merit and integrity hereby discovered.

"IV. When a physician is called to visit a patient in the country, he should not only be minute in his directions, but should communicate to the apothecary the particular view which he takes of the case; that the indications of cure may be afterwards pursued with precision and steadiness; and that the apothecary may use the discretionary power committed to him, with as little deviation as possible from the general plan prescribed. To so valuable a class of men as the country apothecaries great attention and respect is due. And as they are the guardians of health through large districts, no opportunities should be neglected of promoting their improvement, or contributing to their stock of knowledge, either by the loan of books, the direction of their studies, or by unreserved information on medical subjects. When such occasions present themselves, the maxim of our judicious poet is strictly true,

— *The worst avarice is that of sense.* POPE.

For practical improvements usually originate in towns, and often remain unknown or disregarded in situations where gentlemen of the faculty have little intercourse, and where sufficient authority is wanting to sanction innovation.

"V. It has been observed, by a political and moral writer of great authority (Smith's *Wealth of Nations*, book i. chap. 10), that 'apothecaries' profit is become a bye-word, denoting something uncommonly extravagant. This great apparent profit is frequently no more than the reasonable wages of labour. The skill of an apothecary is a much nicer and more delicate matter than that of any artificer whatever; and the trust which is reposed in him is of much greater importance. He is the physician of the poor in all cases, and of the rich when the distress or danger is not very great. His reward, therefore, ought to be suitable to his skill and his trust, and it arises generally from the price at which he sells his drugs. But the whole drugs which the best employed apothecary, in a large market town, will sell in a year, may not perhaps cost him above thirty or forty pounds. Though he should sell them, therefore, for three or four hundred, or a thousand per cent. profit, this may frequently be no more than the reasonable wages of his labour charged, in the only way in which he can charge them, upon the price of his drugs.' The statement here given exceeds the emoluments of the generality of

apothecaries in country districts. And a physician, who knows the education, skill, and persevering attention, as well as the sacrifice of ease, health, and sometimes even of life, which this profession requires, should regard it as a duty not to withdraw, from those who exercise it, any sources of reasonable profit, or honourable means of advancement in fortune. Two practices prevail in some places injurious to the interest of this branch of the faculty, and which ought to be discouraged. One consists in suffering prescriptions to be sent to the druggist, for the sake of a small saving in expense. The other in receiving an annual stipend, usually degrading in its amount, and in the services it imposes, for being consulted on the slighter indispositions to which all families are incident, and which properly fall within the province of the apothecary."

AQUA.—Page 156, col. 1, line 64; "*the bad effects ascribed to them.*"—The assertion at the conclusion of this paragraph is too hasty. Since it was written, we have had reason to conclude that waters peculiarly hard, or rather loaded with a large proportion of selenite, have been highly injurious in inducing constipation. The other supposed dangerous impregnations of water in a late publication are wholly imaginary.

When we speak of the effects of water in diluting the fluids, we must be understood as meaning watery fluids; for it has appeared, that whatever is not subjected to the digestive powers will not form a portion of the animal mixt. Water drank, without addition, is poured out almost unchanged by the kidneys or the exhalents of the skin. The contents of the stomach and intestines, if we except the bile and the viscid mucus, it very certainly dilutes, and whatever fluids are miscible with water, are by its means, carried over the pylorus.

Cold water, when drank, is grateful to the stomach, and the well water, as containing a portion of air, probably common air, is more brisk and pleasant than any other. It often, from its stimulus, proves antiemetic, though a little burnt bread added seems to improve its powers by adding to its relish. Its coldness rapidly abstracts heat, and brings the temperature of the body to that standard which admits more effectually of the discharge of sweat; and, when carried farther, probably to that salutary diapnoe on which our health seems greatly to depend.

The topical and partial application of cold water is highly useful in hæmorrhages, particularly hæmorrhages of the nose, of the bladder, and hæmorrhoidal vessels. It relieves rheumatic pains, chiefly those which arise from a paralytic state of the vessels, and which we style chronic rheumatism; inflammations from blows and strains. The effects of cold water in these cases are greatly increased by its momentum from the mouth of a pump, or when poured on the part from a height. In burns, and some cases of erysipelas, the continued and repeated application of the coldest water is necessary; but, if the inflammation is considerable, and in erysipelas if attended with fever, cold applications are highly dangerous, often inducing gangrene. Cold water, particularly water artificially cooled, is of the greatest utility in reducing herniæ, indeed all swellings connected with inflammation; and,

in every instance almost, except erysipelatous swellings, ice is superior in its powers to common water. For the use of cold water in gout, see **ARTHRITIS**.

We need not add, that cold water, drank when the body is heated, will be highly injurious, and that ices, as more powerful, will be more dangerous. The records of medicine are filled with cases where internal inflammations, inflammatory and low fevers, have been induced by the indiscreet use of this seductive draught; nor need we add to the number, or select any authorities. Daily experience furnishes sufficiently numerous instances. See **BATHING**.

On the subject of common water, see Hoffmann de Aqua Medicina Universali, oper. tom. v.; et De Aquæ Natura de Virtute in Medendo; Sancassani Epistolæ de Aquæ Frigidæ Utilitate; Lombard Opusculæ de Chirurgie sur les Propriétés de l'eau froide, &c.; Marsigli della Potione Aquatica; Kirkland on the Cure of those Disorders which are the Causes of Fever; Hancock's Febrifugium Magnum; Smith's Curiosities of common Water; Arthritifugum Magnum, a physical Discourse on the wonderful Virtues of cold Water, translated from the Latin of Vander Heyden of Ghent, first published in French, 1644, in Latin in 1649, and in Italian ap. Sancassani's Dilucidazione Fisico Mediche.

ARANEÆ.—Page 167, col. 1, line 64; "*nature of the medicine was concealed.*"—The English spiders are certainly not poisonous (Lister Historia Animalium Angliæ), though Borelli informs us, that death ensued when one of the Italian species was swallowed. The bite of the large black spider at Madagascar brings on a coldness and rigor, and is sometimes fatal. The story of the poison of the tarantula, and its being cured by music, is an idle fable. See **TARANTULA** and **TARANTISMUS**.

ARBOR VITÆ.—The ramifications from the trunk of the medullary substance of the cerebellum. In botany the term is applied to the *thuya occidentalis* Lin. Sp. Pl. 1421. The leaves and wood of this tree were formerly esteemed as sudorifics and expectorants, employed in hectic, fevers, rheumatism, and dropsies; but they are now neglected.

ARBUSTIVA.—Page 168, col. 1, line 2; "*plants of the shrubby kind.*"—The thirty-ninth order in the natural system of Linnæus, according to the former editions; but the genera, myrrhus, eugenia, psidium, philadelphus, and caryophyllus, are now included, with some others, under the appellation of hesperidæ. The former title was highly improper, as the limits between shrubs and plants on one hand, and trees on the other, were by no means accurately defined.

Page 168, col. 2, line 27. See **VIREÆ NATURÆ**, also **STAHLIAN SYSTEM**.

ARECA.—Page 170, col. 1, line 11; "*the species of cocoa nuts.*"—The areca is a genus of palm, whose flowers are monoicous, disposed in panicles and inclosed in a monophyllous spathe. Each flower consists of a calyx with three-pointed coriaceous divisions, and of a corolla with three petals, exactly resembling the calyx,

and equally permanent. The male flowers have from six to nine stamina, not projecting, and the females a superior ovary with three pistils. The former are placed in the superior portion of the panicle; the latter at the base. At the centre of the Indian areca, *a. catechu* Lin., there is a bud styled a cabbage, seldom eaten on account of its austerity. The areca alone is not pleasant, for the same reason; but the sharpness is moderated by the betel leaf (see BETELUM), in which, when cut in slices, and sprinkled with lime, it is enfolded. The saliva, by chewing it, assumes a purple hue; but the first secretion is carefully spit out; and with it a large proportion of the lime is discharged. Its effects are apparently the same as those of tobacco, giving ease and serenity. The Hindoos also contend that it strengthens the stomach and improves the appetite. It is moistened on the coast of Coromandel with rose water, mixed with catechu; sometimes cardamoms or other aromatics are added; for the custom varies in different parts of the peninsula. It generally produces caries in the teeth at an early age, and is supposed to be injurious to hectic and asthmatic patients. The formula of the areca americana in the following paragraph is prepared from the nut.

ARENGA. A palm discovered by La Billerdiere in the Molucca islands, in his voyage in search of the unfortunate Perouse. The tree is monoicous, rising to the height of fifty feet; the leaves winged, from fifteen to eighteen feet long; their folioles dentelated at their extremity, with two appendices at their base. The spathe is of a single piece, its spadix much branched. The male flowers have a calyx of three folioles, a corolla of three petals, shorter than the calyx, and from fifty to sixty stamina. The female flowers have a similar calyx and corolla, an oval ovary terminated by three sharp styles. The fruit, *a. drupa*, is almost spherical, vacciform, with three compartments and three seeds, having on the top three protuberances. The seeds, convex on the external and depressed on the internal part, have a lateral embryo situated in a particular cavity.

This palm, by incision, affords sugar during one half of the year, not unlike newly prepared chocolate. The kernel of the young fruits may be prepared so as to afford excellent comfits, and, from the trunk, a sago of a superior quality is produced. The parenchyma is apparently poisonous, producing a violent and almost incessant itching on the skin, with very sharp pains. This palm is figured by Rumphius under the appellation *gornuti*, and has been confounded by Loureiro with the *borassus*.

ARGENTUM.—Page 170, col. 2, line 24; "*became deleterious.*"—Silver has neither taste nor smell; the colour is a pure white, without any admixture of either blue or purple. Its specific gravity is increased by hammering; but not in so great a degree as some other metals. It is salt, elastic, and sonorous; in ductility only inferior to gold, and it may be drawn to a wire, if only slightly alloyed with copper, less than a fine hair. A wire 0.1 of an inch in diameter will support two hundred and forty pounds.

When free from alloy it melts in a heat somewhat inferior to a white, and appears most strikingly brilliant;

but, when cold, becomes a clean dead white. If cooled hastily it shoots up in irregular projections, with some force, but does not oxydate with heat alone, though, when intensely heated with the access of air, the support on which it stands gradually becomes yellow. In porcelain spheres also the silver oxydates, by the oxygen penetrating through the pores; but the permanence of the oxide is owing to its union with the earth, which it covers with a glaze, since it is otherwise reduced by heat alone. Under a blow-pipe, or in the focus of a powerful lens or mirror, it rises in fumes. The oxide, when pure, furnished by precipitation from nitrats, is colourless, insoluble in water, and without taste. Silver will tarnish only, not rust, though, when long exposed in the air of towns, this discoloration becomes a crust, and is found not to be an oxide but a sulphuret. In water also, impregnated with animal or vegetable matter, silver becomes coloured and brittle. (Philosophical Transactions, vol. 88). It does not burn in fire whatever be the temperature, but only in the galvanic circle.

The sulphuric acid dissolves silver only at a boiling heat, and if in the proportion of four to one of the metal, the solution is clear and dense. If in a less proportion, the product is a white powder. The solution requires an excess of acid, is very styptic, and shoots on evaporation into white, brilliant, needle-like crystals. The sulphureous acid combines only with its oxide, and crystallizes spontaneously in small, pearly grains, unaltered by light.

The best solvent of silver is the strong nitric acid, diluted with from two to four parts of water. The nitrous gas separated appears in orange coloured fumes; that retained gives the solution a light blue green colour. Copper increases the blueness, and the colour remains after the solution is cold and saturated, which is not the case when no copper is present. If it contain gold, it is left, after the solution, in the form of a black powder, and if the acid contain any sulphuric or muriatic acid the solution is milky. Liquid nitrat of silver is styptic to the taste, even when greatly diluted, and highly so in its concentrated state. It blackens, very permanently, all animal substances when they have been exposed to the light, owing to a partial reduction of the metal, and crystallizes in six-sided or square thin plates, often arranged like the sticks of a fan. The salt is not deliquescent, and soluble in four parts of cold, much less of boiling, water, containing little water of crystallization; for it melts when moderately heated, and loses very little by being kept long in that state. By cooling it becomes a dark grey mass, which, when redissolved in water, will again crystallize. This is the LUNAR CAUSTIC OR LAPIS INFERNALIS, usually made by evaporating the nitrat of silver to a proper consistence, and cooling the residue in suitable moulds of the size of common pencils. When one of these little cylinders is broke across, the texture appears radiated. Light will not decompose a solution of the nitrat of silver when the bottle is full; but if the moisture be evaporated a black powder is deposited, which is the silver in nearly its metallic state. If heated also beyond the state of lunar caustic, globules of reduced silver are found in the mass. The salt, when decomposed, yields nitrous gas, oxygen, with a little azote, and contains in one hundred parts sixty-

four of the metal, six of the oxygen, and thirty of nitrous acid. About thirteen drachms of lunar caustic are to be procured from pure, and ten or eleven only from standard, silver.

Nitrat of silver detonates with phosphorus most violently and dangerously when struck with a hammer, and the silver is suddenly reduced. If a stick of phosphorus also is put into a very dilute solution of nitrat of silver, the whole of the metal will gradually precipitate on the phosphorus in the form of dendrites. The same salt is rapidly reduced by streams of hydrogen gas; by boiling water; the sun's rays, when exposed to them on charcoal, which had previously imbibed so much water as to sink in it; mercury, by which the arbor dianae is formed; the fixed alkalis; alkaline earths, and carbonated ammonia: the precipitate is darker in proportion to the quantity of carbone which the ammonia contains. A subnitrat of silver is this salt, with an excess of acid (Proust in the *Journal de Physique*, vol. 62). Mr. Keir found that silver might be separated from iron, copper, lead, or gold, by the nitro-sulphuric acid, made by dissolving in eight or ten parts of sulphuric acid one part of nitre.

We have enlarged on the properties of the nitrat of silver as it is used both in medicine and surgery; but must be more concise on the other properties of the metal, except those of the muriat of silver; a preparation of much importance in the analysis of mineral waters. Muriatic acid seems to corrode rather than dissolve the metal; for it forms an insoluble powder, while the remaining acid does not contain an atom of the metal (Proust, l. c). It is generally made by adding any alkaline or earthy muriat to any salt of silver, except the prussiat. The muriat of silver (luna cornea; because it hardens, like horn, when cooled after melting) is so insoluble that the smallest quantity of muriatic acid may be detected in water by adding the nitrat of this metal. This salt retains the last portions of its water with great obstinacy, and cannot be thoroughly dried without remaining at the heat of 112° for some time. A strong red heat volatilizes it in dense, white fumes. One hundred grains of dry luna cornea contain 17.615 of the acid, 75.235 of silver, and 7.15 of oxygen.

Muriat of silver dissolves only in the muriatic acid, and it may thus be obtained in octoedral crystals. Luna cornea is soluble in pure ammonia without decomposition, and when the solution is evaporated the metal is left in small scales, resembling the incrustations of the native muriat; but, when the solution is evaporated by artificial heat, the first crystals are the fulminating oxide, and will detonate with violence, if but slightly shaken. Indeed, the greatest caution is requisite in applying artificial heat to any mixture of ammonia and oxide, of silver free from carbonic acid gas. As the other preparations of silver are not connected with any part of our subject, we must not enlarge farther on its chemical properties.

ARGENTUM.—Page 171, col. 1, line 56; “and to water as 13.5681 to 1.0000.”—Mercury is always fluid in this climate, and is equally without smell or taste. It boils at 660° ; and when the galvanic fluid passes into it from a powerful apparatus disperses in beautiful brilliant, luminous stars. It expands with considerable re-

gularity by heat, till the temperature has arisen to 220° , then more irregularly, but not so as to lessen its utility in the construction of THERMOMETERS, q. v., as in these higher degrees minute accuracy is of less importance. By agitation mercury assumes the appearance of a black powder, which is said to contain 0.04 of oxygen; but it has not been correctly ascertained whether mercury simply divided will not resemble this seeming oxide. It is not easy to say from whence the oxygen should come in a closed bottle; but the experiment will not succeed unless the phial is only in part full, and it succeeds better if some water is added: in either case a portion of oxygen may be obtained. Water itself has no action on mercury, so that the metallic taste in the water boiled with mercury, from which it acquires a power of destroying insects, is probably derived from its alloy.

We have scarcely any thing farther to add on the chemical relations of mercury, as these are connected with the pharmaceutical remarks, or with the more economical preparation of different medicines. The proportions of oxygen and acid in the muriated mercury, as ascertained by Mr. Chevenix, are, we perceive, different from those assigned in the article. A hundred parts of the corrosive muriat contain of mercury 69.7, oxygen 12.3, acid 18. One hundred parts of calomel contain 79 of mercury, 9.5 of oxygen, and 11.5 of acid. Mr. Chevenix has shown that the corrosive sublimate is not an oxymuriat of mercury, but a muriat of mercury highly oxydated; in other words, the oxygen is combined with the neutral, not with the acid, previous to its being neutralized. In the course of these experiments he discovered a real oxymuriat. If a current of oxymuriatic gas be passed through water, containing the red oxide of mercury, the colour of the latter is changed to a dark brown. From the liquor evaporated nearly to dryness a mixed salt was obtained, consisting partly of corrosive muriat, and partly of another salt, which crystallized somewhat later, but which, when it was again dissolved and crystallized, appeared nearly pure. Its qualities have not been examined, but on adding sulphuric acid it yields vapours of the oxymuriatic.

ARILLUS. *Calyptra*, *theca* of Scopoli. The proper interior covering of a seed, which separates spontaneously on drying, and, in some seeds, its place is supplied by a dry epidermis. It is conspicuous in the jessamine, the cynoglossum, ditamnus, euonymus, coffea, &c. Each seed of the cynoglossum is enveloped in four arilli, and in this, according to Linnæus, the essence of the genus consists.

The arillus is sometimes succulent, *baccatus*, as in the euonymus; *cartilaginous*, as in the African diosma; *coloured*, as in the celastrus; *elastic*, as in the fraxinella; *rough and knotty*, as in the hound's-tongue. The existence of an arillus does not prevent the application of the epithet *nuda*, which relates to the absence of a pericarpium exclusively.

ARISTA, (from *arco*, to dry), the horn or sharp beard issuing from the husk or scaly flower-cup of the grasses. (See GRAMINA.) The aristæ are *divaricatæ*; *dorsales*; *erectæ*; *filiformes*; *glutinosa*; *geniculatæ*; *laevæ*; *lunata*; *longissima*; *patula*; *pilosa*; *plumosa*;

recurva; *retorta*, and *reflexo-retorta*; *sanguinea*; *ce-taceæ*; *terminales*; *tortiles*; *villosæ*, and *uncinata*.

ARISTOLOCHIA.—Page 180, col. 1, line 6; “*the creeping sort are the best.*”—Birthworth is a plant with heart-shaped leaves, set alternately on the stalks, from the bosoms of which arise irregular, tubulous, purplish flowers, with a wide mouth, whose lower part is produced with a long flap like a tongue; the seed vessel is large, roundish, and divided into six cells.

The *aristolochia tenuis* has indented leaves, set on pedicles, and bushy roots, composed of a number of fibres issuing from one head: the stalks are weak and trailing; the flowers solitary. The *a. longa* hath large tap roots, like carrots; the branches trailing, a little more than a foot in length. The flowers, like the other species, come from the wings of the leaves, similar in colour, and succeeded by seed vessels resembling those of the *a. tenuis*. The *a. Indica* Lin. Sp. Pl. 1362, hath long trailing branches, which climb on the neighbouring plants, and often rise to a considerable height: the flowers are in small clusters on the upper part of the stalks, which are of a dark, purple colour. It is styled the *contrayerva* of Jamaica, and used for the same purposes.

When we reflect on the effects of the *serpentaria*, and of the *a. indica*, it appears probable that this plant has been too much neglected. The *serpentaria* is disagreeable from its better pungency, which the roots of the *a. tenuis* possess in an inconsiderable degree, so that they may be continued for a longer time. If also, as we found reason to suspect, the *serpentaria* is useful in bringing atonic gout to its more regular inflammatory stage, we shall not wholly despise a species of the same genus.

ARMA, in botany, one of the different fulcra of plants, consisting of *aculei*, *spinæ*, *furci*, and *stimuli*. See **PLANTA**.

ARMENIACA MALA.—Page 180, col. 2, line 4; “*called also præcocia.*”—*Prunus armeniaca* Lin. Sp. Pl. 679.

ARNICA MONTANA.—Page 180, col. 2, line 37; “*Compositæ discoideæ Corymbiferae* of Jussieu.”—The *arnica montana* hath oval-pointed ribbed leaves, like those of the plantain, set in pairs on the stalk, with oblong roots, which spread far under the surface, and put out many entire oval leaves, from between which the flower stems arise, growing about a foot and a half in length. The top is terminated by a compound flower, resembling the dandelion, succeeded by oblong seeds, covered with down. This down is found also in the flowers, and consequently, when boiled, they should be inclosed in a piece of muslin to prevent its irritating the throat. There is another species, the *a. scorpioides* Lin. Sp. Pl. 12, which grows in Bohemia and Siberia, the roots of which are jointed, and divide into many irregular, fleshy offsets, variously contorted, which have led the imagination to fancy that they resembled a scorpion, and were consequently beneficial to those who had been bitten by this animal.

Arnica contains a large proportion of gum and some essential oil; 960 parts yielded 840 of watery and 5 of

alcoholic extract: inversely, 270 alcoholic and 540. The root is of the thickness of a quill; externally brown and rough; internally of a dirty white; in taste, like the plant, acrid and bitter, but with less aroma. Authors differ essentially in the part of the plant which they think deserves the preference, so that it is probably of little importance. Though its emetic power is occasionally observed, it is not constant, and the Smoland peasants not only use it as a snuff, but smoke it in their pipes. Goats are fond of, though oxen reject it.

It is an error in the article to attribute its power of obviating the bad effects of bruises to its power of attenuating the blood; for this would be inconsistent with the advantages to be derived from it in hæmorrhages and putrid fevers. We can easily understand, from what has been said of **DISCUTIENTS**, q. v., that when applied to bruises it must be useful; for, as a narcotic bitter, it must be sedative and astringent, with some acrimony; and we suspect, that from its external utility (Scopoli, *Flora Carniolæ*, 377), it was first given internally. In the Alpine countries, where it abounds, the dose is regulated by the number of plants. Five is the largest number, cut small and boiled in a pint of ale (*De la Marche de Arnicae usu*, p. 16.) The same principle seems to have led to its employment in spurious pleurisy, dyspnoea, humoral asthma, and anasarca. Even in inflammation of the lungs, if arising from external violence, it is allowed by Quarin. In infarctions of the spleen, scirrhus *mammæ*, hecticæ, nephritis calculosa, gout, contractions, in hoarseness and asthma which sometimes supervene on the puerperal state, and in jaundice.

Colin (*Observationes Practicæ*, iv. 5) mentions its utility in convulsive and spasmodic diseases. In a palsy of the lower limbs from a fall on the back, we observe that Plenck, besides giving it internally, applied a cataplasm of cephalic herbs and flowers of *arnica*. With the same cataplasm he thinks that he removed a paralysis of the bladder. *Materia Medica Chirurgica*, 259.

AROMATICA.—Page 181, col. 2, line 17; “*where they are so plentifully produced.*”—The *aromatic powders* of the London and Dublin pharmacopœiæ contain two parts of cinnamon; of ginger, long pepper, and the lesser cardamoms, of each one part. The Edinburgh college omits the pepper, and lessens the proportion of cinnamon. The *aromatic electuary* of Edinburgh is made from their aromatic powder; of Dublin with 6 parts of preserved orange-peel, 1 part of cinnamon, and as much of powdered nutmegs, with one half the proportion of ginger. The aromatic confection of the London college is a more complex formula, made by adding different aromatics, and the compound powder of crabs’ claws in a large proportion to an infusion of zedoary. It is a weak, inert form, and may be given without injury in three times the usual doses. Both the London and the Dublin colleges retain the saffron, which only gives a colour, that might be more cheaply supplied.

For the use of aromatics in diet, see **CONDIMENTS**.

ARQUEBUSADE.—Page 181, col. 2, line 62; “*aqua catapultarum.*”—In Lemery’s treatise on drugs the formula of this medicine is long, and crowded with many

ingredients, which will not rise in the distillation directed, after macerating in wine. In general, it may be considered as a spirituous water from plants both stimulant and astringent, consequently well adapted for a discutient. It is apparently prepared with more fidelity in Switzerland than in England; and is an useful remedy in discussing tumours from violent blows, lessening the pain and blackness from contusions, preventing the progress of gangrenes, cleansing and healing gun shot wounds.

ARSENICUM.—Page 182, col. 1, line 36; "*fatty or carbonaceous matter.*"—The solution of arsenic is clear and colourless, has a sharp, warm taste, with some styplicity permanent on the tongue, somewhat sweet and exciting nausea. It reddens litmus, but occasions no effervescence with alkali or earth, nor alters the colour of syrup of violets. When slowly evaporated, the crystals have many sides, are long, truncated at both ends, often radiated or feathery. The most regular form is the three sided pyramid: the crystals exposed to the air fall into a mealy powder. Alcohol dissolves one eightieth of its weight of white arsenic. The specific gravity of the crystallized arsenic is 3.7; of that vitrified, by sublimation, 5.0. It has by some chemists, according to the principles of the new nomenclature, been styled the arsenious acid; but it is not sufficiently oxydated to be styled an acid, for there are 100 parts of arsenic to 33 of oxygen (Proust). We have said, that simply boiling the alkali and the white arsenic together will scarcely form a neutral, for the oxide is very slightly acid, and requires a farther oxydation before it can be attacked by alkalis. When saturated liquid potash is *digested* with arsenic, what is styled the *liver* of arsenic is produced; a thick, ropy, tenacious fluid, of a strong disagreeable smell, which, on cooling, becomes brittle and hard. The liver is uncrystallizable, but mixes with water. The *arsenical neutral*, first discovered by Macquer, may be readily prepared by melting nitre in a crucible, and adding the arsenic. The mixture deflagrates, the acid of nitre oxydates the arsenic more completely, and the remainder is driven off. In this state the arsenic acid unites with the potash. The same experiment succeeds with natron, if the nitrat of soda is employed. The arsenical ammonia is prepared by distilling arsenic with the ammoniacal nitrat. The process is more difficult; but as the neutral is not employed in medicine, we must not enlarge on it. The union of arsenic with earths forms neutrals little known, but phosphorus combines with it readily; sulphur more so: and the latter is consequently celebrated as a counter poison.

We have said that we never knew any inconvenience arise from arsenic. The language was too positive, for, independent of the dangers resulting from the long use of tonics, we suspect that it has a peculiar narcotic power. We have seen it produce paralytic numbness, and we suspect injure the digestion. These effects are produced, however, only by large doses, and after long continuance. Since the article was printed we have had much experience of the effects of arsenic in intermittent head aches, and have found it very successful. For this purpose it need not be long continued, as it removes the disease often within a week, sometimes in three days.

Considerable apprehensions have prevailed in the minds of practitioners respecting the dangers to be dreaded from arsenic. If sprinkled on the hair, applied to eruptions, used as a wash for the itch (Degner de Dysenteria), drawn up into the nostrils, it is thought to be injurious. It is said, that even the flesh of fowls killed by arsenic has been fatal. In the case recorded by Degner the genital organs were chiefly inflamed, and Morgagni observes (De Sedibus, &c. lxx. 4, 10), that the mouth and fauces are principally affected.

To the antidotes of arsenic mentioned we may add vinegar, recommended by some authors, though its efficacy is denied by others; milk (Morgagni, l. c. 6, 7, 11); oil of aniseed, and ink (Navier): miliary eruptions have been found salutary.

ARSENIC ACID was first prepared by Scheele; but his process was operose, and a readier method is described by Dr. Thompson in his chemistry. Two parts of muriatic acid of the gravity of 1.2 are to be mixed, in a crucible, with eight parts of white oxide of arsenic, and twenty-four parts of nitric acid of the specific gravity of 1.25. These are evaporated to dryness, and the mass exposed to a slight red heat. The proportions of the acid are of little importance. If too small, the oxide flies off; if too large, the superfluous acid.

Arsenic acid has little taste till it is dissolved in water, when it is very sour. Its specific gravity, when dry, is 3.39. It is much more fixed than the oxide, or any of its preparations, but in a high temperature it is partly oxydated, and a portion of the white arsenic sublimes; when long heated in a glass retort, the vessel is so much corroded as when cold to crumble between the fingers. One hundred parts of reguline arsenic require 33 of oxygen to reduce them to the state of an oxide, and 20 more to acidify them. If the vapour of oxygenated muriatic acid be received in a vessel containing white arsenic and water, it will be absorbed, and the arsenic dissolved, not uniformly, but forming two liquid strata, which do not mix. The heaviest is a combination of muriatic acid, with arsenic highly oxydated, but not sufficient to render it acid, called *butter of arsenic*; the lighter is the acid of arsenic, with a portion of the muriatic acid. The fumes of the butter are pungent, like the sulphureous acid. A lighter, more liquid, butter is styled the *oil of arsenic*; but this subject, though curious, must not detain us, since these preparations have not been applied to medical purposes.

ARSENICUM TARTARISATUM.—Mr. Sherwin recommends this neutral (in the Memoirs of the Medical Society, vol. 2) as a diuretic, when used externally. Two ounces of arsenic, with the same quantity of crystals of tartar, are boiled together in a pint of water for half an hour, the solution evaporated and crystallized. On what chemical principle this union of an acid with an acid was suggested we know not. It is not probable that the arsenic could decompose the tartareous acid, and thus be more fully oxydated, or that the oxide could decompose the tartarized neutral. One grain, however, of the salt, rubbed into the hands, at night, is said to have increased the flow of urine; and one sixteenth of a grain taken to have proved sensibly diuretic (l. c. 396).

ARTEMISIA.—Page 184, col. 2, line 17; "Nat. order *compositæ discoideæ*."—It is a plant with firm stalks, of a purplish colour, with deeply divided leaves, resembling those of common worm wood, of a dark green above and hoary underneath. The flowers are small, purplish, naked, and discous, standing erect in spikes, on the tops of the branches; perennial; grows wild in fields and waste grounds: the flowers appear in July.

ARTERIA.—Page 185, col. 2, line 25; "*it only connects the real ones.*"—There is a little apparent contradiction in two parts of this article, which it may be useful to explain. Though the cellular membrane is improperly numbered among the coats, yet the external one, with the few exceptions we shall soon mention, seems scarcely to differ from a condensed cellular substance. In fact, this substance gradually becomes firmer, till it almost assumes a strong ligamentous appearance, though by maceration it again becomes cellular. The meaning of the former assertion is, therefore, that the cellular substance, *as such*, is not properly a coat. An external coat is, however, often supplied from the surrounding membrane; in the thorax and abdomen by the pleura and peritonæum; in the head, and often to some distance after escaping from the cranium, by the dura mater; while the aorta is, for a little way covered by a prolongation of the pericardium. The circular fibres are improperly termed, as continued circles are thus implied, though, as we have expressed it, they are only disposed circularly. They are scarcely demonstrable in the smaller arteries, though they evidently exist, as appears from the effects of what Dr. Whytt calls their increased oscillatory motions. The innermost coat though without valves has, however, folds, which are placed at the divarications of the larger arteries from the aorta, apparently to lessen the too great impetus of the blood. In the arteries of the viscera the internal coat is lax and rugous. The coats of the arteries are nourished by other arteries which come from trunks external to those which they supply. These arteries pass down the sides, and penetrating through the laxer are lost in the denser substance of the external coat. Nerves usually accompany them, and from these circumstances arteries may certainly be numbered among the sensible and irritable parts of the body, though denied by Haller. The smaller arteries appear to possess a high degree of mobility.

The arteries are cylindrical, or rather conical, that is, their sections are constantly circular; and this is attributed, perhaps with reason, to the elasticity of their coats, for when distended by the propelled blood they recover their former figure, in consequence of this principle. The strength of the arterial coat is said to be proportionally greater in the small than in the larger branches; but this idea, apparently derived from the more frequent occurrence of aneurisms in the larger arteries, is scarcely supported by observation: and the disease apparently arises from the greater momentum of the blood, both from its greater bulk and velocity the nearer the vessel is to the heart. The proportion indeed of the containing coats to the cavity of the artery is least in proportion to the size of the vessel, and of course to its more central situation.

The contents of the branches are greater than of the trunk, so that when we compare the branches with

the trunk, we can only style the arterial system a series of conical tubes: for in every view the blood is propelled into a larger space. The sections of two branches it is said, exceed the trunk in the proportion of three to two; so that the enlargement of the cavity must proceed in a ratio rapidly increasing. The angles at which the branches divide are usually half a right angle, but they sometimes, though in a few instances, pass off at right, and in two or three, as the coronaries and lumbar arteries, at very obtuse angles. Sometimes arteries sent off at acute angles soon take a retrograde direction, as the ascending artery of the pharynx, the umbilical and mammary arteries. Two arteries of a large diameter seldom unite, yet an instance occurs in the two vertebrals, but such a junction is common in smaller ones. Arteries sent to parts where the circulation is subject to obstruction, or requires copious supplies of blood, as in the large intestines, lips, and iris, are serpentine, and minutely anastomose: they are serpentine also by distention, and when they pass round any head or process of a bone. The connection of arteries by anastomosis is frequent, particularly where a part is of importance, and where the circulation is occasionally impeded. The microscope is said to discover the last termination of arteries, or the first formation of veins by a reflexion of the same vessel, or by the insertion of the small evanescent artery into the side of a vein; but many reasons lead us to suspect the fallacy of such observations. The smallest arteries of inflamed parts throb, though pulsation in veins is singularly rare. To which may be added, that though a fine injection passes into the minutest arteries, it rarely returns by the veins, or these are filled only to a very inconsiderable extent. For the action of the arteries and the consequences of that action, see *CIRCULATIO*.

A fuller account of the connection of the different parts of the arterial system may be acceptable, and we shall consequently give it in a tabular form. The subdivisions of the table are the branches from the vessels named in the principal divisions.

I. Arch of the aorta. Ascendens.

a Arteria innominata.

1. Right and left carotid, external and internal.

a External carotid.

Thyroid.

Lingual.

Labial.

Inferior pharyngeal.

Occipital.

Posterior auris.

Interior maxillary.

Spinous artery of the dura mater.

Lower maxillary, &c.

Temporal.

β Internal carotid.

Ophthalmic.

Middle cerebral.

Communications inosculating with the vertebral.

2. Subclavian above the shoulder.

a Internal mammary.

Thymic.

- Comes phrenici.
- Pericardiac.
- Phrenico pericardiac.
- β Inferior thyroid.
- Tracheal.
- Ascending thyroid.
- Transversalis humeri.
- γ Vertebral.
- Within the cranium, the basilar artery.
- Anterior cerebelli.
- Posterior cerebri.
- δ Cervicalis profunda.
- ε Cervicalis superficialis.
- ζ Superior intercostal.
- η Supras capular.
- 3. Subclavia artuum superiorum.
- α Axillary artery.
- Four mammary arteries.
- Subscapular.
- Posterior circumflex.
- Anterior circumflex.
- β Brachial artery.
- Profunda humeri superior and inferior.
- Artery which ramifies and anastomoses round the elbow joint.
- γ Ulnar artery.
- Several recurrent branches.
- Common interosseal.
- Dorsal ulnar.
- Palmaris profunda.
- Palmar arch.
- Digitalis.
- δ Radial artery.
- Radial recurrent.
- Superficialis volæ.
- Palmaris profunda and digitalis.

N. B. The ulnar and radial arteries are continuations of the brachial, not distinct branches.

II. Aorta descendens.

- α Pectoralis.
- α Bronchial.
- β Œsophageal.
- γ Intercostals.
- δ Inferior diaphragmatic.
- δ Abdominalis.
- α Cœliac.
- Hepatic.
- Duodeno gastric.
- Right gastro epiploic.
- Pancreatico duodenal.
- Pylorica superior hepatica.
- Coronaria ventriculi.
- Splenica.
- Great and small pancreatics.
- Posterior gastric.
- Left gastro epiploic.
- Vasa brevia.
- β Superior mesenteric.
- γ Emulgents.
- δ Spermatics.
- ε Inferior mesenteric.
- ζ Lumbar arteries.
- η Middle sacral.
- c Hypogastrica. (Illiæ internæ).

- α Sacrales laterales.
- β Gluteæ.
- γ Ischiaticæ.
- δ Pudicalis.
- Externa hæmorrhoidalis.
- Perinealis.
- Arteriæ penis.
- d Hypogastrica externa. (Illiæ externæ).
- α Epigastrica.
- β Circumflexa illiaca.
- c Artium inferiorum.
- α Femoralis.
- Profunda.
- Ramus anastomoticus magnus.
- β Poplitea.
- Anterior tibialis.
- Recurrent artery.
- Internal malleolar.
- External malleolar.
- Tarsal.
- Metatarsal.
- Dorsalis externa halicus.
- Posterior tibialis.
- Internal plantar.
- External plantar.
- Digitalis of the toes.

The diseases of the arteries are various. Among these we find the pulmonary artery sometimes impervious (Medical Observations and Inquiries, vi.); and the defect must necessarily be fatal to children immediately after birth. Their coats are sometimes cartilaginous, and occasionally of a stony hardness. Geisler, in his treatise on calculus, mentions the coats of the arteries as, in many parts, lapidescent. The carotids, independent of either change, have been found peculiarly hard. A single artery is often deficient; but seldom an important one, and we attach little credit to the story of the defect of the spermatics, in two instances recorded in the *Ephemerides Naturæ Curiosorum*.

The coats of the arteries are often inflamed, and Willich, in *Baldinger's Magazine*, mentions its occurrence in the umbilical arteries; Birch, as following the operation for the aneurism. We have found it on the whole, probable that this is the cause of rheumatic pains. Inflammation may weaken their texture, and render them more liable to break, or the stony hardness we have mentioned may render them brittle; it is at least certain that they are sometimes broken through with little external violence; an instance of which is recorded in the *Philosophical Transactions*. Behrens mentions a rupture of the abdominal arteries in consequence of a slight stroke; Stoellers of a rupture of the œsophagial artery from drawing back the head; and we recollect an instance of the rupture of the brachial artery from a fall from a horse, where the person pitched on the elbow. The treatment of wounds of the arteries has been already mentioned (see *VULNUS*, *ANEURISMUS*, and *AMPUTATIO*); but accidental wounds have been cured by compresses, by ligatures, and, in one instance (Lambert *Medical Observations and Inquiries*, ii. 30), by a suture. Lotter (in the *History of the Academy of Surgery*, ii. 95), describes an apparatus for the cure of wounds in the intercostal arteries; and Belloque in the *Memoirs of the same volume* (125), another machine for

the same purpose. Plenck, however, cured a wound in the intercostals by compression only.

We ought to have mentioned, under the head of aneurisms, that Morgagni records a case of considerable palpitation and pulsation of the arteries without any manifest cause.

See Fasselius de Morbis Arteriarum; and Langs-werth Theoria Medica de Arteriarum et Venarum in Corpore Humano Affectionibus.

ARTHANITA.—Page 186, col. 2, line 21; "Lin. Sp. Pl. 207."—It is a low plant, with no other stalk than the pedicles of the leaves and flowers: the leaves are green, with slight specks above, and purplish beneath; the flowers purplish, monopetalous, deeply divided into five segments, followed by round seed vessels; the roots large, somewhat globular, with several fibres, blackish on the outside, and whitish within. It is perennial, and a native of the south of Europe.

ARTHRITIS.—Page 187, col. 2, line 14; "from any farther attack, in tolerable health."—It may appear a trifling observation, but it has escaped the notice of some of the latest etymologists, that the English term *gout* is derived from *gutta*, in consequence of the old idea that all inflammations arise from defluxion. We have still the treatise of Carpinati, published at Padua, 1609, *De Gutta seu Juncurarum Dolore*; but the term may be traced to Valescus de Tarenta, who wrote his commentary early in the fifteenth century, and Schneider, in his *Liber Catarrhorum Specialissimus*, published at Wittenberg, 1664, usually denominated the sixth volume, and peculiarly scarce, describes the gout as a catarrh.

Fits of gout, when most regular, are terminated by a red deposition in the urine, sometimes by a whitish matter, which is, in reality, the mucus of the bladder; occasionally by vomiting and a diarrhoea, by a quartan, and by abscesses (Piso and Weber); but the last solution is in almost every instance the effect of chalky accumulations. The disease is said to be sometimes endemic, as at Goslar (Fabricius), and in Westphalia (Neuhaus); but this probably depends on the most usual diet, and the latter author particularly attributes it to the use of unfermented beer. It has sometimes appeared contagious, and has been apparently communicated from husband to wife, and the contrary (Degner de Dysenteria, p. 100); but these observations are not well supported. It is an idle story, that dogs have been affected with gout by licking arthritic ulcers. It at length destroys the joints (Morgagni de Sedibus, lvi. 2, 3, 4, 10), and exhausts the limbs. There is a singular and highly curious description of the anatomy of a martyr to the gout in the Medical Communications, i. 3. by Dr. Watson. It is singular, that though almost every part, except the hollow viscera, was a mass of chalk, the urinary organs were not diseased. The author adduces this case to disprove, in some degree, the generally supposed connection of gout with urinary concretions. Indeed the nature of the calculi is always the same.

To mention the various causes of gout, accumulated in the works of authors, would be an useless task. They are numerous and connected with no one principle, except inducing debility. Indeed, in their enumeration physicians have generally collected the dis-

eases and circumstances which gout follows, forgetting that the post hoc is not always synonymous with propter hoc.

We have little of importance to add to the cure of gout. An arthritic, who had suffered for forty years, who kept a regular diary of the length of the paroxysms, and their intervals, informed the author that since he had employed opium freely, the former were more short and mild; the latter longer. In advanced life, however, these changes naturally take place from weakness of the constitution, and he certainly never used it in the earlier periods of his suffering.

We know a judicious practitioner of medicine, subject to the gout, who on its first appearance, takes off a large quantity of blood from the arm, or, if possible, more near the part affected. He is of a strong, robust constitution, and has followed this plan for many years, without inconvenience. This has led to some inquiries, the result of which may not be useless.

On recurring to the authors of former eras, we perceive that the practice of bleeding, in the gout, was not uncommon in the sixteenth and seventeenth centuries. It is mentioned also as successful in Patin's Collection of Epistles, i. 63; but the latest author in which we can discover it is Jumelin, who published at Paris, in 1778, a dissertation with this title, "*Ergo in insultibus Arthriticis, Venesectiones repetitæ.*" The principle, when any can be discovered, is, that inflammation is best counteracted by bleeding. This has led to other views. We know that, in younger habits, gout attacks with violent inflammation; and general phlogistic diathesis seems to be its basis. In such habits, a low cooling diet, and avoiding wine, are the best means of relief; and this plan is combined with the means of counteracting acidity in the stomach by the habitual use of soda water. We know that this remedy has become fashionable, and its indiscriminate use has, as usual, been highly injurious. Yet in the inflammatory constitutions just mentioned it has been evidently successful. We state these hints for the guidance of the judicious practitioner, for we cannot speak from experience, as we have, not long since, considered the subject in this light.

The practice lately recommended by Dr. Kinglake is by no means a new one. It is mentioned in the *memorabilia* of Camerarius, and many authors, on whose judgment, in general, we place little reliance. It occurs also in Vander Heyden's work (see *Aqua* in this Appendix). Authors have used snow, cold water topically, and cold baths. Mr. Small (Medical Observations and Inquiries, vi. 198), exposed the pained part to cold air with only a slight covering. We have said in the article, that it is more rational to clothe the joint neither more nor less warm than usual, and, since it was printed, we have found this advice highly useful. We are almost tempted, therefore, to advance another step, and think with Mr. Small that, when the pain is very violent it may even be exposed to cold air. Yet this hint should be received with caution, for, though certainly suggested from the experience of that gentleman, it came perhaps more strongly recommended by our view of the action of DIAPHORETICS, q. v. If, therefore, its favourable appearance is connected with an opinion apparently theoretical, the conclusion should be received with hesitation, and more so,

because there are inconsiderable limits between it and a practice which we think highly injurious, immersion in cold water. It is necessary to add, that Mr. Small is a man of a very robust constitution, and may therefore have resisted more effectually a dangerous repulsion. Leeches, we perceive, were recommended by sir John Pringle.

In the intervals of gout, guaiacum, particularly the volatile tincture, has been highly recommended. It has, under our own eyes, lengthened the intervals, yet the constitution has apparently suffered, or perhaps the lengthened intervals have been owing to increased weakness. Mercury has been also employed in alterative doses, with the same views. It has often failed, and salivation has been particularly injurious; but it has been sometimes successful when joined with opium or the belladonna (Plenciz Acta et Observata Medica; Hamilton Medical Commentaries; Boettcher Vermischte Schriften). Warm baths of every country have been equally recommended, to restore the flexibility of, or to strengthen, the joints. A bath of alkaline ley has been recommended by Riedlin; the tanners' decoction in the Ephemerides Naturæ Curiosorum; the artificial sulphureous baths by Von Mertens. The alkaline bath hath been sometimes used also to bring back the gout when repelled.

All the chalybeate mineral waters have been recommended in the intervals; and the whole tribe of tonics, with the arnica (Stoll Ratio Medendi, iii. 159;) and the mineral acids. The narcotic vegetables have also had their advocates, we mean the hemlock, the flammula jovis, the aconite, rhododendron, henbane, belladonna, and dulcamara. In this country they have, however, usually failed. Many other medicines, some triflingly inert, others ridiculous, have been mentioned; but to fill the page with these would add little to the value of the work.

See Walther de Arthritidis Natura atque Causis; Stoll Prælectiones, 359; Morgagni de Sedibus, lvii. 5, &c.; Murray Opuscula, vol. i.; Grant on the Origin, &c. of the Atrabilious Temperament and Gout.

ARTHROPHOSIS.—Page 191, col. 2, line 54; "*lying under the psoas muscle.*"—(See MORBUS COXARIUS).

ARTICHOKE JERUSALEM. (BATATAS CANADENSIS, q. v.) "*Helianthus tuberosus* Lin Sp. Pl. 1277." A tuberous esculent root, which derives its English name from its resemblance, in flavour, to the common artichoke. It is a pleasant, but flatulent food, though its inconveniences may be avoided by spices, and stewing it in good gravy.

ARTICULATIO.—Page 192, col. 1, line 29; "*See Symphysis.*"—See Rhazes de Morbis Articulorum. In luxations of the joint which cannot be reduced, some motion is often preserved by the head of the bone forming itself a new socket in the part where it is forced. Instances of this are recorded by Tenon (Histoire de l'Académie des Sciences, An. 1750, p. 54,) Moreau (Mémoires de l'Académie de Chirurgie, ii. 11;) and Morgagni (De Sedibus, lvi. 6, 12—15). Mr. Park's method of separating the heads of the bone, and thus preserving the limb, in diseases of the joints, is a bold but a very judicious and useful measure.

ARTICULUS.—Page 192, col. 1, line 37; "*the joint often require amputation.*"—The joints are subject to many diseases, particularly abscesses, weakness, wounds, and fungus. The last is noticed in this work under the articles HYDRARTHUS and SPINA VENTOSA, according to their different consistence. The others are considered under their appropriate heads.

Page 192, col. 1, line 44; *read*, the veins and larger vessels unusually empty.

ARTOCARPUS.—Page 192, col. 2, line 10; "*in some measure resemble them.*"—The character of this genus consists in having male and female amenta in the same tree, but each separately inclosed during the early periods between two deciduous scales. The male amentum is cylindrical, thick, wholly covered with numerous sessile flowers, with a bivalve calyx, and a single very short stamen. The female amentum is thick, covered on every side with sessile flowers, thickly set; a long prismatic hexagonal, almost fleshy, calyx; an ovary terminated by a filiform style, continuing, and terminated by one or two stigmata. The seeds equal in number; the ovaries, with aristæ on their summits, surrounded with a pulpy arilla, buried in a fleshy mass, and forming, by their reunion, an oval berry, rounded, rough and covered with pentaedral or hexaedral areolæ, owing to the superior part of the calices being wholly closed.

The branches of the artocarpus are terminated by a pointed bud, formed by two large scales, or deciduous stipulæ, the leaves of which are simple, alternate, entire, or cut. The axillary amenta are terminal: the fruit of a considerable size, usually situated on the large branches, on the trunk, or at the extremities of the smaller branches.

The *a. incisa* is distinguished by oval leaves deeply cut. It rises to the height of from twenty-four to thirty feet. Its trunk is straight, in bulk nearly equal to that of a man; its bark grey, wrinkled, and covered with little tubercles. Its top is ample, rounded, and branched. The leaves are on the smaller branches, which have circular marks, the remains of former leaves. They are about two feet in length, and one in breadth, divided at their summit by seven or nine deep indentations. The fruit is round and globular, often of the size of the head. Externally, it resembles the berry, contains, under a thick skin, a pulp, at first, very white, farinaceous and slightly fibrous, but which, when ripe, is yellow, succulent, and of a gelatinous consistence. This pulp is thick, and covers an oblong, thick, fibrous receptacle. In fertile individuals it contains oval, oblong, slightly angular seeds, a little pointed at each end, about the size of a large olive, and covered with numerous membranes: when cultivated, the seeds are abortive, and the fruit is wholly pulpy. When the fruit is perfectly ripe, the pulp is succulent, melting, sweetish; at that time very laxative, and is soon spoiled. At an earlier period, the flesh is firm, white like flour, and used as such, broiled only on coals, or boiled in water. The internal part is then soft as the crumb of new bread, which it resembles in taste, with the flavour of the Jerusalem artichoke. In some of the Molucca islands, the seeds are roasted and eaten like chestnuts.

The wood and the leaves are nearly as useful within the tropics, where it thrives, as the palm. Two or three of these trees will supply a man for a whole year; and their cultivation is not more troublesome than that of our apple trees.

The *a. integrifolia* has oval leaves, entire, and a large oval fruit. It is produced in India, and has been conveyed to the isle of France. Its pulp is yellow, and of a saccharine taste: its seeds are roasted like chestnuts, and well tasted. From its trunk a fluid exudes which, when dry, is scarcely inferior to the chaout-chouc. Gærtner makes it a distinct genus under the term *sitodion*, and Loureiro under that of *polyphemus*. Five or six species have been discovered, but the fruit of some of these is acid, and of others disagreeable, though each kind is occasionally eaten.

ARUM.—Page 192, col. 2, line 27; "Nat. order *piperitæ*."—It is a low perennial plant, growing wild in the shade. The leaves appear in March, like a spear, followed by a naked stalk, which bears a purplish pistil inclosed in a long sheath, and, in July, by a bunch of red berries. In some varieties, the leaves have black, in others white, spots: the first are the strongest.

ASAFÆTIDA.—Page 194, col. 1, line 22; "*from ten to thirty grains*."—It has been doubted, whether the asafœtida of the moderns is the *Σιλαφίον* of the Greeks, or the laserpitium of the Latins. J. Bauhine (Hist. Plant. iii. 129), adduces the arguments on each side, and seems to admit their identity. Bodæus denies it. Geoffroy joins the former; and Dr. Miller thinks the whole difference owing to the employment of different parts of the plant in the preparation. The ancients used the *Σιλαφίον* in jaundice, in hoarseness, and to prevent abortion. Galen thinks it heating, and injurious in urinary complaints. In these circumstances the ancient and modern silphium do not seem to agree. In India, the asafœtida is used in colic, dropsy, and tympanites. The seeds are considered as similar in virtue, though of inferior power. Externally it is employed in healing wounds, and in toothach. In chlorotic cases, it has been joined with steel, in worms with calomel. It is an ingredient in the pills of Rosenstein, for worms, with extract of tansy, semina santonici, vitriolated iron, and honey. Alone, it is said occasionally to prove laxative in the torpid state of the intestines, which accompanies old age, and it is recommended by Plenck (Materia Medica Chirurgica, 155.) as an emollient plaster in scrofulous and other indurations.

ASARON.—Page 194, col. 2, line 18; "*growth are nearly as good*."—It is a low plant, without stalks, whose leaves are stiff and roundish, with two little ears resembling a kidney, of a dark shining green colour, set on pedicles three or four inches long. The flowers consist of purplish stamina, standing in a cup, followed each by a capsule, containing six seeds. It is perennial and evergreen, a native of the southern parts of Europe, but raised in our gardens, which produce roots as good as those from the Levant.

ASARUM VIRGINICUM.—Page 194, col. 2, line 52; "*Black snake weed*."—Lin. Sp. Pl. 683.

ASCLEPIAS.—Page 199, col. 2, line 54; "*A. vinetoxicum* Lin. Sp. Pl. 314."—The stalks of the asclepias are not branched; the leaves are smooth, set in pairs; the flowers monopetalous, in clusters, followed by two long pods full of white down resembling cotton, with small brownish seeds. The root is large, composed of many slender strings, hanging from a transverse head, brown externally, and white internally. It is perennial, grows wild in gravelly soils, and flowers in July. The root is not only bitterish, but acrid, with a slight aroma.

ASPHALTOS.—Page 202, col. 1, line 9; "*See Bitumen*."—The true asphaltum is found in a soft liquid state on the surface of the Dead sea, and, by age, becomes a light, solid bitumen, dusky externally, and of a deep shining black within. When heated, its smell resembles pitch. A similar substance is found in many other parts of the world, but that usually sold is a composition, of which pitch is the chief ingredient. The true asphaltum was formerly employed for embalming the dead, and was used in medicine as a pectoral, and, externally, as a discutient. It is now neglected, not from its scarcity, but from its inutility.

ASPHYXIA.—Page 202, col. 1, line 45; "*Bruhier, on this subject*."—In a more limited sense, it means a deficiency of pulse, which is sometimes real, sometimes only apparent from the artery sinking deep among the muscles. In Pacchionis' works we find an instance of the deficiency of the pulse though the heart beat with violence. Haller (Pathology, 25) records a case in which the pulse ceased three days before death: and Morgagni (de Sedibus, &c. xlviii. 44), where, from mœnorragia, it was not observable for a considerable time before the same event: Valisnieri could not discover it for seven days. From aneurisms it is often partially indistinct; and Mr. Hunter mentions the pulse being lost in the wrists from an aneurism of the aorta.

ASPIS.—Page 202, col. 1, line 56; "*amputation cannot be performed*."—There have been considerable disputes respecting the animal by whose bite the voluntary death of Cleopatra was induced. Laurenti and Ceppe consider it to be the common viper of Egypt, Linnæus the coluber ammodytes. The difficulty may perhaps be removed by denying that she died of the bite of any serpent, for the only foundation of the suggestion was two small marks on the arm. The science of poisoning was too well understood in those days to require external aid. It is, however, certain, that the poison of the Egyptian viper induced a pleasing numbness, which terminated in death; and these were the animals originally employed in the theriaca, and in all circumstances where the flesh of vipers is directed. Hasselquist informs us, that vast quantities were exported to Venice from Egypt, for the purpose of preparing the treacle, which derived its name from that city. The ancients directed also a plaster, *δὲ ἀσπίδων*, as a resolvent in scrofulous swellings.

ASPLENIUM.—Page 202, col. 1, line 61; "*Spleen wort*."—It is a small bushy plant, growing on the fissures of rocks and old walls, consisting of capillary, blackish,

roots, long narrow leaves, cut down to the rib on each side, alternately, into many oblong, obtuse, narrow sections, with broad bases. It has no stalk nor flower: the seeds are a yellow powder, on the back of the leaves.

Page 209, col. 2, line 25.—*ASTRAGALUS EXCAPUS*, Lin. Sp. Pl. Wildenow, vol. 3, p. 1322; Mantissæ, 275.

ASTROITES is a madripore found most frequently in a petrified state, chiefly imbedded in calcareous blocks, where they are styled, by the workmen, partridges' eyes. The petrified or siliceous astroites are not very common, the calcareous ones more frequently occur. They are sometimes not surrounded by the stone, but cavities in the block are apparently lined with them.

ATABULUS. A wind, which sometimes prevails in Apulia; scarcely inferior to the harmattan in its drying qualities, but cold and unwholesome.

ATRIPLEX FÆTIDA.—Page 213, col. 1, line 63; "*chenopodium vulvaria* Lin. Sp. Pl. 321."—It is a low procumbent plant, sprinkled with a white, clammy farina; the leaves small, roundish, with an obtuse point. Clusters of imperfect flowers come from the tops of the branches, followed by a flattish seed. It is annual, grows wild about dunghills, and flowers in August.

ATROPHIA DEBILIUM.—Page 214, col. 1, line 39; "*milk diet, are the cure*."—It may be useful to give a more particular account in this place of the causes and cure of atrophy, which, particularly in children, is often a troublesome and dangerous disease. As it proceeds from a deficiency of the digestive powers, we may discover its effects in every part of the process. It is often owing to an imperfect mastication, either from haste, or from want of teeth; to an atony of the œsophagus; weakness of the stomach; scirrhus of the liver; a change in its organization (Morbi Vratislavienses, 189); steatoma pressing on the stomach or intestines. Suckling is not an uncommon cause of atrophy; and, in three instances, where the constitution was weak, we have seen it induce a debility of the œsophagus, and a difficulty of swallowing in consequence of it. With rickets, diseases of the mesentery are usually combined, and these are apparently different from scrofulous infarctions. The atrophy, in scurvy, seems to be owing to an acrimony, as well as that from lues (see *SCORBUTUS*). We need scarcely add to the list of causes a deficiency of aliment, or of food not alimentary.

Among the medicines not mentioned in the article, we observe the arnica, recommended in the Berlin Transactions, acorns, the leaves of the *hedera arborea* (*Delii Adversaria Fasciculus*, iv.), lichen islandicus, and the resolvent of clysters Kempf, which consist chiefly of what are called, in the Boerhaavian school, the saponaceous deobstruents, in other words, the simple biters.

Topical atrophies do not differ from partial palsies.

ATTOLLENS NARES rises from each superior bone of

the nose, and is inserted into the lower part of the alæ, pulling the nose upwards.

ATTRITA.—Page 214, col. 2, line 63; "*See Intrigo*."—*Attrition*, in the mechanical philosophy, means the rubbing of bodies against each other, so as to abrade their sharper angles, and render them round, or, as was formerly thought, fluid. Des Cartes supposed the world formed by the attrition of cubes and bodies, yielding in different degrees, from the attrition of the parts first abraded, and then of the others in succession. The mechanical physicians endeavoured, in the same way, to explain the changes in the human body; and angular fluids, which were stimulant, they supposed were rendered mild by the abrasion of their points (*Gaubii Pathologia*, §. 300). We need scarcely add, that this rests on an unfounded hypothesis. The attrition of the sides of the stomach was considered, with as little reason, to be the cause of hunger.

AUDITORIUS NERVUS.—Page 215, col. 1, line 61; "*from the dura mater can be traced*."—See *CEREBRUM* and *NERVUS*.

AUDITUS.—Page 216, col. 1, line 25; "*and the article Sonus*."—The philosophical part of this article, in the beginning, was taken too implicitly from authors of credit. In the article *SONUS*, q. v. it is, we trust, more correct. But no apology is necessary for erring with men of established reputation. We could wish to expunge "*the ingenious observations of Dr. Sherbeare*." The words escaped from inadvertence: we have since referred to the work, and find the epithet wholly misapplied.

AURANTIA HISPALENSIA.—Page 216, col. 2, line 61; "*or in a spirituous solution*."—The flowers may, it is said, be preserved by packing them closely in earthen vessels, with half their weight of muriated soda. They are sometimes candied with sugar, and occasionally suspended in glasses, opposed to the sun, that their liquid odour may transude. This is preserved in well stopped phials.

The leaves were first employed as a secret remedy, and sent from Westerhoef to De Haen. They were first given in chocolate, red wine, or in decoction, and the former found them highly useful; in convulsive diseases, the colico pictonum, and epilepsy, joined with catalepsy. De Haen, however, though he cured with their assistance some convulsive complaints, yet could not succeed in epilepsy, nor in a tremor arising from a fright (*De Haen Ratio Medendi*, vi. 305, 313). Locher, Hannes, and numerous other practitioners, are, however, said to have been more successful, while in different places they have failed. In hysteric spasms and slighter pains (*Werlhoff Opera*, 707) these leaves are allowed to be useful; and in nervous weakness Kempf, it is said, has employed them with success (*Acta Hassiaca*, i. 156). Of the dry powder of the leaves from half a drachm to a drachm may be given two or three times a day. In decoction a handful of the leaves, cut small, may be boiled in a pint of water to half a pint, which must be taken in the day.

The *rind* is by some authors preferred to the bark, in intermittents, and is given infused in wine or spirit, sometimes in powder. The most respectable authority for its use is Werlhoff. Independent of uterine hæmorrhages, it has, according to the same author, been found useful in hæmorrhoidal ones. It has been preferred in atony of the stomach, on account of its aroma, and has for this reason been directed as an ingredient in the elixir stomachicum of Hoffman, and the tinctura stomachica of Whytt.

The recent *juice* is of singular service in scurvy, and Lobb observes that it has the power of dissolving some species of calculus. The essence of bergamot is not prepared from the Spanish orange, but from a variety of lemon, called by Volkamer the limon bergamotta.

AURIS MARINA.—Page 218, col. 2, line 16; "*are first boiled, then fried.*"—The auris marina is the haliotis tuberculata of Linnæus, a genus of the univalves, composed of uniform shells, with a very low spiral, and a large aperture; the shells are rather long than large, and pierced with holes in a line, often containing pearls. The aurmar resembles the limpet, not only in its shell, but in the animal who inhabits it, differing in the spiral, which is almost imperceptible, and in the holes disposed in a lineal direction. These holes vary in number apparently according to the age of the animal, and are supposed to be the passages for its excrements. They are by no means a delicious food, and are sometimes found fossil.

AUTOCRATEIA (*αυτος* and *κρατος*) synonymous with the vis medicatrix naturæ, the *anima medica* of Nichols, the *archæus* of Van Helmont, that power which corrects all the deviations from a state of health, and preserves it in circumstances most adverse. We know not in what it consists; because it is so intimately connected with the principles of life, of which we are ignorant. It is highly probable that the autocrateia is not an intelligent agent comprehending the cause of the disease, and directing the requisite means (see STAHLIAN SYSTEM); nor, on the other hand, are the preservation of health and its restoration from disease, the necessary consequences of a peculiar structure or organization.

AUTOUR, a bark brought from the Levant, resembling cinnamon; but thicker and paler. Within it resembles a broken nutmeg, with numerous brilliant points. It has neither taste nor smell, and is used only in the arts, particularly for making carmine.

AXIOM generally means a self-evident truth, as that a part is less than the whole; but the meaning of the term has been extended, and we meet with axioms in physics, which, so far from being self-evident, appear, at first sight, scarcely probable. In fact, axioms of the former kind are positions which must be necessarily true; of the latter, those which have been admitted as such, because the contrary has not been demonstrated.

AXIS.—Page 220, col. 2, line 11; "*the third vertebra from the skull.*"—It is also in *anatomy* and *physics* the central line of a canal equidistant from the side, and like a mathematical line, possessing length without breadth.

In *botany* it is a taper column round which the different parts of a flower are regularly disposed.

B

BACCÆ.—Page 222, col. 1, line 9; "*which are berries hanging in clusters.*"—A berry is defined by Linnæus, a pulpy pericardium or seed vessel, without a valve, inclosing several naked seeds, generally, though not always, placed on foot stalks. In the xanthium, what has been styled the berry is dry; in the capsicum, without pulp. These exceptions it is probably impossible to avoid, without introducing more intricacy, by increasing the number of terms or modifications.

A berry is usually round or oval, often furnished with an umbilicus, the remains of the efflorescence. When formed of the pericarpium, it is styled *proffer*: if of other parts, *improffer*, or *singular*. Of the latter the varieties are numerous. A large fleshy succulent calyx, sometimes the common receptacle, a seed, the nectarium, the tube of the corolla, and a succulent arillus, occasionally become berries. The pulp rots on the ground, and the berries then germinate.

BACCIFERÆ PLANTÆ, an association in the systems of Hermannus, Morison, Boerhaave, Ray, &c., from seeds being contained in a bacca.

BALBUTIES.—Page 223, col. 1, line 48; "*psellismus balbutiens of Dr. Cullen.*" Stammering is a convulsive action of the organs of expiration, probably also of the muscles of the glottis, wholly involuntary, and so rapidly recurring, that the articulating organs are unable to act (see Vox). It is generally the disease of persons of an irritable and mobile habit; and what establishes the reality of the cause is, that, if the attention is strongly fixed, the convulsion as usual ceases. For this reason those who stammer often sing without the usual hesitation; for the mind is fixed on the tune. When the stammerer is wholly silent, the spasm is apparently in so great a degree as to close the rima glottidis, and, during its relaxation, not to yield sufficiently to admit of a sound. We see evidently that the catches of the respiration are peculiarly rapid.

BALLOTE.—Page 223, col. 2, line 1; "*black stinking horehound.*"—It shoots up from one root, in numerous, black, square, hairy stalks: the leaves resemble those of common horehound, but are larger, rounder, black, and hairy, set at a distance about the stalk, as in the melysophyllon; a name sometimes assigned to it. The flowers are white, and grow about the stalk in whorles, appearing in July.

BALNEUM.—Page 225.—We were not aware, at the time this article was written, that some experiments on the effects of this remedy were made by Dr. Haygarth, and published in Dr. Falconer's work on the Bath waters.

Other medicated baths are prepared from iron, milk, and aromatics. Milk baths have been used as cosmetics, for conveying nourishment, when the œsophagus or the pylorus were obstructed, though, we

believe, with little success. Vitriolated baths have been employed for restoring strength to the debilitated; more partially to the legs, for the cure of varices; for stopping the excessive discharges of the menses and of the hæmorrhoids. Alum, lime, and sal ammoniac have been boiled together, or separately, in water, for the relief of paralytic limbs. Alkali, dissolved in water, has been used to solicit the gout to the extremities, and the muriatic acid, in the same way, to restore flexibility to the joints, after a paroxysm.

BALLON, a large glass receiver in the form of a hollow globe, sometimes with two necks, one of which is inserted into the retort, the other into a second balloon. Several balloons are thus often connected, and then styled *enfiladed*. The design is to increase the space in which the distilled fluid is condensed. A small balloon is sometimes interposed between the retort and receiver, to keep the latter at a greater distance from the fire.

BALSAMICA.—Page 228, col. 1, line 62; "*of oil and resin of oxygen*." The acid in balsams is the benzoic, and, according to Neumann, they contain a large portion of essential oil. Indeed they are sometimes considered to be the oil itself, which has lost its odoriferous principle and its volatile portion; but this is undoubtedly erroneous, as the acid is constant, and rises with the oil. It is not astonishing then that the residuum should be resin, which usually remains after the distillation of essential oils. They are suspended in water by the yolk of an egg, sugar, but most perfectly by mucilage, and we usually prefer, from its smoothness, that of the gum tragacanth.

BALSAMUM ARTIFICIALE. Essential oils or resins reduced to the form of a balsam, and coloured by alkali or saffron. The **BALSAMUM LOCATELLI**, q. v., is an instance of this kind; but the old pharmacopœias are full of similar preparations.

BALSAMUM.—Page 228, col. 2, line 40; "*a. Gileadensis*."—Neither the genus nor the species of the real plant is yet properly discriminated; nor have we heard that the labours of the Institute, during their dangerous and tumultuous residence in that neighbourhood, have advanced our knowledge on the subject. The tree, whatever it be, is at first small, only a few cubits in height, growing plentifully in the mountainous districts of Arabia Felix and Deserta. Yet it sometimes rises to a greater height, since Forskall described it, if we allow the identity, under its shade. Alpinus denies that the plant or tree is a native of Egypt; but admits that it is brought to the green houses in the neighbourhood of Cairo, from Mecca, or rather from the place of its growth, between Medina and Mecca.

The balsam was highly valued by the ancients, and the tree was held so sacred, that, like the misseltoe of the druids, which should only be cut with a golden sickle, the branch of this species of amyris was said to be destroyed by iron, and the incision must of course be made with a sharp stone, or a shell. Some branches yield only three or four drops in a day, and the most fertile ones only from thirty to sixty drops. We suspect that the account in the article which describes the different kinds of balsam obtained by incision, a decoc-

tion of the branches and the fruit, is erroneous. The first is apparently the only balsam. The branches are burnt in the temples; and those of another species (*Amœnitates Academice*, vii. 66) are sometimes employed in their place. The fruit also affords apparently no balsam, though, in its recent state, both from the smell and taste, it seems to contain it.

The experiment of its diffusion in water, and being taken up on the point of a needle, does not always succeed in balsam confessedly genuine, especially when long kept. The drop sometimes sinks to the bottom, sometimes renders the water milky. But the oil of juniper, and the resinous fluid which distils from the fir, in the month of March, equally spreads in a pellicle on the surface of water: it is not certain that these may be taken up on the point of a needle.

This balsam consists of a very fragrant ethereal oil, drawn off by distillation, and a fixed resinous substance. It is dissolved in alcohol only by heat, and cold water added to the solution renders it milky. Digested with distilled oils an union takes place.

It is adulterated with the Cyprian turpentine, the oil of sesamum, the fat of the ostrich, &c. (*Hasselquist's Travels*, 530; *Alpini Dialogi*, 33) In the place of this balsam, the fluid which exudes from the ruptured vesicles of the *pinus balsamea* is sometimes sold, and this accounts for the different descriptions given of the properties of the medicine.

It is impossible to confirm or deny the exuberant praises which the ancient physicians have lavished on this medicine, since we do not probably receive it in a pure state. Besides its diuretic and expectorant powers, more sober enquirers admit its antiseptic and analeptic virtues. From its warmth, it is injurious in inflammatory diseases, particularly in the early stages of virulent gonorrhœa, though recommended by Sydenham, on the mistaken idea of the complaint arising from ulcer. In all internal ulcers it is equally dangerous, unless when the discharge is continued from a relaxation of the vessels. Its use in external wounds and ulcers is very clearly ascertained; but its utility is by no means so considerable as to induce us to regret its scarcity and price. Quarin has informed us, that even the best Mecca balsam is scarcely, if at all, superior to boiled turpentine (*Animadversiones Practicæ*, 89). The Turks take three drops to strengthen the stomach; but twenty may be occasionally employed with no striking advantage.

BALSAMUM COPAIBÆ.—Page 229, col. 2, line 2; "*greatly impaired by the fraud*."—The name is said to be derived from copal, an appellation of all sweet scented gums by the Americans, and *iva*, a tree. The balsam is often adulterated with turpentine, which can scarcely be disguised if a little of the suspected balsam be rubbed in the palm of the hand. The turpentine is also thicker and less yellow than the copaiba. Another mode of adulteration is to distil a portion of the oil of copaiba, which it yields in a large proportion, with cheaper essential oils, and in this union the fraud can scarcely be detected but from the weaker qualities of the suspected drug; sometimes from the adulterated oil requiring a longer time and a larger proportion of spirit of wine for its solution than the copaiba.

The balsam is drawn by a perpendicular cleft in the tree five or six inches long, so deep as to penetrate

through the wood; or by boring. In the proper season twelve pounds of the balsam may be drawn in three hours. The younger trees supply a larger quantity, but of a more weak watery quality. The wound then closes, though in the old trees the operation may be repeated.

When first discharged it is more fluid and colourless. Another species sometimes met with is white, less limpid, of an unpleasant terebinthinate smell, and a disagreeable taste, with a small portion of dirty water at the bottom. This balsam, if not adulterated, is sometimes produced by a decoction of the branches or bark.

The use of the balsam copaibæ in hectic has occasioned considerable controversies. In the more violent inflammatory stages it is undoubtedly injurious, and we can scarcely perceive any period for its use, but in those doubtful cases, partaking of the nature of catarrh and hectic, where the expectoration is apparently checked from weakness, or is too copious from relaxation. Even diminishing the dose, and joining it with nitre, or rather neutrals (Simmons and Gesner), will be scarcely sufficient to render it safe. In gonorrhœa also it is necessary to wait till the inflammatory symptoms have subsided; nor is its use perfectly safe until they are removed, though we find instances where a large dose is said to have cured at once a gonorrhœa. In dropsy, according to Mutis, it has been useful, and in large doses often proves laxative. In new Spain it is generally employed in the arts, particularly in the preparation of varnishes. It is the only solvent of gum algarrobo.

BALSAMUM PERUVIANUM.—Page 229, col. 2, line 20; "*decoction of the branches inspissated.*"—This account, however, taken from Monardes' Commentary on Clusius' Exotics is subject to a little doubt; for a few drops of this black balsam dropped into water divides into two portions; the larger part sinks to the bottom, while a more subtle one of a penetrating taste rises to the top, though Monardes informs us, that the balsam is separated from the water after boiling very readily, as it swims on the top.

Balsam of Peru burns when flame is applied, and by long standing crystals are produced, which resemble, on solution in water, flowers of benjamin. Sugar does not procure a sufficiently permanent union between it and water. It is recommended by Sydenham in the Devonshire colic, and by Kirkland in convulsions from suppressed perspiration, producing child bed fevers. In trismus, from an injury to the tendo achillis, its application is said to be highly successful.

BALSAMUM SATURNI prepared by dissolving cerussa acetata in oil of turpentine, and digesting the mixture till it acquire a red colour, is said to be an useful application in foul ulcers; but it is not acknowledged by the college.

BALSAMUM TRAUMATICUM, formerly FRIAR'S BALSAM. Tinctura Benzoes C. Pharmacopœiæ Londinensis.

BALSAMUM TOLUTANUM.—Page 130, col. 1, line 1; "*tuluifera balsamum* Lin. Sp. Pl. 549."—It is procured by wounding the bark of the tree, and receiving

the balsam in spoons made of black wax, and brought to us in divided gourd shells. It easily mixes with essential oils, more difficultly with expressed ones, and with fat. When distilled alone first a pale empyreumatic oil, and next one of a deeper colour arises, with occasionally a small portion of saline matter, resembling flowers of benjamin.

BAMIER, an Egyptian plant, whose pyramidal husk, dressed with meat, is agreeable and wholesome. The husk is of a lemon colour, filled with seeds, which resemble in their smell musk.

BANANA.—Page 230, col. line 30; "*Nat. order scitamineæ.*"—The plantain, the *musa paradisiaca*, as well as the *musa sapientum*, is a species of this genus. The former we have shortly noticed in the article *MUSA*; but we shall add a little fuller and a more connected account.

The character of the genus consists in a corolla deeply divided into two parts, of which the external, the largest, hath five teeth on its summit; the interior, and shorter, is entire and cuneiform; in six stamina, whose antheræ are connected in the superior parts of the filaments; an inferior, oblong, triangular ovary, a little curved, from whence rises an upright style, terminated by a somewhat thick stigma, with from three to six angles. The fruit is an oblong, prismatic, triangular berry slightly curved, with three receptacles.

The two species mentioned are distinguished by the terms of the *long and short fruited banana*. Both are extremely useful as food, and cultivated for this purpose in both the Indies. The first is eaten roasted in the cinders, or in an oven, sometimes boiled in water with salt meat. It is soft, very nourishing, and easy of digestion, especially if eaten in moderation. The musky variety is the best; the fig banana is fresh, delicate and melting, always eaten raw. The banana trees delight in a humid soil, and the plantations require only weeding. The tree bears fruit once only: if the trunk is not cut down it withers. But, from the root, numerous suckers arise, of which the strongest soon bears fruit, yielding its place to the others in succession. Thus a single banana furnishes an uninterrupted generation of similar individuals. The fruits are sometimes suffered to ripen, after they are gathered.

As the stalks of the banana are thick and herbaceous, they preserve their freshness long after they are cut down. In this state they afford a nutritious food for oxen and sheep, and are preserved on shipboard for the same purpose. By a peculiar preparation they furnish flax.

The plantations are sometimes destroyed by the whirlwinds, and the fruit is occasionally so abundant as to spoil before it is eaten. They have, therefore been dried like figs and plums, and M. Badier of Guadeloupe has described two processes for this purpose. The natives of the West Indies, according to Labat, preserve the plantain by making a paste from them, viz. by squeezing the moistened fruit through a sieve. Of this paste they make little loaves, which they dry in the sun, or in hot ashes, previously wrapping them in the leaves of the Indian flowering reed. This paste by the preparation has undergone the acetous fermentation, and, when dissolved in water, forms an agreeable sub-

acid food. The leaves of the *tando* serve the inhabitants of the Molucca islands for towels and napkins. When dried, without injury, they are polished, and a fine paper is produced, soft, though brown, and not lasting. The Malays cover the tobacco they smoke with it, and little confections are conveyed to Europe wrapped in it. The heart of the flower stalk is cut in pieces, and boiled for feeding hogs.

The involucre of the leaves of the *coffa*, another species, are used for making cloths of a brown colour, like the cloth of unbleached hemp. The most common, used for clothes, is very coarse, and dyed of a black, a red, or a yellow colour. Another kind is fine and brilliant as silk, either dyed black, or painted with the figures of different animals and flowers. It is used to decorate beds, canopies, and the apartments of the opulent, and to make light dresses for the ladies. The external thicker bark of these involucre furnishes cord for cables, or hammocks for sleeping. The foot stalk of the fruits, bruised or macerated in water for a night, is a powerful sudorific. The kind called *cro*, according to Adanson, is more useful than even the cocoa tree, since it is more common. It furnishes the principle food of man in the watery districts, where rice is rare.

To feed infants with this fruit, the mother previously chews it. Botanists suspect that the *ensète*, which comes from Gondar, is a species of banana. Bruce tells us that its stalk is boiled and eaten, and that it tastes like bread.

BARAPICKLET, very fine light cakes. The term is cumraig, as *bara* means bread. In the north of England such cakes are called *picklets*.

BARBA.—Page 230, col. 2, line 46; "*a beard*."—Barba implies the hair on the chin and upper lip; "*an excrement*," to use the language of Antolycus, which forms the discriminating mark of manhood. Women in whom the catamenia are scanty or obstructed, have a beard sufficiently conspicuous. Eunuchs have none. It is indeed so intimately connected with the genital system, that when the testes have been destroyed, after the beard has begun to grow, it has ceased to increase, and in some instances has disappeared. When the same event has happened in maturer age, the beard has evidently become thinner and weaker. The causes of this surprising singularity cannot be explained.

In botany it is a light species of down, covering the surface of some plants, and, from the language of Linnæus, apparently signifies a tuft or bunch of strong hairs terminating the leaves. *Barba corollæ ringentis*, in the language of Rivinus, means the lower, *galea* the upper, lip of a ringent corolla.

BARBADOES CHERRY, *Malpighia glabra* Lin. Sp. Pl. 609, are the small cherries of the West Indies, very inferior in flavour to those of Europe.

BARBATUS FLOS of Rivinus, synonymous with the *labiatus* and *personatus* of Tournefort, the *ringens* of Linnæus.

BARBULÆ; SEMIFLOSCULI, Pliny.
VOL. II.

BARBYLA. COMMON DAMASK PRUNE. Theophrastus.

BARYTES.—Page 232, col. 2, line 41; "*History of Lancashire, Cheshire, &c.*"—Barytes is only found combined with vitriolic or carbonic acid. The former is generally diffused; the latter has been discovered only in Siberia and England. Le Grange, in the *Annales de Chimie*, xlvii., has taught us how to prepare the muriat of barytes from the sulphat without previously purifying the latter. The residuum from the distillation of muriated ammonia, viz. muriated lime, with an excess of earth, is lixiviated and evaporated to dryness. This, when reduced to powder, is mixed with an equal weight of sulphat of barytes, and the whole slowly projected into a red hot crucible, where it must remain in fusion for a few minutes. It is to be poured out while hot, and it will be found a gray, or slate-coloured, hard sonorous mass, very deliquescent. This is to be dissolved in six times its weight of boiling water, filtered, evaporated, and crystallized. The crystals will be muriated barytes. A second and a third crystallization is requisite to separate wholly the other salts.

Carbonated barytes is converted into pure by calcination, or by solution in nitrous acid, after which the acid is separated by heat; but the artificial yields its carbonic acid much more easily than the natural kind: the former only can, therefore, be rendered pure by calcination; the latter requires, according to Pelletier, fusion for an hour in a close crucible, with 0.10 of its weight of charcoal.

The taste of barytes, when pure, resembles that of lime, with greater acrimony and causticity. It changes the vegetable colours like alkalis, absorbs a small portion of water with avidity, and considerable heat, forming a stiff paste, which adheres strongly to glass (*Annales de Chimie*, xxi.). Additional water changes it to a bulky white powder, which readily dissolves when heated, and on cooling crystallizes in clusters of transparent needles, or fine transparent prisms. Strontian only, of all the other earths, can be thus artificially crystallized. Boiling water dissolves one half, cold one twenty-fifth, of its weight.

When heated on charcoal by the blow pipe it becomes hard, partly vitrified, and scarcely soluble in water; for it seems to have regained some oxygen. When the blow pipe is urged with oxygen gas, it melts into a white globule, resembling enamel. A solution of barytes attracts carbonic acid from the atmosphere more rapidly than lime water, and is deposited in a white powder. It is scarcely soluble in alcohol, unless assisted by heat. The earth is precipitated from its solution by the oxalic, citric, phosphoric, and malic acids, and again dissolved by their excess. Most of the metallic solutions are decomposed by barytic water, and the oxyds of silver and lead are again dissolved by an excess of the earth. (Vauquelin.) The carbonat of barytes and all its soluble salts are poisonous to animals, and should be employed with caution in medicine. The affinities of barytes with earths and oils strongly resemble those of alkalis; but this earth has a stronger attraction to oils than alkalis, and will decompose common soap; but the barytic soap is insoluble in water.

BASAAL.—Page 233, col. 1, line 33; "*tree growing*
4 A

about Cochin.—The plant is of the class *pentandria*, and order *monogynia*. The calyx has five divisions, as many petals and stamina; a superior ovary terminated by a very small style; a round berry containing a nut resembling a white almond. Rheed has figured two species of this shrub (Hort. Malab. tab. v. 11, 12), which are evergreens, and highly odoriferous.

BASANITES.—Page 233, col. 1, line 40; “*useful in diseases of the liver.*”—Mr. Kirwan has given this appellation to a petrosilex; for he thinks it is of the same genus with the *siliceous trap*, or the *paliopectra* of Sausure, the *hornflit* of some mineralogists. Its bloody juice and its utility in diseases of the liver are equally fabulous. The reference, “**BASILICUM**,” has no object.

BASILICUM.—Page 233, col. 2, line 45; “*superior to the oil of marjoram.*”—The oil is chiefly recommended by Hoffman (Observationes Physico-chemicæ, 19) as a cephalic and nervous medicine. The powder is sometimes used as tobacco (Chomel), and is an ingredient in the sternutatory powders of the foreign pharmacopœiæ.

BATH, chemical; the substances employed to transmit heat more gradually, and to retain it longer, as *balneum arenæ*, vel *aquæ*, when sand or water is employed. The latter is particularly useful, as it conveys a determinate degree of heat, that of the boiling point, and sea salt is occasionally added to the water, by which it admits of a higher, but at the same time a steady temperature.

BATRACHITES, brontias, the thunderbolt of the ancients, apparently a globular pyrites, striated from the centre to the circumference. The stones ascertained more lately to have fallen from the atmosphere, where ever formed, are very different, and combinations not yet discovered in this planet.

BATTATAS.—Page 238, col. 1, line 34; “*will not grow there without skilful culture.*”—A different and more probable history of the introduction of this useful root into England is given in the late Memoirs of the Horticultural Society, and introduced by Mr. Nicholson into his Journal; but it is too long for insertion, as it is but remotely connected with our subject.

BDELLIUM.—Page 238, col. 2, line 61; “*internally it is clear and not unlike glue.*”—The pieces of bdellium are brittle, and the fracture on the surface is rough, of a deep brown colour, occasionally pellucid, mixed with leaves and branches of the tree. It is softened by the heat of the fingers, and adheres to the teeth when masticated. Spirit of wine, if first employed, extracts only one fourth; water in the first solution, five sixths: the former is red, the latter blue. Its fragrance rises in distillation. It does not burn rapidly; but while it crackles pours a fluid matter from its surface, leaving a black coal.

BECCA, in the materia medica of the ancients, is the resin collected from the mastich and turpentine trees combined together.

BE CABUNGA.—Page 239, col. 1, line 21; “*veronica begabunga* Lin. Sp. Pl. 16.”—It is a low creeping plant, with round, thick, smooth, reddish stalks, naked and procumbent at the bottom, erect at the top, clothed with firm, round, juicy leaves, of a dark shining green colour, slightly indented about the edges, and set in pairs about the joints. From the bosoms of the leaves arise naked foot stalks, bearing spikes of blue flowers deeply cut into four segments, followed by flattish seed vessels. It is found in rivulets and ditches, flowering in June; has been given as an antiscorbutic in whey, and the syrup is commended by Forestus. Its claims to the character of a deobstruent are as good as those of many other vegetables, which act as such only by a gently laxative power.

BELEMNITES, orthoceratites, a kind of shell usually found in a fossil state, generally in the mountains of secondary formation, though sometimes occurring in the stratified ones, and even in chalk. From the structure of the shell the animal apparently resembles the nautilus, but it has never been seen.

BELAE.—Page 239, col. 2, line 27; “*of considerable efficacy in diarrhœas.*”—The Indians add it to a fermented liquor, which they prepare from the sugar cane, styled *took*, and Sonnerat describes it as useful in dysenteries, which were, however, apparently cases of hæmorrhoids. The dose is twenty-four grains in a cup of tea, or a glass of wine, twice a day, increased after a few days to thirty grains. See Sonnerat and Mauduyt *Memoires de la Societè Royale de Medecine*, iii. 689.

BELLIS MINOR.—Page 239, col. 2, line 61; “*it is wholly neglected.*”—The character of Baglivi induces us to add, that he recommends the juice of the red daisy in catarrhus suffocativus, arising from the stagnation of blood in the heart and lungs. Mathiolus and Fabricius also think it useful in wounds of the thorax. See also Koenig *Regnum Vegetabile*, 755.

BELLIS MAJOR.—Page 240, col. 1, line 4; “*diuretic and antiasthmatic.*”—Its utility in asthma and hectic is supported by Ray; and Geoffroy informs us, that the herb, before the appearance of the flowers, has a peppery pungency, adding, that at this time it is diuretic.

BELLON GROUND, a certain space round the smelting houses of lead, where the poitou colic (*belton*) is common, affecting oxen, sheep, and poultry, as well as mankind.

BEN.—Page 240, col. 2, line 13; “*from the cotton in a press.*”—The nuts are contained in a trivalve legumen, full of white pulp, and are themselves triangular. The ancients suppose them to be actively cathartic (Galen de Simplicibus, vi.; Avicennæ, lib. ii. 11, 82), and to the shells ascribed an astringent and deobstruent power, to which they add an opinion of their utility in diseases of the skin. The acrimony of the nuts is so great as to render them highly dangerous, if incautiously eaten. From eight pounds five drachms of the nuts, thirty ounces and a half of oil have been extracted

(Geoffroy, iii. 254). This oil differs little in its quality from common oil, though some practitioners have supposed that it prevented more effectually pits from the small pox.

BENZOINUM.—Page 241, col. 2, line 25; "*employed as a corrector of foul air.*"—Scheele's process consists in uniting the benzoic acid with lime, and then separating the earth by means of the muriatic acid. It crystallizes in long needle-like crystals. Crystallized benzoic acid is light, feathery and elastic. When the oil is in appearance wholly separated it is white; but as the fragrance is retained, some oil probably remains, and occasions its weak affinity to alkalis. This acid is contained in styrax, and almost all the balsams.

BERBERIS.—Page 241, col. 2, line 40; "*putrescent state of the fluids.*"—There are three species of barberry, the common English, which we have mentioned, growing to the height of eight or ten feet, with many stems, armed with sharp thorns. The leaves are obtuse, oval, slightly serrated; the flowers arise from the axæ of the leaves in small ramous bunches, like currants, of a yellow colour, succeeded by an oval fruit, at first green, but, when ripe, of a beautiful red. The flowers appear in May, and the fruit ripens in September. The barberries without stones are, according to Millar, the oldest plant. The white-fruited barberry is distinguished by leaves of a lighter green, and a whiter bark; but it seldom bears fruit. The tall eastern barberry (Tournefort) has a black, sweet fruit. The two other species the *canadensis* and *eretice*, offer nothing interesting.

The ancients added fennel seeds to the juice of barberries, to prevent their flatulence. An infusion of the bark in white wine is said to be purgative. The root, the bark of the root, and the inner bark of the stalks, are used for dyeing yellow.

The acid of barberries is the malic, with some portion of the citric; and they are used as pickles, as cooling eatables in sore throats; and the juice is preserved by sugar in the form of barberry drops. The facility with which it crystallizes, when mixed with a small portion of lemon juice, seems not sufficiently to have attracted attention.

Page 242, col. 1, line 39, for *CONTRACTURE* read *CONTRACTURA*; and in col. 2, line 51, for *M. Orchard* read *M. Achard*.

BETONICA.—Page 243, col. 1, line 20; "*powdered, they make a good errhine.*"—The taste of the leaves is bitterish, slightly saline, with an inconsiderable aroma. The watery extract is bitter, and somewhat austere, without the smell of the branches; the spirituous extract is slightly acrid and aromatic. The story of Scopoli, who relates that the old women who gathered the root were intoxicated, does not prove its power, since others employed in the same office were unaffected, and the singular effect of the leaves given in broth to relieve the pain of a gouty paroxysm is entitled to little credit. The fresh roots are evidently laxative; and the leaves, according to Chomel, are expectorant. It is highly probable that the ancient betony was not the same plant which we distinguish by this name. The description of Dioscorides is very vague (lib. 4. c. 1. p.

245), and it can only be ascertained that it is a verticillated plant.

BETULA.—Page 243, col. 1, line 49; "*a brownish concrete like manna.*"—It is said to kill ascarides, and, from the time of Van Helmont, has been highly celebrated in calculus, though it evidently did not dissolve the stone in the trials of Mr. Boyle (On the Utility of Experimental Philosophy, Ex. 4. xvii. 179). It is said to be so violently diuretic as to induce diabetes; the authors should have said an excess of urine; for the essence of diabetes consists in a change in the chemical nature of the secretion. Hundertmarck thinks it useful in the itch, and that the juice has brought back the eruption after it has been repelled. The young leaves and the branches in decoction, externally, are said to be useful in itch, and the bark to cure intermittents, particularly those arising from scurvy.

The leaves of the *betula alnus*, according to Murray, are useful in repelling the milk. When cut, they are warmed till the watery fluid begins to be discharged, and in that state applied.

BIDENS.—Page 245, col. 1, line 20; "*Nat. order discoidea.*"—This species grows to the height of two feet; the leaves are divided into three, often five, serrated lobes, with yellow flowers, succeeded by flattish angular seeds, with two beards arising from the angles, hooked or barbed downwards, with often a shorter beard from the middle of the back of the seed. The seeds poison the gold fish by adhering to the gills, and Mr. Lightfoot thinks, both from its botanical and chemical analogy with the *verbena acmella*, that it may be useful in calculus and nephritic complaints.

BIFARIUS, leaves of plants which point two ways.

BIFERÆ, plants which bear fruit twice a year. In this way Salmasius has explained the perpetual fruit of the Hesperidian gardens, since, from the variety of biforous trees, it would never be wanting.

BIFURCATED, (from *bis* and *furca*), divided into two branches.

BILIARES DUCTUS are the small ducts arising from the *pori biliarii*, which unite, and form the ductus hepaticus. See *JECUR*.

BILIOSA FEBRIS.—Page 246, col. 1, line 29; "*the patient is peculiarly disposed.*"—See Grant on Fevers; Stoll Ratio Medendi, ii. 55, 68, and 129; iii. 357.

BILIS.—Page 250, col. 2, line 62; "*felt on the opposite side at the back.*"—The minuter structure of the liver has been described particularly by some authors; but anatomical injections often deceive. The ultimate branches of the *vena portæ*, cava, and hepatic artery, with the beginnings of the biliary ducts, are said to be united in clusters, styled *acini*, of an hexagonal shape surrounded with a lax, cellular texture, in which they freely anastomose; for fluids injected into the *vena portæ* are returned, according to Mr. Fyfe, through the ductus choledochus. It has been contended that these clusters contain a hollow cavity, in which the change of

the blood takes place; for in brutes they are rounder and better defined than in the human subject; and small cavities appear to be occasionally filled with chalk or calculi; but the opinion has been rejected, chiefly because injections sometimes pass freely, and leave in no instance a knob moulded in a cavity. The cystic duct is sometimes increased by another small duct from the liver before its insertion. Some animals have several small ducts from the liver to the gall bladder; but they seem wanting in man.

We have said, in the article, that the bile contributes to correct the acidity of the aliment, and to prepare the chyle; but it more probably precipitates this fluid from the chyme. See DIGESTIO.

The black bile was supposed by the ancients to produce cancer, elephantiasis, quartan fevers, tumefied spleen, and melancholy. It apparently, however, assumes this appearance from stagnation merely, and this may be owing to a want of irritability in the ducts and intestines: the latter generally produces costiveness; the frequent complaint of literary persons. (Morgagni de Sedibus, xxx. 17; xxxi. 6.) The opposite states of this fluid are the watery, insipid, muddy, pale, or white, and vapid. In each the bile no longer retains its peculiar qualities, but is a watery or an albuminous fluid. Bianchi, in his *Historia Hepatis*, is the chief authority for these changes. It is said to be sometimes salt, purulent, highly acrid, or acid to be discharged in an effervescing state, or of a green colour. These circumstances are, however, peculiarly rare. It is sometimes discharged through an ulcer in the liver, and Bloch mentions that the daily quantity amounted from two to three ounces, and continued for fourteen days. De Haen, from Citois (*Ratio Medendi*, x. 32), informs us, that green bile was discharged from a tumour between the coats of the jejunum. From injuries it has been poured into the abdomen. See JECUR and VESICULA FELLIS.

BISCUIT, SEA.—Page 251, col. 1, line 5; “*with the unleavened biscuit in diseases.*”—Biscuits are preserved by the fumes of burning brimstone, by keeping them in tinned casks, or perhaps more perfectly by charred casks. It was called by the ancients *ἄπτον δίπυρον*, *panis nauticus*, and by Pliny, *vetus aut nauticus panis tussus atque iterum coctus*; so that, when old, they seem to have renewed the biscuit by grinding, and then baking it again. In the middle ages it was styled *paximus*, or *panis paximatus*.

BISMUTHUM.—Page 251, col. 2, line 5; “*for more than a hundred years.*”—See Bardsley’s Medical Reports.

BISQUE, (perhaps from *biscocta*), a rich broth made by repeatedly stewing pigeons, and chickens, in the gravy of mutton. Demi-bisque contains only half the ingredients, and bisque of fish is made with carp, adding their roes, and lobsters.

BISTORTA.—Page 251, col. 2, line 11; “*Nat. order oleraceæ.*”—The leaves of the plant are oval, pointed, wrinkled, of a dark green colour above, and bluish underneath, standing on long pedicles, and continued down them, forming a narrow margin on each side.

Among these arise round, slender, jointed, unbranched stalks, furnished with smaller, narrower leaves, without pedicles, bearing on the top spikes of imperfect, quinquepetalous, red flowers, followed by triangular seeds. The root is of the thickness of the finger, compressed, inflected, encircled with annular rugæ, externally of a blackish brown colour, internally of a flesh colour. It blackens a solution of martial vitriol, and tans leather, yielding its virtue equally to water and spirit. Each extract is intensely bitter, and about three drachms of the watery may be obtained from an ounce of the root. It has, with little reason, been commended in gonorrhœa; for in the inflammatory stage it is injurious: in the subsequent one useless. In the Alps it is employed in fluor albus, and the Siberian shepherds, after boiling and repeatedly macerating, find it a wholesome aliment. Falks.

BISTERNATUS, a botanical term, implying a leaf which has three divisions, and as many subdivisions.

BIVALVA, (from *bis* and *valva*), seed pods which open lengthways in two divisions.

BLACKBERRY, *rubus fruticosus* Lin. Sp. Pl. 707, α. A common fruit in the hedges, vapid, with little flavour, and no particular properties.

BLATTA BYZANTINA, the name given by the ancients to the operculum of the heavy strombus, an univalve shell, and an ingredient in some of their preparations for hysteria and epilepsy. Rondeletius informs us that there were two species, one of which was brought from the Red Sea, and the other from Babylon; that, in his time also, the opercula of all the purpura of the ancients, confounded by Linnæus with the buccina and murexes, were employed. The old name was *unguis odoratus*, and they were sometimes directed to be burnt. They then probably resembled in their virtues the burnt sponge.

BLISTERS.—Page 256, col. 2, line 22; “*applied to the part previously rubbed with vinegar.*” See Tralles de Usu Vesicantium, 4 vol. 4to.

BLOOD.—Page 260, col. 1, line 18; “*prophecy is required to foretel the event.*”—The stronger acids coagulate the blood and darken its colour. Sulphuric acid acts on it, as on the greater number of animal and vegetable substances, by charring it, disengaging, in the operation, sulphureous acid gas. Nitric acid separates a large proportion of azot, leaving adipocire, united with oxalic acid. Oxygenated muriatic acid blackens it; an effect the more singular, as oxygen renders its colour brighter. In a temperature about that of boiling water it coagulates, resembling in colour the liver, and by agitation becomes a dark unctuous paste, which experiences little alteration for a long time, if kept dry. It is attracted by the magnet, and when moistened is soon covered with an efflorescence of mild soda. When in a higher temperature in an open crucible it softens, swells, and burns with a strong flame, exhaling a fetid odour. If distilled, an ammoniacal water first comes over, followed by a pungent vapour of carbonated ammonia, a dense yellow smoke, and in

succession some prussic acid, resembling in smell bitter almonds, with jets of phosphoric flame from a decomposition of the phosphats by the carbone. The remainder is mild soda mixed with a slightly oxydated calx of iron, a ferrugineous charcoal, phosphat of lime, with a little muriat of soda and potash. When the blood is calcined in an earthen retort the coal has a brilliant appearance resembling plumbago, with great difficulty incinerated.

BLOOD STONE. See HÆMATITES.

BLOODY FLUX. See DYSENTERIA.

BLUBBER, the FAT OF THE WHALE, commonly employed, when cleared, by boiling, from the skin and the fibres, under the name of *train oil*. It differs little from the OLEUM JECORIS ASELLI, q. v.

BOCCONIA, the GREATER TREE CELANDINE; *b. frutescens* Lin. Sp. Pl. 634. Nat. order *rhædea*, a tall tree of South America and the American islands, from every part of which a yellow fluid may be procured, considerably acrid, and used in removing specks from the cornea.

BOJOBI.—Page 261, col. 2, line 24; "*patient is to swallow in a little water.*"—It is a species of BOA, q. v. distinguished by the trivial name of *canina*. The body is green, or of an orange colour, with long stripes, white, or of a pale yellow, on the sides. Two species, one from India and the other from the Brazils, seem to have been confounded by naturalists; but the error is of little importance in a medical view. The creature is harmless, unless when provoked; and its bite is said to be then highly dangerous, and often fatal. See SERPENS, and CAA APIA.

BOLETUS CERVIL.—Page 261, col. 2, line 36; under the article AGARICUS we omitted some species, which we shall here shortly mention. The first is the *b. suberosus*, the white cork spunk, growing on the birch and willow. It is sessile, horizontal, semicircular, convex, white and downy above, and plain below. The size greatly differs, from three to twelve inches in diameter. In substance it resembles cork. *B. bovinus* is brown, though sometimes tawny, yellow, and reddish, deep red, purple, or a greenish brown. The flesh is yellow, white, or reddish. When young, they are eaten in Germany and Italy; when old, they are the nidi of numerous scarabæi and dermestes. Cows, deer, sheep, and swine, are often greatly disordered by accidentally eating them. The *b. laricis* is the agaric of the shops, formerly used as a cathartic. The substance beneath the bark is extremely white, irregular, spongy, and very light. *B. suaveolens* is the FUNGUS SALICIS. See FUNGUS.

BOLUS GALLICUS.—Page 262, col. 1, line 47; "*not allowed to possess any medical virtues.*"—*Armenian bole* is of a bright red colour, inclining to a yellow, hard and compact, with a rough dusty surface. It is in part dissolved by acids, without effervescence, and coloured with an ochry substance. It contains also a portion of the vitriolic acid. *Bole of Blois* is of a light yellow, and

effervesces strongly with acids. *Bohemian bole* is yellow, flaky, and inclining to red, but unaffected by acids. *Silesian bole* is also of a pale yellow, and resists the action of acids.

BOLT HEAD, a capacious chemical vessel spherical at the bottom, with a long slender neck.

BONE.—Page 264, col. 2, line 32; "*oleaginous or an oxygenated fluid.*"—Cold water has little action on bone, unless in contributing to the septic process. Scalding water separates a considerable quantity of oil, which is said not to be marrow, but a fat combined with the substance of the bone. This fat is also found, by anatomists, to exude from the heads of the bones of the skeleton, and it is no little labour to separate the whole. If the bones, chopped for the purpose of separating their oil, are now ground down to a fine paste, and boiled for some hours with ten times their weight of water, till half is consumed, a thick jelly will be produced; and, by farther evaporation, a good glue. The bones fall to the bottom in a mass, which has little consistence, though not absolutely dry and friable; for the complete separation of the jelly and oil is only effected by very high temperatures, in Papin's digester; but the solution, in this case, has a burnt taste. The jelly does not separate in any great degree by age; for it has been found in button shavings, and in bones which have lain some centuries in a church yard.

The experiment alluded to, of dissolving the earth and gelatin of bones, leaving the reticulated or spongy cellular membrane, is described by Mr. Hatchett, in the Philosophical Transactions for 1799 and 1800. This spongy cartilage is the substratum of all the hard parts of animals, and it resembles coagulated albumen: but differs from it in being, when dry, semitransparent and brittle, and resisting the action of water, even in Papin's digester. It is also scarcely acted on by any acid, if dilute, and without the assistance of heat, though softened by long maceration, and it then dissolves in ammonia. If nitric acid is heated on this cartilaginous albumen, it is rapidly dissolved with a great discharge of nitrous gas. With caustic, fixed alkali, it forms an animal soap, giving out a large proportion of ammonia. Acids separate this albumen, on which Mr. Hatchett rests as a property distinguishing it from gelatin. It is little changed, even in warm and moist situations. The earth of bones contains the phosphat of lime, with an excess of earth. Fourcroy and Vauquelin have also discovered a small proportion of phosphat of magnesia in the bones of animals; but not of human bones (Annales de Chimie, xlvii). The bones of oxen, chicken, and fish, contain, when calcined, about one fortieth of the latter salt: those of sheep and horses somewhat less.

When a bone is heated, without addition, in the open air, it becomes greasy and yellow, yielding a watery vapour, followed by a thick fetid smoke, which burns, with a most offensive ammoniacal smell. After some time, it becomes black, brittle and carbonaceous; and, if heated too suddenly, splits in every direction. When a strong heat has been long continued, a sonorous, white, earthy phosphat only remains, retaining the form of the original bone, and its porous texture. When heated in closed vessels, a limpid faintly smelling

water first comes over, which presently becomes ammoniacal, and yields a sensible quantity of carbonat of ammonia. With this, while the heat is still moderate, a clear, yellowish, pungent, but not disagreeably smelling, oil arises, which is that mentioned under the name of Dippel's. As the heat increases, this oil becomes foul and black, at last resembling pitch, strongly ammoniacal, excessively fetid and smoky. Sulphuretted hydrogen, carburetted hydrogen, and carbonic acid gases are separated in the process. The water and oil, condensed in the receiver, contain a large quantity of carbonat of ammonia, and the former holds in solution some sebatic and prussic acids.

If the distillation is stopped when the oil which comes over is black, the bones are found penetrated with a dark fetid oil. If the whole then be placed in a red heat, in a close vessel, the entire bone becomes uniformly black, glossy, and brittle. This we have mentioned under the name of *ivory black*.

Bones are whitened by alternate exposure to wind, moisture, and sun. Salt water, previous boiling in a weak alkaline ley, or macerating them in the oxymuriatic acid, will greatly contribute, not only to expedite the process, but to render the whiteness more clear and brilliant. Bones are tinged of a fine green colour, by immersing them in a solution of verdigrise, in distilled vinegar, and keeping them in a well closed vessel, at a moderate temperature, as in a dunghill, for ten or twelve days. When found of a green colour by being accidentally buried in a copper mine, they are called *TURQUOISE STONE BONES*. A good black is given by solutions of silver and lead, or immersing them in a water in which equal parts of litharge and quick lime have been boiled for some hours. Bones will take the vegetable dyes by first moistening them with dilute nitrous acid, and then rubbing in the dye for some time. Bones, we have observed, are tinged with madder, by feeding the animal with it. The quick communication of this colour, and its equally rapid separation, have led physiologists to suppose that the earth of bones was in a state of quick succession; but a late French author, since the article was printed, has shown that the affinity of the madder to the serum is greater than its affinity to the phosphat of lime, and that, in reality, the serum retains and carries it off. This we have mentioned in a subsequent part of the dictionary.

As we have given a general view of the arteries, nerves, and muscles, we shall add a tabular view of the bones. As some minuter separations are not in this table noticed, the number amounts only to about two hundred and fifty.

The bones of the HEAD are,

The Frontal,
Parietal,
Occipital,
Temporal,
Ethmoid,
Sphenoid.

Of the FACE,

Superior maxillary,
Jugal,
Nasal,
Lachrymal,

Palatine,
Spongy bones,
Vomer,
Inferior maxillary.

TEETH,

Incisores,
Cuspidati,
Molares.

TONGUE,

Os hyoides.

EAR,

Malleus,
Incus,
Stapes,
Orbicular os.

Bones of the TRUNK are,

Vertebrae, Cervical,
Dorsal,
Lumbar.

Sacrum.

Coccyx.

Thorax, Sternum
Ribs.

Pelvis, Ossa Innominata,
Ischia,
Pubes.

Bones of the UPPER EXTREMITY.

Shoulder, Clavicle,
Scapula.
Arm, Humeri os,
Fore arm, Ulna,
Radius.

Hand.

Carpus, os naviculare,
— lunare,
— cuneiforme,
— orbiculare,
— trapezium,
— trapezoides,
— magnum,
— unciforme.

Metacarpus,
Phalanges.

Bones of the LOWER EXTREMITY.

Thigh, femur.

Leg, patella,
tibia
fibula.

Foot.

Tarsus, calcaneus,
astragalus,
cuboides os,
naviculare os,
cuneiformia ossa.

Metatarsus,
Phalanges.

Eight sesamoid bones of the thumb and great toe are occasionally found.

There are some diseases of the bones, besides those mentioned in the article, which we may shortly notice. One of these is a slighter separation of some of the articulations, which scarcely amounts to a luxation. Reichel, in Sandifort's Thesaurus, mentions a separation of the epiphyses from the bone; and an instance occurs in

the Philosophical Transactions, N°. 484, of a separation of the ossa pubes by the violent leap of a horse. The union of the sacrum with the ossa innominata has been equally disordered by accident. The supposed separation of the symphysis of the pubes in labour has already been the subject of consideration.

A friability of the bones, from the experiments recited, must be owing to a defect of oil, a cause to which their fragility has been attributed (see FRAGILITAS); but Saillant has shown, in the Memoirs of the Society of Medicine, that fragile bones contain too great a proportion of oil. The present disease has sometimes been found after salivation, and occasionally observed without any known cause. A crackling of the bones must be rather attributed to a disease of the joints.

Bones are destroyed by any pressure which deprives them of life, and reduces them to the state of an extraneous body. Mr. Hunter thinks that they are more particularly affected by the access of blood. Indeed a frequent cause of their destruction is the pressure of an aneurismal sac. Sandifort (Exercitationes Academicæ, ii. 1.) mentions the destruction of the os frontis from a fungus of the dura mater; and an author, in a German collection, describes a resolution of the bones into a gelatinous mass from suppressed itch. The *restoration*, or rather the *regeneration*, of bones is a singular fact, and the most striking instance of it is the union of the bones above and below after a joint has been extirpated, in the operation of Mr. Park. In this case there is no albuminous membrane, such as has been described, no mould in which the bony matter may be deposited; and, in reality, the deposition of the osseous substance in all such circumstances is rude and irregular. It appears probable that all the arteries may at times secrete the calcareous phosphat, and particularly at points where it is already found. Like the calculous matter, it seems only to require a nucleus, on which it may be deposited.

Wounds of the bones, if not reducible to splinters, fissures, or fractures, are rather denudations, with slight indentations. The most satisfactory information we have met with on this subject is in a dissertation of Heister's, preserved by Haller in the fourth volume of his surgical collection, N°. 123. (De Vulneribus Ossium rite curandis.) Exfoliation is common when bones are denuded from an external cause, probably from the injury in consequence of the bruise; but not equally frequent when from an internal one (Fabricius Hildanus, iv. 96). Quesnay, in the Memoirs of the Academy of Surgery, observes also that denuded bones do not always exfoliate. Unctuous substances are said by some authors to promote, (Petit Oeuvres, Posthumes, i. Præf. 14, &c.) by others to prevent, exfoliation (Vogel ap. Richter Bibliothec. v. 409); but, in general, they are less useful when the denudation proceeds from an external cause.

Pains in the bones are, in general, referrible to an inflamed or a distended state of the periosteum; but in some cases they are deeply seated, and may arise from inflammation of what has been styled the internal periosteum. There is little reason to think that bones themselves are, almost in any circumstances, the seat

of pain. We have read, though we do not recollect the author, of a gouty affection of the marrow, and it is not impossible that, while misplaced gout tortures every part in turn, it may have some effect on these internal membranes. We find a *decay of the bones* attributed to poisons, and styled *cachexia ossium*; but not on authority which induces us to enlarge on the subject.

BONONIENSIS LAPIS.—Page 265, col. 1, line 22; "*makes a species of phosphorus*."—It is the heavy spar, the sulphat of barytes, said to resemble the petunse of the Chinese, used in their porcelain; but this we suspect to be a mistake.

BORAX.—Page 265, col. 1, line 36; "*nitrum nativum*."—The lake which affords the borax contains also a large proportion of common salt, which is found at the bottom, while the borax is chiefly on the sides, where it is constantly reproduced, if taken away. It is condensed by the cold; for the situation of the lake is so high that it is almost constantly frozen. The process of purification is kept secret; but previous to the repeated solution and crystallization, the grease which usually covers it is burnt away in a fire somewhat below the melting point of the salt. When pure, its specific gravity is 1.74. Its taste is sensibly alkaline, and it turns syrup of violets green. According to the *latest* experiments it is found to contain thirty-nine parts of the acid, seventeen of soda, and forty-seven of water of crystallization: 0.02 are lost. It is soluble in six parts of boiling water only, so that crystals are deposited on cooling.

Borax is decomposed by all the mineral and vegetable acids, but if the excess of soda be only saturated, the solution on cooling, forms a confused mass: it will unite with half its weight of boracic acid, forming a true borat of soda, while, in its natural state, it is properly styled by later chemists *sub borat of soda*. Borax dissolves most of the metallic oxyds, receiving from each its appropriate hue.

BORACIC ACID. See SEDATIVUS SAL.

BORRAGO.—Page 265, col. 2, line 54; "*boragineæ* of Jussieu."—It is a hairy, rough plant, with wrinkled, blackish green, leaves, approaching an oval shape, with round, hollow stalks, in which the leaves are set alternately. On the tops of the branches the flowers appear monopetalous, generally blue, sometimes reddish, or inclining to white, followed by four black wrinkled seeds. It is perennial, grows wild on waste grounds, and on old walls. The experienced apiarian sows it near his hives, as bees are peculiarly fond of it.

BOTANY.—Page 275, col. 1, line 32; "*be employed with advantage*."—We shall add, however, the arrangement of vegetables according to the natural system of Linnæus; but we can only offer the principal remedies, as every one employed would make the catalogue too extensive.

I.—CONIFERÆ.

SYSTEMATIC NAMES.

Pinus sylvestris
 — *picea*
 — *abies*
 — *larix*
Juniperus communis
 — *lycia*
 — *sabina*

OFFICINAL.

Pix liquida
Terebinthina vulgaris
Pix Burgundica
Terebinthina veneta
Juniperus
Olibanum gummi resina
Sabina

ENGLISH.

Scotch fir
 Silver fir tree
 Norway spruce fir tree
 Common white larch tree
 Common juniper
 Olibanum juniper
 Common savin

II.—AMENTACEÆ.

Salix fragilis
Juglans regia
Quercus robur
Pistacia terebinthus
 — *lentiscus*

Salix
Juglans
Quercus
Terebinthina chia
Mastiche

Crack willow
 Common walnut tree
 Common oak tree
 Common turpentine tree
 Common mastich tree

III.—COMPOSITÆ.

Arctium lappa
Centaurea benedicta
Cynara scolymus
Leontodon taraxacum
Artemisia abrotanum
 — *absinthium*
 — *vulgaris*
 — *maritima*
 — *santonica*
Tanacetum vulgare
Tussilago farfara
Anthemis nobilis
 — *pyrethrum*
Chicorium intybus
Matricaria parthenium
Lactuca virosa
Inula helenium
Arnica montana
Achillea millefolium

Bardana
Carduus benedictus
Cinara
Taraxacum
Abrotanum
Absinthium
Artemisia
Absinthium maritimum
Santonicum
Tanacetum
Tussilago
Chamæmelum
Pyrethrum
Chicoreum
Matricaria
Lactuca virosa
Enula campana
Arnica
Millefolium

Common burdock
 Holy thistle
 Artichoke
 Common dandelion
 Common southernwood
 Common wormwood
 Common mugwort
 Sea wormwood
 Tartarian wormwood
 Common tansy
 Colt's foot
 Common camomile
 Pellitory of Spain
 Wild succory
 Common feverfew
 Stinking wild lettuce
 Elecampane
 Mountain arnica
 Common yarrow

IV.—AGGREGATÆ.

Valeriana officinalis

Valeriana sylvestris

Officinal valerian

V.—CONGLOMERATÆ.

Plantago major
Viscum album

Plantago
Viscum

Great plantane
 Mistletoe

VI.—UMBELLATÆ.

Eryngium maritimum
Daucus Carota
Conium maculatum
Ferula assa fetida
Angelica archangelica
Angelica sylvestris
Phellandrium aquaticum
Ænanthe crocata
Cicuta virosa
Bubon galbanum
Cuminum cyminum
Coriandrum sativum
Sium nodiflorum
Imperatoria ostruthium

Eryngium
Daucus sylvestris
Cicuta
Asafœtida, gummi resina
Angelica
Angelica sylvestris
Fœniculum aquaticum
Ænanthe crocata
Cicuta aquatica
Galbanum, gummi resina
Cuminum
Coriandrum
Sium
Imperatoria

Sea eryngo
 Wild carrot
 Common hemlock
 Asafœtida gigantic fennel
 Garden angelica
 Wild angelica
 Fine leaved water hemlock
 Water dropwort
 Water hemlock
 Lovage leaved bubon
 Cumin
 Common coriander
 Creeping water parsnip
 Common masterwort

SYSTEMATIC NAMES.

Pastinaca opopanax
Anethum graveolens
 ——— *feniculum*
Carum carui
Pimpinella saxifraga
 ——— *anisum*
Apium petroselinum
Ligusticum levisticum

OFFICINAL.

Opoponax, gummi resina
Anethum
Fœniculum
Caruon
Pimpinella
Anisum
Petroselinum
Levisticum

ENGLISH.

Rough parsnip
 Common dill
 Common fennel
 Common carraway
 Small burnet saxifrage
 Anise
 Common parsley
 Lovage

VII.—HEDERACEÆ.

Vitis vinifera
Panax quinquefolium

Vitis
Ginseng

Common vine
 Ginseng

VIII.—SARMENTACEÆ.

Smilax China
Smilax sarsaparilla
Cissampelos pareira
Aristolochia serpentaria
 ——— *longa*
 ——— *clematitis*
Asarum europæum
Ruscus aculeatus

China
Sarsaparilla
Pareira brava
Serpentaria virginiana
Aristolochia rotunda
Aristolochia tenuis
Asarum
Ruscus

Chinese smilax
 Sarsaparilla smilax
 Pareira brava cissampelos
 Snakeroot birthwort
 Long-rooted birthwort
 Climbing birthwort
 Asarabacca
 Knee holly

IX.—STELLATÆ.

Rubia tinctorum
Galium aparine
Spigelia marilandica

Rubia tinctorum
Aparine
Spigelia Marilandica

Dyer's madder
 Cleavers
 Perennial worm-grass

X.—CYMOSÆ.

Coffea arabica

Coffea

Coffee-tree

XI.—CUCURBITACEÆ.

Cucumis colocinthis
Momordica elaterium
Bryonia alba

Colocynthis
Cucumis agrestis
Bryonia

Bitter cucumber
 Wild cucumber
 White briony

XII.—SOLONACEÆ.

Solanum nigrum
Solanum dulcamara
Atropa belladonna
Atropa mandragora
Hyosciamus niger
Datura stramonium
Nicotiana tabacum
Capsicum annuum
Physalis alkekengi
Verbascum thapsus
Digitalis purpurea
Strychnos nux vomica

Solanum
Dulcamara
Belladonna
Mandragora
Hyosciamus
Stramonium
Nicotiana
Piper indicum
Alkekengi
Verbascum
Digitalis
Nux vomica

Garden nightshade
 Woody nightshade
 Deadly nightshade
 Mandrake
 Black henbane
 Common thorn apple
 Tobacco
 Annual capsicum
 Winter cherry
 Common mullein
 Common foxglove
 Vomic nut

XIII.—CAMPANACEÆ.

Convolvulus scammonia
Convolvulus jalaptha
Lobelia siphilitica
Viola odorata
Viola tricolor

Scammonium
Jalapium
Lobelia
Viola
Viola tricolor

Scammony bindweed
 Jalap bindweed
 Blue lobelia
 Sweet violet
 Pansy

XIV.—CONTORTÆ.

Cinchona officinalis
 VOL. II.

Peruvianus cortex

Peruvian bark tree
 4 B

APPENDIX.

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APPENDIX.

SYSTEMATIC NAMES.
Cinchona rubra
Asclepias vincetoxicum

OFFICIAL.
 Cortex peruvianus ruber
 Vincetoxicum

ENGLISH.
 Red peruvian bark
 Official swallow wort

XV.—ROTACEÆ.

Gentiana lutea
Gentiana purpurea
Chironia centaurium
Menyanthes trifoliata

Gentiana
Cursuta
Centaurium minus
Trifolium paludosum

Yellow gentian
 Purple gentian
 Lesser centaury
 Buck bean

XVI.—SEPIARIÆ.

Olea europæa

Oliva

Common European olive

XVII.—BICORNES.

Santalum album
Arbutus uva ursi
Styrax officinale
Styrax benzoin
Rhododendron chrysanthemum

Santalum citrinum
Uva ursi
Styrax, resina
Benzoe, resina
Rhododendron

Yellow saunders
 Bear-berry
 Storax tree
 Gum benjamin tree
 Yellow rhododendron

XVIII.—ASPERIFOLIÆ.

Anchusa tinctoria
Anchusa officinalis
Pulmonaria officinalis
Lithospermum officinale
Symphytum officinale
Cynoglossum officinale
Borago officinalis

Anchusa
Buglossum
Pulmonaria
Lithospermum
Consolida
Cynoglossum
Borago

Dyer's bugloss
 Official bugloss
 Common lungwort
 Common gromwell
 Comfrey
 Houndstongue
 Borage

XIX.—VERTICILLATÆ.

Teucrium marum
Teucrium scordium
Teucrium chamædrys
Thymus vulgaris
Thymus serpyllum
Melissa officinalis
Hyssopus officinalis
Lavandula spica
Origanum vulgare
Origanum marjorana
Origanum dictamnus
Mentha piperita
Mentha viridis
Mentha pulegium
Marrubium vulgare
Salvia officinalis
Rosmarinus officinalis
Glechoma hederacea
Betonica officinalis

Marum syriacum
Scordium
Chamædrys
Thymus
Serpyllum
Melissa
Hyssopus
Lavandula
Origanum
Majorana
Dictamnus creticus
Mentha piperitis
Mentha sativa
Pulegium
Marrubium
Salvia
Rosmarinus
Hedera terrestris
Betonica

Herb mastich
 Water germander
 Common germander
 Garden thyme
 Wild thyme
 Common balm
 Common hyssop
 Common lavender
 Common marjoram
 Sweet marjoram
 Dittany of Crete
 Pepper-mint
 Spear-mint
 Pennyroyal-mint
 Common horehound
 Garden sage
 Rosemary
 Ground ivy
 Wood betony

XX.—PERSONATÆ.

Gratiola officinalis
Veronica officinalis
Veronica beccabunga
Verbena officinalis
Eupharsia officinalis
Antirrhinum linaria
Vitex agnus castus

Gratiola
Veronica
Becabunga
Verbena
Euphrasia
Linaria
Agnus Castus

Hedge hyssop
 Male speedwell
 Brooklime
 Common vervain
 Common eyebright
 Common toadflax
 Chaste tree

XXI.—RHOEADES.

SYSTEMATIC NAMES.

Papaver rhæas
Papaver somniferum
Chelidonium majus

OFFICIAL.

Papaver erraticum
Papaver album, Opium
Chelidonium majus

ENGLISH.

Red poppy
 Common white poppy
 Greater celandine

XXII.—PUTAMINEÆ.

Capparis spinosa

Capparis

Caper bush

XXIII.—SILICOSÆ.

Sisymbrium nasturtium
Cardamine pratensis
Sinapis nigra
Cochlearia officinalis
Cochlearia armoracia
Erysimum officinale
Erysimum alliaria

Nasturtium aquaticum
Cardamine
Sinapi
Cochlearia hortensis
Raphanus rusticus
Erysimum
Alliaria

Water cresses
 Ladies smock
 Common mustard
 Scurvy grass
 Horse radish
 Hedge mustard
 Sauce-alone

XXIV.—PAPILIONACEÆ.

Dolichos pruriens
Geoffroya inermis
Spartium scoparium
Glycyrrhiza glabra
Astragalus tragacantha
Astragalus exscapus
Trigonella fenum græcum
Pterocarpus santalinus

Dolichos
Geoffræa
Genista
Glycyrrhiza
Tragacantha, gummi
Astragalus exscapus
Fœnum græcum
Santalum rubrum

Cowhage
 Smooth bastard cabbage tree
 Common broom
 Common liquorice
 Goats thorn milk vetch
 Stemless milk vetch
 Common fenugreek
 Red saunders

XXV.—LOMENTACEÆ.

Cassia senna
Cassia fistula
Mimosa catechu
Mimosa nilotica
Tamarindus indica
Hæmatoxylum campechianum
Polygala senega
Fumaria officinalis

Senna
Cassia fistularis
Catechu, extractum
Arabicum, gummi
Tamarindus
Lignum Campechense
Seneka
Fumaria

Senna cassia
 Purging cassia
 Catechu mimosa
 Egyptian thorn mimosa
 Tamarind tree
 Logwood tree
 Rattlesnake root milk wort
 Common fumitory

XXVI.—MULTISILICOSÆ.

Aconitum napellus
Delphinium staphisagria
Helleborus niger
Helleborus fœtidus
Anemone pratensis
Ranunculus acris
Pœonia officinalis
Clematis recta
Dictamnus albus
Ruta graveolens

Napellus
Staphisagria
Helleborus niger
Helleboraster
Pulsatilla nigricans
Ranunculus pratensis
Pœonia
Flammula Jovis
Dictamnus albus
Ruta

Common wolf's bane
 Stavesacre
 Black hellebore
 Bear's foot
 Meadow anemone
 Meadow crowfoot
 Common peony
 Upright virgin's bower
 Bastard dittany
 Common rue

XXVII.—SENTICOSÆ.

Potentilla reptans
Rubus idæus
Rosa centifolia
Rosa gallica
Rosa canina
Agrimonia eupatoria
Geum urbanum

Pentaphyllum
Rubus idæus
Rosa damascena
Rosa rubra
Cynosbatus, fructus
Agrimonia
Caryophyllata

Cinquefoil
 Raspberry
 Hundred leaved rose
 Red officinal rose
 Hip, or dog rose
 Common agrimony
 Common avens

XXVIII.—POMACEÆ.

SYSTEMATIC NAMES.	OFFICIAL.	ENGLISH.
<i>Pyrus cydonia</i>	<i>Cydonium malum</i>	Quince tree
<i>Prunus domestica</i>	<i>Prunum gallicum</i>	Prune, or plum tree
<i>Prunus spinosa</i>	<i>Prunum sylvestre</i>	Sloe tree
<i>Prunus laurocerasus</i>	<i>Laurocerasus</i>	Cherry laurel
<i>Amygdalus communis</i>	<i>Amygdala</i>	Common almond
<i>Amygdalus persica</i>	<i>Persica</i>	Peach tree
<i>Punica granatum</i>	<i>Granatum</i>	Pomegranate
<i>Citrus medica</i>	<i>Limon</i>	Lemon tree
<i>Citrus aurantium</i>	<i>Aurantium hispalense</i>	Orange tree
<i>Ribes rubrum</i>	<i>Ribes rubrum</i>	Red currant
<i>Ribes nigrum</i>	<i>Ribes nigrum</i>	Black currant

XXIX.—HESPERIDEÆ.

<i>Myrtus pimenta</i>	<i>Pimento</i>	Allspice
<i>Caryophyllus aromaticus</i>	<i>Caryophyllum aromaticum</i>	Clove tree
<i>Melaleuca leucadendron</i>	<i>Cajeputa</i>	Cajeput tree

XXX.—SUCCULENTÆ.

<i>Sedum acre</i>	<i>Sedum acre; s. minus</i>	Wall stone crop
<i>Saxifraga granulata</i>	<i>Saxifraga alba.</i>	White saxifrage

XXXI.—COLUMNIFERÆ, S. MALVACEÆ.

<i>Althæa officinalis</i>	<i>Althæa</i>	Marsh mallow.
<i>Malva sylvestris</i>	<i>Malva</i>	Common mallow.

XXXII.—GRUINALES.

<i>Guaiacum officinalis</i>	<i>Guaiacum</i>	Guaiacum
<i>Quassia amara</i>	<i>Quassia</i>	Bitter quassia
<i>Quassia simarouba</i>	<i>Simarouba</i>	Simarouba quassia
<i>Linum usitatissimum</i>	<i>Linum</i>	Common flax
<i>Oxalis acetosella</i>	<i>Acetosella</i>	Wood sorrel.

XXXIII.—CARYOPHYLLÆ.

<i>Dianthus caryophyllus</i>	<i>Caryophyllum rubrum</i>	Clove pink
<i>Saponaria officinalis</i>	<i>Saponaria</i>	Soapwort

XXIV.—CALYCANTHEMÆ.

XXXV.—ASCYROIDEÆ.

<i>Cistus creticus</i>	<i>Ladanum, resina</i>	Cretan cistus
<i>Hypericum perforatum</i>	<i>Hypericum</i>	St. John's wort
<i>Fraxinus ornus</i>	<i>Manna</i>	Flowering ash

XXXVI.—COADUNATÆ.

XXXVII.—DUMOSÆ.

<i>Rhamnus catharticus</i>	<i>Spina cervina</i>	Purging buckthorn
<i>Sambucus nigra</i>	<i>Sambucus</i>	Common black elder
<i>Sambucus ebulus</i>	<i>Ebulus</i>	Dwarf elder
<i>Rhus coriaria</i>	<i>Sumach</i>	Elm leaved sumach
<i>Amyris gileadensis</i>	<i>Balsamum gileadense</i>	Balsam of gilead tree
<i>Copaifera officinalis</i>	<i>Balsamum copaiva</i>	Balsam of copaiva tree
<i>Toluifera balsamum</i>	<i>Balsamum toluatanum</i>	Balsam of tolu tree

XXXVIII.—TRIHILOTÆ.

<i>Æsculus Hippocastanum</i>	<i>Hippocastanum</i>	Horse chesnut
<i>Tropæolum majus</i>	<i>Nasturtium indicum</i>	Nasturtium

SYSTEMATIC NAMES.	OFFICIAL.	ENGLISH.
<i>Berberis vulgaris.</i>	Berberis	Common barberry
<i>Swietenia mahagoni</i>	Swietenia	Mahogany
XXXIX.—TRICOCCÆ.		
<i>Croton cascarilla</i>	Cascarilla	Willow leaved croton
<i>Clusia eluteria</i>	Cascarilla	Cascarilla
<i>Ricinus communis</i>	Ricinus	Palma christi
<i>Siphonia elastica</i>	Resina elastica	Elastic resin tree
<i>Thea</i>	Thea	Tea tree
<i>Wintera aromatica</i>	Winteranus (cortex)	Winter's bark tree
XL.—OLREACEÆ.		
<i>Salsola kali</i>	Barilla, natron	Prickly salt-wort
<i>Chenopodium vulvaria</i>	Atriplex fœtida	Stinking goosefoot
<i>Rumex aquaticus</i>	Hydrolapathum	Water dock
<i>Rumex acetosa</i>	Acetosa	Common sorrel
<i>Rheum palmatum</i>	Rhabarbarum	Officinal rhubarb
<i>Polygonum bistorta</i>	Bistorta	Bistort snakeweed

<i>Laurus cinnamomum</i>	Cinnamomum	Cinnamon tree
<i>Laurus nobilis</i>	Larus	Sweet bay
<i>Laurus sassafras</i>	Sassafras	Sassafras tree
<i>Laurus camphora</i>	Camphora	Camphor tree
<i>Canella alba</i>	Canella alba	Laurel-leaved canella
<i>Myristica moschata</i>	Nux moschata	Nutmeg tree
XLI.—SCABIDRÆ.		
<i>Parietaria officinalis</i>	Parietaria	Wall pellitory
<i>Dorstenia contrayerva</i>	Contrayerva	Contrayerva
<i>Ficus carica</i>	Carica	Fig tree
<i>Urtica dioica</i>	Urtica	Common nettle
<i>Morus nigra</i>	Morum	Mulberry tree
<i>Ulmus campestris</i>	Ulmus	Common elm
XLII.—VERPECULÆ.		
<i>Daphne mezereum</i>	Mezereum	Mezereon
XLIII.—PALMÆ.		
XLIV.—PIPERITÆ.		
<i>Piper cubeba</i>	Cubebæ	Cubebs
<i>Piper nigrum</i>	Piper nigrum	Black pepper
<i>Piper longum</i>	Piper longum	Long pepper
<i>Acorus calamus</i>	Calamus aromaticus	Sweet flag
<i>Arum maculatum</i>	Arum	Common arum
XLV.—SCITAMINÆ.		
<i>Amomum zingiber</i>	Zingiber	Ginger
<i>Amomum cardamomum</i>	Cardamomum minus	Cardamom
<i>Curcuma longa</i>	Curcuma	Tumeric
<i>Kæmpferia rotunda</i>	Zedoaria	Zedoary
XLVI.—LILIACEÆ.		
<i>Lilium candidum</i>	Lilium album	Common white lily
<i>Scilla maritima</i>	Scilla	Officinal squill
<i>Allium sativum</i>	Allium	Common garlic
<i>Veratrum album</i>	Helleborus albus	White hellebore
<i>Colchicum autumnale</i>	Colchicum	Common meadow saffron
<i>Crocus sativus</i>	Crocus	Saffron
<i>Aloë species variæ</i>	Aloë	Aloe
<i>Convallaria polygonatum</i>	Convallaria	Solomon's seal

XLVII.—ENSATÆ.

SYSTEMATIC NAMES	OFFICIAL.	ENGLISH.
<i>Iris florentina</i>	<i>Iris florentina</i>	Florentine orris
<i>Iris pseudo-acorus</i>	<i>Iris palustris</i>	Yellow water flag

XLVIII.—ORCHIDÆ.

<i>Orchis mascula</i>	<i>Satyrion</i>	Male orchis
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XLIX.—TRIPETALOIDEÆ.

<i>Calamus rotang</i>	<i>Sanguis draconis</i>	Dragon's blood tree
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L.—CALAMARIÆ.

LI.—GRAMINA.

<i>Saccharum officinarum</i>	<i>Saccharum</i>	Sugar cane
<i>Zea mayz</i>	<i>Mayz</i>	
<i>Hordeum dystichon</i>	<i>Hordeum</i>	Barley
<i>Triticum hybernum</i>	<i>Triticum</i>	Wheat
<i>Avena sativa</i>	<i>Avena</i>	Oats

LII.—FILICES.

<i>Polypodium vulgare</i>	<i>Polypodium</i>	Common polypody
<i>Polypodium filix mas</i>	<i>Filix</i>	Male fern
<i>Asplenium trichomanoides</i>	<i>Trichomanes</i>	Maidenhair
<i>Asplenium scolopendrium</i>	<i>Scolopendrium</i>	Hart's tongue

LIII.—MUSCI.

LIV.—ALGÆ.

<i>Lichen islandicus</i>	<i>Lichen islandicus</i>	Eryngo-leaved lichen
<i>Lichen caninus</i>	<i>Lichen cinereus terrestris</i>	Ground liverwort

LV.—FUNGI.

<i>Boletus igniarius</i>	<i>Agaricus chirurgorum</i>	Agaric
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BOTRYS MEXICANA.—Page 275, col. 2, line 10; "juice adheres to the fingers." The taste of the former is somewhat bitter, and the distilled water is milky, containing the smell and taste of the plant, but a very small proportion only of essential oil can be obtained from it. One portion of this oil is fluid, yellow aromatic, bitter, and fragrant like the plant; the other coagulates in the cold like suet, and is readily dissolved in spirit of wine. The watery infusion is bitter, with a fragrance inferior to that of the plant: the spirituous tincture, with a slight bitterness, has also an acrid taste. Somewhat more than two drachms of a watery extract of a bitter, saltish taste is obtained from an ounce of the plant, and it is soon covered with an efflorescence of saline crystals. The spirituous extract is less in quantity, amounting only to a drachm and a scruple, but superior in bitterness and acrimony. From the shape of the crystals, and their crackling in the fire, they are supposed to be nitrous. The plant has been styled, from its sensible qualities, an aperient, an abstergent, a carminative, and an analeptic, peculiarly useful not only in pituitous asthma but in hysteria.

BOULIMUS.—Page 276, col. 2, line 46; "appetite for food is followed by vomiting."—Another species should have been added, viz. *b. organica*. In the first

volume of the Memoirs of the Medical Society we find a case recorded by Mr. French, in which, from an hydrops ovarii, the stomach was raised on the left side, so that the pylorus was the lowest part; and Ruysch (Obs. 74) relates an instance of a similar complaint from a relaxation of the pylorus. We can scarcely reconcile Blasius' observation of a double stomach with the symptoms of this disease, and hesitate a little in admitting the troops of lice found by Bonetus (Sepulcretum, lib. iii. ii. 9). A liver of an enormous size is mentioned among the causes which probably drew the pylorus downward; and Bonetus records the insertion of the ductus choledochus into the stomach as a cause, (l. c. lib. iii. ii. 6; see also Anatomia Vesalii, v. 3. 8). The structure of the intestines, which had not their usual tortuous course, is said to have produced the same effect. We know that all carnivorous animals, whose intestines are shorter and less convoluted than those of the human race, bear fasting indifferently. The narcotics, particularly opium and coffee, are frequently useful to lessen the painful sensation; for, in the organic species we are now describing, a cure can scarcely be expected.

BRACTEA, a thin plate; but in botany it implies a floral leaf, or is the name of the vegetable organ on

which the plant depends for support. It is commonly of the same duration with the other leaves, which is of importance in the distinction, as it might be otherwise confounded with the calyx, which withers when the fruit is ripe.

BRANCHIÆ, the gills of fish.

BRANDY.—Page 279, col. 1, line 2; "See *Annales de Chimie*, vol. xxxvii."—See **VINUM ADUSTUM**. Like all other wines and spirits, it is an indirect stimulus; in other words a most destructive narcotic, if used in excess; but often useful and salutary at proper seasons and in moderate quantities.

BRASILIANUM LIGNUM.—Page 279, col. 1, line 17; "*Santalus Adulterinus*."—*Hæmatoxyllum campechianum* Lin. Sp. Pl. 549.

BRAWN. The neck of the boar boned, firmly rolled into a cylinder, and afterwards boiled. An old animal is preferred, as the skin is more horny. It is cut thin, and eaten with vinegar and mustard; condiments which render it more digestible. It is, however, to many persons an insipid food, and not very soluble.

BREVI VASA.—Page 281, col. 2, line 45; "the veins which receive this name."—The veins accompany the arteries; but the term is chiefly applied to the latter. See **SPLEN**.

BRISTOLIENSIS AQUA.—Page 282, col. 1, line 28; "adds to the ingredients sulphat of soda."—Dr. Carrick obtained from a wine gallon, muriated magnesia $7\frac{1}{2}$ grains, common salt 4, sulphated soda $11\frac{1}{2}$, selenite $11\frac{3}{4}$, carbonated lime $13\frac{1}{2}$, in the whole forty seven grains and three quarters. Dr. Nott found, probably in a drier season a residuum of fifty two grains. The specific gravity of this water is 1.00077, and its heat 74° , nearly. It is said, like the Bath water, to occasion a sensible glow in the stomach, and to produce occasionally headaches.

BRITISH OIL, a dark petroleum, found sometimes floating in springs, but more frequently produced by distillation from a stone which contains it. This oil is slightly stimulant, and it is recommended as a discutient in bruises.

BROCCOLI. *Brassica italica*. See **BRASSICA**.

BROMATOLOGIA, (from *βρῶμα*, food, and *λογος*, a discourse). The doctrines of aliment.

BRONCHITIS, a term lately introduced by Dr. Badham, implying inflammations of the bronchiæ, not decidedly catarrhal. He considers this disease as of three kinds the *b. acuta*, *asthenica*, and *chronica*, viz. the active inflammation of the membrane lining the bronchiæ the peripneumonia notha, and the catarrhus senilis. He seems, in some places, to allude to the croop, but not distinctly, and with no accurate discrimination of its peculiar membranous discharge.

The acute bronchitis, which is the only novelty in the work, does not appear to be distinguished from ca-

tarrh; for the bronchial glands are occasionally turgid; and though marks of inflammation are at first obvious, debility soon comes on, and every symptom apparently marks languid circulation through these organs (Badham on the inflammatory Affections of the mucous Membrane of the Bronchiæ). See **PERIPNEUMONIA NOTHA**, **CATARRHUS SUFFOCATIVUS**, and **SENILIS**.

BRUSH. The flesh brush and its use are generally known (see **FRICTIO**); but we introduce this article for the purpose of mentioning two instruments of this kind; one is the *metallic brush of M. Molwitz*, the other the *stomach brush*. The first consists of wires terminating in small knobs, fixed round a wheel, and is used by turning an axle which gives motion to the wheel. He seems willing to compare it with the metallic tractors; but thinks the action of both instruments purely mechanical. The stomach brush we cannot readily describe, as we have not met with an intelligible account of it. The stimulus is given by hairs, which bend in passing through the œsophagus; but recover their rectangular position when in the stomach, in consequence of their elasticity. It is called by the German authors *excusia ventriculi*, and is used to stimulate the organ, and to assist the discharge of heavy viscid mucus.

BRUTA.—Page 287, col. 2, line 7; "teaching the use of salt in clysters."—This article should have been marked with inverted commas. It is the opinion of others, and not our own. The fact is not true; nor is it probable, if the Almighty had deigned to instruct us, that this would have been the means, which few could have profited by. The whole is truly ridiculous.

BRYONIA ALBA.—Page 287, col. 2, line 37; "*bryonia alba* Lin. Sp. Pl. 1438."—The flowers of the bryony are bell-shaped, monopetalous, of a greenish white, followed by red berries, containing an extremely viscid pulp with small seeds. The root is as thick as a man's leg, brownish or yellowish without, and white within.

The excavated root of the bryony is occasionally filled with beer, with the recent juice of the plant, or with sugar, which deliquesces in 24 hours. In different doses these are employed in dropsies; in the stronger habits, it is said, with considerable success. Externally, if cut in pieces, slightly bruised, and applied warm to the legs, repeating the application every twelve hours, it is said, by Tissot, to evacuate a large quantity of water. In other hands it has been less successful.

Its external application has been also advantageous in sciatica and scrofulous swellings, and in stiffness of the joints. It is sometimes sold instead of the mechoacanina. Its fæcula formerly employed is wholly useless. The Wirtemberg Dispensatory contains an *unguentum agrippæ* of which the larger proportion is bryony; and it is said to be useful as a cathartic in enlarged spleens, and externally in cold tumours.

BUFO.—Page 293, col. 1, line 15; "it is often found under bramble bushes."—The scientific name of this animal in the system of Linnæus is *rana bufo*, in modern authors of the natural order of *batrachiens*; whose cha-

racter is a short, thick body, often rugged, four paws, the posterior rarely longer than the body, toes without any viscous cushion at their extremities, and no tail. The animal is not formed for escape, and, when in danger, inflates his body, rendering it very hard and elastic, throwing from the rugged protuberances a fetid viscid fluid, and another fluid from the anus, both supposed, without reason, to be poisonous. When these means of defence fail, the animal attempts to bite. His hold is firm; but the wound, though attended with a slight inflammation, is soon cured. The fluids thrown from the verrucæ and the anus are not most slightly injurious, unless from a previous wound, and even then an inconsiderable inflammation only ensues. In warm countries these fluids are more acrid, and may be truly styled poisonous. The frothy fluid on plants, called *toad's spittle*, is in reality the nidus of an insect. Toads eat worms, insects, &c., sometimes bread, and different vegetables; and some are so tame as to come when called, and eat what is offered. A curious instance of this kind, recorded by Mr. Pennant, occurred in Devonshire. They most commonly come from their retreats after a warm rain. At other times they remain quiet in their holes, not in a state of torpor, but merely of weakness from want of food, and from cold. The male is peculiarly active in assisting the female when she lays her eggs, and singularly attentive to the young ones, when ready to escape from them. Toads are apparently long lived, and their legs are often eaten in France instead of the legs of frogs, to which they are said to be sacrilegiously inferior, except in tenderness.

Toads, dried and powdered, have been used not only as a diuretic but as a sudorific: applied alive on the head the animal is supposed to relieve pains of that part, and, on any other organ, to draw the gout to it. We need scarcely add that these fancies have little foundation.

The common toad has large projecting parotids, an ash coloured body, sometimes a little yellowish above, and white below. The verrucæ are of an obscure red, the hinder feet demi-palmated.

BUFONITÆ, TOAD STONES, fossils convex and smooth on one side, flat and unequal on the other; regular and irregular. They were supposed to be calculi from the head of a toad, and are the origin of the fable, that the head of this animal produces pearls. They are now known to be the teeth of the anarrhicus, or the sea wolf. Those which have concentric circles of different colours are called *serpents's or wolf's eyes*. Various medical virtues have been attributed to them, but on no secure foundation.

BUGLOSSUM.—Page 293, col. 1, line 45; "*its roots are mucilaginous.*"—The ancient bugloss was probably not the same as the modern; for the latter does not merit the name of euphrosine given by Pliny. *Historia Naturalis*, xxv. 8.

BULBOCASTANUM.—Page 293, col. 2, line 6; "*tuberous, and whitish.*"—The lower leaves are winged, and cut into several divisions, finer and smaller than those of saxifrage. The stalk is about twelve inches in height, with one leaf about the middle, as fine and slender as fennel, with similar leaves at every division

of the branches, on the tops of which grow thin umbels of small white flowers.

BULBO CAVERNOSUS, a muscle named from its origin and insertion. See *ACCELERATOR URINÆ*.

BULBUS.—Page 293, col. 2, line 24; "*easily taken hold of from its roundness.*"—In botany it means a large bud, generally produced under the ground, on or near the roots of some herbaceous plants, from hence called *bulbous*. Linnæus describes it as a species of hibernaculum produced on the root, consisting of stipulæ and foot stalks, the rudiments of former leaves, with scales or bark. In the bulbous plants, of which the tulip, onion, and lily are examples, the root is properly the hibernaculum, which contains and protects the embryo of the future plant. At the lower part of this bulb a fleshy tubercle, from which a number of fibres proceed, is observable. This part is strictly the root, as the other is only the nursery of the plant, which, after a series of years, perishes, leaving at its sides a number of smaller bulbs for perpetuating the species. Dr. Grew remarks, that all bulbous roots may be considered as hermaphrodites, by which he meant roots and trunk in one. When uniform, they are styled *solid*; when composed of numerous infolding coats, *tunicated*; when composed of lesser scales, *squamose*; when there are only two to each plant, *duplicate*; when several, *aggregate*.

BUPLEURUM ROTUNDIFOLIUM, Lin. Sp. Pl. 340, is an annual, growing in fields. The seed is black, long, furrowed, and of an austere taste, which is weak in the plant. Each is accounted a vulnerary. It was formerly used to prevent and cure herniæ; but as a steady pressure was also applied, the effect was ambiguous. It is recommended also as a discutient, and to take off the blackness from bruises.

BUPRESTIS.—Page 294, col. 2, line 6; "*are possessed in some measure of the same virtues.*"—It is a coleopterous insect of singular beauty. The body is long: two membranous wings are concealed under very hard scales; filiform, serrated antennæ, a little shorter than the breast plate, are composed of eleven joints; the mouth is furnished with two lips, two horny mandibles, and two unindentated jaws, and four short filiform antennulæ: it has five joints in the tarsi.

BURGEON, in botany, an eye, bud, or gem.

BURSÆ MUCOSÆ.—Page 295, col. 1, line 39; "*the outside of the foot.*"—These bursæ are found in the extremities of the body; and the number of those discovered is said to be one hundred and forty, viz. thirty in each superior, and thirty-seven in each inferior extremity. Many are placed on the inner sides of the tendons between them and the bone, some between the tendon and the integuments; many are external and internal with respect to the tendons; some between contiguous tendons, or between tendons and ligaments. These sacs are also interposed where processes of bone play on ligaments, or one bone on another. The bursæ sometimes communicate, and when tendons separate the sacs are also divided. In very

young and in very old persons they sometimes communicate with the cavities of the joints, without any apparent injury to its motion.

The bursæ, in many respects, resemble the capsular ligaments of the joints; for the internal membrane of each is thin and dense; between them and the bones, layers of cartilage, or articular cartilages, are interposed; fatty matter intervenes at least in part, in each where the motion is considerable; and the chemical nature of the containing fluids is the same. The bursæ often communicate with the cavities of the joints, and it is equally necessary, in operations, to guard them from too free access of the external air. As Mr. Gooch's enumeration has been thought too concise, we shall transcribe a more complete catalogue from Dr. Hooper.

"BURSÆ MUCOSÆ OF THE HEAD.—1. A bursa of the superior oblique muscle of the eye, situated behind its trochlea in the orbit. 2. The bursa of the digastricus, situated in the internal surface of its tendon. 3. A bursa of the circumflexus, or tensor palati, situated between the hook-like process of the sphenoid bone and the tendon of that muscle. 4. A bursa of the sterno hyoideus muscle, situated between the os hyoides and larynx.

"BURSÆ MUCOSÆ SITUATED ABOUT THE SHOULDER JOINT. 1. The external acromial, situated under the acromion, between the coracoid process, deltoid muscle, and capsular ligament. 2. The internal acromial, situated above the tendon of the infra spinatus and teres major: it often communicates with the former. 3. The coracoid bursa, situated near the root of the coracoid process: it is sometimes double, and sometimes triple. 4. The clavicular bursa, found where the clavicle touches the coracoid process. 5. The subclavian bursa, between the tendon of the subclavicularis muscle and the first rib. 6. The coracobrachial, placed between the common origin of this muscle, the biceps, and the capsular ligament. 7. The bursa of the pectoralis major, situated under the head of the humerus, between the internal surface of the tendon of that muscle and another bursa placed on the long head of the biceps. 8. An external bursa of the teres major, under the head of the os humeri, between it and the tendon of the teres major. 9. An internal bursa of the teres major, found within the muscle where the fibres of its tendon diverge. 10. A bursa of the latissimus dorsi, between the tendon of this muscle and the os humeri. 11. The humero bicipital bursa, in the vagina of the tendon of the biceps. There are other bursæ mucosæ about the humerus, but their situation is uncertain.

"BURSÆ MUCOSÆ SITUATED NEAR THE ELBOW JOINT.—1. The radio-bicipital, situated between the tendon of the biceps, brachialis, and anterior tubercle of the radius. 2. The cubito radial, between the tendon of the biceps, supinator brevis, and the ligament common to the radius and ulna. 3. The anconeal bursa, between the olecranon and tendon of the anconeus muscle. 4. The capitulo-radial bursa, between the tendon common to the extensor carpi radialis brevis, and extensor communis digitorum and round head of the radius. There are other bursæ, but as their situation varies, they are omitted.

"BURSÆ OF THE INFERIOR PART OF THE FORE ARM AND HAND.—*On the inside of the wrist and hand.* 1. A very large bursa, for the tendon of the flexor pol-

licis longis. 2. Four short bursæ on the fore part of the tendons of the flexor sublimis. 3. A large bursa behind the tendon of the flexor pollicis longus, between it and the fore part of the radius, capsular ligament of the wrist, and os trapezium. 4. A large bursa behind the tendons of the flexor digitorum profundus, and on the fore part of the end of the radius, and fore part of the capsular ligament of the wrist. In some subjects it communicates with the former. 5. An oblong bursa, between the tendon of the flexor carpi radialis and os trapezium. 6. A very small bursa between the tendon of the flexor carpi ulnaris and os pisiforme.

"On the back part of the hand and wrist. 7. A bursa between the tendon of the abductor pollicis longus and the radius. 8. A large bursa between the two extensores carpi radiales. 9. Another below it, common to the extensores carpi radiales. 10. A bursa at the insertion of the tendon of the extensor carpi radialis. 11. An oblong bursa, for the tendon of the extensor pollicis longus, and which communicates with 9. 12. A bursa, for the tendon of the extensor pollicis longus, between it and the metacarpal bone of the thumb. 13. A bursa between the tendons of the extensor of the fore, middle, and ring fingers. 14. A bursa for the extensors of the little finger. 15. A bursa between the tendon of the extensor carpi ulnaris and ligament of the wrist. There are also bursæ mucosæ between the musculi lumbricales and interossei.

"BURSÆ SITUATED NEAR THE HIP JOINT.—*On the fore part of the joint.* 1. The ileo-puberal, situated between the iliacus internus, psoas magnus, and the capsular ligament of the head of the femur. 2. The pectineal, between the tendon of the pectineus and the thigh bone. 3. A small bursa of the gluteus medius muscle, situated between it and the great trochanter, before the insertion of the pyriformis. 4. A bursa of the gluteus minimus muscle, between its tendon and the great trochanter. 5. The gluteo fascial, between the gluteus maximus and vastus externus.

"On the posterior part of the hip joint. 6. The tubero-ischiatic bursa, situated between the obturator internus muscle, the posterior spine of the ischium, and its tuberosity. 7. The obturator bursa, which is oblong, and found between the obturator internus and gemini muscles and the capsular ligament. 8. A bursa of the semi-membranosus, under its origin and the long head of the biceps femoris. 9. The gluteo-trochanteral bursa, situated between the tendon of the psoas muscle and the root of the great trochanter. 10. Two gluteo-femoral bursæ, situated between the tendon of the gluteus maximus and os femoris. 11. A bursa of the quadratus femoris, situated between it and the little trochanter. 12. The iliac bursa, situated between the tendon of the iliacus internus and the little trochanter.

"BURSÆ MUCOSÆ SITUATED NEAR THE KNEE JOINT.—1. The supra-genual, which adheres to the tendons of the vastus and cruralis and the fore part of the thigh bone. 2. The infra-genual bursa, situated under the ligament of the patella, and often communicates with the above. 3. The anterior genual, placed between the tendon of the sartorius, gracilis, and semi-tendinosus, and internal and lateral ligament of the knee. 4. The posterior genual, which is sometimes double, and is situated between the tendons of the semi-membranosus, the internal head of the gastrocnemius, the capsular

ligament, and internal condyle. 5. The popliteal, conspicuous between the tendon of that muscle, the external condyle of the femur, the semilunar cartilage, and external condyle of the tibia. 6. The bursa of the biceps cruris, between the external part of the tendon of the biceps cruris, and the external lateral ligament of the knee.

"BURSÆ MUCOSÆ SITUATED IN THE FOOT.—*On the back, side, and hind part of the feet.* 1. A bursa of the tibialis anticus, between its tendon, the lower part of the tibia, and capsular ligament of the ankle. 2. A bursa between the tendon of the extensor pollicis pedis longus, the tibia and capsular ligament of the ankle. 3. A bursa of the extensor digitorum communis, between its tendons, the tibia, and ligament of the ankle. 4. A large bursa, common to the tendons of the peronei muscles. 5. A bursa of the peroneus brevis, proper to its tendon. 6. The calcaneal bursa, between the tendo Achillis and os calcis.

"*In the sole of the foot.* 1. A bursa for the tendon of the peroneus longus. 2. A bursa common to the tendon of the flexor pollicis pedis longus, and the tendon of the flexor digitorum pedis communis longus profundus. 3. A bursa of the tibialis posticus, between its tendon, the tibia, and astragalus. 4. Five bursæ for the flexor tendons, which begin a little above the first joint of each toe, and extend to the root of the third phalanx or insertion of the tendons."

The bursæ mucosæ are often found inflamed, relaxed, or full of a morbid, coagulable fluid. Stiffness is the frequent consequence of such diseases. See Koch de Morbis Bursarum Tendinum Mucosarum Lipsiæ, 1790.

BUTYRUM.—Page 295, col. 2, line 3; "*Butter.*"—The Grecian poets, who speak of milk and cheese, had no name for butter: the Romans only used it as a medicine. Butter is the oily inflammable portion of milk, separated in the form of cream, as already explained. (See LAC.) Fresh butter has scarcely any smell, and its taste is soft, mucilaginous, and agreeable, more rich than oil, and softer than marrow. It resembles, in its nature, the fatty expressed oils; but is often inconvenient in a delicate stomach, as it swims on the upper part of the food in that viscus, producing a sensation not unlike heartburn. It melts easily, and runs like oil, unless this separation of the oil from the mucilage is prevented by flour or milk. In this state, however, it is with great difficulty digested. Butter in some constitutions is laxative. It is computed that 50,000 tons of butter are consumed annually in London.

In separating the oily portion of the milk, a milky fluid is left, called *butter milk*. It is less rich than cream; but a part of the oil, and the whole of the saccharine part, remains. It is a light, pleasing, and refreshing drink, and when the acetous fermentation is allowed to precede the process of making butter, it is agreeably acid and an useful refrigerant.

BUXTONIENSIS AQUA.—Page 295, col. 2, line 36; "*cold bath hath been used.*"—It seems not to be pointed out with sufficient distinctness, that the great advantages of the Buxton waters, externally used, consist in their temperature. We have seen, in the article BATHING, that some reaction takes place from the increased energy of the system, in popular language the

vires medicatrices naturæ, from which the advantages of cold bathing are derived. If the temperature be increased, the shock is less, and the powers of reaction are not so great, so that waters of this kind are adapted for the weaker constitutions, where greater cold might be injurious or fatal. For these reasons Buxton waters are useful to those previously weakened by severe gout, rheumatism, or other painful diseases. Internally it is said to relieve dyspepsia and its attendant symptoms, to increase appetite, restore the spirits, and improve the general health. To this we cannot object; but should this be the effect of the azotic gas, for the water contains no other active ingredient, it is a subject of regret that it is not more generally employed.

BUXUS.—Page 295, col. 2, line 52; "*found wild in some parts of England.*"—The box is an evergreen, thickly branched, with oval, dark green, shining leaves. The wood is yellowish, of a greater density than any other European wood, sometimes sinking in water. The flowers are imperfect; the fruit a green berry divided into three cells, containing six seeds. The peculiar smell and taste of the leaves are lost in drying, and the plant is said to kill camels, though they appear fond of it. (Hanway.) The wood, when masticated, has no taste: the spirituous extract, which amounts to about one fifteenth of the wood, is slightly bitter; and the watery (one thirtieth) of a disagreeable saline taste. A decoction of the wood has been esteemed of equal virtue with the guaiacum in lues. The oil of box has been useful in curing toothach, and, mixed with equal quantity of linseed oil, in relieving the pains of hæmorrhoids.

BYSSA.—Page 296, col. 2, line 6; "*the same with amurca.*" It is a cryptogamous plant of the family of the algæ, consisting of a filamentous tuft, or a powdery down. Many of the byssi ought to be referred to the confervæ, and the downy powders certainly to be referred to a separate genus. This name is also given to the tuft of filaments, which fix some shells to the rocks in the Mediterranean sea. These are capable of being spun, and actually form different articles of dress, of a silky fineness.

BYSSOLITE, a singular species of mineral vegetation discovered by Saussure on Mount Blanc, adhering to masses of granite. One of these blocks, he observes, was in part covered with delicate strait fibres of amianthus, which seemed to grow on the stone like a fine plant. A transparent rock crystal, adhering to the rock in the middle of this mineral herb, contained many of these threads, and was evidently of a subsequent formation. The byssolite consists in one hundred parts of alumine, 43.19; flint, 34.73; lime, 9.01; oxide of iron, which gives it a brown colour, 19.32. These are ingredients very different from those of amianthus, and it consequently becomes a new genus.

C.

CAAMINI, the leaf of a shrub found on the mountains Maracaya, used in Chili and Peru as tea. It grows on very high hills, at a distance from the inhabited parts of Peru.

CAAPONGA.—Page 297, col. 2, line 26; "*the same nature as the above.*"—It resembles in habit the cassias, and every part is bitter: the leaves are applied to foul ulcers. The name is more properly *caaroboa*.

CACAO.—Page 298, col. 1, line 36; "*of a much larger size.*"—The fruit is oval, obtuse on the top, about three inches in diameter, sometimes smooth, at others rough, with protuberances, or divided longitudinally by furrows. The colour is a pale yellow, or a blood red. Within the fleshy covering it contains a white pulp, resembling butter, sweet and subacid, and in the middle there are about twenty-five nuts. The ripeness of the fruit is ascertained by the colour, and the rattling of the seeds, when shaken. The pulp is cut longitudinally, and the seeds separated by agitation, assisted by fermentation. They resemble, as we have said, almonds, covered with a black, red epidermis and a blackish medulla, divisible into lobes, between which the cuticle insinuates. Sonnerat informs us, that the cocoa nuts of the Manillas are superior to those of America.

In making chocolate nothing should be added, by which means it may be kept longer without injury. The chocolat de Santé is wholly unmixed. When the Spaniards arrived in South America, the Mexicans kept these nuts in their houses, so that they might prepare their meal at any time; but the Spaniards, thinking the nuts too cold, added the spices. The proportion of sugar varies: the most oily nuts require the largest, and it is said sometimes to amount to two thirds: if in too small a proportion, the bitterness is unpleasant. The spices employed, besides the vanilloes, are cinnamon, capsicum, and cloves; the odoriferous additions, besides musk, are amber and balsam of Peru.

The oil which the nuts contain is not wholly subdued by the roasting, but is rendered miscible with water by the trituration with sugar; but the sugar must not be in so large a quantity as to occasion acidity or flatulence. When properly prepared, chocolate is said to be nutrient, analeptic, and demulcent, to procure quiet sleep, and gently loosen the belly. It is injurious to the fat, plethoric, and to those who use little exercise, as it renders them liable to apoplexy and hæmorrhages. Where the stomach also is loaded with viscid mucus or bile, it is often hurtful. It is more salubrious in the morning than after a full meal; in cold than in warm weather; an useful diet in tabes, and, if the spices are omitted, in phthisis. Linnæus (*Amœnitates Academicæ*, vii. 263) recommends chocolate as highly useful in relieving the pains of hæmorrhoids. As a vehicle for the bark, the leaves of the orange tree, and for muriated mercury, it has been highly recommended. For the latter purpose it is made into lozenges. The *butter of chocolate*, separated as already explained, is rendered whiter by repeated ablution in hot water, and of a still more brilliant hue by an alkaline ley, by quicklime, or spirit of wine. By distillation it affords an acid resembling the sebacic (*Crell's Chemical Journal*, ii. 152); does not become rancid in many years, and when left in a copper vessel for a month produced no ærugo. It is employed like other expressed vegetable oils, and more useful, as it does not change by heat; and is applied with advantage, to piles (*Mangeti Bibliotheca Pharmaceutica*, art. *CACOA*), either by means of cotton, or introduced internally on a suppository;

relieving the pain, and often producing a salutary discharge of blood. It is highly useful in soaps, and in preserving surgeons' instruments from rust.

CACHEXIA.—Page 299, col. 2, line 62; "*must be directed by general views only.*"—We find an instance, in which it was found to have arisen from an insect in the stomach: repelled eruptions and evacuations, or gout, have been frequently its source. Drinking cold water while warm, and the use of saturnine cosmetics are more frequent causes than authors have suspected. We lately saw a case of cachexy following a poitou colic, it was said from the *smell* of paint. The facts were admitted, but the cause was denied; and it was at last discovered that the lady had been too anxiously endeavouring to obtain a brilliant complexion.

To the remedies we have only to add the broad leaved willow bark, and the Pyrmont waters. Marcand.

CACHRYS ODONTALGICA, Lin. Sup. Pl. 181; Willdenow, vol. i. 1409. The root is long, highly acrid, and somewhat aromatic. It resembles the pyrethrum, and is used, like it, in toothach. Pallas, iter. 3, Appendix.

CACOCYHMIA.—Page 300, col. 2, line 56; "*depraved state of the humours.*" If it were of consequence to fix the meaning of the term more accurately, we would observe that it is a depravation of the *chemical* nature of the fluids, as when the alkali is in excess in those fluids which contain ammoniacal salt; when the phosphoric acid is unusually disengaged, as seems to be the case in gout. The water in a greater proportion, the fibrin or the red globules in a less, ought not to be called cacochymia.

CACTUS COCHENELLIFER, Lin Sp. Pl. 670. A plant which grows in many parts of South America, and particularly in Mexico. This is the species according to La Marck, which feeds the cochineal insect, and not the *c. opuntia*, as stated in that article. Yet Thierry de Menonville, who visited the native districts of this plant, doubts if it be the same which is cultivated in the neighbourhood of Mexico for the support of these insects. The colour of the insect is derived from the deep, brilliant red of the flowers. The whole genus is succulent and spinous; but this species has few thorns.

CADÆ OLEUM, **CADÆ OIL**, supposed to be the pisselæum of the ancients, but really made from the fruit of the *juniperus oxycedrus* Lin. Sp. Pl. 1470. It is used chiefly as a discutient.

CÆCITAS, (from *cæcus*). See AMAUROSIS and CATARACTA.

CAJUPUTI OLEUM.—Page 302, col. 2, line 65; "*edition of the species plantarum.*"—It is the *melaleuca leucadendron* of Willdenow Sp. Pl. vol. iii. page 1428; of Linnæus first *mantissa*, and the Supplement, included in the *polydelphia icosandria*. Dr. Smith, in the Linnæan Transactions, iii. 273, seems inclined to refer it, with other naturalists, to the genus *metrosiderus*, as the only distinction is the union of the filaments into five bundles. He has examined the flower of this species, and Willdenow has retained his specific character.

The appellation *caie put* is said to signify the white tree, and it was therefore supposed to be distilled from the wood; but Valentyn and Rumphius have informed us, that it is really drawn from the leaves, which is more probable, as they are marked with transparent points, like the *hypericum perforatum*. It was, at first, slightly mentioned by Locher in 1719; but introduced into the Amsterdam dispensatory seven years afterwards. The genuine oil is rarely met with in this country, and its place is said to be supplied by oil distilled from cardamoms. Thunberg describes it of a grass green colour, equally fluid with ardent spirits, burning or evaporating without leaving any residuum. The smell resembles that of camphor, mixed with turpentine; and, if strongly drawn into the nose, is somewhat disagreeable, but in a less degree highly fragrant and grateful. Goetz describes it as fluid, of a yellowish colour, not peculiarly volatile, with an agreeable smell at first, but afterwards with a slight terebinthinate odour, at last resembling that of savine. The taste was aromatic, not unlike that of rosemary. What he considers as a mark of its genuineness is, that a drop rubbed on the temples occasioned a pungent pain in the eye, with a discharge of tears. Many travellers seem to agree that the green colour is not essential to it, but in some measure adventitious, owing to an addition of the berries and the leaves; or, more certainly, to an impregnation of copper from the still or the vessel in which it is brought to Europe. Chemical analysis supports the latter opinion. Fraudulent chemists seem to have often tinged the oil of rosemary green, but the oil of the greater and the middle or longer cardamoms is greenish (Spielman and the anonymous author of *Oleo Cayeput*). The Dutch formerly made it by adding to the oil of rosemary some camphor, with a little oil of cardamoms, and giving the mixture a green colour.

The oil of cayeput is highly stimulating, from its tenuity, supposed to penetrate the minutest blood vessels, and produce a copious sweat. In these respects it is said to excel all other essential oils. From its sudorific power, it is employed in India to prevent the paroxysms of intermittent fever, as well as relieve anasarca. In emprosthotonus, chorea, hysteric paroxysms, and catalepsy, induced by a fall, it is strongly recommended. Partial spasms it is said to relieve with equal success, particularly the spasms of the stomach and bowels from atonic gout.

In various cases of palsy it is thought highly beneficial, particularly in a stupor of the arm from an hypochondriac affection, and in amaurosis, induced by a tertian. It has relieved albugo, and, as is said, cataracts, more certainly deafness, applied on cotton to the meatus, rubbed behind the ears, and given internally. In toothach it is supposed to excel every other remedy, particularly in relieving that pain which arises from a rheumatic diathesis. In gout and chronic rheumatism it is highly efficacious, and an arthritic ophthalmia was relieved by dropping it on a handkerchief, which was held before the eye. In herpes its application is said to be successful; in headach, rubbed on the temples and drawn up the nostrils, it is equally so. It restores all suppressed evacuations, particularly those of the catamenia and hæmorrhoids.

From three to twelve drops are administered on a knob of sugar. It may be also taken in wine, Hoffman's mineral anodyne, or sweet spirit of nitre.

Warm aromatic teas may be drank after it, if the nature of the complaint does not forbid; and the bark has been occasionally joined. It does not require a long continuance.

These additions have been more extensive, as we have often read in the German authors that the English know nothing of this medicine, that it is neither introduced into their pharmacopœias, nor spoken of in their treatises on the materia medica. This accusation will be, in future, we trust, unfounded; but as we have scarcely, in any part, spoken from our own experience, we must adduce our authorities.

Cartheuser (*Dissertationes Physico Medicæ*), and Adami de *Oleo Cayeput*; anonymous author (supposed to be Martini) de *Oleo Wittnebianum seu Kaiuput* (the oil was introduced into Europe by a clergyman called Wittneben); Werlhoff *Opera* edit. Wichman 711; Thunberg's *Travels*; Goetz in *Comment. Norimberg*, 1731, p. 4; Trew, *ibid*, 1737; Valentyn's *Amboyna*, iii. 192.

CALAGUALÆ RADIX. The plant which affords this root is a native of Peru; but its characters are unknown. It is apparently a fern, and probably related to the polypodium: the leaves resemble those of the asplenium scolopendrium, though less. The root is knotty, like that of the common polypody, or *osmunda regalis*, without any taste. Two other roots are occasionally sold for it; one called *calagula femina*, and the other *c. spuria* radix; both insipid and useless.

The first information we received of it was from the *London Medical Journal*, vol. v., where we were told that the root was used at Rome in cases of dropsy. The additional information seems to have been taken from the letter of Dr. Domenico Luigi Gelmetti to Dr. Giammaria Mezzi "Della Radice di Calaguala." This letter seems to have had, in its original state, a very limited circulation; but it is republished in the *Giornali della Medicina*, v. 409, and in Brugnatelli's *Bibliotheca Physica d'Europa*, v. 135. The Indians use the decoction of calaguala in pleurisy, in contusions, and internal abscesses with success, and the trials in Italy seem to have confirmed its utility. The first case was that of different complaints of the breast from contusion; the second, a hectic, subsequent to pleurisy; the third, a severe pleurisy; the fourth, a convulsive colic, with fever, a bilious vomiting, and an obstruction of the alvine discharge. In Germany, particularly in the north, a decoction of this root is highly celebrated in coughs. Two drachms of the root are boiled in a pint and a half of water to a pint, and drank as tea. The medicine is said to be powerfully diuretic, without pain. We understand, however, that in the trials of Carminati and Franck it has not succeeded.

CALAMARÆ.—Page 303, col. 1, line 28; "*of plants of the reed kind.*"—It is the third order of Linnæus' fragments, and distinguished from the grasses, to which it is nearly allied, by the base of the leaf, which embraces the stalk, having no longitudinal aperture; by a triangular stalk, without knots or joints, and the flowers having no petals.

CALAMUS AROMATICUS.—Page 304, col. 1, line 62; "*where the stomach is in a torpid state.*" Its antiseptic power has only been ascertained by experiments out of the body; and when it is styled antiscorbutic the sea scurvy is not meant, but a scorbutic disease,

which appeared in a crowded monastery. In a kind of scorbutic itch it seemed to succeed; but many other active medicines were combined with it; and when Hoffman informs us that it cured a bleeding of the gums, we ought to reflect that he joined the marine acid with it. Other hæmorrhages it is said to have checked, particularly of the nose and of the uterus, from abortion; but the iris pseudacorus, which is less aromatic, was probably the medicine employed. They are often confounded; but the leaves of the *calamus aromaticus* are highly fragrant; those of the bastard kind without aroma.

CALCAR COROLLÆ, *nectarium*, the heel or spur, which terminates the corolla of larkspurs, &c.

CALCATRIPPA. See **CONSOLIDA REGALIS**.

CALCITRAPA.—Page 306, col. 1, line 42; "*centaurea calcitrapa* Lin. Sp. Pl. 1297."—The stalk of this plant is divided into numerous, spreading branches, rising very high, with a few leaves on them, placed at the division of the stalks. The flowers grow thick on the branches, are of a reddish colour, rising from heads composed of several scales, each ending in a long, strait, sharp, hard thorn. The seeds are downy, white, flat-tish, and oblong: the root is single, in length nearly of a finger, running deep into the ground, of a whitish colour, with a thick bark. It grows on highways, and flowers in June.

The calcitrapa has been supposed to be the Jewish condiment with the paschal lamb; but at present the broad leaved lepidium is used for this purpose (Forskål); and it is not certain whether the plant has been mistaken, or the custom has been altered. Four or six ounces of the juice, a drachm of the powdered herb, or twice the quantity of the extract, taken at the commencement of the attack of an intermittent, are said to cure it. Tournefort and Geoffroy.

CALCULUS.—Page 308, col. 2, line 49; "*from the Annales du Museum National*."—The different calculi may be classed from their appearance and analysis. The simplest are those which consist of one substance only, besides animal matter; the next those which contain two ingredients, often compound ones; and the last genus those which contain more than three bodies, besides the animal matter.

The stones which contain the lithic acid only are reddish, or of a highly yellow colour, resembling wood by their brittleness, as well as their fine homogeneous texture: they dissolve wholly in acids, without the ammoniacal odour; their figure spheroidical, compressed, and oval; the surface sometimes highly polished, but often rough and warty, of a crimson light red, yellowish, or light brown colour, but never white, grey, or black. Their specific gravity usually exceeds 1.500, and these concretions are most common in the kidneys; about three fourths of the whole number examined by the authors, viz. Fourcroy, &c., 600 were of this kind.

Calculi composed of lithat of ammonia only are generally small, of a pale or grey colour, consisting of fine and easily separable strata: the nucleus adheres but slightly to the strata. Their figure is commonly oblong, compressed like almonds; the surface smooth,

frequently crystalline, the specific gravity from 1.225 to 1.720. When powdered they are soluble in water, but are often covered with a thin stratum of lithic acid. These calculi are rare.

Those which contain oxalat of lime, exclusively, are unequal in their surface, and usually styled the *mulberry stones*. They are hard, grey, solid, susceptible of a fine polish, and, when sawed, exhale the faint odour of semen. They leave lime after calcination, are not soluble in alkalis, but decomposed by mild alkaline leys. Their figure is usually spheroidal; their gravity from 1.428 to 1.976, and they often form the nucleus of other stones. The proportion of this class was about 75 in 300.

The first species of the second genus contains lithic acid and some phosphat, but in a separate state. The surface is white, cretaceous, brittle, and semitransparent, as the phosphat is usually that of lime or of ammoniacal magnesia; the nucleus only consisting of ammoniacal magnesia. The proportional number was about one twelfth of those examined, and their bulk is larger than that of any other kind; their shape oval, somewhat pointed at one end. The specific gravity is very variable.

The second species contains lithic acid, and earthy phosphats intimately mixed; but the appearance is greatly varied by the different proportions of the ingredients. The earthy phosphats are separated in different strata, but sometimes so intimately mixed that chemical analysis can only distinguish them. The colour is usually grey, but sometimes variegated like marble; their figure oval, globular, or irregular; the surface mostly brittle, cretaceous, or whitish, like the calculi that contain phosphat of lime only. The polyhedrous stones belong to this species, and their angles are often worn by attrition. Their number is about one fifth, and their specific gravity varies from 1.2 to 1.7.

The third species consists of lithat of ammonia and phosphat of earth, viz. of lime and ammoniacal magnesia, resembling in its appearance the first species of this genus. The lithat of ammonia often makes the kernel, while the mixture of the two others, rarely a single one, forms the crust. The nucleus sometimes contains the phosphats, and the crust a little lithat of ammonia, occasionally with excess of lithic acid. The strata of these stones are easily separable, and they are often small. Their number was only one thirtieth, and their specific gravity is from 1.3 to 1.7.

The next species contains the same principles intimately mixed, but the colour is paler than that of the second species, and much ammonia is separated on the addition of kali. They are seldom large, and Fourcroy found them only in the proportion of one fortieth.

The fifth species contains phosphat of lime and phosphat of ammoniacal magnesia. These stones are of a pure white, friable, insoluble in alkalis, and soluble in the weakest acids. Their proportional number is about one sixtieth. Their size is considerable; their form irregular; their surface uneven; their texture consisting of white, brittle strata, sometimes interwoven with solid semitransparent crystals of ammoniacal magnesia. The crusts which form on foreign bodies, introduced into the bladder, are of this kind, and their specific gravity is from 1.138 to 1.473.

The sixth species consists of oxalat of lime and, externally, uric acid. The proportion of these parts, as well

as their specific gravity, vary greatly; the latter having the extensive range from 1.34 to 1.75. The uric acid is sometimes on one side only, and the oxalat of lime is distinguishable on the other by its protuberances; but this variety is peculiarly rare.

The last species of this genus contains in its centre oxalat of lime, surrounded by earthy phosphats. The nucleus is grey or brown, and radiant; the crust white and cretaceous. The figure and size greatly vary, and their specific gravity is from 1.168 to 1.752. The proportional number of these stones is one fifth.

The first species of the third genus is a calculus containing oxalat of kali, earthy phosphat, with uric acid, either pure, or combined with ammonia. They rarely occur, and scarcely twelve were found in six hundred. They often consist of three distinct strata. The external coat contains the earthy phosphats, often mixed with uric acid, or lithat of ammonia; the second, lithat of ammonia, and the internal, oxalat of lime: all these may be distinguished by the eye on sawing the stone. This species has many varieties; but, as they are not distinguishable by external characters, we shall not describe them.

The last species of calculus contains a variety of ingredients. Siliceous earth seems to have taken place of oxalat of lime, and it is mixed with uric acid, as well as lithat of ammonia, and covered by phosphats of earth. Two only occurred in six hundred specimens.

The calculi from the intestines are rather peculiar to animals than the human species, and consist often of conglomerated hair, which they lick from their bodies. Stones are, however, so frequently discharged from the rectum, or remain as unconquerable obstructions in the intestines, that though we admit, with Morgagni (de Sedibus, &c. xxxvii. 24), the greater number to be biliary calculi, they are probably not all of this kind. One exception we can distinctly perceive in the case recorded by Molinelli in the Bologna Transactions, vol. ii. part 1, where a fungus was filled with calculi; nor can we think that the large stones, described by Gooch (Medical and Chirurgical Observations), by Houston (Philosophical Transactions, N^o. 389); by Horstius (Opera, ii. 237), could have proceeded from the gall bladder. The largest stone of this kind which we recollect is in one of the English collections of cases, though we have forgotten the title of the work, where its weight amounted to ten drachms. Indeed Morgagni himself, in the forty fifth article of the same epistle, points out the distinction.

Calculi have been found in other parts of the body, besides those described, as between the meninges of the brain; and the brains of animals have been found, it is said, wholly petrified. A bone was once discovered so perfectly in shape resembling the brain, that it was carried to Dr. Simson, of St. Andrews, as a petrified brain, who, in a dissertation suggested by this fact, endeavoured to show that the vital and animal actions might be carried on independent of the brain. This fact is supposed to have shown only the credulity of the professor; but, when we observe in the collections of authors, some of whom merit our attention for their accuracy, that a great part of the brain of animals has been found in a calcareous state, we begin to suspect that the ossified brain may not have been wholly fictitious. The vital actions we well know may be carried on by the ganglionic system.

Scherb describes a calculus which he found in the receptaculum chyli; and numerous instances occur of calculi in every part of the heart: in one case the calculus weighed two ounces. In the lachrymal passages, in the mammæ (Ruysch Thesaurus Anatomicus, i. 3), in the testis, in the spleen, the veins, the uterus, the prostate, the coats of the nerves, the ovarium, the seminal vessels, the stomach, the pancreas, the tonsils, the Fallopian tubes, the placenta, and indeed in almost every organ, calculous concretions are occasionally discoverable.

To describe the remedies formerly recommended for calculus would be an useless labour. We shall only notice one or two, which have been apparently too much neglected. The first is drinking freely of water, either warm or cold, pure or mineral. Menghini, in the Bologna Transactions, advises the addition of soluble tartar; Vater recommends the Pyrmont; Springfield the Carolina waters; Desault those of Bareges; Dr. Russell the sea water: the relief, however, probably depends on diluting the urine, which is certainly affected by the simple element. Perhaps, in the case recorded by De Haen (Ratio Medendi, xiii. 177), where 1500 pints of lime water were drank, a part of the benefit may have been derived from the fluid. The wild carrot seed, the turpentine, and the juniper, have probably been useful, merely by increasing the proportion of urine. Honey, we perceive, has numerous recommendations, and is particularly spoken of by Hoffman joined with the juice of juniper berries. Baldinger advises the infusion of tobacco in rhenish wine, and all the alliaceæ are highly commended, probably as diuretics only. The tetradynamia, perhaps on the same principle, have had their advocates; and the berries of the sapotilla (a variety of the *SAPOTA*, q. v.) are recommended by Whytt and Simon in the Philosophical Transactions.

A singular practice is mentioned by Alpinus (De Medicina Ægyptiorum, iii. 14), of drawing the stone from the bladder by means of a syringe applied to the penis. The practice was, within nearly half a century, preserved in the east, as we find from Perry's View of the Levant, published in 1743; and the plan mentioned by Fourcroy in his Médecine Éclaircée. It is, however, obviously chimerical; and properly styled by Bosc, *infidum calculi extrahendi auxilium*.

CALENDARIUM FLORE, a fanciful idea of Linnæus, disposing flowers in the order of their flowering, so that the period of the year may be ascertained by the opening of the corolla. It, however, rises above a fancy, when we find that it teaches us when to look for any given plant in its perfection. The *horarium floræ*, or *horologium botanicum*, is a similar arrangement of flowers, according to their hour of opening.

We find, in some German authors, the **CALENDARIUM IN HOMINE** from the regular return of pains in moist weather, of epileptic fits in the increase of the moon, or the regular return of fevers.

CALENDULA.—Page 313, col. 2, line 64, "*corumbiferæ* of Jussieu."—It is the *calendula officinalis* Lin. Sp. Pl. 1304, of an unpleasing smell, not unlike pitch. The taste is, at first, sweetish, and afterwards bitter; but the calyces are more bitter, more acrid and disagreeable. The infusion in water retains the smell; in

wine the taste. It was given as an aperient in jaundice, probably from its colour, and thence the analogy was transferred to other obstructions, particularly to scrofulous ones. Its acrimony is said to destroy warts, and the hard callus at the bottom of the feet. The flowers have been used as sudorifics and alexipharmics.

CALIDÆ, (from *calor*). An epithet applied either to mineral waters or to the plants of hot climates. Waters are seldom called calidæ unless they exceed the heat of the body; and plants have this appellation which require a temperature from 10° to 40° of the centigrade thermometer.

CALIX the membrane which covers the papillæ in the pelvis of the kidneys, and the usually uncoloured covering of the corolla of a plant. See **CALYX**.

CALLOSUM CORPUS. (See **CEREBRUM**.) This part of the brain has, we find, been injured by a counter fissure, without any peculiarly dangerous symptoms.

CALLUS.—Page 317, col. 2, line 65; "*from the fibres of the bone*."—It rather arises from a deposition of the bony matter from the arteries, nor does it ever, as has been supposed, pass first into the state of a cartilage. (See **BONE**.) The formation of callus is well explained by Morgagni (*De Sedibus, &c.* lxxvi. 29); and the impediments to its regeneration by Callisen (*Collectiones Societatis Medicæ Havniensis*, ii. 22). See Bordenave *Memoires sur les Os*.

CALYCANTHERÆ, (from *calyx*, and *anthos*), the seventeenth order of Linnæus, in his fragments, consisting of plants chiefly distinguished by the insertion of the corolla and stamina into the calyx. In these plants the receptacle of the flower is placed on the fruit, or the fruit on the receptacle of the flower.

CALYCYCLORÆ form the sixteenth order of the fragments, where the stamina are inserted into the calyx. Plants of this order want the corolla; the flowers are hermaphrodite, and male on the same root, or male and female on different roots, and the seed vessel is pulpy, containing a single stone.

CALYX.—Page 322, col. 2, line 17; "*more substantial than the corolla*."—Linnæus thinks that it consists of the outer part of the epidermis; but Dr. Grew has shown, that it is compounded not only of the epidermis but, at least in many plants, of a cortical and parenchymous, or ligneous, substance also.

CAMPANACÆ (from *campana*, a bell). Bell shaped flowers, the twenty-ninth order of Linnæus' fragments. This is a very natural order, and the plants are generally herbaceous and perennial, though some of the convolvuli are annual, and some foreign species have woody stalks.

CAMPECHENSE LIGNUM.—Page 323, col. 2, line 4; "*three or four times a day*."—The decoction is, in general, preferred to the extract; but each is equally useful, and often very advantageous, particularly so in diarrhæas from the use of mercury. The trunk and principal branches sometimes exude a gum in large

masses, which soon becomes solid and brittle. Browne describes it as of a blackish appearance, from its intense redness, and of a sweet taste. *Natural History of Jamaica*.

CAMPHORA.—Page 323, col. 2, line 24; "*the camphora oleum on re-distilling it*."—The native camphor is only collected from the oldest trees, and, to ascertain its existence, the natives dry, and smell to the bark, as well as strike against the trunk. If the proper marks appear, they cut down the tree, separate the bark, and cut the trunk into billets. In the old trees camphor occasionally exudes from the fissures, in a fluid form styled oil of camphor, and is caught in vessels appended. The larger and the smaller exudations, and the fluid obtained by scraping the wood, are distinguished, in the Malay tongue, by appellations which mean the head, the belly, and the feet. Marsden denies that the oil of camphor, and the dry concrete, proceed from the same tree, adding, that many of the camphor trees contain neither. The Sumatra camphor is much dearer, and less volatile than that of Japan. The dearness is in part owing to the small proportion the former yields, and this to the want of proper management in separating it. The Japanese do not perfectly understand the method of purifying the camphor, and, therefore, purchase that from Sumatra at a high rate, since it is greatly esteemed as a medicine. Even its smell they suppose cordial, and the inhabitants of Siam and China suppose that it will relieve visceral obstructions if only held in the mouth. They use it in putrid and bilious fevers, and also in their fine varnishes.

The oil of camphor is rather a resin, and exudes not only naturally but through wounds in the trunk, made transversely to the depth of two or three inches, and afterwards hollowed into a cavity which will contain about thirty-two ounces. In this cavity a lighted reed is placed for about ten minutes, to draw the oil towards it, and it is filled in a night. The operation is repeated; but the oil obtained is gradually less. Camphor is also obtained from the roots of the *laurus cinnamomum* and the *cinnamomum camphoratum* (Thunberg). Besides the plants mentioned in the article, it has been ascertained that camphor may be procured from the *schænanthus persicus* (Kempfer), the *radix zedoariæ* (Grimm), the *radix enulæ* (Malouin), lavender (Hagen), cubebs and turpentine (Meyer), *anemone pratensis* and the seeds of fennel (Heyer), and the *radix asari*. Yet the production, in every instance, is not exactly the same as the camphor of Sumatra or Java, and frequently rather approaches than resembles it.

Camphor is a considerable electric, attracting light bodies when rubbed with a flannel. The form of its crystals is starry, with four or six rays. If to a solution of camphor in spirit of wine, water is slowly added, an elegant vegetation is formed. It is constantly said not to be soluble in water; but its taste and smell are retained in the *julapium à camphora*, though soon lost. It is soluble in an equal weight of good spirit, and in water impregnated with carbonic acid gas. In short, though it agrees in many respects with essential oils, ether, and resins, yet it almost as widely differs from these as from gums, gum resins, volatile oily salts, &c.

To insects of every kind camphor is fatal, except the tinæ; but they are killed sooner in summer than in autumn, sooner under the influence of a south than a

north wind, which apparently arises from the different volatility of camphor in a higher temperature. Frogs were soon killed, if included in a vessel with camphor, after experiencing convulsive motions, difficulty of breathing, anxiety, and stupor (Carminati). To sparrows and the sea-pies the fumes of camphor were equally fatal. Menghini and Carminati tried the effects of camphor on many birds, and some of the smaller quadrupeds, without any uniform consequence. Some were apparently intoxicated, others comatous, others furious. Anxiety, stertor, groans, cries, foaming at the mouth, were sometimes the consequences; tremors, convulsions, epilepsy, &c. more rarely. Nature seemed occasionally to exert herself in procuring the evacuation of the medicine by vomiting, stool, diuresis, ptialism; and it was observed that when the camphor was thrown up with very little loss, the symptoms were scarcely mitigated. A few grains would be fatal to birds, while cats were seldom killed by less than a scruple. A sheep, though affected by two drachms, was not, however, killed. A dog appeared mad with a drachm and half, so that it was thought most safe to kill him. Another dog, from two drachms, appeared hydrophobic, but afterwards recovered (Medical Observations and Inquiries, vi. 229). The same dose was not always destructive to the same species of animals. Two rabbits escaped after taking two drachms, without any evacuations, while another died apoplectic. On dissection the stomach appeared to abound with mucus, and was inflamed; the food undigested: in those who died comatous, the membranes of the lungs, the brain, the heart, the large vessels, and the intestines were highly inflamed. The small intestines were suffused with bile; and it was found that camphor given in clysters was fatal in the same doses, and with the same appearances, as in the mouth (Menghini Commentaria Bononiensia, tom. iii. and iv.; Carminati de Animalium ex Mephitibus Interitu). To these experiments we may add the remark of Burserius, that camphor diminishes the irritability of the muscular fibre (Institutiones Medicæ Practicæ, iii. 190); and of Dr. Monro, who found it produce stupor and insensibility when applied to the nerves of the leg (Essays and Observations, Physical and Literary, iii. 351, &c.).

In the human body Dr. Whytt found that half a drachm, dissolved in olive oil, produced considerable heat in the stomach, with a dimness of sight, and a load in the head; but on going into the air all these inconveniences disappeared. The same dose, in another person, produced the same effects, with a vomiting of bile, coloured with blood, and a quickening pulse. In another, who took two scruples, the heat at the pit of the stomach also came on, the pulse was slower, with gaping, and, after three hours, with sleep. The vertigo was troublesome at intervals, a slight horror, pale countenance, and a kind of intoxication ensued. Dr. Alexander's experiments are the most important. He took two scruples, and found his pulse gradually sink ten strokes in a minute, the heat of the body sunk one degree. Vertigo, nausea, a failure of memory, an abolition of the senses, fury, with foaming at the mouth, convulsions, tremor, and coma, succeeded; and the pulse rose from 67 to 100 in a minute. On taking warm water, the camphor, which had been swallowed three hours before, came up with little apparent change. The formidable symptoms just mentioned subsided by

degrees; but an obstinate costiveness ensued. Colin has observed, that in healthy persons camphor has occasioned ebriety, vertigo, and spasms. Observationes circa Morbos, iii. 148.

We have thus engaged somewhat fully in the details on which we rested, when in the article we styled camphor a sedative, and we may perceive, from these facts, how nearly it is allied to opium. The foreign authors rest much on its antiseptic power, yet Colin admits that it is not a prophylactic against epidemic miasmata, though, when dissolved in vinegar, it has been sometimes evaporated in sick rooms.

In gangrene, both dry and moist, it is styled a remedy of importance, applied externally to the first in solution, to the latter in powder. It is said to lessen the effects of variolous poison, and, when applied to a part which may suffer from the pustules, to prevent their appearance. This appears, however, to be truly fanciful.

We perceive that we have omitted to speak of its use in more active rheumatisms; indeed we have lately only procured the work of Colin, who is its chief advocate in this disease. In that author's opinion, it successfully removes rheumatic pains in the spine, the thigh, the lumbar vertebræ, &c., to which he adds the ischias nervosa of Cotunnio. In rheumatic toothach it is known to be advantageous.

It is said to be useful in epilepsy, if dissolved in vinegar; and an English author has highly recommended it in the same disease joined with the vitriol or oxide of zinc. The chronic convulsive asthma it is said to relieve (Millar on Asthma, &c. 104). The authors who have recommended it in mania we perceive to be numerous and highly respectable. Its anthelmintic virtues are chiefly supported by Prange in his Dissertatio de Camphoræ, Virtute Anthelmintica, § 6—10; but the chief fact of importance is the evacuation of numerous worms after taking it, in some cases of camp fever. We know its effluvia are highly deleterious to the greater number of insects. Colin found it a very useful application in ulcers of very different kinds, from different causes, and we perceive its smell in Marshall's cerate, though used perhaps only as a disguise. Cold, indolent tumours it contributes to soften and discuss. Though it relieves ischuria arising from cantharides and other acrimony, it is said sometimes to induce it (Heberden, Medical Transactions, i. 471). That it mitigates the action of mercury and squills is doubtful, and though it softens the resinous purgatives, there is no evidence of its diminishing their active power.

CAMPHORATA.—Page 326, col. 1, line 57; "*in gouty complaints*. Miller's Bott. Off."—In the beginning of the last century this plant obtained some credit for the relief of dropsy and pituitous asthma (Historia de l'Académie des Sciences, 1703, p. 53), and afterwards as an aperient; but it appears to have no real virtue.

CANALIS PETITIANUS. A triangular cavity between the two laminae of the hyaloid membrane of the eye, in the anterior part, formed by a separation of these laminae. It usually contains a fluid. See Oculi.

CANCER.—Page 330, col. 2, line 62; "*cancer has been accelerated*."—Authors have divided cancers into

many kinds, the *genuine*, the *scrofulous*, the *syphilitic*, the *fungous* to which has been added the *scorbutic*; while others speak of the *putrid*, *acid*, and *atrabilious* cancer. These distinctions are, however, of little importance. The cancer is a single disease, and though foul ulcers, which heal with difficulty, attend the disorders mentioned, they do not merit the name of cancer. The most rational distinction of cancers occurs in a paper of Richter in the Gottingen Commentaries for 1779; but the subject need not detain us.

Several authors contend that cancer is contagious, and Febure informs us that the cancerous matter is eaten by dogs without injury. Camper, in his *Demonstrationes Anatomico-pathologicae*, describes cancer as surrounded by a hard firm membrane, similar probably in structure to the septa. We mention this fact as it seems to support the animal nature of the tumour; an opinion, by the way, of Gesner, a Swedish physician, who published some Tracts on Medicine and Natural History at Nordlingen, in 1769, &c. v. 230. The various causes assigned by authors are those of debility only, and do not lead us to its more immediate cause. The fancy of some practitioners in ascribing it to a singular depravation of the nervous fluid, need not for a moment detain us.

Among the remedies, fixed air is now allowed to be useful only in correcting the fœtor when present. Its earliest use we have not been able to trace beyond the paper of Magellan in Rozier's Journal for 1776. The use of arsenic, according to Hildanus, was introduced by the monk Theodoric, who lived about the commencement of the eleventh century. It is the foundation of almost all the secret remedies, particularly that of Fuschius, which has been celebrated from the end of the fourteenth century, when it was joined with soot and serpentry. Of the *hemlock* we have already spoken; and we can now add, that its inutility is more strongly vouched than its advantages. The belladonna has had its advocates; but this remedy also is now very generally neglected; and De Haen, who lived in the zenith of its credit, owns (*Ratio Medendi*, ii. 37.) that cancers were not really relieved by it. The solanum is found to be equally useless.

The carrot poultice is chiefly advantageous in correcting the fœtor, and Gesner in the Nordlingen Collection advises, for the same purpose, a balsam composed of acetum lithargyri and oil of turpentine: indeed the saturnine preparations, in every form, have been highly commended.

The internal use of mercury as an alterant has been a favourite plan with many authors, and its external use is highly recommended. The sublimate is the preparation generally preferred. Toads have been brought to suck the poison, and, if we do not mistake, an experiment of this kind is recorded by Pennant. The only other account of this remedy which has occurred to us is in the *Journal de Médecine*, lxiii. It seems not to have succeeded in either instance. The numerous trifling, absurd, and disgusting remedies we omit.

See Le Dran *Memoires l'Academie de Chirurgie*, iii.; Norford on the general Method of treating Cancers; Young on Cancers; Guy's select Number of Scirrhus and Cancerous Cases; Morgagni de Sedibus, &c. i. 4—47; Hahn de Cancro Occulto et Aperto; Peyrilkie de Cancro apud Selegel *Theses Pathologicae*.

VOL. II.

CANELLA ALBA.—Page 335, col. 1, line 21; "*Nat. order, oleraceæ.*"—The tree grows usually to the height of twenty feet, in thickness eight or ten inches, in the Bahama islands. The leaves are narrow at the stalk, and wider at their ends, broad, smooth, rounding, and of a shining green, having only a middle rib. The flowers, which are monopetalous, appear in May and June, in clusters, from the ends of the branches. They are red, fragrant, succeeded by berries of the size of peas, green, and purple when ripe, containing two shining black seeds, flat on one side; but in other respects resembling a kidney bean.

The colour is much paler than that of Winter's bark, with which it has been confounded, and the external brown coat, marked with various rugæ, is of a lighter colour, while the internal epidermis is white. The texture is somewhat more lax, and the taste not quite so bitter. The distilled water of the canella is milky, and it yields a scruple of oil from half a pound of the bark. The watery extract is very bitter, the spirituous has but a small portion of the former fragrance. Proof spirit is its best menstruum. See Cartheuser *Dissertatio de Cortice Winterano*, and Lewis's *Materia Medica*.

CANITIES.—Page 336, col. 1, line 9; "*Greyiness of the hairs, or grey headed.*"—The blackest hair most commonly becomes grey at a very early age, the red hair is sooner grey than the auburn, the brown, or the chestnut. Grey hairs are sometimes hereditary, and children are recorded to have been born with them. Early excesses in venery are said to induce them; fear and terror more rapidly; grief more slowly and less certainly. Violent headaches have undoubtedly changed the colour of the hair. For Vauquelin's opinion of its cause, see *PILUS*. No internal remedy will remove it; and the only method of staining it is by a black lead comb, or washing it with a diluted solution of muriated silver.

CANNABIS.—Page 336, col. 1, line 51; "*emollient and demulcent qualities.*" In the form of an emulsion it has been a rustic remedy in jaundice. The seeds boiled in milk until cracked are used for the same purpose, and the relief is so sudden that the disease has been suspected, with good reason, to have arisen from spasm. Five or six ounces of the strained decoction are taken twice or three times a day. In an epidemic icterus, which prevailed at Gottingen, it is said by Herliz to have been very successful.

CANTHARIDES.—Page 336, col. 2, line 29; "*styled the cantharidæ.*"—Cantharides have an elongated body, almost round or cylindrical, two wings covered by hard, but flexible, scales; filiform antennæ, half the length of the body, composed of eleven joints; the head inclined, the mouth furnished with an upper lip, two simple arched mandibles, two bifid jaw bones, and four lesser filiform antennæ; five joints on the tarsus of the four anterior feet, and four on the posterior. Another insect is sometimes mixed with them, viz. the *melanotha vitis*, which can be easily distinguished by its square body, and should be separated.

Lewis found that the spirituous and watery extracts

were equally active in blistering; and Neumann obtained from 1920 grains, 920 of a watery and 28 of a spirituous extract; inversely, the numbers were 400 and 192.

CAPILLUS.—Page 340, col. 1, line 46; “*wholly without foundation.*”—See **PILUS**.

CAPITATUS FLOS, (from *caput*, a head). A fructification, generally consisting of many flowers, firmly connected on the summits of the footstalks, so as to form a head, as in the globe amaranthus.

CAPITULUM. A similar connection of flowers, but of a smaller bulk. It is either *dimidiatum*, *foliosum*, *globosum*, *hispidum*, *nudum*, *ovatum*, *pedunculatum*, *pyramidatum*, *sessile*, or *subrotundum*. The antheræ of mosses are also called *capitula*.

CAPPARIS.—Page 341, col. 1, line 54; “*See CONDIMENTIS.*”—The bark, which is chiefly taken from the root, is thick, white, convoluted, as large as a swan’s quill, somewhat aromatic, bitterish, and slightly acrid. It has been universally supposed to be an astringent, though it does not turn black by the salt of steel. The ancients seem to have valued it highly as an aperient and a deobstruent, useful in obstructions of the spleen, suppression of the menses, sciatica, scrofula, and foul ulcers, (Dioscorides, ii. 204). The depraved fluids it was supposed to evacuate by urine, sometimes by bloody stools (Galen de Simplicibus, vii.): more modern authors have been equally eager in their commendations; but it is now neglected as a medicine.

CAPRA ALPINA.—Page 341, col. 2, line 2; “*from stags, elaphophila.*”—For an account of its flesh and its milk, as a food and medicine, see **ALIMENT** and **LAC**.

CAP RIFICATIO (from *capere* and *figus*). A method used in the Levant of ripening the fruit of the domestic fig tree by insects bred in the wild species. The utility of this process, as well as its design, has been doubted. We find, in ancient authors, that it was usual to suspend the wild figs over the cultivated ones, to hasten their maturity. They knew only the fact, and apparently did not inquire whether this step was a necessary one. Linnæus seized on the practice as the support of the sexual system, and supposed that as the cultivated fig had few, and often imperfect, male flowers, an insect, a species of cynips, which usually found its nest in the wild fruit, was thus conveyed to the other, and carried with it some of the fecundating pollen. In fact, however, as Olivier has informed us, caprification is unknown in many parts of the Levant. It is not practised in France, Italy, or Spain, and now neglected in those countries where it was once so common. Yet their figs are large, and of an excellent flavour; nor can it escape the most inattentive observer, that to suspend the wild fig, at any one period, cannot influence fruit of very different sizes and degrees of maturity, usually found on fig trees. The operation is also useless; for every fig contains some male flowers near its eye, which may fecundate the internal ones, and there are figs of an excellent flavour whose seeds

are abortive. The cynips is undoubtedly found exclusively in the wild fig.

CAPRIZANS, an epithet applied by Galen to the pulse when it bounds irregularly like a goat.

CAPSULÆ ATRABILIARÆ RENALES.—Page 342, col. 1, line 3; “*by vessels to those of the kidneys.*”—Each oblong gland hath three edges, and two points; forming an irregular crescent. The great convex edge is sharp; the small convex one broad. The length is about two thirds of the greatest breadth of the kidney, and the breadth of its middle portion about one third of its length; the colour a dark yellow. The upper edge has been called the crista, the two lower the labia. One of the extremities is turned towards the concave, the other to the convex, part of the kidney. The surface is uneven, the basis the narrowest side. The anterior side is divided by a ridge into two equal parts, like a leaf, by the middle rib; and under the basis there is a kind of suture.

The cavity, internally, is triangular, the surface full of short, strong villi, of a yellowish colour, in children reddish, in advanced life a dark brown. The sides of this cavity touch at the top, and are connected below by numerous filaments. The substance is apparently full of follicles, on which, and on the sides of the cavity, the blood vessels are distributed. The glandular substance adheres more closely to the basis of the cavity than to the sides, especially near the extremities; but, it may be separated, as its connection is formed by filaments. The vein may be inflated by blowing into the capsular cavity, and the air also passes into the vena renalis.

The fluid of the cavity is unctuous, of a yellowish red colour, changing, in the progress of life, to a yellowish purple, a dark and a black yellow: it is sometimes mixed with blood, but has often the appearance of bile. These glands lie on the top of the kidneys; that on the right side is partly connected to the diaphragm, under and very near the adhesion of the great lobe of the liver to that muscle. The left gland adheres to the diaphragm, below the spleen. They are involved with the kidneys in the membrana adiposa, and a little fat insinuates between them and the kidneys, or between them and the diaphragm.

When the capsular vein is opened longitudinally, many foramina, perhaps the branches of the vein, are discovered in it. Some of these may, however, be different, and through them the air may pass. The granulated surface appears to proceed from a thin stratum of fat under a distinct, exterior coat, and this gives the gland a paler hue. The different appearance of the glands, in the figures of different anatomists, may arise from their state in different periods of life.

CAPUT GALLINAGINIS, *verumontanum*, a cuticular eminence in the urethra, lying before the neck of the bladder, resembling distinctly in shape the head of a cock. Around it the seminal ducts and those of the prostate open.

CAPUT.—Page 343, col. 1, line 46; “*called contorsio.*”—Inflammatory tension of the pericranium is often the effect of injuries of the brain, and we have

found, more than once, soreness on pulling the hair a symptom of serious injury on that organ. It is more singular to discover diseases of the thoracic and abdominal viscera among the effects of concussion, and we are rather inclined to class them among concomitant symptoms. We cannot, however, wholly omit the authority of Morgagni, who has collected many facts of this kind, de Sedibus, ii. 20, 21, 22. lii. 15, &c.

The brain has sometimes suffered very severe wounds, without fatal consequences. Fabricius Hildanus describes a case in which a spear entered under the left eye, penetrated through the brain, fixing the helmet to the head; but the patient recovered. On the other hand, slight blows and wounds, if neglected, if the most rigid temperance be not observed, and if violent passions be not restrained, are often fatal. It is not easy to fix the period in which a person who has received a violent blow or wound in the head can be pronounced secure. From fourteen days to six weeks is the period when the worst symptoms usually occur. Yet Petit, in the Supplement to his Chirurgical Works, describes a case where the fatal event happened at the distance of three months, and a considerable extravasation of blood was found on the brain. Other narratives, though not in works of the highest credit, have recorded cases of death after fifty-four days, and even ten years.

The shape and size of the head are subject to many varieties. Sagacity we ascribe, in common language, to a long head; and we observe a dissertation quoted with the following title, *Ergo macrocephalos prudentissimi*. We know not on which side the author ranks; but in dissertations, with similar titles, the affirmative is usually defended. An uncommon thickness of the skull is not uncommon, and a singular instance is recorded of it in the Philosophical Transactions for 1768.

See CONCUSSIO, FRACTURA, TREPANATIO, APOPLEXIA, PARALYSIS, EPILEPSIA, MANIA, CONTRACTURA, CERVIX.

CARA BRASILIENSIBUS.—Page 343, col. 2, line 9; “they were not quite so tender.”—There is an African root, which the negroes eat, also styled CARA; perhaps the same. It is the *convolvulus batatas* Lin. Sp. Pl. 220, or *edulis* Lin. Sp. (Ed. Willdenow) i. 875.

CARABUS.—Page 343, col. 2, line 27; “it is used for the locusta marina.”—The carabi properly belong to the coleopterous insects. They have an elongated body; the breast plate heart shaped; the elytra convex, distinct from the breast plate; the antennæ filiform, about half the length of the body, with two lips, two large, arched, dentated mandibles, two horny jaws, and six antennulæ; an appendix at the base of the posterior thighs, with filiform tarsi, composed of five joints. Linnæus called it *carabus*, slightly changing the name from *scarabæus*; but Geoffroy restored the ancient appellation, *buprestis*: the term *carabus* has, however, prevailed. The carabi are distinguished from the tenebriones by the antennæ and the tarsi; from the cicindalæ, by the head, the eyes, the breast plate, the feet, and the tarsi; from the scarites, by the antennæ, and the anterior feet. These insects run with rapidity, and conceal themselves under stones, and under the earth, avoid light, are very voracious, even devouring each

other. Their odour resembles that of tobacco; and, when taken, they discharge from the mouth and anus a very acrid and caustic dark green fluid, whose smell is more penetrating than that of their bodies. This caustic fluid was supposed fatal when incautiously devoured by oxen, in consequence of the inflammation which it excited, from whence the name *buprestis* was derived.

Hippocrates, Pliny, and other ancient physicians, thought them little inferior to cantharides, and employed them in dropsy, tympanites, and in several female diseases. The dose was very small, and they were sometimes an ingredient in the pessaries, mixed with aromatics.

CARBO VEGETABILIS.—Page 344, col. 2, line 25; “but it appears to possess little peculiar merit.”—It is retained in the new Edinburgh Pharmacopœia from its use only in preparing the muriat of barytes, and is not a pure oxide, as it contains a proportion of hydrogen. This ingredient is removed by strong calcination, and, if heated in a covered crucible until red, and while flame no longer appears on removing the cover, it is considered as pure. The upper stratum must be removed, and the inferior kept in small, dry, well closed bottles. From its effects in sweetening putrid ulcers it has been given in complaints of the stomach, where putrid eructations showed a disordered state of that organ, and ten grains have been the usual dose, but without any salutary effects. It is sometimes used in a cataplasm, by joining to the common poultice about one third of finely powdered charcoal.

CARBON.—Page 345, col. 2, line 2; “involve any contradictory quality.”—Carbon was formerly considered as owing its origin to decomposed oil; but it is now known to be a separate principle, almost peculiar to vegetables, and to be contained, in each, in a distinct, peculiar proportion. When the proportion of water is small, as in some solid woods, the carbon retains their form. It exists also in the animal kingdom; but it there appears a light spongy mass, apparently indestructible, from the phosphoric salts combined with it. Charcoal is sometimes hard, sometimes friable, of a lighter or deeper, a sparkling or a dull, colour. Its specific gravity is equally variable. That from oils is peculiarly light.

When charcoal is burnt, the carbon unites with oxygen, forming carbonic acid gas. Some kinds burn readily; others with difficulty; those from oils retain their form in a red heat for a long time. It powerfully attracts moisture, and from this the hydrogen, with which it is apparently contaminated, seems to be produced.

Sulphuric and nitric acids are decomposed by carbon; but by the latter most readily, and with some degree of effervescence (Macquer), occasionally with detonation and flame (Proust). It decomposes all sulphuric salts, forming sulphurs. Sulphur of potash dissolves carbon readily. With iron it forms steel, and with this metal, in a very small proportion, plumbago. It renders tin peculiarly brilliant, and fat oils susceptible of inflammation with the nitrous acid. Metallic oxyds it quickly reduces in degrees of heat adapted to the metallic body.

CARBUNCULUS.—Page 346, col. 1, line 35; "*sublimite or arsenic succeed.*"—Anthrax in cattle is sometimes owing to the poisonous stings of flies, and it has been doubted whether this may not have been a cause in the human body. The *sirex gigas* has been sometimes accused; and Pallas, in his *Travels*, attributes the disease to the bite of the *furia infernalis*. Fourcroy, in his *Médecine Eclairée*, mentions this among its other sources.

We were not aware, when the article was written, that arsenic and corrosive sublimate had been really enumerated among the remedies; but we perceive the former recommended by Agricola, and mercury in solution by Le Dran. Caustics were favourite remedies of Riverius; and in Russia tobacco leaves with sal ammoniac externally. The actual cautery is recommended by Pouteau.

CARCAPULI LINCOTANI.—Page 346, col. 1, line 54; "*this latter the best.*"—The gutta gamba probably proceeds from a plant somewhat different from these. See GAMBogia.

CARDAMOMUM MEDIUM.—Page 347, col. 1, line 60; "*Woodville's Medic. Botany.*"—There is a considerable confusion in authors respecting the different kinds of cardamoms, and the same names are often given to very different seeds, or different names to the same seed. The ancient descriptions are collected with great care by J. Bauhine (*Historia Plantarum*, ii. 195, &c.); and the ancient accounts are compared with the modern by Spielman (*Historiæ et Vindiciæ Cardamomi*). We need only add to the description in the article, that the seed of the *c. medium* is but little larger than that of the *c. minus*, is rounder, less obviously triangular, with the striæ scarcely visible. The *c. minimum* appears only a variety from an ungenial soil or climate.

All the cardamoms have a trivalve capsule, with flexible valves, membranous partitions, striated, trilobular, with a double row of angular seeds in each compartment. The capsule of the lesser cardamom is of a pale yellow, the base contracted, so as to resemble a small footstalk, while the other more blunt extremity is augmented by a deciduous apex. The seeds within are coherent, angular, reddish, rough, and filled with a white medulla. The capsule has little taste or smell. The taste of the seeds is agreeably aromatic, somewhat bitter, with some traces of camphor. They yield in flavour to cinnamon only.

The mucilage in cardamom seeds is in so large a proportion, that the decoction will not pass through a filter unless diluted. Water, however, extracts much of the aroma. The proportion of ethereal oil is one-twenty-fourth or one-twenty-sixth: it is yellow, smelling like cardamoms, and highly acrid. The weight of the aqueous is greater than that of the resinous extract.

CARDIACA HERBA.—Page 347, col. 2, line 8; "*Leonurus cardiaca* Lin. Sp. Pl. 817."—It is a large plant, with square branched stalks, the leaves set in pairs, on long pedicles at the joints, and the flowers in clusters round the upper joints. The leaf is dark coloured, cut deep into three sharp pointed, indented, segments, of which the middle one is the longest, and the two lateral ones are commonly again deeply cut. The

flower is purplish, and labiated; the upper lip long and arched, the lower short, divided into three sections.

CARDIALGIA.—Page 348, col. 2, line 33; "*must be only occasional and temporary.*"—Of those substances which affect the stomach by their vapour, garlic, and the rest of the onion tribe, including the fetids, are striking examples: spirits, oil of amber, and the balsams, may probably act in the same way. The local irritations which produce this singular sensation are numerous. A leech in the stomach, a needle or a bone swallowed, the ensiform cartilage pressed in, worms, hydatids, animalcules (Wall in the *Philosophical Transactions*), larva of the *musca cibaria* (White, *Memoirs of the Medical Society*, ii.), drastic purges, particularly gutta gamba, cheese, pickles, &c., have produced it. The diseases in the stomach itself from which the complaint has arisen are, ulcers, scirrhi, calculi, erosions, and herniæ of the stomach, contraction or accretion of this organ, and a hard callosity from excess in drinking. Diseases of the neighbouring parts, which appear to have produced it, are those of the kidneys (Hoffmanni *Opera Supplementum Secundum*, i. 504), a perforation of the œsophagus, a scirrhus pancreas (Bonetus), steatoma in the mesentery, a calculus and a scirrhus in the jejunum, and diseases in the liver. An instance is recorded by Zacutus Lusitanus, where an obstinate cardialgia arose from the ductus communis, passing into the stomach instead of the duodenum.

The existence of acid in the stomach as a cause of heart burn is well established, but, as we usually see acid only in consequence of a previous spirituous fermentation, it has been doubted whether such can exist in the stomach. There is certainly no evidence of any previous change, and the acidity often appears very rapidly, especially if there is any agitation of mind after taking food. M. Perperes (*Annales de Chimie*, ix. 280), has, since the publication of this article, made some experiments on the subject; and he seems to prove that the dilatation of the stomach, when the process of digestion is disturbed or irregular, depends on the formation of carbonic acid gas, mixed with some atmospheric air, arising from the decomposition of the food, especially if it be of a vegetable, amylaceous nature. The pain in the stomach, often communicated to the œsophagus, arises, in his opinion, from a quantity of the acetous acid, for he found that two ounces six drachms of acetous acid were produced by eight ounces of roasted chestnuts (a species of aliment peculiarly indigestible in his stomach), after fermenting an hour and a half in that organ. The best mode of relieving this inconvenience he found to be taking ten grains of columbo root, with twelve grains of calcined magnesia.

The acidulous alkaline waters are often essentially useful in this complaint, not only as antacid, but as gently stimulating and exciting the action of the stomach. When these waters are chalybeated they are still more salutary. Soap is also of considerable service, as the alkali, when united with the acid and the oil, proves gently laxative. Refrigerants are recommended by some authors, and even by Stoll (*Ratio Medendi*, ii. 157. iv. 363). He particularly advises abstinence from wine (v. 129). Diluents and demulcents are remedies of the same class, and often highly advantageous. Bitters and tonics of almost every kind have been advised,

and the oxide of bismuth, first mentioned by Odier, seems a probable remedy; steel has been very commonly employed. As a diarrhœa has sometimes relieved, cathartics have been given, and frequently emetics: both have been useful, when the pain has depended on extraneous bodies, which are by their means evacuated. Cold, as a tonic, is very salutary in this complaint, and it has been freely employed in the form of cold drinks, and cold applications to the pit of the stomach; but the applications to this part have been more commonly of the warmer kind: blisters, rubefacients, and even cupping glasses have been applied externally, while the tetradynamia have been given internally. We can see little foundation for the use of hemlock mentioned by Quarin, of hyoscyamus recommended by Storck, or of mosch by many different authors. Yet as opium has the sanction of De Haen, of Whytt, and other respectable practitioners, it is probable that the other narcotics may be useful.

CARDUUS BENEDICTUS.—Page 349, col. 1, line 56; "*for gathering it is when in flower.*"—The watery extract is, after some time, covered with a saline efflorescence resembling nitre, though sometimes styled common salt. It is considered as a deobstruent, and employed in jaundice; a febrifuge, and therefore used in intermittents, (Eller de Cognoscendis et Curandis Morbis, 89); an antiseptic, which has led to its employment in malignant fevers, and even the plague (Mathiolus in Dioscoridam). It is said to promote sweat, and Geoffroy recommends it in pleurisy. J. Bauhine mentions its great utility in cancer, used externally in the form of distilled water and of powder sprinkled on the sore. In deep putrid ulcers it is supposed to have been applied with advantage, as well as in chilblains.

The seeds are oblong, slightly curved, the base cut off towards the side, crowned on the upper part by a serrated margin, covered by a grey bitter skin, under which is a sweet medulla. They have been used as sudorifics, and to assist the eruption of the small pox; are given in emulsions, and require ten times their weight of water.

CARDUUS LACTEUS.—Page 349, col. 2, line 43; "*to be efficacious against pungent pains.*"—The seeds are oblong, compressed, smooth; their bark a variegated brown, or white, containing a bitterish oily kernel. They are mentioned by Triller, though without any warm commendations, in pleurisy. The leaves are bitterish and somewhat saline: when the thorns are removed they are sometimes boiled like spinage and eaten as a condiment. Their juice is recommended in dropsy and in intermittents. Tournefort.

CARDUUS TOMENTOSUS. *Onopordium acanthium* Lin. Sp. Pl. has been chiefly used in cancers, by applying its fresh juice on lint, or even the leaves themselves when bruised. Numerous authorities support its utility. The disc is eatable, resembling an artichoke. *Amœnitates Academicæ*, vi. 124.

CARIES.—Page 351, col. 1, line 53; "*the neighbourhood of an aneurism.*"—Caries may arise from causes similar to those which produce mortification, viz.

excess of inflammation, continued irritation, pressure, acrimony, perhaps the application or continued use of narcotics. Inflammation may be in excess from wounds, from a denudation of the bones, or from metastasis, though of the latter there are few instances. The irritations recorded are those of a neighbouring paronychia, a thorn, neglected erysipelas, &c. The effects of pressure are well known from the consequences of aneurisms; and acrimony may, as stated in the article, be either syphilitic, scorbutic, or variolous. Scrofula seems to affect the bones only as a part of the general system. Of caries from the long continued use of narcotics we have few instances; but we have great reason to suspect that a disease of this kind has been the consequence of the long use of hemlock.

The applications recommended in caries, besides those mentioned, are numerous, but chiefly of the acrid caustic kind. The most acrid preparations of mercury are often recommended, particularly by Petit in his posthumous work, and Gooch advises the muriated mercury internally. The actual cautery, with the muriated mercury, is recommended by Petit in his Treatise on the Diseases of the Bones; the euphorbium by Fabricius Hildanus; the flammula jovis by Storck; savine, by Hoffman; calcined vitriol, essential oils, the pulsatilla, &c. by others. In general, spirituous applications and dry powders are hurtful: the oil of camphor, and even asafœtida, are said to have been useful.

CARINA.—Page 352, col. 2, line 39; "*usually shaped like a boat.*"—The carina consists sometimes of one petal, as in the cytissus, sometimes of two, as in the broom, and is either *lunulata*, *bifida*, *spiralis*, *incurva*, *ventriculosa*, or *compressa*. The line which forms the keel runs strait to the middle, and then rises in the segment of a circle; but the marginal line runs strait to the apex, where the two lines meet, and terminate obtusely. The lower part of the base of the keel extends into a claw, inserted into the common receptacle, and of the length of the calyx.

CARLINA.—Page 352, col. 2, line 61; "*The dose from ʒ i. to ʒ i.*"—The root is branched, thick, externally brown, internally of a yellow white, of a fragrant smell, an acrid, an aromatic, and bitter taste. Its essential oil is heavy, and is best given in infusion. The plant seems to be a sudorific, and it is an ingredient in the theriaca and the alexipharmic essence of Stahl; but the idle superstitious nonsense reported of it does not merit a moment's consideration. The disc is eatable, and not unpleasing. Gesner in Raii Historia, i. 288; Halleri Historia, N°. 831.

CARLOCK, a kind of isinglass made of the membranous parts of the sturgeon.

CARUS.—Page 355, col. 1, line 43; "*In other respects the treatment does not essentially differ from that of apoplexy.*"—One great question has arisen, whether, in such cases, emetics may be employed, as they determine, during their action, so powerfully to the head. We have already noticed this subject under the articles APOPLEXIA and PARALYSIS, and repeat it now to remark, that in this disease we find no very strong authority for

their employment. Carus has sometimes yielded to bleeding of the nose, often to eruptions of almost every different kind. These circumstances strongly evince the necessity of evacuations, particularly topical ones, and that mild gentle diaphoe, which has appeared so active and so useful an evacuant. Alexander Trallian advised castor, in which we perceive Horstius joins; and antispasmodics were formerly no uncommon medicines in affections of the head.

CAROTIDÆ ARTERIÆ.—Page 355, col. 2, line 2; "*maxillaria interna*."—The branches of the external carotid may be divided into anterior and posterior. The *first anterior branch* goes off from the origin of the carotid, on the inside. It soon takes a little turn, and, sending off branches to the neighbouring glands and integuments, it is distributed on the thyroid glands and the larynx; supplying also, in some degree, the pharynx and the muscles of the os hyoides. The *second anterior branch* passes over the nearest horn of the os hyoides to the muscles of that bone, the sublingual glands, and the tongue: it is lost on the latter, and has been styled *ranina* or *sublingual*. The *third branch*, the *maxillaris inferior*, the *pharyngea inferior* of Sabatier, goes to the maxillary gland, the styloid and mastoid muscles, to the parotid and sublingual glands, to the muscles of the pharynx, and the small flexors of the head. The fourth, *maxillaris externa*, the *labialis* of Sabatier and Haller, at first covered by the stylo-hyoid and digastric muscles, gives branches to the pharynx and tongue, the tonsils, the palate, and, at the angle of the jaw, to the skin and neighbouring muscles. It then runs over the lower jaw, before the inferior edge of the masseter, passes under the depressor anguli oris, which it supplies, as well as the buccinator and depressor labii inferioris. A contorted branch divides at the angle of the lips, and supplying the orbicularis muscle, anastomoses with its opposite. It then ascends to the nose, which it supplies, rises to the great angle of the eye, supplying the external muscles: through all its course it is named *angularis*. The *fifth branch*, *maxillaris interna*, rises over against the condyle of the lower jaw, and is very considerable. It passes between the jaws, giving off, 1st, the *spheno-spinalis*, or *media duræ matris*, passing between the external and internal carotids through the foramen spinale of the sphenoidal bone, and distributing branches to the dura mater in every direction; 2d, the *maxillaris inferior*, which, running through the jaw, and supplying the teeth, escapes at a hole near the chin, and is lost in the neighbouring muscles, after having anastomosed with the branches of the external maxillary; 3d, *pterygoideæ* and *temporales profundæ*, sent to the muscles thus distinguished; 4th, the *buccalis*; 5th the *alveolaris*, supplying the upper jaw; 6th, *infra orbitaria*, which, after sending a branch to the nose, passes through the posterior opening of the orbital canal, and having supplied the orbit, the antrum maxillare, and teeth, goes out by the infra orbital hole, communicating, on the cheek, with the angular artery; 7th, *palatina superior*, and another small branch terminates on the parts at the upper end of the pharynx. The *sixth anterior branch* is very small, and spent on the masseter.

The *first external or posterior branch* is the *occipital artery*, which passes obliquely before the internal jugu-

lar vein, and having supplied some of the contiguous muscles, it runs between the styloid and mastoid apophyses, along the mastoid groove, supplies the muscles and integuments of the hind head in an undulating course. A branch forms a communication with the cervical arteries near the top of the head, and it communicates with the posterior branches of the temporal artery, sending a branch to the foramen mastoideum, The *second external branch* supplies the ear, and what we have called the external cavity. The trunk of the external carotid then ascends above the zygoma, passing between the angle of the lower jaw and the parotid, forming the temporal artery, which divides into an anterior, middle, and posterior branch. The first of these goes to the frontal muscle, communicating with the angular artery, and sometimes sends off a small branch, which pierces the internal apophysis of the os malæ, so far as the orbit: the second or middle branch goes partly to the frontalis, and partly to the occipitalis: the third to the occiput, communicating with the occipital artery.

The internal carotid, at its first separation, is a little incurvated, appearing rather like a branch than an important trunk. The curvature is inward, passing behind the neighbouring external carotid, though sometimes at first a little outward. It runs upward, without any considerable branch till it reaches the canal of the petrous apophysis of the temporal bone, and after following the direction of that canal, covered by a production of the dura mater, it is again incurvated, and enters the cranium through a notch of the sphenoidal bone. It then bends from behind forward, and makes a third angle on the side of the sella sphenoidalis, and a fourth under the clinoid apophyses of that sella. While it lies on the side of the sella turcica it sends off small branches to the parts about that cavernous sinus.

As it leaves the bony canal to enter the cranium it sends off a small branch through the sphenoidal fissure to the orbit of the eye, and soon afterwards a larger one, the *ophthalmica*, to supply the contents of the orbit. The first branches from the ocular artery are very small, supplying the dura mater on the optic nerve, and the first portions of the muscles at the bottom of the orbit. The *lacrimal and ciliary* arteries are next sent off; the artery covered with the levator muscles of the eye and upper eye lid afterwards turns inward between these muscles and the optic nerve, at nearly right angle; but where it turns it sends off the *anterior ciliary* branches, and afterwards two go off to the levator of the eye and upper eye lid; then the *posterior ethmoidal* and *arteria centralis retinae*, are separated. While it passes over the nerve it gives off the *musculares superior and inferior*, and other ciliary branches. It now lies at the inner side of the orbit, under the superior oblique and adductor muscles. The adjacent parts receive some small branches from it, when it produces the *anterior ethmoidal*, and its trunk descending under the cartilaginous pulley of the superior oblique, after giving a branch to the lacrimal sac and the eye lids, divides into the *superciliary*, the *nasal*, the *superficial*, and *deep frontals*. At the inner angle of the eye it communicates with the angular arteries, and, within the orbit, sends off some small branches to the nose. The internal carotid, after this distribution of branches, runs under the basis of the brain to the infundibulum

at no great distance from the internal carotid of the other side, and there divides into anterior and posterior branches.

The anterior branch separating from that on the other side, runs forward under the brain, then coming again nearer, unites with it in the interstice between the olfactory nerves. After supplying these nerves with some branches it separates again, dividing into two, or, according to Winslow, three, branches. The first, the smallest, but a constant one, runs forward to the inner side of the anterior lobe, which it supplies. The second, after it has passed beyond the corpus callosum, to which it sends branches, is reflected back over that substance upon the inner side of the hemisphere, and may be traced to the posterior lobe. From this innumerable branches proceed, anastomosing with the ramifications of the posterior trunk.

The posterior branch first communicates with the vertebral artery of the same side, and, after running between the lateral and anterior lobes of the brain, ramifies minutely between its superficial convolutions, so far as the bottom of the sulci, in the duplicatures of the pia mater. The anterior and middle branches ramify in the same manner.

From these extensive communications, stopping or retarding the circulation in the carotid appears to be by no means very dangerous, and it has lately been attempted in a degree which, at first view, seems a conduct unjustifiably rash. Yet it is the result of a sound judgment, resting on an intimate knowledge of the circulation within the cranium. A wound in the external carotid (*Journal de Médecine*, xxvi. 452), has been healed. The carotid is occasionally ossified, and it has been sometimes dilated into an aneurismal sac.

CARPATICUM.—Page 355, col. 2, line 25; "*germanis oleum.*"—See **BALSAMUM CARPATHICUM.** It is pellucid and very fluid, approaching in odour and taste very nearly the oil of juniper. It was first introduced by C. ab Hortis; but its chief recommender was D. Fischer, who rubbed it on the temples in vertigo with success, dropped it into the ears in susurrus and deafness, applied it to erysipelatous tumours, gave it internally in pleurisy, typhus, and calculus. Other practitioners have not found it so useful.

In reality there is another balsam often used for this, which may be distinguished by the appellation of *balsamum Hungaricum*. It is the distilled oil of the *abies munghos* of Scopoli, var. β , of the *pinus sylvestris*. The balsam, however, exudes spontaneously from the tops of the branches, and C. ab Hortis is diffuse in his commendations. It is used externally in wounds and ulcers, contusions, obstructions of the catamenia, palsy, spasm, and even gout. Internally the balsam is given from two to nine drops, *it is said*, with success, in obstructions of the viscera, in gonorrhœa, calculus, mænorrhagia, headach, cough, and phthisis. As a diuretic and sudorific it was esteemed excellent. It is easy to see that such exaggerated commendations are suggested by credulity, and prejudice; nor have we any reason to trust the recommendation of Fischer who praises, with almost equal warmth, the wood and its bark; the essence and spirit of the *abies munghos*.

The *oleum templinum*, the *krummholzöl* of the German itinerants, is the distilled oil of the tender

branches, sometimes of the green cones (*Hermannus*), of a golden colour, an agreeable smell, an oily but acrid taste. A few drops of this oil are taken in brandy, by the common people of Brunswick, to cure intermittent fevers. In wounds of the nerves and tendons, joined with the spirit of ants, it is said to be really useful, as well as in the running ulcers of cattle.

CARPIO.—Page 355, col. 2, line 47; "*the tongue is the most delicate.*"—It is not generally known that the carp which belongs to the genus *cyprinus*, is an inhabitant of the south of Europe, brought to England in 1514, to Denmark in 1560, and introduced some years afterwards into Holland and Sweden. Its food is the larvæ of insects, worms, the spawn of fish, seeds, and the young shoots of plants. They are said to live on mud; but this is untrue, though they swallow it in large quantities. Some naturalists have denied that they feed on vegetables, but they devour lettuce leaves within our sight; and Bloch observes that they thrive greatly in ponds abounding in the *Nais*. The same author has observed some hermaphrodite carp, which had a milt in one ovary, and eggs in another; it was formerly the custom, and may perhaps be so still, in England to castrate carp, to render them larger and fatter. All the aid of cookery has been, in vain, exerted to render carp a luxury. Its meat is neither highly flavoured, nor, as is said, very wholesome. The French physicians think it injurious to convalescents, and that it induces paroxysms of gout; effects probably derived from the sauces and condiments.

CARTHAMUS.—Page 356, col. 1, line 29; "*perfection in England.*"—The flowers are originally of a citron colour, but acquire the bright yellow by being macerated in brackish water, and exposed to the sun and dew. They are valued only for their colour and used in food on this account. In India, according to Rumphius, they are given in jaundice, and as deobstruents.

The seeds are white, wedge shaped, quadrangular, shining, and hard, including a white, unctuous, sweet kernel, whose epidermis is brown, bitter, subacid, and nauseous. Except, however, in a dose of one or two drachms in substance, six or eight in emulsion, they do not prove laxative. Their nauseous taste is unpleasant to the stomach, so that aromatics must be necessarily combined. Mesue informs us that they promote expectoration, and render the voice clear. They are not injurious to fowls, who are fond of them, and their oil is eatable.

The young leaves were used by the Egyptians as pickles; the older ones as salad. The powder of the leaves coagulates milk. The dry leaves and stalks are found to be an useful winter fodder for sheep and goats.

CARTILAGO.—Page 356, col. 2, line 35; "*too minute to be visibly demonstrated.*"—The consistence and cohesion of cartilages are less than those of ligament, and they yield less easily; but they are composed of plates nearly as bones. The perichondrium of the cartilages of the ribs and larynx has more considerable arteries than those of the joints, and penetrate deeper; but madder never changes their colour. The granulations which rise from the ends of the metacarpal and metatarsal bones, after amputation at the first joint, are acutely

sensible, which shows that cartilages have nerves, though in a sound and firmer state insensible. From their less cohesion they exfoliate sooner than bones; but are subject to ossification, which more readily occurs in those parts where the motion, however constant, is not considerable. Some unnatural, interarticular cartilages are occasionally met with loose within the cavity of the joint. Numerous instances occur in medical authors (Medical Observations and Inquiries, v. 30; Broomfield's Observations, i. 330; ii. 76; Desault, Journal de Chirurgie, ii. 45; Morgagni de Sedibus, lviii. 14; lix. 12; Simson Edinburgh Medical Essays, iv. 306). Sometimes little bones are mixed with the cartilages, and sometimes the little separate cartilages are partly osseous. These separate cartilages seem to sprout from that which covers either end of the bone, and to have been separated from some violence. Their usual seat is in the knee. (See GENU.) The xiphoid cartilage is sometimes bent inward, sometimes luxated.

CARTILAGO ANNULARIS, synonymous with the **CARTILAGO CRICOIDEA**, q. v.

CARTILAGO ARETENOIDEA. There are two cartilages distinguished by this name at the top of the **ASPERA ARTERIA**, q. v. They are small and equal, resembling, when united, the spout of an ewer, and situated immediately on the top of the cricoid cartilage. Each has a basis, two horns, a posterior concave, and an anterior convex side, an internal edge, and a very oblique external one. The bases are broad and thick, with concave articular surfaces, by which they are joined to the cricoid cartilage. The cornua are bent backward, approaching each other, sometimes apparently separate appendices. Between their inner edges they form a kind of fissure, and each outer oblique edge terminates by a thick prominent angle.

CARTILAGO CRICOIDEA is situated between the thyroid and aretenoid cartilages, and the trachea, constituting the basis of many of the annular cartilages of the *aspera arteria*. It resembles a thick, irregular ring, very broad on one side, and narrow on the other. Its basis to which the trachea is connected, is almost horizontal, in an erect posture; its posterior or convex side divided by a prominent line for the insertion of muscles. Above this line the top is gently stopped, terminating on each side by an obtuse angle, formed between it and the oblique edge of each lateral portion of this cartilage. At the upper part of each angle the articular surface is smooth and gently convex.

The posterior side is distinguished into two lateral portions by two prominent lines, each of which runs almost perpendicularly from the articular surface at the top, a little below the middle, where it terminates in another articular line, a little concave, and near these four articular surfaces there are small tubercles. With the superior surfaces the arytenoid cartilages are articulated with the inferior horns of the thyroid.

CARTILAGO ENSIFORMIS, the cartilaginous lower extremity of the **STERNUM**, q. v.

CARTILAGO INNOMINATA, synonymous with the **ANNULARIS**, OF **CRICOID**.

CARTILAGO SCUTIFORMIS. See **CARTILAGO THYROIDÆA**.

CARTILAGO THYROIDÆA, (from *θυρεος*, a shield, and *ειδος*, forma). The thyroid or scutiform cartilage is placed perpendicularly to the cricoid, forming the anterior, superior, and largest part of the larynx. It is large, broad, and folded, so as to have a longitudinal convexity on the fore side, and two lateral portions, styled *alæ*. The upper part of its anterior, middle portion is formed into an angular notch: the upper edge of each ala makes an arch, resembling, together, the upper part of the ace of hearts. The lower edge of each ala is more even, and the posterior edges of both are very smooth, being lengthened above and below by apophyses, called the *cornua*. The superior are the longest, and the extremes of all are rounded like small heads, which in the inferior apophyses have an apparently articular eminence on the inside. On the outside of each ala, near the edge, is a prominent oblique line, running from behind forward, the upper extremity of which is near the superior horn, and this, as well as the lower, terminates in a small tuberosity. These tuberosities serve for the insertion of muscles and ligaments: the lowest is the largest. The inside of the *alæ*, and the convex side of the anterior portion are uniform. This cartilage often ossifies in advanced life.

CARUL.—Page 356, col. 2, line 57; "*Its roots and leaves are esculent.*"—The seed is ovate, oblong, striated; the involucre monophyllous; the petals carinated below, and emarginated by their inflexion. The cultivated plant produces larger seeds than the wild, and in many places its cultivation is an object of peculiar attention. The tender roots are eaten as pickles, sometimes preserved: in general they resemble parsnips. A wine made from infusing them with other fermenting mixtures is called *CARITES*, and formerly much used in Germany. Weinman supposed that the roots of *carui* formed the *chara cæsaris*, from which the soldiers of Valerius prepared bread; but that plant seems rather to have been one of the edible *algæ*. The tender leaves are sometimes boiled as potherbs. The seeds are so full of oil that Lewis procured from them one thirtieth; Spielham one eighth. In flatulent colics they are applied in the form of a cataplasm made with crumb of bread and Rhenish wine, and in tertians they are said to be useful (Lin. Flora Suecica, 95). They are supposed to increase the milk in the breast of nurses, and to attenuate viscid sputum.

CARYOPHYLLATA.—Page 357, col. 2, line 36; "*Nat. order rosaceæ.*"—It is a rough plant, with dark-coloured winged leaves, and pentapetalous, yellow flowers, standing in ten leaved cups on the tops of the branches; the seeds are hairy, the roots slender and full of fibres, of a dark brownish colour on the outside, and reddish within. When fully grown, it consists of a short oblong trunk, throwing out numerous, thick, long, attenuated fibres: at an earlier period it is fibrous only. It must be dried slowly, and with caution, as its supposed febrifuge virtue is otherwise destroyed. The thicker part of the root is the most active; it must be dug in spring or summer, and what grows in mountainous districts is preferred. The powder of the

root is of a pale red, and slightly tinges wine or spirit with this hue. In distillation, a white, thick, oily matter comes over. The watery extract is more copious than the resinous; but each consists of different proportions, both of gum and resin. It preserves beer like hops, and gives it a peculiar fragrance.

Many idle stories are told of its producing sweat, and assisting the appearance of eruptions, of its aphrodisiac, emmenagogue, and alexipharmic power. Haller complains that in malignant fevers it often occasioned delirium. Its utility in scurvy, and in relaxed gums, rests on a better foundation, as well as its salutary effects in dyspepsia. At the end of dysenteries, Scopoli informs us that it has been serviceable; and in decoction, particularly with ale posset, it has cured intermittents, if given before the fit.

It is unnecessary to engage in the dispute respecting the febrifuge powers of this medicine. Among the Danish physicians who support it we find the names of Buchnave, Aascow, Callisen, Bang, Weber, Schonheyder, Tode, and Waldstedt. Their cases are related distinctly, and the successive changes very carefully pointed out. On the opposite side are ranged Ab Acrel, Dalberg, Christopherson, Barfoth. We own, on examining the different facts, the clearness of the narrative, the accuracy of the observations, and the precision of the language, lead us to the former party. Yet they have probably exaggerated its virtues; and, though not a certain febrifuge, it may be a valuable medicine.

In other diseases from debility, as diarrhoea, lucorrhœa, passive hæmorrhages, hysteric spasms, and flatulent colic, it has been useful. To these the hooping cough, with less propriety, has been added.

CARYOPHYLLI AROMATICI.—Page 358, col. 1, line 10; "*genus eugenia*."—We have examined, with some care, this assertion, and find it without foundation. The testimony of Sonnerat, Gentil, and Tessier ap. Rozier's Journal, 1779, are decisive. The resemblance, however, to the *eugenia jambos* is very striking; and there is a wild clove, with long footstalks and obtuse leaves, but without the peculiar aroma of the clove, which must be distinguished from it.

The tree is of a middle height, from fifteen to twenty-eight or thirty feet, with a large pyramidal top. The trunk, about a foot in diameter, is angular at its lower part, and covered with a grey, smooth, thin cortex, which adheres very closely; it is strait and unbranched to the height of five or six feet, and divides into different limbs, furnished with opposite branches, terminated by bunches of beautiful flowers. The leaves are united, shining, and opposite, borne on a footstalk of from six to eight lines, which Sonnerat tells us is even more aromatic than the clove. The leaves are from two to four inches by an inch and a half, entire, with a border a little undulated. They resemble the leaves of the common laurel, and may be rubbed to a powder by the fingers. Their internal surface is perforated by little transparent points. The fruit which we have called *anthophyllus*, is sometimes styled the *mother clove*. The flowers are at first white, then green, and at last red and hard. The cloves are beaten down from October to February, received in cloths and dried in the sun, or in the smoke of the bamboo. They are usually,

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however, previously immersed in water; and, if this is omitted, the cloves are wrinkled and light.

About 380 grains of a nauseous and somewhat astringent extract was obtained from a decoction of 960 grains, and about 300 of a fiery extract by means of alcohol. The pungency is from the oil; for the resin is tasteless. The first product of the oil is very white and pellucid; but it becomes yellow from the access of air. It is an ingredient in the *apoplectic balsam* of the Wirtemberg dispensatory, and in Hoffman's *balsam of life*.

CASSIA CARYOPHYLLATA.—Page 361, col. 1, line 63; "*under different names into Europe*."—See **CORTEX CULLILAWAN**.

CASSIA FISTULARIS.—Page 361, col. 2, line 10; "*is brought to us from the Brasils*."—The tree, in Alexandria, where it was originally found, rises to the height of forty or fifty feet, with a large trunk, divided into many branches; the leaves are pinnated, composed of five pair of spear shaped lobes, smooth, with transverse nerves from the mid rib to the border. The flowers stand in long spikes at the end of the border, on a long peduncle, composed of yellow concave petals, succeeded by cylindrical pods. The pulp of the American cassia is more nauseous than the eastern, and the pods are larger, thicker, and more rough. The hard part of the pods seems to contain a purgative matter, and Fallopius prefers it to the pulp. It is doubtful whether this plant is the *siliqua ægyptiaca* of Theophrastus. It was apparently mentioned first by Avicenna under the name of *chaiarlander*.

CASSIÆ FLORES. These are the flowers of the cinnamon tree, and are, like the cinnamon, aromatic and somewhat astringent.

CASSIA LIGNEA.—Page 362, col. 1, line 30; "*laurus Malabathrum*."—It has been doubted whether it is really a distinct species, and, on the whole, the difference appears rather to be the result of cultivation than any real specific difference (Combe, Philosophical Transactions for 1780, p. 873; Thunberg, Vet Acad. Handl. 1780, p. 56; Solander ap. Dossie's Memoirs of Agriculture, 202, note). In general it is not convoluted like cinnamon, which is said to happen from the bark being taken from the trunk: when from the branches its appearance is the same.

CASSUMUNAR.—Page 362, col. 2, line 46; "*as a medicine of uncommon efficacy in nervous diseases*." It was, in fact, introduced by Dr. Peachy (Sloane in the Philosophical Transactions, No 264), assisted indeed by Dr. Marlow. Mead was said to have considered it as a valuable medicine, and, on this account, it long held a place in the British dispensaries.

Cassamunar has the smell of ginger, and, with the taste of the zedoary, a slight flavour of camphor is mixed. The spirituous tincture is of a deep yellow, agreeably bitter, and of a steady warmth. It was recommended by Peachy in apoplexy, palsy, vertigo, and colic. It is probable that it was an useful medicine, and has been perhaps too hastily discarded.

CASTOR.—Page 363, col. 1, line 62; "*which is in thin long bags.*"—Alcohol, proof spirit, and even water, with the assistance of heat, extract its virtues. From 480 parts of castor, Neumann obtained 140 of alcoholic extract, and eighty of watery; inversely fourteen of watery, and twenty of alcoholic. The first alcoholic extract retained the whole flavour of the castor, since none of it rose in distillation. On the contrary, the distilled water contained all the flavour, and the extract was merely bitter. Cartheuser obtained a volatile oil from it by distillation.

CASTRATIO.—Page 364, col. 1, line 18; "*for the better convenience of tying the vessel.*"—The operation is necessary, when a severe contusion has bruised the testicle, in cases of fungous ulcers, sarcocele, hydrosarcocele, and cancer. If from a blow the scrotum is considerably swollen, and after discharging the fluid, the organization of the testicle is found to be essentially injured, the operation is indispensable. In sarcocele it is equally necessary, whether the testicle hardens or remains soft, which sometimes happens, though the tumour is considerable, and continues increasing. If the cord is enlarged so far as the ring, hard, unequal, and sore to the touch, with pains extending to the region of the loins, we must not risk the operation; and these reasons will acquire greater force if the patient's complexion be livid or of a lead colour; if the skin is dry and burning, or an habitual fever has worn him down. Yet if the patient is otherwise well, and has no pain but what rest and a suspensory bandage will remove, a slight swelling of the cord should not delay the operation. The testicle is seldom diseased without some tumour of this part; and M. Peyronnie performed it though its size was two inches in diameter. Sometimes the size of the cord is increased by a portion of intestine, or of the epiploon, which has accidentally fallen into it. Sharp and Garengot consequently advise opening it, when swollen, to avoid comprehending either part in the ligature.

The operation is very simple. It is proper to place the patient on the right side, whichever testicle is to be amputated. If the size of the tumour is moderate, and it is not ulcerated, the surgeon raises with his finger and thumb the teguments at the upper part in a transverse fold, which he cuts through, and continues his incision from above and below. When the integuments are less loose, and the tumour is considerable, the knife should be directed by a grooved sound, so that the incision should extend from the ring of the muscle to the lower part of the tumour. If the swelling be large, ulcerated, the teguments thin, and of an unusual colour, two incisions must be made in the form of segments of a circle, inclosing the diseased portion of skin, which must be separated with the testicle.

In either way the cord must be laid bare, and the cellular substance carefully dissected; but without separating it from the parts below. When it appears larger than usual, it is necessary to examine whether this is owing to any portion of prolapsed intestine. If not, the cord is raised by the finger and thumb, and a common needle, armed with a thread, passed under it, as a precaution chiefly if other means of stopping the hæmorrhage fail. An incision is then made through it, and the testicle separated. When the cellular texture

is loose, it may be torn with the fingers, otherwise it must be separated with a bistoury, cautiously avoiding any injury to the urethra or the integuments; for, when the testicle is very large and indurated, considerable adhesions take place. To check the hæmorrhage, Le Dran and Saviard advised drawing down and compressing or convoluting the cord, as the females of quadrupeds stop the bleeding in the funis. Other practitioners surround the end of the cord with little dossils, and compress them. The ligature is, however, now preferred, and, when fixed, the cord must be divided a finger's breadth, at least, below, or the cord will retract above the ligature, which will remain only on the cellular substance. Yet the pain of the ligature, the spasms which frequently follow, have led surgeons to employ a less dangerous method. They observed, that when the cord was cut the cellular substance retracted more than the vessel, which left the latter free for the operator to put his ligature on it, which may be easily effected if the vessel is raised by the dissecting forceps. The most dangerous bleedings are from the arteries of the dartos, which separates the testicles; but these may be tied like the vessels of the cord. This is indeed the method of Mr. Gooch and Dr. Hunter; but in the proposal they seem to have been anticipated by the French surgeons.

The diseased integuments must be then separated, the wound filled up and covered with lint, on which an oblong compress is placed. The patient is then laid on his back in bed, with his shoulders raised, and the legs and thighs bent. The external dressings are changed when necessary; but the internal ones left about nine or ten days, when the suppuration has come on, and soon afterwards the ligatures drop off. The first thread, which was introduced by way of precaution, may be then removed.

When the cord is greatly diseased, and the tumour extends to the ring of the muscle, it is often necessary to divide the latter, to prevent gangrene. Yet this step, should, if possible, be avoided, as numerous inconveniences may result. In general, by the mode of tying the arteries just described, the necessity is often precluded.

The *castration of females* consists in extracting the ovarium. This we know is done often with success in quadrupeds, and we have heard of its being practised by one of these operators on his own daughter. The excision of the ovaries has been more seriously proposed when diseased. The operation seems to have been recommended by Felix Plater; but other authors of an earlier and a later age appear to have formed an opinion of its practicability. Diemerbroeck, on the contrary, contends that the wound in the abdomen would be highly dangerous, and that hæmorrhage must prove fatal. Ancient historians, however, mention the practice; and Franknau seems to have seen a woman who had lost an ovarium, in consequence of a wound. Yet it is difficult to draw any conclusion from such an accident; for a diseased ovary often adheres to the neighbouring parts; and, when large, its vessels are dilated in the same proportion; nor is it in the greater number of cases easy to say that the ovarium is the part affected. The idea must, therefore, be banished as a necessary surgical operation, and fortunately the voices of women do not change at the period of puberty,

so as to render them victims of a wanton experiment, to administer to the amusement of others.

Castration in botany consists in cutting off the antheræ, previous to the evolution of the pollen. It is chiefly employed as an experiment to confirm, or refute, the sexual system.

CATALEPSIS.—Page 365, col. 2, line 13; "*fatal apoplexy.*"—This disease is so peculiarly rare, that it requires no little leisure to establish the facts on the subject. On considering *HYSTERIA*, q. v. we were struck with the analogy between it and catalepsy, and added an article, *HYSTERIA CATALEPTICA*, q. v. Its connection with *hypochondriasis* is no less evident, and we should be inclined to reduce it to either of these diseases; but rather the latter than the former. We find, in Baldinger's Magazine, that cataleptic patients bear very considerable doses of medicines, though in one case, where forty grains of emetic tartar did not produce vomiting, it was combined with mania. It has happened also after severe headaches, from deep, long, fixed attention (Plateri Observaciones, i. 30); from disappointment in love (Tulpius, i. 22); from plethora, terror, and sordes in the stomach. Since the article was written we have seen two cases of less degrees of the disease, which were truly hysterical.

See also Wepfer Observaciones, Wedel de Soporosis Affectionibus et Catalepsi; Stoll Prælectiones, ii. 10; Fabri Tentamen de Catalepsi; Hoffmann de Affectu Cataleptico Rarissimo; Philosophical Transactions, N^o. 437; Tissot on the Diseases of the Nerves.

CATAPUTIA.—Page 366, col. 2, line 53; "*sometimes of a nauseous taste.*"—The seeds of the *ricinus inermis* Lin. Systema vegetabilium, ed. 14, p. 865, supply also an oil well adapted to medical use. They are as large as those of the almond, but in every respect similar to the lesser ones. The capsules of these seeds are of the size of a filberd, and they have been erroneously supposed to be the production of the *r. maffia* Lin. Sp. Pl. 1430. In the article, for this number, 430 is erroneously substituted. The greatest caution is, however, required, lest the seeds of the *ricinus* be confounded with those of the *croton* and *jatropha*, which are highly drastic; an error which probably occasioned the complaints of the dangerous and drastic power of the castor oil. This more acrid oil was the *oleum cicinum* of the ancients, from *Κικίς*, the synonym of *Κροτῶν* (Dioscorides). See *RICINOIDES* in the following page. Later authors, who have so warmly reprobated the use of this oil, viz. Geoffroy, Linnæus, Vogel, Crantz, &c., probably employed the whole seed, which seems according to Thunberg (de Medicinis Africanorum, 4), to be still practised in Africa, where it is used in gonorrhœa. The other parts of this plant are not acrid (Bonelli Memoira intorno all Olio di Ricino Volgare, 8. 10). The leaves, rendered slightly flaccid by heat, are said to relieve the pains of gout and inflammations of the eyes. The recent leaves are applied to erysipelatous and inflammatory swellings; to the abdomen to relieve colics; macerated with vinegar, to relieve herpes, itch, and *tinea capitis* (Canvane). Yet they should be used with caution; for we find, in the History of the Society of Medicine at Paris, ii. 302, that, when applied to the

head in hæmicrania for one night, they induced blindness. The root is said to be a powerful diuretic.

The oil is separated from the seeds by boiling, or by expression. The former method procures the largest quantity; but it has less sweetness, and is more disposed to rancidity than the expressed oil. From a pound of the seeds, Bonelli obtained eight ounces of oil. Two pounds thirteen ounces of decorticated seeds yielded, by expression, with the assistance of hot water, a pound and six ounces of oil. The proportions differ on account of the different quantities of mucilage combined with the oil. If the shells are not separated a less quantity of oil is obtained, though without any variation of its sensible properties (Murray). Yet the shells show, in every experiment, the most decided marks of acrimony, and Odier remarks, in the Journal de Médecine, that such oil is called, by way of distinction, *oleum escharoticum Riverii*, and that a single drop excites heat and inflammation in the fauces. The difference may perhaps be reconciled by the difference of pressure to which the seeds were exposed, perhaps to different seeds having been used.

Genuine castor oil is thick and viscid, when obtained by expression, containing some fluid mucilage, almost insipid or sweet, without leaving any acrimony in the fauces. The oil that is somewhat opaque, is newer and more effectual than what is pellucid, and of a yellow colour. The colour of the recent oil is of a bluish green, of a specific gravity superior to other oils and fats, approaching to solidity in the cold, resembling in that state the colour of amber, and almost pellucid. It burns with an agreeable odour, resembling wax. What is sold differs greatly in colour and acrimony: the whiter is less efficacious, and that which is whitened by repeated boiling in water has little purging power. By age it approaches the consistence of new honey, is red, and diaphanous. What is obtained by boiling is described by Labat as equally clear with olive oil.

We have given, in the article, a somewhat unfavourable view of the utility of the castor oil in fevers and colics. In fact, after an apparently free evacuation by its means, we have found feculent matter in large quantities remain. The experience of two bilious epidemics has corrected our views, and, after calomel with the usual drastics had failed, we have procured a free and copious discharge by castor oil, with the infusion of senna. The Devonshire colic has hitherto resisted its powers; but Selle found that it relieved the asthma arising from saturnine fumes; and we have experienced its efficacy, at least as a prophylactic, against colic from lead. In ileus it is said to be useful, and singularly so in that species of the complaint which arises from repelled gout: in vomitings, like those which arise from volvulus or a gall stone, Bergius found it of equal efficacy. In cardialgia, with vomiting and obstinate costiveness, it was highly useful (Quarin); in dysentery not less so (Tode). In the *tænia lata*, Odier found it beneficial, and he substitutes it for the drastic purgative in madame Nouffer's remedy. Even alone it often discharges the whole worm: in the *t. solium* it seems scarcely to have been tried, and to the lumbrici it is apparently not injurious.

CATAPUTIA MINOR.—Page 367, col. 2, line 14;
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"*tithymalus latifolius*."—It is the *euphorbia lathyris* Lin. Sp. Pl. 655. The seeds of the cataputia minor are three, in a trilobular capsule, oval, larger than hemp seed, obliquely truncated at one end, consisting of a brown, rough, brittle shell, and a white oily nucleus, of a taste at first mild, and afterwards somewhat acrid. It is singular that the appellation is the same with that of the cataputia major, when the resemblance of the seeds is so inconsiderable. The effects of these seeds are apparently unequal, without any adequate reason. The ancients gave them as cathartics in a dose of eight or ten grains (Dioscorides and Rufus Ephesius); modern physicians and empirical practice have admitted doses of thirty grains, it is said, without danger; but so uncertain a medicine may be advantageously neglected.

RICINOIDES.—Page 367, col. 2, line 34; "*but is rarely used, on account of its activity*."—These seeds afforded the *oleum ricinum* of the ancients; but the modern accounts of their efficacy vary greatly, chiefly from the seeds reaching Europe in a rancid state. Dr. Percival, relates a case in which twenty of them proved fatal. Medical Transactions, iii. 96.

GRANA TIGLIA.—Page 367, col. 2, line 51; "*one drachm of the oil is a strong dose*."—The whole plant is highly acrid, so as to inflame the mouth, fauces, and intestines, down to the anus. The root is milder than the seeds. The latter were formerly in general use through the whole of India as an hydrogogue in dropsies. Two seeds were sufficient for the robust patient, one for the weaker, and four were often fatal. They are poisonous to fish. The acrimony is said to reside in the oil, and, when prepared from the dry seeds, a drop is supposed to be the dose, which Lewis whom we followed in the article, has changed to a drachm (Rumphii Amboyna, iv. 98; Lewis's Materia Medica, 481). The oil also rubbed on the navel is equally cathartic. Four grains of the powdered seeds have expelled a tænia, though with great faintness and debility. They were given in milk; and in the colic pains, which they excited, milk was freely drank. Vogel succeeded with this remedy in what he styled a severe pituitous disease, which he does not particularly describe.

The lignum pavanæ is light, spongy, of a pale hue, covered with an ash-coloured bark, of a disagreeable smell, and highly pungent taste.

CATARACTA.—Page 368, col. 2, line 29; "*no contraction of the iris takes place*."—The ancients considered the crystalline lens as the seat of vision, and the cataract was supposed owing to a membrane, formed by an approximation of the thicker particles of the aqueous humour. Kepler pointed out, in 1604, the true use of the lens, and thus led the way to the discovery of the true nature of the disease. It seems to have been established by observations, previous to the year 1651; and Quarrè, a French surgeon, has indisputably the honour of the discovery.

The cataract occasionally appears at different distances from the pupil, and this has given rise to the distinction of *deep* and *superficial cataracts*: the latter constitute the disease in its greatest degree, and its most advanced stage. The patient sees as through a

cloud, and better in a cloudy than a bright day. The reason of the latter singularity is, that the disease at first occupies the centre of the lens; but in a cloudy day the pupil is dilated, and admits the rays at the edges of the disc. Objects, for the same reason, are best seen near the sides: the pupil often preserves its usual diameter.

Cataract has been attributed to various causes, and, among them, the aqueous humour has been supposed, not according to the ancient doctrine, to be the seat of the disease, but to have induced it by a vitiated state. Morgagni mentions its diminution among the causes. It may perhaps be styled an obtusation from inflammation; for the general causes are of this nature. To inflammation may be referred the cataract which proceeds from blows, and injuries to the eye, from repelled eruptions (Hartman), suppressed perspiration, and convulsions. Cataracts, which arise from a concurrence of injuries, are rarely, according to Wenzel, successfully cured by the operation.

Not only hemlock, but the aconite, pulsatilla, napeilus, and the tribe of poisons, have been given. These, if they produce any effect, will correct that chronic kind of inflammation on which cataract apparently depends. Whatever produces an evacuation from the eyes is sometimes useful, as dropping in laudanum, stimulating collyria, electricity, errhines, &c. Mercurials in small doses, and long continued, are commended, and have certainly sometimes relieved. Quarrin informs us that hemlock will often prevent a cataract from increasing, but seldom cure it. Any accident which produces violent inflammation in the other eye has relieved a cataract, and the advantage derived is apparently owing to the remedies employed for the new complaint. If this be true it will suggest the utility of a more active plan of evacuations in this disease, which will only be contraindicated by the state of the patient. Though cataracts are most commonly the disease of the weak and aged, they sometimes occur in the young and plethoric. Every method, however, hitherto tried, has been attended with so little advantage, that the operation is considered to be the chief remedy.

When the patient can distinguish dark from light, though he can neither discern the form nor the colour of objects; when the eye preserves its usual form and dimensions; when the cataract is of a pearl colour, and when the cloud which apparently obscures objects has become gradually thicker, success from the operation may be expected. Yet, with all these favourable circumstances, if one eye only is affected, the operation is not advisable. It is unnecessary, since the other remains; and whatever be its success, the focus of vision in each has been for some time so different, that the sight cannot be distinct.

On the contrary, the operation will not succeed when the patient cannot distinguish a bright from an obscure situation; when the pupil is wholly immovable, whether contracted or dilated; when the form of the eye is unequal, and its bulk increased or diminished; when the cataract is red, blue, yellow, a dark brown, or of a snowy whiteness; when it has been preceded by the sensation of floating cobwebs; when there have been violent pains in the head, or some chronic disease of the eye. The operation should also not be performed on infants, who cannot be kept at rest.

As the circumstances of the cataract being soft or hard must influence our decision, it is necessary to consider the appearances which lead to the decision.

Mr. Pott suggests to our enquiry, whether, when the opaque crystalline is dissolved so as to become soft, it is not enlarged, or when hard, contracted. When the pupil is constantly dilated, and, though moveable, does not contract in the usual manner, the cataract is often soft: when contracted, hard. The softer cataracts Mr. Pott suspects have become opaque very slowly, with little or no pain, while the harder become opaque more hastily with severe, deep-seated pains, particularly in the hinder part of the head.

The objections, at least, the most important ones, to couching are, 1. The impossibility of success, if the cataract be soft. 2. If of a mixed kind, the softer parts cannot be depressed, and the firmer ones, eluding the point of the needle, may remain in the posterior, or escape into the anterior, chamber. In one case the operation will be unsuccessful, in the other the pain and inflammation will be violent and distressing. 3. If the cataract be hard, it will probably be insoluble; and, though it may not rise, prove, in different ways, an impediment to vision. 4. However successful the depression, yet the operation must greatly disarrange the organ. The two first objections, he observes, are unfounded. The third objection, he thinks, is well founded in a very few instances, if at all, and has been repeated without sufficient inquiry. If the cataract be perfectly soft, the contents will escape into the aqueous humour, and be gradually absorbed, the humour becoming transparent as before. When the cataract is of a mixed kind, the softer part may escape; but the harder will remain, and may require a repetition of the operation, though the admission of the aqueous humour will contribute to its solution, or, if pushed into the anterior chamber, it gradually disappears. These objections then are rather supports of the operation, and the arguments which obviate them acquire additional force, when we reflect that there is no perfectly firm cataract, but all are in part soft; and the firmest is rather the nucleus of an opaque crystalline. The injury done to it, in removal, renders it subject to the same laws as dead animal matter. The last objection has only any force when the hand is unskilful; and the most salutary operations may be most injurious when injudiciously conducted.

The original idea of the cataract being a membrane formed from the grosser parts of the aqueous humour very early suggested the idea of extraction. Albucasis proposed to puncture the cornea, and extract the aqueous humour by suction. From the time of Avicenna, for many ages, the cornea was punctured below, to draw down the lens. Hooks, and needles combining the use of forceps, were employed, and an itinerant oculist showed an instrument of this kind to the elder Albinus, in 1696. About the same time Homberg sent a similar instrument to the French Academy, of which he insinuated that he was the inventor. It seems, however, never to have been used, and the first operation of extraction was performed by Frere Jaques, more generally known by the name of St. Yves, mentioned by Mery, in the *Memoirs of the Academy for 1707*. The process, however, he did not describe; but, about a year afterwards, Mery was consulted in a similar case,

and he recommended this operation, which was performed by Petit. The state of the lens, when extracted, showed the true nature of the disease, and it is described by this academicien in the *Memoirs of 1708*.

The form of the needle in couching is greatly varied: they have been round, lance-shaped, cutting on the sides, straight and large. Those which are lance-shaped and of a moderate size, are preferred. The needle is held like a pen, with the cutting edges above and below, the surgeon resting the ring and middle finger of his hand on the patient's temple, as a point of support, and while waiting till the eye shall be a little at rest from the agitation which the preparations have occasioned. The surgeon then plunges the needle a little below the transverse diameter of the cornea, and about the eighth of an inch distant from it. Nearer it would injure the ciliary circle, wounding its vessels and nerves: at a greater distance it would pass through the aponeurosis of the external rectus, wounding some of the branches of the sixth pair of nerves distributed on it. The distance, in the opinion of different practitioners has greatly varied; and Sharp, as we have seen in the article, directs it to be less than one tenth of an inch. The surgeon then depressing the handle of his needle, raises the other extremity to the top of the lens, and turning it so that the cutting edges may be horizontal, depresses the lens firmly and steadily. When it has reached the bottom of the eye, and is apparently fixed there, the needle is returned to its first position, and gradually withdrawn. The coolest regimen, rest, tranquillity, darkness, &c. are necessary afterwards, as in ophthalmia.

If a vessel is wounded, or a milky or purulent matter discharged, it is necessary to wait, and withdraw the needle, till they have been absorbed. If the cataract has been of long standing, it may have contracted adhesions, which must be cleared with the needle before we can depress the crystalline. Sometimes the lens breaks, and it is then necessary to depress each portion; sometimes it passes through the pupil, and is lodged between the iris and the cornea, so that the operation of extraction is indispensable; sometimes it rises again, and this is perceived at the moment, or at the first examination of the eye. In the first case it must be depressed more carefully, and held down more steadily; in the second the operation must be repeated at a future period.

The last accident practitioners have attempted to avoid, by a different manner of operating, viz. by puncturing the capsule at its posterior and inferior part, before the crystalline is depressed. This is affected by passing the needle into the lens at the lower part, and turning the cutting edges, so as to divide the capsule below. The operator then draws back the needle, giving the horizontal direction in the middle of the crystalline, as before, and completes the operation, as in the first case. Ferrein proposed this method in a memoir presented to the Academy of Sciences at Montpellier in 1707; Petit, of Namur, claimed it in the *Memoirs of the Academy of Paris, in 1722*; the chevalier Taylor, in 1738; and the operation has been described with great accuracy by La Faye, in his *Notes on Dionis' Treatise in 1740*.

However carefully the operation is performed, it sometimes occasions considerable inconvenience. Many acutely sensible parts are divided, the vitreous humour is in part torn from its adhesion to the ciliary processes;

the consequences of which are often very severe pains, vomiting, inflammation, fever, and suppuration of the whole eye. When these symptoms are less severe, an opacity of the crystalline *membrane* often ensues, occasioning a sedentary cataract, first demonstrated by Benomont in 1722. In consequence of these and similar accidents, the operation of depression was warmly opposed by Hovius, Raw, and Hiester, who contended, that it did not succeed in one of a hundred cases, and where it was successful, pains of the head continued to distress the patient, and blindness, after no long interval, came on. These objections are now no longer valid, since, from superior skill and address, the operation of couching is neither very uncertain nor dangerous: the greater number of patients recover, at least, a very useful and comfortable degree of vision.

Daviel's instruments for *extraction* were a large iron needle, lance shaped, fixed on a plate of untempered iron, to admit of its being bent to a curvature adapted to the convexity of the eye; a second needle longer, straighter, blunt, cutting on the edges, mounted on a similar handle; two pair of convex scissors, bent in opposite directions; a spatula of gold, silver, or steel; a second lance-shaped needle, much smaller, and of the same form as the first, a curette, and forceps.

After the usual preparations, Daviel thrust the first needle into the anterior chamber of the eye, penetrating the middle and inferior part of the transparent cornea, at some distance from the opaque. He introduced it between the iris and the cornea, so that its point extended opposite to the superior part of the arc of the pupil. The aperture was enlarged by the blunt needle and, if yet not sufficiently wide, by the scissors, following as much as possible the circumference of the cornea. When this part was cut, so as to form a semicircular flap of about half its extent, Daviel raised the flap with the curette, and carrying the straight needle into the eye, opposite the pupil, pierced the anterior part of the capsule of the crystalline. If this capsule was thick, and of a dark colour, he cut it round with the needle, and raised it so that it might be no impediment to the transmission of light. The crystalline was then separated by slight frictions with the fingers on the inferior part of the globe of the eye. This body passed obliquely through the aperture of the pupil, which it gradually enlarged, and then fell out on the patient's cheek.

In this operation the aqueous humour is necessarily discharged; but we know that it is soon reproduced. The adhesions of the crystalline to the iris, common in old cataracts, Daviel separated with the curette, or with the needle designed for the opening of the lens. It was sometimes difficult to prevent the escape of the vitreous humour, however moderate the pressure, and he then assisted the escape of the crystalline with the curette, and, at the moment of its passing, permitted the eye lids to be closed. The pupil, after the operation, was not always clear; for glairy flakes often passed across it. Daviel separated them with the same instrument, and employed it to raise and restore the folded iris so as to give the pupil its former shape.

Daviel is copious in recounting the advantages of his method, and its success. Out of two hundred and six, he tells us that a hundred and eighty recovered their sight. In this enumeration he is suspected to have greatly exaggerated, though he was certainly more suc-

cessful than other operators who depressed the lens. Garengeot attempted to simplify the operation by using the scissors only after the puncture, cutting the cornea from the superior to the inferior part, and from within outward, forming a trapezium; but he had no imitators.

The first material improvement on Daviel's method was made by La Faye. The knife designed to open the transparent cornea, from the small to the larger angle of the eye, is mounted on a handle three inches and nine lines long, and three lines in diameter. Its blade is about twenty lines in length, terminated by a sharp point, cutting at the edges to the extent of about two lines, to penetrate the cornea more readily. It is blunt above, to avoid cutting the upper eye lid, if it should happen to fall by the neglect of the assistant, and slightly curved on its flat side, to avoid the iris while passing through the anterior chamber of the eye. Palucci, an Italian surgeon in the service of the emperor, had already proposed a bistoury of a peculiar shape for this purpose, the resemblance of which to his own instrument La Faye disclaims. A new instrument, the *cystotome*, is designed to supply the curette, and the small lance-shaped needle of Daviel, and to cut the capsule of the crystalline, after raising the flap of the cornea. It resembles the pharyngotome in every respect but its size, and the sheath, which conceals the lancet a little bent on its flat side, about a line in length and seven lines long; the part which conceals the spring is two inches long, and about two lines in diameter. When the spring is touched, the lancet passes only a quarter of a line from the end of the instrument.

After the usual preparations, La Faye takes the bistoury in the usual way, carrying the point on the transparent cornea towards the lesser angle of the eye lids, at the height of the pupil, and half a line from the sclerotic. It passes through the anterior chamber in an horizontal direction, and pierces again the cornea near the great angle; and at the same distance from the sclerotic. He then inclines the cutting edge of the bistoury forward and downward, making it slide from the great to the smaller angle; he divides the cornea in the form of a cross, and of sufficient extent to admit the passage of the crystalline. Sometimes the lens separates; sometimes it is necessary to divide the capsule which covers it. This is done with the *cystotome*, the sheath of which is carried under the section of the cornea, so that its convexity shall be above. When the extremity of the sheath has reached the pupil, the button is pressed, to propel the lancet, and the capsule is divided: the slightest pressure then on the inferior part of the eye pushes it through the wound.

The operations of La Faye, and his pupil Poyet, do not appear to have been eminently successful; and at the same time Mr. Sharp, in this country, was engaged in simplifying the operation of Daviel. His memoir on this subject was published in the forty-eighth volume of the Philosophical Transactions, and is sufficiently known. He used only a small knife slightly curved, cutting on the concave side. He passed this knife from the less to the greater angle of the eye, and conducting the cutting edge from above downward, made a simicircular of the cornea as near as possible to its union with the sclerotic. He then pressed slightly

the eye with the fore finger, and forced out the crystalline. In this operation the wound of the cornea is completely filled by the knife, which increases in breadth from the point, so that none of the aqueous humour escapes till the motions by which the cornea is divided commence, and the eye consequently preserves its form. In another memoir he speaks of having succeeded in half the cases which he operated on, though all were followed by a considerable inflammation. The circular shape of the pupil was also destroyed, which he attributes to the delicacy of the iris, which is injured by the passage of the lens through it, or by the back of the knife when penetrating the anterior chamber. He does not consider this as an inconvenience; and appears not anxious to force it out by pressure, but to draw it through the iris by plunging the point of the knife through its substance. The mobility of the eye, he thinks, may be repressed by a speculum, which must be removed after the section of the cornea, lest a large portion of the vitreous humour should be pressed out. Berenger supplied the use of the speculum by blunt crotchets, and divided the cornea with a knife of such dimensions as at once made a wound of the necessary extent. When this was made, he raised the flap of the cornea with forceps, and punctured the cornea with a lance-shaped needle, like that of Daviel. He seems to have succeeded as well as his brethren, and neither the hooks nor the forceps appear to have been injurious. The latest improvement in this operation is the proposal, we believe, of Sir James Earl, the extraction of the lens by a pair of small forceps.

Different plans were adopted and rejected for fixing the eye till the time of Wenzel, who waited, like the earlier operators, till the great irritability of the eye had subsided, trusting the upper eye lid to an assistant, and the lower he held himself. His knife was made on the principles of Berenger; but the point was longer, and it had no convexity on the anterior surface, so that it might be employed for either eye, while Berenger's plan requires one for each. After the former preparations he plunges the instrument into the anterior chamber, piercing the cornea at half a line from the sclerotica, at its superior and external part. When he has reached the pupil, he engages the point of the instrument in the lens, making a similar incision in it as in the cornea, representing the segment of a circle whose convexity is turned obliquely outward and downward. He then pierces the cornea a second time from below outward, towards the lower and internal part of the eye, and finishes the section without altering the direction of the instrument. In general, the section of the cornea and lens is completed before the aqueous humour escapes, and before the iris has time to fall in folds. When it does so, a slight friction will induce its contraction and disengage them. The advantages of the oblique section are, avoiding any injury to the great angle of the eye, the caruncle, and the side of the nose. The section of the cornea is also concealed by the upper eye lid, and, should it swell, it will extend below the wound.

The great difficulty of this operation is the section of the lens at the same time with the section of the cornea. If the eye is very moveable, the pupil small, or the lens hard, it must be wounded in a subsequent attempt by a sharp curette or a lance-shaped needle. When

the crystalline membrane is opaque, the flap must be raised by forceps, which cannot be so easily done as if cut at once. This case is ascertained by the appearance of spots of different degrees of opacity, which, if deep, show the disease to be in the lens; if superficial, in the membrane.

A variety of circumstances require a difference of conduct, which would detain us too long: they can only be with advantage considered in the original authors. The later improvements chiefly relate to the method of fixing the eye, which, however, ingenious, are managed with difficulty. They have not, we believe, been extended to this country; and surgeons now chiefly trust to the mode of securing them recommended by Wenzel.

The dressing is most simple: all pressure should be avoided, and the eye not opened for eight or ten days, at the termination of which period the wound of the cornea is usually closed. Rest, the lightest diet, and an obscure chamber, are equally necessary. For one of the consequences of this operation, see STAPHYLOMA.

See Wenzel *Traité de la Cataracte*; Sabatier de Variis Cataractam Extrahendi Methodis; Daviel *Dissertatio ergo Cataractæ Tutior Extractio Forcipum ope*; Ejusdem *Memoires de l'Academie de Chirurgie*, ii. 327; Ejusdem *Philosophical Transactions*, v. 49; De la Faye *Memoires de l'Academie de Chirurgie*, ii. 563; Richter *Observationes Chirurgicæ Fasciculus*, ii.; Pellier *Recueil des Memoires*; Morgagni de Sedibus, xiii. 14. lxiii. 11.

CATARACTA VACILLANS, a shaking cataract, a cataract in constant motion from its connection with the iris. This kind of cataract is mentioned by Celsus, and St. Yves; but has been lately neglected. M. Forlenze and M. Chaussier are the only authors on the subject with which we are acquainted. The former describes it in the Brussels Memoirs. He performs the operation nearly in Wenzel's method, and separates the adhesions with a golden needle, mounted like a cataract knife. The method of the latter was not very different. (*Nouveaux Memoires de Dijon*, 1784, ii. Semestre.) We have since found the vacillating cataract described in Mohrenheim's *Surgical Observations*, published in Vienna, 1780, 8vo. See *Commentaria Lipsiensia*, vol. xxiv. and xxvi.

CATARRHUS INTESTINORUM.—Page 373, col. 2, line 58; "*the connection just mentioned*."—See DIARRHŒA and DYSENTERIA.

CATTU-SCHIRAGRAM.—Page 380, col. 1, line 42; "*kill worms*."—*Conyza anthelmantica* Lin. Sp. Pl. 1207.

CAUCALIS.—Page 380, col. 1, line 50; "*BASTARD PARSLEY*."—Probably the *tordylium anthriscus* Lin. Sp. Pl. 346. The *echinophora tertia* is, however, the *caucalis leptophylla* Lin. Sp. Pl. 347. As sometimes happens, in the former editions of Motherby the synonyms of two different genera are accumulated under one species. The synonyms of every species of a genus are often collected.

CAUDA EQUINA.—Page 380, col. 2, line 17; "*this*

to their origin."—The cervical fasciculi of nerves run out nearly at right angles from the spinal marrow, and are therefore short; the dorsal fasciculi more obliquely, and these are, of course, longer; the lumbar and sacral fasciculi are much longer. The filaments of the last also are broad, resembling, in this respect, the lowest cervical nerves. The lumbar fasciculi form, in the cavity of the spine, a bundle of nervous fibres, covered by the dura mater, sending out nerves in a very oblique direction through the foramina. At the passage out of the spine the covering from the dura mater is apparently elongated, but soon lost. The pia mater, as usual, accompanies the nervous fibres.

CAUL, the popular appellation of the omentum. The term is also applied to a membranous covering of the infant's head, when born, arising from a close application of the ruptured membranes. The sailor's wife preserves it, as an amulet, to save her husband from shipwreck.

CAULIS.—Page 380, col. 2, line 39; "*The STALK.*"—The stalks of the ferns, grasses, palms, and mushrooms have distinct and appropriate appellations. The caulis may be *procumbens*; *scandens*, climbing by the help of tendrils; or *volubilis*, twining without tendrils.

CAUSTICUM ARSENICALE. See CANCER.

CAVIARUM.—Page 383, col. 1, line 23; "*It is the pickled roe of the sturgeon.*"—All the fibres are taken from the roe, and it is washed in white wine or vinegar, salted and pressed in a fine bag, and put in a cask, which has a hole in the bottom, from which any remaining moisture drops. The manufacture is carried on by the Italians, and much of it is consumed by the Russians, who keep their three lents with great rigour. It is also used in considerable quantities in Italy and France. The best caviare is said to be made from the *accipenser huso* Lin. a fish whose enormous ovaries equal nearly one third of its whole bulk. The ovaries of one large sturgeon are said to have weighed 800 pounds.

Besides the black eggs of these cartilaginous fish, Guldenstaedt informs us that the yellow eggs of other large fish are employed, as the carp, the pike, the lucioperca, the bream, and the different species of cyprius: a kind of caviare is made in the Mediterranean, from the roe of a mullet, and called *botargo*.

The Archangel caviare is, on the whole, an insipid food, and requires various condiments. It is also, in weak stomachs, often inconvenient from its insolubility.

CEANOTHUS.—Page 383, col. 1, line 35; "See CELASTRUS INTERMIS."—There is an error in this reference; for the celastrus has no connection with the ceanothus. The last is the new Jersey tea tree, the *c. Americanus* Lin. Sp. Pl. 284, whose powder is applied to syphilitic ulcers.

CELASTRUS.—Page 384, col. 1, line 62; "*Americanus* Lin. Sp. Pl. 284."—It is the *celastus scandens* Lin. Sp. Pl. 285.

CELERI ITALORUM.—Page 384, col. 2, line 6; "*APIUM.*"—Another kind of celeri is afforded by a species of apium, found by sir J. Banks and Dr. Solander on the coast of Tierra del Fuego. It resembled the garden celeri in colour and the disposition of its flowers, but the leaves are of a deeper green: it was found to be an excellent antiscorbutic, and was boiled in the seamen's soups.

CELLULÆ; *loculi*, little cavities, as the cellulæ adiposæ, which contain the fat. In botany the term implies the cavities into which the seed vessel is divided.

CELLULOSA MEMBRANA.—Page 385, col. 2, line 12; "*its minutest parts are rendered visible.*"—The importance of this connecting medium of the human body has been greatly exaggerated. It has been supposed irritable, susceptible of spasm, and of inflammation. It indeed possesses a degree of elasticity; but the general facts from which these changes have been supposed to arise are more readily accounted for by a change of state in the vessels themselves. See FIBRA.

CENEANGIA.—Page 385, col. 2, line 47; "*concourse of symptoms.*"—See ANÆMIA.

CENTAURIUM MINUS.—Page 386, col. 1, line 39; "*extract like wormwood.*"—As the petals are insipid, the tops, according to Lewis, are less useful than the herb. It was formerly supposed to be a laxative, and not an inactive one, if two drachms of the powder were boiled in eight ounces of water till one half was consumed. On this subject the reports of authors differ, and it seems only to possess the slight laxative power common to all bitters. It was considered in Germany as a safer and more efficacious remedy than the bark in intermittents, when the latter was supposed to leave dangerous effects, in producing enlargements of the liver or spleen. Senac (*De Recondita Febrium Natura*, 184) has, however, observed considerable increase of heat and fever from its incautious use. In gout, like other bitters, it has been commended, and, as a deobstruent, it has been given in infarctions of the viscera, and dropsy arising from them. In cutaneous branny scales and tinea, a decoction of centaury has been used, it is said, with success. In foul ulcers the herb applied in the form of a cataplasm is also said to have been useful. Wedel de Centaurea Minori, 29.

CENTENIUM OVUM, the *hundredth egg*. When a hen lays no more eggs she produces a small one without a yolk, but perfect in every other respect, probably because the materials of the yolk are exhausted before those of the albumen. In its place is a fibrous substance, which has been styled a serpent, and the egg is supposed to be the joint production of the hen and a reptile of this kind. It is sometimes styled a cock's egg.

CENTRUM.—Page 386, col. 2, line 2; "*the middle point of some parts.*"—Philosophers distinguish the centre of gravity, of motion, oscillation, and of percussion. The first and last only are connected with medicine. The centre of gravity of the human body is, according to Borelli, nearly in the middle of the pelvis, and he supposes that for this purpose the organs of generation

are placed there; a fanciful idea, which a more extensive view of the operations of nature would soon have refuted. The centre of percussion is that point, wherein the force of a stroke, made with any body, is the greatest. Thus the middle of the humerus is sometimes broken through by the effort of a violent blow on another part of the bone.

CENTUMNODIA. *Polygonum aviculare* Lin. Sp. Pl. 519, has no smell, and a very slight subastringent taste. The decoction is nearly insipid, but becomes brownish on the addition of vitriolated iron. It was used as an astringent, but has been long neglected. Scopoli (Flora Carniol, 423) seems to have found it useful in chronic diarrhœas, which we can easily believe when we perceive logwood useful in the same complaint, with sensible qualities almost equally slight.

CEPHALALGIA.—Page 388, col. 1, line 32; “*should be carefully avoided.*”—We have mentioned that headach precedes mania, and it is equally the precursor of amaurosis. It sometimes has been described as epidemic; but this occurs, we believe, almost exclusively in fevers attended with tumours of the parotid glands, on which it seems to depend. It is sometimes periodical, when not confined to one half of the head, and in one instance was observed to alternate with a mucous discharge from the urethra. It sometimes goes off suddenly with a sense of explosion, and the sound of pulsating arteries has occasionally been so considerable as to be heard by those around (Fabricius Hildanus). Mr. Henry, in the Memoirs of the Medical Society, describes a singular case, in which the pain was confined to the lower part of the coronal suture, about an inch above the sphenoidal bone, and relieved by the discharge of a calculous substance, probably through the nasal sinus. At the seat of the pain the suture was dilated; a circumstance which sometimes has occurred in violent pains of the head. The real seat of this calcareous matter was not ascertained: similar cases, however, occur in Horstius (Opera, vol. ii. 240) and Fabricius Hildanus (v. i.).

Among the causes, acrimony, during the reign of the humoral pathology, was commonly accused: black bile and lentor, or, in other words, pituita, was supposed to be equally injurious in this respect. Valisnieri indeed found coagulated lymph at the basis of the brain. Bonetus has recorded a dissection in which, after cephalalgia, air was found in the pia mater; but it is uncertain whether this may have not been separated in the last moments, or after death. Abscesses we have mentioned as producing coma and lethargy rather than cephalalgia; but the instances are so numerous, and the authorities for their producing headach so respectable, that they must be admitted as very frequent ones. In one instance the cerebellum itself is said to have degenerated into a thin purulent ichor. Ossifications in the arteries, in the sinuses, and tumours in different parts of the substance of the brain, have been also frequently detected by dissection, as well as too close an attachment of the membranes to the cerebrum or cerebellum. The cavity of the cranium, either misshapen or contracted has been often enumerated among the sources of the disease from the time of Hippocrates (Epid. vi. 1) to Morgagni (Epist. lxii. 15); and from this cause

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headach, from too closely united sutures, proceeds. Caries and exostoses of the bones, and a thickening and ossification of the membranes, have had a similar effect. Hydatids in the ventricles have been found by Bonetus, and an instance of this kind is recorded by Helsham in the Medical Commentaries of Edinburgh. All the narcotic poisons induce headach, and some kinds of smells are equally injurious. Insects in the brain, which, however, are more frequently in the sinuses of the bones, particularly the frontal, are described by many highly respectable authors among the causes, and the pain has been often removed by their evacuation.

Among the remedies we have probably not given the full force to topical evacuations. Bleeding with leeches in the more acute cases, setons in the more chronic, errhines when the determination to the head is not very violent, and masticatories have been employed. Rubefacients, hartshorn, and various stimulants have been applied to the forehead, and sometimes cold applications have been attended with the most salutary effects. (See CEPHALICA.) All the narcotics have been given as remedies, particularly the hemlock, the aconite, the flammula Jovis, and the digitalis, sometimes with success. To these we may add coffee, recommended by Dr. Percival, and the valerian, a favourite medicine with many practitioners.

Medicines of a different class, designed as deobstruents, have been often employed, and if these have any efficacy, they may be expected to be useful in the more chronic kinds of cephalalgia. We allude to mercurials in slight alterative doses, with the decoctions of sarsa, of bardana, or mezereon.

Blair on the Transactions for the Improvement of Medical Knowledge, ii. 192; Henry, Memoirs of the Medical Society, i. 294.

CERASUS NIGRA.—Page 392, col. 2, line 23; “**BLACK CHERRY.**”—A prejudice has prevailed against the use of the black cherry water, from a similarity of taste, and perhaps of quality, to the laurel; but the proportion of this principle, connected apparently with the prussic acid, is too inconsiderable to be most slightly dangerous.

CERATUM SPERMATIS CETI. CERATUM ALBUM Pharmacopœia Londinensis. See CERATUM.

CEREBRUM.—Page 400, col. 2, line 9; “*an assistant in the same office.*”—The brain is sometimes absent, and Dufour, in the Journal de Médecine, has recorded a case where there was neither brain, cerebellum, nor spinal marrow. Under the article NERVUS, q. v., we have shown how the deficiency is supplied. Yet it is supplied imperfectly; and, as Morgagni observes, should the infant be born alive, he soon sinks attenuated, as in hydrocephalus (De Sedibus, xii. 5. 6). Dr. Heysham, in the Medical Commentaries, mentions a child without a brain, who lived six days; Le Clerc, in Blegny's Collection, observed one to live five days; and, in the Berlin Transactions, another lived eleven hours. See Sandifort Anatome Infantis sine Cerebro nati; Haller de Fœtu Humano sine Cerebro edito; Wepfer Historia Apoplexiæ in Præfatione.

The brain is sometimes peculiarly firm, and both Fabricius and Morgagni have observed that this appearance is not peculiar to maniacs; sometimes dry, it is

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said, from venereal excesses; sometimes dissolved in purulent matter, consumed by a carcinomatous fungus, or gangrene. A hernia of the brain has been found to occur from a carious bone, sometimes from dilated sutures; and there are many instances of its being cured by gentle, but steady, compression. It is sometimes scirrhous, and little benefit can then be expected from medicine. See CAPUT and CEPHALALGIA.

CERUMEN AURIS.—Page 401, col. 1, line 60; "*occasions deafness.*"—Warm water is its best solvent, and warm sea water, at least, the safest stimulant when the quantity is diminished. It is said occasionally to be sweet (Ephemerides Naturæ Curiosorum, Dec. ii. An. iii. 91), sometimes resembling castor in smell.

CERUSSA.—Page 401, col. 1, line 64; "*unde xερυσα.*"—It is the acetous oxide of lead, in modern language *oxydum plumbi album acetatum*. It has a scaly, foliated texture, is brittle, heavy, beautifully white, and sweet. It is best powdered by rubbing a lump of cerusse on a sieve over white paper. It is chiefly used in plasters and ointments, occasionally sprinkled on the excoriated skins of children, and sometimes suspected to produce, in this way, complaints of the bowels. It should, therefore, be used with caution.

CERVICALES VERTEBRÆ. The uppermost vertebræ of the spine, seven in number, are smaller and more solid than any of the others, and flattened on the fore part, for the passage of the œsophagus, from the pressure of the food, or the action of the longi colli and anterior recti muscles. They are flat behind, except from the protuberances to which the internal ligaments are fixed. The upper surface of the body of each is made hollow by a slanting thin process, raised on each side: the lower surface is hollowed by the rising of the posterior edge, and the production of the anterior. The cartilages, secured by this structure, are thick, especially on their fore part, which occasions the vertebræ to advance forward as they descend, and enlarges their sphere of motion. The oblique processes are peculiarly slanting; the smooth, and almost flat, surfaces of the upper ones facing obliquely backward and upwards, those of the lower forwards and downwards.

In the cervical vertebræ, besides the common transverse processes rising from between the oblique ones on each side, a second comes from the side of the body of each vertebra; and these, after leaving a circular hole for the passage of the cervical artery and vein, unite, and are considerably hollowed at their upper part with rising sides, to protect the nerves that pass in the hollow. Each side, at last, terminates in an obtuse point, for the insertion of the muscles.

The spinal processes stand nearly strait backwards, are shorter than those of the other vertebræ, and double at their ends, for the more convenient insertion of the muscles. All these circumstances add to the extent of their sphere of motion. Though the holes are in common, the largest share is in the lowest.

The first of these, styled the *atlas* or *epistrophe*, from the motion it performs on the second, has little or no spinous process, but a large bony arch, over which the muscles pass. From two depressions on the back and upper part of this arch the recti postici minores rise,

and to two sinuities, at the lower part, the ligaments, which connect the bone to the following one, are fixed. The superior oblique processes of this atlas are large, oblong, hollow, and more horizontal than those of any other vertebræ. The external rises higher than the internal brim, to render the articulations of the os occipitis firmer. Under the external edge of each oblique process is a fossa, in which the vertebral arteries make a circular turn as they are about to pass through the great foramen of the occipital bone, and where the tenth pair of nerves goes out. This fossa is sometimes covered with bone. The inferior oblique processes, extending from within outwards and downwards, are large, concave, and circular, so that this vertebra receives the bones with which it is articulated both above and below.

The transverse processes of this first vertebra are not much hollowed or forked; but longer and larger than in any other, for the more advantageous insertion of the muscles, whose strength is required to be considerable. The cavity for the spinal marrow is also unusually large, as the medulla itself is large; and, from its importance in this part, care is necessary to guard it from injury. The condyles of the os occipitis move backwards and forwards in the superior oblique processes of this vertebra, admitting little circular or lateral motion. In new born children the lateral pieces only are ossified, and the arch is cartilaginous.

The second cervical vertebra is called *dentata*, from the tooth like process at the upper part of its body. This vertebra is somewhat pyramidal, produced downward in front, to enter a hollow of the vertebra below, while, from a square process at the upper part, a small point projects. The side of this process, on which the hollow of the anterior arch of the first vertebra plays, is convex, smooth, and covered with a cartilage. It is equally smooth behind; for the ligament which passes transversely from one rough protuberance of the first vertebra to the other, is cartilaginous in the middle, and plays on it. A ligament also goes out, in an oblique transverse direction, from each side of the process *dentatus*, to be fixed by its other end to the first vertebra, and to the occipital bone: another ligament rises from near the point of the process to the os occipitis.

The superior oblique processes of this vertebra are large, circular, and nearly horizontal, slightly convex, to be adapted to the inferior oblique processes of the first vertebra. The inferior oblique processes do not differ from those of the other vertebræ.

The transverse processes are short, slightly hollowed at their upper part, and not forked at their ends. The canals through which the cervical arteries pass are reflected outwards, about the middle of each process, so that the course of these vessels is directed towards the transverse processes of each vertebra. The arteries are thus defended by bone, that the course of the blood may not be obstructed by the motions of the neck. This structure is not very uncommon in similar circumstances. The spinal processes are thick, strong, and short, for the origin of the muscoli recti majores and obliqui inferiores.

The third vertebra of the neck is called *axis*; but this, with the three below, have nothing peculiar in their structure. Each is larger as it descends. The

seventh vertebra of the neck approaches in form those of the back; but the articulating surfaces are less hollow, the oblique processes more perpendicular, without any bifurcations. In this and the sixth vertebra, the hole in the transverse processes is often divided, separating the cervical vein and artery.

These vertebrae are seldom subject to inflammation in the cartilages, which produces caries, as happens in the lumbar. Yet in the latter case we often find spasms in the upper extremities, as if a similar affection had taken place, or the irritation was communicated through the medulla. We have seen the inflammation and the irregularity of the cervical vertebrae in one instance only.

The vertebrae of the neck are sometimes luxated by blows: if partially only, and soon restored, no inconvenience follows; but if more general, the importance of the nerves and vessels, subject by such accidents to injury and compression, render the case soon desperate; indeed so close is their mutual connection, that they can scarcely be luxated in a considerable degree without fracture. Bonetus records a case where the vertebrae were indurated and immovable, apparently from cretaceous depositions.

CETACEA, (from *cete*, a whale.) Cetaceous animals, though strictly fish, yet in many respects resemble land animals, at least the amphibia; in some important ones, even the mammalia. They require a supply of fresh air, at no very distant period; they breathe by means of lungs, utter sounds, and suckle their offspring. Yet, as they have all the appearances and manners of fish, they ought perhaps to have formed a separate family of these animals.

CEVADILLA.—Page 403, col. 2, line 28; "*the size of lintseed*."—The plant has never been seen in a state of perfection; but, in the appearance of its siliquae mixed by accident with the seeds, it resembles the aconite, or delphinium; from other parts, particularly portions of the flower preserved equally by accident, it seems to come nearer the veratrum (Retzii *Observationes Botanicae*, i. 29). The whole fruit is tricapsular, the capsules ovated, long, and compressed, about half an inch in length and straw coloured. In each capsule there are two seeds of a deep brown colour, somewhat wrinkled; they are oblong, obtuse at one extremity, sharp at the other, on one side plane, on the other convex, compact, with a sharp margin, and white within. Parsley seed powdered, white pepper, and hellebore are fraudulently mixed with these seeds. The taste of the capsule is bitter only, and not acrid. The seeds themselves are very pungent, disagreeably bitter, affecting the top of the tongue with a sweetish nauseous taste, with the pungency of needles piercing through it, and producing a severe continued salivation. The powder of the seeds is a violent errhine. The decoction is highly acrid and caustic; the tincture equally so, but with a strong aromatic smell. The watery extract amounts to one eighth of the seeds; the spirituous to one fourth. The seeds, when powdered, soon lose their virtue.

The cevadilla is fatal to almost every animal and insect. Independent of its destroying lice, bugs, &c. it is said to be useful in cleaning foul ulcers, and excit-

ing the action of the vessels in gangrene. When applied, however, to crusta lactea, it has produced violent and fatal effects, so that Rosenstein, who recommended it in his two first editions on the Diseases of Children, has omitted to mention it in the third.

The seed has been given internally as an anthelmintic. Worms out of the body are soon killed by it, and more than one tænia is said to have been completely discharged by its use, continued fourteen days, interposing a drastic every fifth day. Ascarides are also carried off by its means. Two drachms of the seeds are boiled in ten ounces of water to seven of the strained fluid, mixed with equal quantity of milk, and thrown up as a clyster. With this the powder should be given internally. In cases of lumbrici Schmucker gives half a drachm of the powder every morning; but it should be recollected, that he directs the siliqua and the seeds to be powdered together. This produces generally vomiting, and some worms are discharged, if in the stomach. The dose is repeated the second day, and on the third and fourth taken at twice. On the fifth day a laxative of rhubarb is given; and on the sixth five grains of the seed, three times, in a bolus. In this manner he proceeds, interposing the laxative every fifth day, till the complaints of the bowels are removed, and no more wormy mucus is discharged. Children, from two to four years, take two grains of the cevadilla for a dose. It seems, from some incidental remarks, to be an useful medicine in epilepsies and convulsions of a severer kind; but it must be recollected that these often depend on worms.

As the ancient hellebore was nearly allied to the veratrum, the cevadilla has been used, like it, in mania, &c; but we know not with what success. We observe, in one of Sceliger's cases, published by Schmucker, that with a tænia, discharged by the cevadilla seeds, a melancholia was also relieved. In killing bugs, every crevice of the furniture must be sprinkled with the powder, or washed by vinegar, in a pint of which two ounces of the seeds have been digested for two days.

CHÆRIFOLIUM.—Page 403, col. 2, line 52; "*essential oil*."—It is used in soups, since its acrimony as a condiment is not unpleasant, and its smell is not unlike that of fennel. The plant contains a salt, supposed to be nitre; but it does not defflagrate, and has been given as a diuretic and deobstruent. In phthisis it has also been celebrated, though Geoffroy informs us that it is injurious to those subject to hæmoptoe. It is applied in indurations of the mammae, to boils, varices of the spermatic vessels, and scrofulous tumours (Plenck *Materia Medica Chirurgica*). Internally it is given in herpes, while a dilute saturnine solution is employed externally. Riverius recommends two ounces of the juice to be taken with white wine, for many days, to promote a flow of urine in dropsies. Geoffroy thinks the effects more certain if nitre be combined.

Murray recommends it, from his own experience, for repelling milk, and dissipating the nodes which its coagulation may have excited, particularly if united with the leaves of the alnus. For this purpose the leaves are chopped, warmed, reduced to a poultice, and applied to the breast, several times a day. Langius prefers adding the leaves of hemlock. A liniment,

composed of its juice and olive oil, relieves the pain of hæmorrhoids, as well as the vapours of a decoction of the plant, or the latter used as a fomentation. A cataplasm of the herb is commended in ischuria.

The scandix odorata Linnæi is nearly similar in its virtues, and is used by asthmatic persons, smoked like tobacco.

CHAJOTLI, or CHAYOTI. A Mexican fruit, covered with a husk similar to that of the chestnut, but much larger and of a deeper green. The kernel is of a greenish white, and has a large white stone in the middle, resembling it in substance, and eaten with it when boiled. The root of the plant, which is unknown, is also esculent.

CHAMÆDRYS.—Page 404, col. 2, line 38; “and other chronic complaints.”—Of these the principal are coughs and asthma. In hypochondriasis Sennertus considers it as highly useful; and Ray informs us that it is a secret female remedy in suppressions of the catamenia.

CHAMÆMELUM NOBILE.—Page 405, col. 1, line 65; “*carminative portion.*”—Though the camomile flowers, when their powers are extracted by warm water, prove emetic, in the cold infusion they are grateful to the stomach, and in this form they appease its irritability. From 480 parts Neumann obtained 180 of alcoholic extract, and 120 of watery; inversely 240 and 60. They are an ingredient in clysters, chiefly from the carminative power of their oil.

CHAMÆMELUM VULGARE.—Page 406, col. 1, line 24; “*changes it to a yellow.*”—Of these flowers the calyx is the most efficacious portion; for in this the essential oil resides. The smell of the flowers is fragrant, and not very agreeable; the taste bitter, and the medical virtue inferior to that of the anthemis nobilis. To this plant, however, the praises of foreign authors must be referred, particularly when they speak of its febrifuge virtues, and the only sceptic whom we can discover on the subject is Senac (De Recondita, Febrium Natura, 188); but this very excellent physician had not the same prejudices against the Peruvian bark, which the German authors seem to have felt. In nephritic as well as spasmodic colic it seems to have been peculiarly useful, as well as in relieving cardialgia.

CHAMÆMORUS.—Page 406, col. 2, line 8; “*common use.*”—The fruit is used also as a cooling febrifuge in hæmoptysis and hectic (Linnæi Flora Laponica, 167). The berries, which sometimes equal in size the largest cherries, with acini scarcely less than peas, are preserved by the Laplanders in snow, and sent to Stockholm in casks, to be employed in different dishes as condiments and antiscorbutics. They are seldom ripe, when gathered, and imperfectly matured by the means of preserving them.

CHAMÆPITYS MAS.—Page 406, col. 2, line 44; “See CHAMÆDRYS.”—The watery extract is austere-bitter; the spirituous sweetish and warm. It has been always highly commended in diseases of the joints; but we find, from the observations of Gesner,

in Haller's Epistles, that it was found, after being for some time employed by arthritics, to produce asthma, slow fever, and apoplexy. It is esteemed as a discutient and aperient; but there is some danger of lessening its virtue by boiling. It was formerly in high reputation for cleaning and healing wounds.

Page 406, col. 2, line 57; for “CHAMÆRIPHES” read CHAMÆROPS.

CHANCRE.—Page 407, col. 1, line 32; “*more difficult to cure than in other parts of the penis.*”—The inflammation, when chancre affects the frenum, is more considerable, and an ulceration appears, forming a little cavity, a circumstance which has induced authors to recommend its division at first, but without reason; for this cavity by stimulating mercurials sloughs, and soon after fills. When a chancre affects the cutis above the glans it soon forms a scab. If the inflammation is considerable, and spreads rapidly, the constitution is irritable, and stimulants should be avoided. Violent pain shows the same state of body, and emollients will be the proper applications. When on the glans, with a considerable loss of substance, hæmorrhages are often violent and obstinate.

When the chancre becomes indolent, the balsam Peruvianum, calomel with turpentine, or the red precipitate, in such proportions as will stimulate without proving escharotic, may be employed. Some surgeons employ the blue vitriol, verdigrise, calomel with ether, &c.; but in general, the red precipitate, proportioned to the irritability of the sore, is preferable. When these stimulants act too violently, some saturnine applications are often combined.

CHELIDONIUM MAJUS.—Page 408, col. 2, line 37; “*dissipates its smell.*”—Yet the extract has been usually preferred in jaundice and obstructions of the mesentery; but it is directed to be made from an infusion of white wine, by a very gentle heat. This extract, dissolved in vinegar of squills, has been also recommended in infarctions of the lungs from pituita, probably to promote expectoration in those cases of asthma where the action of the vessels is languid. In intermittents it has been highly commended; and in dropsies, from the abuse of spirits, the common people of Warsaw infuse the leaves and roots in beer, which is said to produce a copious flow of urine. (Endtell Varsovia Illustrata, 190.) In infusion it is recommended in the Berlin Transactions to calculous and gouty patients.

CHELIDONIUM MINUS.—Page 409, col. 1, line 1; “*tettery eruptions.*”—The roots are acrid with a styptic taste, at first acid, then bitterish and nauseous. When bruised they raise blisters on the skin, though not so violently as those of the ranunculus bulbosus. It affords a safer sternutatory than the other ranunculi, and either in powder, or boiled in axunge, is said to be useful in scrofulous tumours. In hæmorrhoids it is a doubtful remedy.

CHEMOSIS. See CHYMOSIS.

CHENOPODIUM.—Page 421, col. 2, line 51; “*little medical power.*” It often happens that plants

of the least real virtues are decorated with the most numerous imaginary ones, nor is it possible wholly to pass over what authors of some reputation have said. The leaves of the *bonus henricus* have been applied to wounds, ulcers, and various chronic exanthemata. In tinea, and leprosy they are said to have brought on a most salutary discharge (Vogel's Practice of Medicine, 63, 64; Murray Opuscula, ii. 392). The leaves must be changed two or three times a day. The fresh leaves are said to discharge a considerable quantity of water from œdematous limbs (Lin. Flor. Suecica, 78). In blind piles, bruised and formed into a liniment, with unsalted butter, they greatly relieve pain (Vogel and Linnæus). A cataplasm from the whole plant is said to relieve gout. The buds are sometimes eaten like asparagus.

The *chenopodium botrys* is viscid to the touch, with a balsamic, somewhat unpleasant, smell; an aromatic and bitter taste. Its distilled water is milky, and retains both the taste and smell of the plant. Its distilled oil is in a very small proportion, and is either fluid, yellow, aromatic, and bitter to the taste, with the fragrant smell of the plant; or coagulates like wax, and is easily dissolved in spirit of wine. The watery infusion preserves the bitterness; but the smell is impaired. The spirituous tincture is more slightly bitter, with an acrid taste. From an ounce of the herb somewhat more than two drachms of a watery extract were obtained, of a bitter salt taste, and a large quantity of saline crystals effloresce from its surface. The spirituous extract is in a smaller proportion, as the ounce contains only one drachm and a scruple, though more bitter and acrid than the aqueous. The salt is apparently nitre, and the whole plant decrepitates in the fire. Its sensible qualities seem to show some activity; but, except in a list of diseases, as usual in herbals, there are few observations which prove that it has been really employed; and the names of the complaints in which it has been useful have been repeated, with little variation, from the time of Mathioli. It is recommended in diseases of the breast by Forestus, and Mathioli himself seems to speak, with some precision, of its use in purulent expectoration. The Venetian women, it is said, use it both externally and internally in hysteria.

The *chenopodium ambrosioides* has similar qualities, though in a more considerable degree. It has been styled the Mexican tea, and was formerly used instead of the Chinese in Germany, Sweden, Bavaria, Silesia, and lower Hungary. A saturated decoction has been commended in palsy: this plant contains also nitre.

The seeds of the *chenopodium anthelminticum* are shining, small, brown, roundish, somewhat compressed, and of a faint smell. They are used in America against worms, given in an electuary with honey (Chalmers on the Diseases of South Carolina, 71). The dose is not mentioned.

CHILIADYNAMIS, (from *χίλιαι*, a thousand, and *δύναμις*, power,) an epithet of the POLEMION, from its numerous virtues. Dioscorides.

CHINA ORIENTALIS.—Page 423, col. 1, line 21; "gives place to sarsaparilla."—It did not prove more serviceable to the emperor Charles V. in rheumatism;

and in dropsy, melancholy, infarctions of the spleen, &c. though recommended by Fallopius and Amatus Lusitanus, it has not been found more successful. The advice of Rosenstein to give the decoction for fourteen days after inoculation, that the pustules may be large and full, is more reasonable; but the medicine is unnecessary. It seems to be a pure demulcent only.

CHLOROSIS.—Page 428, col. 2, line 62; "intermitting headaches and fainting."—In general, when the regular changes which the state of the constitution successively produces do not take place, whatever may be the cause, the effect is languor, a weaker action of the vessels, and debility in the conduct of every function. The pulse is weak and quick, the veins almost indistinct, the energy of the mind lost, the mental functions often irregular, the nervous system frequently irritable. Chlorosis is often the effect of the catamenia not coming on, or their suppression after they have appeared. The more remote causes are most commonly indistinct; but generally debility of the constitution naturally existing, or induced by anxiety, pain of mind, or disappointment. Debility may be induced also by bodily complaints, and long fevers are frequent causes. The disease, however, often occurs with little apparent reason, and that power which is destined to expand the vessels appears incapable of performing its office. The chief remedies are the stimulating tonics, either those which act on the system in general, or the neighbouring vessels. Of the former kind are the bark, aromatics, and steel; of the latter aloetic purgatives, and a matrimonial union. Fourcroy recommends breathing oxygenous gas (Annales de Chimie, iv.), and Hufeland, in his Annals, repeats, if he does not confirm, the recommendation.

Dr. Cullen has preserved a chlorosis amatoria as a species; but love seldom produces the disease, if its "course run smooth."

CHOLEDOCHUS DUCTUS.—Page 329, col. 1, line 50; "to hinder the bile from regurgitating."—It has usually the epithet of *communis*, as it seems to convey both the cystic and hepatic bile into the intestines. The cystic and hepatic ducts, after the curvature of the neck of the vesicula, run very near each other, and the raising the liver appears to separate them.

The ductus choledochus seems rather to be a continuation of the ductus cysticus than the common trunk of that and the ductus hepaticus; for the latter runs a little way within the sides of the former before it opens into its cavity.

CHOLERA MORBUS.—Page 429, col. 2, line 47; "violent passions."—Two very common causes of cholera are omitted, viz. drinking cold liquors when warm; and whatever lies cold on the stomach, as lettuce, melon, or peaches: cucumbers often induce it. Suppressed evacuations are sometimes causes, and even drying up an issue has been enumerated among its sources. Terror has sometimes occasioned it; but mushrooms more probably act by their deleterious powers. Blisters applied to the pit of the stomach are sometimes useful.

Add to the references Henrici de Cholera; Tralles

de Cholera, &c. quam sustinuit ipse; Stahl de Cholera Morbo; Stoll Ratio Medendi, iii. 64; Lind on the Diseases of Warm Climates.

CHORDÆ TENDINEÆ, tendinous strings, arising from the carnæ columnæ of the heart, and passing to the edge of the valves in the ventricles.

CHORDÆ WILLISII; small fibres, which cross the sinuses of the dura mater, discovered by Willis.

CHOROIDES PLEXUS.—Page 434, col. 1, line 14; "*lateral ventricles of the brain*."—It consists of a great number of arteries and veins very minutely ramified, partly collected in two loose bundles, which lie on each lateral ventricular, and partly covering the thalami nervorum opticorum, the pineal gland, and other neighbouring parts. In each lateral portion of its plexus there is a venous trunk, whose ramifications are spread through the whole extent of the two portions. These trunks approach each other near the pineal gland, and, uniting behind it, empty their contents into the torcular Herophili. Sometimes these two trunks unite and pass into the sinus as a single one. Its loose portions contain many tubercles like glands, which enlarge by disease. They are best seen in a microscope when the plexus is expanded in water.

The sides of the fornix, of the eminences, ventricles, canals, and infundibulum, are covered by a fine membrane, containing numerous minute vessels, a continuation of the plexus, which is apparently derived from the pia mater. A very fine membrane is sometimes observable between the septum, whose sides, in other subjects, appear to be contiguous.

CHRYSOMS, (from *χρῖσμα*, *unctio*), an anointed cloth formerly laid on the face of a child until it was baptized. On this account children under a month are in our bills of mortality, styled *chrysoms*.

CHYLUS.—Page 435, col. 2, line 14; "*presence of chyle in it*."—See DIGESTIO.

CHYMUS.—Page 436, col. 1, line 23; "*object of our taste*."—(See DIGESTIO.) *Chyme* sometimes meant a grosser chyle rejected by the lacteals, and taken up by the meseraics to be farther elaborated in the liver, an operation styled *chymosis*.

CHYNLYN, a cylindrical root of the thickness of a goose quill, brought from China, in pieces about an inch long. The taste is bitterish; it imparts a yellow colour to the saliva; and the Chinese consider it as a stomachic. They use it in powder and tincture. Bergius, to whom it was brought by a Swedish East Indian captain, confirms its efficacy; but adds, that it occasionally proved emetic.

CICHOREUM.—Page 436, col. 2, line 36; "*much more so than the flowers*."—It belongs to the compound semiflorescous flowers, which are usually milky, and, except in the *lactuca virosa* and *scariola*, free from any injurious acrimony. The milky fluids suggested to Boerhaave the idea of soap, and all

these plants have consequently been considered as aperients, resolvents, and anodynes, employed in jaundice, cachexy, hypochondriasis, melancholy, and hectic. A decoction of the root has been used, it is said, with advantage, when joined with goat's milk, in phthisis; and a strong decoction in whey, to which sal polycryst is added, frequently relieves, according to Van Swieten; jaundice from calculus. An old ulcer on the tibia is supposed to have been cured by the juice of this plant. The root is added to the decoction in acute fevers, and it is an ingredient in Lower's decoctum avenaceum.

CICUTA MAJOR FETIDA.—Page 437, col. 1, line 11; "**SPOTTED HEMLOCK**."—It is necessary to guard against an error which the innovations of some later naturalists have occasioned by a change of name, which, though proper, was inexpedient. They have changed the appellation of the *cicuta* of the ancients from *conium* to *cicuta*, and the *cicutaria* is included under the same genus. There is great danger of confounding the officinal plant with the *chærophyllum bulbosum* Lin. Sp. Pl. 370, which, when more advanced, is furnished in the spring with a bulbous root: the stalk is spotted; but, at the divarication of the branches, and at the foot-stalk of the leaves, there is a little swelling. The leaves are somewhat rough, clean, at the apex of the pinnæ and the lacineæ cartilaginous; the seeds subulate and smooth.

The description of the *Kavelas* of the ancients is referred by Haller to the *cicuta virosa* of Linnæus; but among the Greeks it is apparently the appellation not only of one but of every poisonous plant (Plinii Historia Naturalis, xiv. 5; xxv. 13), and of every plant whose stalk is fistulous, between joints (Virgilii Ecloga, ii. 36). It is improbable that our hemlock should be that which the Greeks employed to induce an easy death, since its fatal effects are preceded by vertigo, anxiety, vomiting, madness, &c. Hemlock, at least the plant known to us by that name, is certainly poisonous: its nauseous smell; the bitter acrid milk of its root, from which the tongue is rendered stiff, swollen, and painful; and its botanical analogy, render its nature scarcely doubtful. Storck indeed contends that it will not injure a pregnant woman, or an infant at the breast, and that it may be long continued without danger. The two first assertions may be admitted; but the fatal experience of many practitioners has disproved the last. This author also opposes his own experience to the assertion or the practice of Aretæus, who remarked that it checked the venereal ardour. By chemical analysis it is found to contain a watery saline extract; by distillation, an ammoniacal spirit, an empyreumatic oil, and a volatile salt.

Some authors recommend gathering the leaves before the flowers, or even the flower stalks, appear, though Fothergill advises them to be gathered when the rudiments of the seeds are conspicuous (Medical Observations and Inquiries, iii. 415). The extract must be made with the greatest care, lest it should be burnt, and it is most advisable to inspissate it only so far that a given proportion of the powdered leaves may make it into a mass. Morris (Philosophical Transactions, liv. 172) contends that the Coimbra extract is superior to any other; an assertion not supported by

experience. In general, the decoction should not be strained. Storck seems to have discovered its inefficacy in some degree, since, in his later works, he recommends various additions.

We have mentioned, in the article, the principal diseases in which it has been employed. It were almost an endless task to enumerate those in which it has been recommended. In gout, spina ventosa, creeping ulcers, resembling elephantiasis, fluor albus, a hard tumour in the left hypochondrium, jaundice, attended with violent fever and anasarca, rickets, amaurosis, lymphatic tumours of the joints, a serous, yellowish tumour of the whole body, syphilitic caries, tinea, hooping cough, from repelled itch, serpigo and fissures of the skin, which extended to the flesh, vomiting, chronic cough, aphthæ, slow fever, rheumatism, ischuria, calculus, epilepsy, &c. All these effects it is said to produce without any sensible change, except an increased flow of urine.

Many of the most respectable physicians in Vienna support, by their testimony and experience, these facts, and it affords a lamentable proof of the facility with which we believe what we wish. Physicians of other countries certainly found it sometimes useful, and their commendations, brought into one view, appear to prove that it was generally beneficial. Experience, however, has confined it to the diseases mentioned in the article; and De Haen, even in the cradle of its fame, gave his testimony, adding that of Tralles at Breslaw, against its efficacy (Epistola de Cicuta). In England its opponents have been numerous, respectable, and decided; and, when it was contended that the plant and the extract were not the same as those at Vienna, the medicine was procured from thence, with no better success.

In venereal cases it has certainly been sometimes useful in lessening irritability, and has consequently been advantageous in repressing discharges of semen. It occasionally diminishes tumours of the prostate gland, and amends the appearance, frequently the discharge of venereal ulcers. As a narcotic, diminishing irritability, and its extensive effects, hemlock may probably still be useful.

See Erhart Dissertatio de Cicuta; Halleri Historia Stirpium Helveticarum, N° 766, note a.; Quarin Tentamen de Cicuta; Colin Annus Medicus, iii.

CICUTA AQUATICA.—Page 438, col. 1, line 38; “and flowers in July.”—Either this plant, or a compound, seems to have been the instrument of punishment in ancient Greece, and to have been, with the juice of poppies, an ingredient in the medicine of Thrasyas of Mantinea, which killed without pain. Trew, (Commentaria Norimbergica, An. 1740, 388) endeavours to show that it is the *κνίσιον* of Dioscorides.

The roots in spring and summer are almost globular, in the water elongated, annulated, divided, by parallel cells, sending out numerous thick fibres. Its yellow juice is contained in little cells in the bark. The poison of the root is most deleterious in the spring, and the radical leaves are almost equally dangerous. The smell of the root is faint; its taste warm and somewhat acrid; and the stagnant lake in which it grows is often covered with a shining oil swimming on its surface. By distillation with water a volatile narcotic

spirit of a most noisome smell comes over, and the remainder is inodorous.

Dr. Houlston of Liverpool has also described the effects of this poison in some children in Liverpool (Edinburgh Medical Commentaries). On the dissection of those who have died by eating it the stomach and intestines were found eroded, inflamed, and gangrened. The abdomen was tumid, and the vessels of the brain distended. Wepfer.

What Linnæus and, after him, Vogel have said of the use of this plant must be applied to the conium, and the former has directed the emplastrum à cicuta to be made with it; in which he is followed by the Danish college. When dried the roots are less acrid, and the Fins give them, mixed with salt, to their diseased cattle. Externally it is often used. In the VAREN, q. v., a kind of lumbago, endemic in Westphalia, it is applied roasted in the ashes; and mixed with honey, when it terminates in suppuration. It is a popular remedy in Norway, Siberia and Kamtschatka, used externally in pains; but it is forbidden to touch the spine with it, or the most fatal consequences, it is said, will follow.

CICUTA MINOR, *athusa cynapium* Lin. Sp. Pl. 367. It is chiefly noticed in this place to remark, that, from its resemblance to parsley, it is often taken for it; but if the curl-leaved parsley were only cultivated in our gardens no such mistake could happen. All the leaves are alike; the stem is branched, the leaves smooth and glossy, the petals whitish, the seeds very large and striated.

CILIA.—Page 438, col. 2, line 9; “sometimes called *cilia*.”—The hairs belonging to the inferior palpebra are bent upward; those of the superior downward: the former are the longest. These rows are irregularly double or triple; the hairs longest towards the middle, and wholly wanting at some little distance from the inner angle.

CILIARES GLANDULÆ. Along the border of the palpebræ, on the inner side, we can perceive a row of small holes, styled the *puncta ciliaria*, the orifices of small, oblong, whitish glands, which lie beneath. In a microscope they appear like bunches of grapes; those of each bunch communicating with each other. The contents of these glands are a soft matter like wax, which may be pressed through the puncta. They are more numerous in the upper than the under lid, and were first observed by Casserius; but described by Meibomius, from whom they are often called.

CILIARIS PROCESSUS. See CILIARE LIGAMENTUM.

CILIUM, the EYE LID, sometimes applied only to a hair of the eye lid.

CINCONIN, the name given by the younger Dr. Duncan to the principle, which in the bark forms the precipitate with tannin. It is soluble in alcohol, and differs in its properties from any vegetable substance formerly known.

See CORTEX PERUVIANUS, and the additions to the article in the *Appendix*.

CINCINNUS, the hair which grows on the temples.

CINERITIOUS, (from *cinis*, *ashes*), the darker coloured part of the brain, and the darker portions of some ganglia and nerves. See NERVUS.

CINGULUM MERCURIALE.—Page 439, col. 2, line 42; "*belt of flannel*."—It is used to cure itch and other cutaneous eruptions; but it repels the pustules or papulæ without curing the disorder, and has been in many instances dangerous; in some, within our own observation, ultimately fatal.

CINNAMOMUM.—Page 430, col. 2, line 4; "*and of a fibrous texture*."—The bark of an inferior kind is hard, thick, of a dead brown colour, pungent, with an acrimony resembling that of cloves, followed by a bitter, austere, viscid taste. The Dutch contend that no good cinnamon is brought from any other part of India except Ceylon; but many of the neighbouring islands now produce it in perfection, and the cultivation is in a promising state even in the West Indies. The inferiority already observed, though the trees have not attained their proper age, is in part owing to the management. It is still uncertain whether our cinnamon is the bark distinguished by this name in ancient authors; but the controversy is not peculiarly interesting (See Raii Historia, ii. 1559; Valentini Dissertatio de Cinnamomo, &c. in his Historia Simplicium, 597; Watson in the Philosophical Transactions, xlvii. 301). The oil is in a small proportion, and the largest quantity from imported cinnamon seems to have been obtained by Cartheuser, viz. two drachms from a pound.

The spirituous tincture is of a darkish colour, smelling like cinnamon, of a sweet, aromatic, subastringent taste: the inspissated extract is about three sixteenths of the weight, according to Cartheuser, or one eighth according to Neumann. The watery infusion is of a brownish red, and sweetish, with the other marks just mentioned. By inspissation, in which much of its odour is lost, a slightly astringent extract, about one eighth or one tenth, is procured. The remainder is wholly insipid.

It is not certain that the oil of camphor is really produced from the root of the *laurus cinnamomum*. Its smell is that of sassafras, and it is probable that the camphor proceeds from a variety of the tree called *capura carundu*, camphorated cinnamon; for it is seemingly distinguished by the appellation of *oleum caphuræ*. It is said to be analeptic and carminative; useful in gout, in a dose of ten or twelve drops on sugar.

See White in the Philosophical Transactions, i. 860; Gentil Voyage dans les Mers de l'Inde, ii. 79; Dossie's Memoirs of Agriculture, iii. 198, &c.; Grimm apud Bartholin Acta Medica Hafniens, iii. 167, and v. 223; Thunberg's Travels; and the Swedish Transactions.

CIRCULATIO.—Page 442, col. 2, line 33; "*those vessels are then less convoluted*."—There is some doubt whether the coronaries are filled with blood by the contraction of the heart or the aorta. The right

goes off between the aorta and pulmonary artery, the left between the left auricle and the aorta. They communicate by anastomosis round the septum and tip of the heart; but do not make a complete circle around it. That they receive their blood from the aorta is attempted to be proved by the retrograde angle at which they go off, the paleness of the contracted heart, and from the valves of the aorta covering their mouths. These arguments are replied to by observations which show that retrograde angles only retard, and do not stop, circulation; and it is added, that the action of the coronary artery is synchronous with that of the heart. On the whole, we think that they do not form an objection to the general rule.

CIRRHUS.—Page 444, col. 2, line 62; "*serving also for roots*."—Tendrils are sometimes placed opposite to the leaves, as in the vine; at the side of the footstalk, as in the passion flower; or on the leaves of the flower, as in the winged pea; and are composed of one or of many fibres. Dr. Grew considers them as a mean between a root and a trunk; but a compound of both. The claspers sustain only the younger branches; but the larger, as in the vine, require the care of the gardener.

CITRIC ACID, the native acid of the citrus medica. (See LIMONIUM.) It is of the specific gravity of 1.034, composed of much water, vegetable mucilage, of extractive matter, which seems to contain a slight astringency, of a small proportion of the malic, and a much larger of its own appropriate acid. The proportion of these ingredients varies; but, on an average, 576 grains of fresh juice lose, by evaporation, 528 grains of water, and about 30 grains of the remainder is the citric acid: the rest is the mucilage and extractive, which occasion its fermentation and moulding (Proust Journal, De Physique, lii). The mucilage may be separated by the common means of clarification; but the extractive adheres obstinately to the acid. It in general subsides, and the acid is obtained tolerably pure, or it is covered with oil, to prevent the access of air, and permitted to subside in a cold cellar. In every method, however, the spontaneous changes of the extractive give the juice soon a disagreeable flavour. By freezing, in a temperature of from 23° to 26°, it may be concentrated to about one eighth of its former bulk, and in this operation the ice, formed of the watery part, must be successively removed till it grows sour. The state of the acid is then tolerably permanent, but still subject to some change. It is sometimes preserved by brandy, and the juice occasionally clarified by the addition of a portion of alcohol, which precipitates the mucilage; but the former method renders it less fit for some purposes, and the latter is expensive, while the object is imperfectly obtained. It cannot be purified by distillation; because it is less volatile than water, and will not rise till the heat is sufficient to decompose it. By moderate evaporation it forms a rob, intensely sour, but of no pleasant flavour from the remaining extractive. The process of Scheele has already been detailed in this work. (See ACETOSELLA.) In this process M. Disé proposes using cold water, which is sufficient, with agitation, to wash out all the acid; but some calcareous sulphat still remains from the excess of sulphuric acid

employed, and it is united with some of the citric acid. If the remaining fluid is evaporated at the temperature of boiling water, the earthy salt falls down; but as the sulphuric acid becomes concentrated, from a clear yellow colour it turns blackish, though this more probably arises from the extractive. The acid is so very soluble that the solution must be brought to the consistence of a thick syrup before it will crystallize, and the crystals, at first dark and dirty, require two or three solutions and recrystallizations before this colour is destroyed. The excess of sulphuric acid is apparently necessary to destroy the extractive. The clear liquor, after adding the chalk, contains malat of lime, and the astringency seems to arise from a portion of gallic acid.

Richter saturates the lemon juice by carbonate of potash, and then adds acetated lead. A copious white precipitate consists of citrated lead. The metal is separated by dilute sulphuric acid. The citric acid is thus accidentally, but more often fraudulently, adulterated with sulphuric acid. The latter is detected by adding to the suspected juice some acetite of lead, and then a few drops of strong nitric acid. If there is no sulphuric acid, the precipitate formed in the first instance is soon redissolved; but, if adulterated, the sulphat of lead will remain at the bottom; for it is not soluble in nitric acid.

The pure acid crystallizes, according to Lowitz, in alum shaped crystals, consisting of two four sided pyramids, joined by their bases; or, according to Dizé, in rhomboidal prisms, not deliquescent. Its taste is intensely sour; but, when diluted, agreeable to the palate. One ounce of distilled water will dissolve more than an ounce of the crystallized acid, producing 30° of cold by the mixture. In a boiling heat water dissolves twice its weight of the acid. Distilled alone, an empyreumatic acid, phlegm, carbonated hydrogen gas, and carbonic acid come over; so that it seems composed of carbon and hydrogen, with oxygen in unknown proportions.

If boiled with nitric acid, nitrous gas is separated, and oxalic acid formed: with a larger proportion the whole becomes acetous acid, without passing through the state of oxalic. Vauquelin contends that this acid may be produced by passing oxymuriatic gas through water, containing gum arabic, for some time. *Annales de Chimie*, vi.

The only preparations from this acid used in medicine are the *citrat of potash* and *ammonia*. The first was introduced by Riverius, and is called the *common saline draught*. From twelve to sixteen parts of lemon juice will saturate one of common, carbonated potash. According to Vauquelin, thirty-six parts of the crystallized acid, dissolved in water, require sixty-one of crystallized carbonat of potash. This salt crystallizes, though with difficulty, and is very deliquescent. It is decomposed by barytes and lime.

The citrat of ammonia is used where the stomach is delicate, instead of Mindererus' neutral, the aqua ammoniæ acetatæ. Thirty-six parts of the acid saturate forty-four of the carbonate of ammonia, and the salt is with great difficulty crystallized.

CITRULLUS.—Page 446, col. 1, line 10; *employed in this kingdom.* In Egypt, and other warm countries, the fruit is eaten in fevers, as its taste is agreeably sweet

and cooling; but it is often injurious in producing diarrhoea and cholera, particularly if the body is previously heated. The Chinese avoid it in putrid fevers, and Rumphius adds, that it corrects the inconveniences which arise from taking opium.

CLAVICULÆ.—Page 448, col. 1, line 4; *“by the articulation called arthrodia.”*—Each clavicle is larger at either end than in the middle; that next the sternum is triangular, and to the posterior angle, which projects, the transverse ligament which unites one clavicle to the other is fixed. The opposite side is roundish, and the middle of this protuberant end is as irregularly hollowed as the cavity for receiving it, in the sternum, is raised. The irregularities at each end are supplied by a moveable cartilage, resembling in its strength the intervertebral.

From the internal end the clavicle, for more than half its length, is bent obliquely forward and downward. A small ridge, with a plain rough surface before it, is observable in the upper and fore part of the curvature, whence the sterno-hyoideus and sterno-mastoideus in part arise. Near the lower angle, the first rib and this bone are contiguous, and connected by a strong ligament; and from this part a rough, plain surface, extending outward, marks the insertion of the pectoral muscle, while it is flattened behind from the insertion of the larger share of the subclavian. Where it is bent backward it is round, and soon afterwards broad and thin. A rough sinuosity runs along the external concavity, from which a part of the deltoid arises, and on the opposite convex ridge a portion of the cucullaris is inserted. The upper surface is flat, the lower hollow, and on the back part is a tubercle, to which, and to a neighbouring roughness, the strong, short, thick ligament which connects this bone to the coracoid process is attached.

The external end is horizontally oblong, smooth sloping on the posterior side, and covered with cartilage for its attachment to the acromion. The bone is spongy around, for the firmer connection of the ligament. The medullary arteries enter behind in the middle of the bone, and pass obliquely outwards.

The clavicle is firmly fixed to the sternum; but, as the cartilage is moveable, some motion is admitted, which at the other extremity is more conspicuous.

These bones are subject to caries, exostosis, and fracture. It will be obvious, from the description, that it will be difficult to keep the ends together, and many contrivances have been invented for this purpose. *Mem. de Chirurgie*, v. 20; Desault in *Baldinger's Journal*, xv. 73.

CLAVUS.—Page 448, col. 1, line 45; *“and is wholly separated.”*—We find in authors some stories of corns annually suppurating, and it is said, by Borelli, that death has been the consequence of cutting a corn. Armstrong considers corns as the effects of a rheumatic diathesis, and Camerarius endeavours to show that the gemursa of Pliny is only a more malignant species of corn (*Dissertatio de Gemursa Pliniana*). Silius Italicus is said to have died of an incurable corn.

Among a number of trifling superstitious remedies, we find green wax used after cutting, the colour of which is owing to nitrat of copper. A French author,

with similar views, recommends a plaster of gum ammoniac, verdigrise, and wax. The cream of milk with pisselæum is also a boasted remedy. Milder applications, as lemon juice (after cutting), the juice of the sedum, and purslain, have sometimes succeeded; in other cases the milk of figs, fresh squills, horse radish, &c. Severinus recommends the actual cautery.

CLIMATE.—Page 449, col. 2, line 22; “*distempered imagination.*”—See TOPOGRAPHIA MEDICA.

CLITORIS.—Page 450, col. 1, line 20; “*venereal pleasure.*”—The blood vessels of the clitoris come chiefly from the hypogastric arteries, and its nerves are derived from the second and third pairs of the nerves of the sacrum, by means of which they communicate with the great mesenteric plexus, and the great sympathetic nerves. They are not, of course, under the controul of volition. See NERVUS.

“*And if weak women go astray,
Their nerves are more in fault than they.*”

The diseases of the clitoris independent of its enlargement, are cancer, ossifications, and tumour. There are few instances of cancer; but we find that it has been extirpated in such cases with success. Ossifications, it is said, are not uncommon among the Venetian courtezans, and, in different works of Bartholine, there are numerous instances of this disease. In Riedlin's Collection we find an instance of a considerable enlargement of the clitoris on the approach of the menses: a slight fulness of this part is not uncommon, and we recollect a case of a watery tumour of the same organ, perhaps from hydatids, as it was not connected with dropsy.

A morbidly enlarged clitoris may be safely removed by ligature or extirpation. See Denman's Midwifery, and Simmons in the Medical and Physical Journal, vol. iii.

CNIDIA GRANA.—Page 451, col. 1, line 22; “*Daphne gridia.*”—The word meant was *gnidia*; but this species was erroneously noted. They are the seeds of the *daphne mezereum* Lin. Sp. Pl. 509. The berries are oval, of the size of a pea, including a round seed, of which the shell is brittle, the kernel white, oily, and very acrid, though the pulp is mild. The nucleus is much more dangerous, as, from the mixture of the oil, the acrimony is not easily washed off; and it is delusive, since the impression on the palate is at first mild and agreeable. Birds are very fond of them; but they are poisonous, if swallowed in due proportion, to every animal. Four of the seeds were nearly fatal to a man; but he was relieved by demulcents and opiates. If, however, the nuts are not minutely masticated, they are not equally dangerous. The more robust peasants of Brunswick, take eight grains as a laxative, by which they often procure twenty motions; and Pallas informs us that the inhabitants of the northern districts of Siberia sometimes take thirty of the nuts bruised for the same purpose; and even in Dauphiny they are employed, though in less doses, as cathartics. The Russians use them as emetics in chincough. The Tartars think that they at first increase the cough, though afterwards relieve it. The inhabitants of Finland give in the

cough nine grains of the seeds, and in intermittent fevers twenty-seven (Halleri Stirpes Helveticæ, No. 1024). In Sweden an ointment is made of the bark and the nuts, applied to cancerous and malignant ulcers.

COAGULANTIA.—Page 451, col. 1, line 64, read “*Externally there are undoubtedly coagulants,*” &c.

COCCINILLA.—Page 453, col. 1, line 5; “*about the size of a flea.*”—It is an ill shaped, stupid insect: its eyes, mouth, and antennæ are fixed so deeply in the skin that a microscope is necessary to distinguish them. The males are rare, in the proportion nearly of one to three hundred, and more active than the females. The neck is narrower than the head, and still more so than the rest of the body. Its thorax is elliptic, exceeding in length the head and neck, and flattened below. The antennæ are jointed, and from each joint hairs issue four or five times longer than the insect. Its two wings are fixed to the upper part of the thorax, fall like those of a fly, and are of an oblong form, suddenly diminishing where they are joined to the body.

COCCYGIS OS.—Page 453, col. 2, line 51; “*a pair of nerves pass.*”—The shoulders of this bone extend farther than the end of the os sacrum; and this should, in Dr. Monro's opinion, fix the commencement of the os coccygis rather than the number of the bones. The upper surface of this bone is a little hollow, and from each shoulder a process often rises to join with the bifurcated spine of the fourth and fifth bones of the os sacrum, to form a bony bridge. Sometimes these shoulders are joined to the sides of the fifth bone of the os sacrum, forming the notch mentioned for the passage of the twenty-ninth pair of spinal nerves. Immediately below the shoulders a notch may be observed on each side, through which the thirtieth pair of nerves passes. When the bones ossify, the upper end of each bone is formed into a cavity, exactly adapted to the protuberance below. All these bones are capable of motion, of which the first, but particularly the second, enjoys the largest share: their substance is very spongy.

These bones differ from vertebræ, since they have no processes, no cavity for the spinal marrow, nor holes for the passage of nerves. They have no lateral motion; and in advanced life the motion backward and forward is greatly impaired. Its use is to support the rectum, and as it is cartilaginous in infants, we see why they are so frequently subject to exania. Its chief disease is luxation, which may in general be safely restored.

COCHLEA.—Page 454, col. 1, line 30, for *arises*, read *arrives*.

COCHLEARIA BRITANNICA.—Page 455, col. 1, line 7; “*a penetrating acid (acrid) taste.*”—Birds in Iceland feed on it, and become very fat; but their flesh acquires a disagreeable flavour. The oil, though in small quantities, is so rich that a single drop gives the smell and taste of scurvy grass to sixteen ounces of any fluid: it is specifically heavier than water. The plants of this order have been styled alkalescent; but no experiment shows any alkali, and the slight fermentation which

ensues when the juice is added to beef is of the acid kind. De Haen (*Ratio Medendi*, viii. 235) calls it a volatile acid, soon degenerating into an alkali. In Iceland they eat scurvy grass, cut in small pieces, with milk or whey, and keep the plant laid in strata in large casks.

The rheumatism, in which it is recommended by Sydenham, is what he styles the scorbutic, and he joins it with the compound powder of arum. The taste is best concealed by a little nutmeg. In scorbutic ulcerations of the fauces the juice is applied, united with alum.

The *antiscorbutic spirit of Drawitz* is prepared by adding the distilled spirit of tartar, which is highly acrid and empyreumatic, to the spirit of scurvy grass, in which vitriol calcined in a red heat has been previously dissolved. It is highly volatile and acrid, exciting sneezing; commended by Werlhoff, not only in scurvy but in palsy, intermittent fevers, and debility of the stomach. The taste can, however, be scarcely borne, unless given in syrup, or with mucilage; and Werlhoff's dose was thirty drops, though Drawitz gave it in a larger quantity.

COCTIO.—Page 455, col. 2, line 59; “second and third coction.”—See CONCOCTIO.

COFFEA.—Page 457, col. 2, line 18; “first Europeans who writ on the use of it.”—Rauwolf visited the East in 1573, and Alpinus first described the coffee tree in 1591: he thought it resembled the euonymus. It was used in the earliest ages in Ethiopia, and brought to Arabia in the fifteenth century. About the year 1690 the president of the Indian society, Van Hoorn, procured recent coffee berries to be sent from Arabia to Java, which produced many plants. One of these was conveyed to Witsen, who presented it to the botanic garden at Amsterdam in 1710 (*Linnæi Amœnitates Academicæ*, vi. 164). It now vegetates and bears fruit in our conservatories. Its most genial natural soil is sandy, dry, and warm, though it occasionally flourishes well in a fertile and shady valley. In Arabia it is collected in elevated situations, or at the foot of mountains, where streams of water are frequent, or can be led to it.

The fruit in pairs, or quaternions, proceed from the axilla of each leaf, consisting of an oblong berry, of the size of a moderate cherry, somewhat compressed on each side covered with a red, soft, thin epidermis, under which is a sweet and somewhat viscid flesh. When this is separated, two seeds are observed (very rarely a single one) divided by a septum, oblong, convexly plane, and on the plane surface marked with a furrow. Each is covered with a cartilaginous arillus, within which there is a very thin membrane. The double covering is separated by agitation of the dry fruit; the one brown, from the pulpy flesh, with the epidermis, the other yellow, from the arillus. From the former the *café à la sultane* is prepared; but its flavour is disagreeable to an European palate. Coffee is sometimes prepared from the seeds without roasting, and they are boiled in water for half a quarter of an hour. The decoction is of a yellow colour, and is said not to produce watchfulness nor anxiety. The Arabians and other eastern nations drink their coffee without sugar

or cream. We have no reason for thinking either injurious.

Coffee, we have seen, contains originally some albumen; but this seems to be destroyed by the operation of roasting, and we cannot, therefore, allow it a nutrient quality. The unroasted coffee seems to be without the inconveniences which attend the use of the roasted seeds, and it is probable that the narcotic which coffee undoubtedly possesses is owing to the oil rendered empyreumatic in that process. To this power the watchfulness, the anxiety, the palpitations, and, from its excess, vertigo, tremblings of the limbs, cowardice, eruptions on the face, weakness of sight (*Linnæi Amœnitates*, l. c.), and palsy (*Percival*), are to be attributed. Hysteria and hypochondriasis are greatly increased by it, so that Tissot guards literary persons from drinking it freely. The catamenia it is said to render more profuse, and to continue the discharge beyond the usual age: it has been accused also of inducing leucorrhœa and hæmorrhoides, of producing emaciation, and lessening the venereal appetite. Coffee is consequently supposed not to be adapted to persons in fever, to the choleric, the plethoric, and the emaciated.

It is rarely used as a medicine. We have mentioned Dr. Percival's recommendation of the infusion in asthma, and it is sometimes said to produce a discharge of urine, as well as of stool. In a bilious diarrhœa it has been apparently useful; and a small cup of strong coffee, with an equal quantity of juice of lemons, is supposed to have been successfully employed in the cure of intermittents, if given on the day of the apyrexia, and the profuse sweat excited by it supported by warm drinks.

COFFEA.—Page 457, col. 2, line 48; “oil and some salts.”—Mr. Chevenix, in the *Bibliothèque Britannique*, N° 158, from some experiments concluded that coffee was neither acid nor alkaline, and that it did not contain tannin previous to its roasting. M. Payssé, either from these remarks, or, as he observes, considering that no analysis of coffee had been undertaken since the operations of chemistry were more minute and refined, engaged in this subject at some length. The memoir is abridged by M. Parmentier, in the fifty-ninth volume of the *Annales de Chimie*, published since the article was printed.

This author found that coffee contained a particular acid with distinct characters, in a disengaged state, since the powder quickly reddened the vegetable juices, and wine or alcohol would separate it in a state more or less pure, without the assistance of heat. The acid decoction of coffee easily decomposes many metallic salts, particularly of tin, iron, lead, &c. As these precipitates are more copious, and of a deeper colour than those formed by the acid in a state of perfect purity, it is probable that the decoction contains some extractive, albumin, or colouring matter. The colouring matter is apparently precipitated in part by its affinity to the metallic *café*, and the albumine, no longer rendered soluble by the acid, accompanies it. The acid of coffee may be obtained in sufficient purity by mixing its decoctions or macerations in alcohol with the muriats of lead, and decomposing the salts in the manner practised

by Mr. Chevenix, by sulphurated hydrogen. The calic acid may be decomposed by sulphuric acid. This new acid has not yet been reduced to crystals; but is wholly soluble in water and alcohol. It separates the small portion of iron usually contained in the prussiate of potash, and may thus be useful in purifying this useful reagent.

Different species of coffee contain this acid in nearly the same proportion, and it exists in a small quantity in infusions of coffee, roasted in different degrees, as well as in the products by distillation of the same seeds. It certainly resembles the gallic acid and the tanning principle; but M. Payssé's experiments show that it differs from them, and essentially from the latter. The acid is apparently the unknown principle mentioned by Mr. Chevenix, which he seems not to have examined with care. The salts which it forms with different bases are decomposable more or less easily by fire, or the more powerful acids; but the order of affinity is different from any known acid; for the alkalis have the weakest attraction to it. When decomposed by the sulphuric acid, assisted by heat, by the nitric, the muriatic, or the oxygenated muriatic acids, it is reduced to the malic acid. It appears, from distillation, chiefly composed of carbon, with a less proportion of hydrogen, oxygen and azot, the existence of which is proved by the products, which are oil, pyromucous acid, carbonic acid, and carbonated ammonia. About 100 parts of the watery extract of coffee, produced from 750 parts of the powder, yielded of the calic acid 0.55; extractive, 0.25; vegetable albumen, 0.05; resinous matter 0.09; loss, 0.06. The ashes and coal of coffee contain muriat of potash and lime, with a very minute portion of iron.

Roasting coffee is an operation of considerable nicety, as it is necessary to give the taste of empyreuma, without depriving the berry of its aroma. Under the idea of making the coffee strong, this operation is sometimes carried too far, and it is almost wholly carbonated. In fact, the colour is deeper, but the aroma is destroyed, and the taste is acrid and bitter, followed by a very disagreeable empyreuma. This coffee is never fine, and the union of the component parts is apparently destroyed. At the end of the roasting a little butter is sometimes added to prevent the exhalation of the aroma, sometimes sugar, which is said to heighten the flavour. It must be powdered only when used, or it loses its flavour, and has not those globules of oil which usually swim on the surface of the best coffee. The infusion M. Payssé considers as by far the preferable mode of preparation. Cold water does not extract from coffee either the aroma or the other principles. The Dutch supply its place by the roots of the wild succory, the *cichorium intybus* Lin. Sp. Pl. 1142.

COLD AFFUSION. See BATHING; Currie on Cold Affusion, two volumes.

COLICA.—Page 463, col. 1, line 24; "*similar effects.*"—Independent of acrid matter, some substances seem to act mechanically, or by the spasm, occasioned by their irritations, in producing colic. Gall-stones, when passing through the ducts, sometimes occasion this disease, or at least pains which are mistaken for it, and

authors have described it as proceeding from biliary calculi in the intestines; but this can only be the case when, by sticking in the villous coat, or in the caput coli, they produce considerable irritation. Some tubercles are occasionally formed in the intestines of a sebaceous nature, and appear to produce colic. Scott, in the Edinburgh Medical Commentaries, has described a case of colic relieved by a discharge of adipose masses, and in the *Acta Naturæ Curiosorum* a pain of the hypochondria was removed, after the evacuation of some globules, resembling in substance soap (vol. iii. obs. 51). There are numerous instances, in different collections, of colic arising from cherry and plum stones, sometimes covered with conglomerated hair, in one instance (*Philosophical Transactions*, 252) with calcareous matter. Cancerous and scirrhus tumours, hydatids, as well as obstructing causes of every kind, have occasioned colic.

Obstructions may also arise from some disease of the intestine, independent of its contents, or of the neighbouring organs; thus hernia, a rupture of the colon, a contraction of the intestines (*Stoll Ratio Medendi*, vii. 154), a callosity of the intestines (*Valisnieri Opera*, iii. 305), sometimes ossifications in their coats, and even varices in their veins, have been said to have occasioned it. Tumours in the mesentery, the omentum, the liver, the pancreas, the stomach, the kidneys, or a hernia of the stomach into the thorax, may contract the canal of the intestines, and occasion colic pains. Bordenhove, in the *History of the Academy of Sciences at Paris*, mentions as a cause a contraction of the omentum in the form of a rope; but it is more singular to find the same consequences from its being wanting. (*De Haen Ratio Medendi*, xi. 3); *Quarin de Morbis Inflammatoriis*, 160.

In the cure we have spoken too slightly of vomits. Colic is sometimes kept up by acrid saburrae, gradually passing from the stomach; and emetics are frequently the quickest mode of relief. When colic arises also from repelled gout and eruptions, from cold and damp, a vomit will often relieve. Stoll we perceive to be very partial to this remedy, and he has given three and five in succession, particularly in the summer season (*Ratio Medendi*, ii. 135, and iii. 65). Dashing of cold water against the legs and feet has been mentioned under *ILEUS*, q. v.; but in the warmer climates we perceive cold employed in all its rigour. Snow has been externally applied, cold draughts of water freely given, cold clysters injected; but in this country they have been scarcely ever used.

In some cases it has appeared that the mucus is thin and acrid, and this is most probable when colic arises from cold, or when slight, but teasing, in elderly persons. In such cases demulcents of every kind, often joined with opium may be employed, and oils, particularly the *oleum ricini*, is useful. Should these fail, the old remedy, *vitrum antimonii ceratum*, has often succeeded, and even wax, united with a proportion of soap, to render it soluble. When it arises from spasm, evidently connected with debility, the warmer aromatics, with opium, are highly useful, taking care to prevent the latter from constipating the bowels. As stimulants, turpentine and the oil of juniper are often advantageous, and spirits of wine have been

freely employed, often indeed with too much freedom, and inflammation has been induced. Other narcotics employed have been the nux vomica, the skins of walnuts, henbane, camphor, tobacco, &c. Blisters to the abdomen have been often useful, and leeches, cupping glasses, burning with moxa (Kempfer), and escharotics applied to the navel have been recommended.

See Morgagni de Sedibus, xxxiv. xxxv. 21, 22; Stoll Prælectiones, ii. 185; Saalman Descriptio Morbi Variolosi et Colicæ Acutæ; Eyselius de Colica Passione; Baglivi Praxis Medica, i. 9.

The *colica pictorum* is not always attended with severe pain, but very generally with a retraction of the abdomen, though sir George Baker mentions its being sometimes distinguished by a considerable flatulence. In general, stools are procured with great difficulty; but gangrene is less common, from their delay, than in colics of a different kind. Of lead as a cause we have spoken in the article PLUMBUM. It is indeed a rare one, and sleeping in newly painted rooms is undoubtedly not dangerous from any saturnine effluvia. We lately met with a case attributed to this cause, and was blamed for our incredulity; but, in fact, the lady had for many years been in the habit of using saturnine cosmetics.

The cathartics employed must be of the most active kind, and these often long continued, before any effect is produced. The torpor induced on the bowels requires the most active stimuli, and the empirical remedy among the Devonshire labourers is equal parts of ardent spirits, and the ethereal oil of turpentine. Hillary, however, considers stimulants as injurious; but Lentin properly observes, that the pulse rising after the fourth day is a good sign. Sydenham recommended the balsam of Peru in doses of forty drops, twice or three times a day, and Dr. Lionel Chalmers combined with his purgatives some essential oils. Oily medicines, though recommended by Eyerel, Mosely, Tissot, Odier, Grashuis, and Segner, have been in our hands the most inert cathartics, and the only medicine of this class from which we have derived benefit is calomel in large doses. Hahneman recommends the dry calcareous liver of sulphur as an antidote to the lead; but in a few instances only is lead conveyed into the intestines when it produces the disease, and, after much inquiry, we cannot find that this remedy has been employed. Blisters have been applied to the abdomen by Hunter (Diseases of the army in Jamaica), by Baker and Grashuis; but in our hands they have availed little, and bleeding has been usually unnecessary.

The chief narcotic employed has been opium, and it has been given previous to the evacuations, after them, and united with the cathartic. The last method has always appeared trifling; for the power of the purgative is lost before the action of the opium has ceased. When the violence of pain requires it, the opium should be first given; for, previous to the cessation of the spasm, purgatives will be of little use, and the dose should be such as to mitigate its violence, whatever the necessary quantity may be. Dr. Adair gave a grain every hour (Memoirs of the Medical Society, ii. 21). Other narcotics recommended are the henbane, the camphor, and the musk; but on opium our chief dependence should be placed. Mercury does not seem to have been given to a sufficient extent; to large doses of calomel, inter-

nally, active mercurial frictions on the abdomen may be joined. The practice of Dr. Chalmers seems to support this idea; for he sometimes gave a wine glass full of a solution of vitriolated copper, in the proportion of eight grains to eight ounces. This medicine at first discharged much bile, both from the stomach and intestines; but at last ceased to procure any evacuation. We have found copper, like other metals, a powerful tonic.

De Haen Ratio Medendi, iii. 2. x. 1 and 2; Ratio Medendi Continuata, iii. 363; Fothergill in the Medical Observations and Inquiries, v. 394; Lentin in Blumenbach's Bibliotheca Medica; Grashuis de Colica Pictorum, Amsterdam, 8vo. 1752, with the Appendix, containing a Decad of Observations, Amsterdam, 1755; Segner de Colica Saturnina Metallurgorum; Stoll Ratio Medendi, vii. 308.

COLLIQUATIVA (from the same), excessive evacuations either from the bowels or skin, in which the solids of the body seem to melt.

COLLISIO.—Page 465, col. 2, line 27; "See CONTUSA."—The reference is useless; for, though contusions happen by collision, the effects do not explain the cause. In physics *collision* means the mutual impulse of two or more bodies in motion, in opposite directions. The effect of this impulse is in proportion to the momentum of the largest body, though sometimes, when the velocity of the smaller is increased in a vast proportion, its momentum may exceed that of the larger. Yet in the human body velocity does not seem always to supply the defect of bulk; for that of light is conceivable, though it appears to possess no momentum in its impulse on the retina, and out of the body scarcely any, even when concentrated in the focus of a mirror.

COLOCYNTHIS.—Page 466, col. 1, line 37; "*quickens their operation.*"—It has been used as an anthelmintic; but it is not poisonous to worms; for Redi found them living twenty-four hours after immersion in a strong decoction of colocynth. As a drastic purgative it may, however, separate them with the mucus in which they are involved. In gonorrhœa it was a favourite remedy, when active purgatives were supposed to be the most certain means of relief; a plan lately introduced again, it is said, with success in some military hospitals. Fabre's tincture, if the remedy be admitted, is the safest form (Maladies Veneriennes, ii. 368). An ounce and half of the gross powder with six cloves, a drachm of the stellated aniseed, twelve grains of saffron, and an ounce of diuretic salt, are digested in twenty ounces of spirit of wine for a month. Two drachms of the strained tincture are taken in white wine, for three days, every morning. On the fourth the medicine is omitted, and the former course afterwards repeated. Dahlberg's tincture is said to be more convenient, which he gives in chronic pains of the head. It differs only in omitting the cloves, the saffron, and the salt. The dose in these cases is from fifteen to eighteen drops three or four times a day. A woman who was pregnant took, it is said, a large table spoonful without miscarriage following. It has been recommended in epilepsy, melancholy, mania, asthma, &c.; but seems to have no effect different from any purgative equally active.

Some authors contend that the seeds are purgative (Lobel); and according to Wedel, when infused in beer, they have been successful in lues.

Various preparations of this medicine occur in the older pharmaceutical authors. The *trochisci alhandel*, *confectio hamech*, *pillulæ iliacæ*, &c. The oil of colocynth is only the fruit infused in oil, with the addition of the root of black hellebore, and the gall of an ox.

COLON.—Page 466, col. 2, line 32; "*rugæ are waved and irregular.*"—These rugæ are not found under the bands, which, of course, appear to be distinct from the intestine, and if these bands are cut through all the rugæ are not obliterated.

The common coat on one side is a continuation of the mesocolon, and its continuation on the other forms the omentum. The irregular action, therefore, of the mesocolon, when not balanced by the omentum, may be the cause of COLIC, as stated in that article; see page 84, Ap. The longitudinal fibres of the muscular coat are very slender, except in the bands, and those which are in the situation of the annular fibres are segments only stretched over the folds. The solitary glands are broader and more numerous than in the cæcum. From the course of the colon, spasms and inflations of this intestine may be mistaken for a disorder of the stomach, gall bladder, kidney, or pancreas: on the contrary, diseases of these viscera may be referred to the colon: the former error is, however, the most common. The diseases of the colon do not greatly differ from those of the other intestines.

COLOR. The colour of the complexion is often useful in our prognostics. The dead paleness shows that the circulation is not duly carried to the extreme vessels, while the livid colour is equally a proof that the blood stagnates in them: the latter, when in the cheeks, is the most common and certain mark of an obstruction of the circulation through the lungs; and when the foramen ovale continues open, the whole body is cærulean. The dead paleness usually partakes of a yellow hue, and the most brilliant complexion is compounded of this yellowness, the real colour of the skin, and of the red colour of florid blood. The more brilliant yellowness from jaundice is well known; but the "green and yellow melancholy" as well as "green eyed jealousy," exist almost exclusively in the pages of poetical fiction. Yet, as green is compounded of blue and yellow, its existence cannot be wholly denied.

In the materia medica we are informed by Linnæus that a yellow colour usually points out bitterness. Yet gentian is not yellow, and gutta gamba of a most brilliant hue. Red, he thinks, denotes a sour taste, and this is undoubtedly true, not only of fruits, but of herbs which turn red in the autumn. The stalks, however, of the conium maculatum are red. Green indicates a crude unripe taste, as in leaves and immature fruits; a yellow white, a sweet and luscious one. Black generally shows a nauseous, disagreeable taste, with, very generally, deleterious properties.

COLUMBO.—Page 468, col. 1, line 53; "*ultimately be successful.*"—Distilled with water it shows no marks of oil; but the fluid has a slight balsamic taste, and a smell resembling cummin seeds (Car-

theuser *Dissertationes Physicæ*, 149). From an ounce of the root the infusion was brownish, very bitter; and by a gentle evaporation afforded a drachm and twenty four grains of extract, highly bitter, and with a slight smell of cummin. A saturated tincture was yellow, with a grateful balsamic smell approaching that of musk or a hyacinth, intensely bitter, affording only twenty four grains of extract. Wine digested with the root is only moderately bitter; but the best menstruum is proof spirit (Cartheuser, l. c. and Josse *Histoire de la Société de Médecine*, Paris, iii. 343). The watery infusion is soon injured by keeping.

The Indians consider it as an excellent remedy in diseases of the stomach and bowels, and they generally employ it in infusion with Madeira wine. In puerperal fever it is often used, particularly where the discharge by stool is apparently kept up, in excess, by a redundancy of bile. In habitual vomiting, from weakness and irritability of the stomach, it is of service, and it is said often to repress this action when produced by the bark in intermittents. In the yellow fever it is supposed to quiet the irritability of the stomach very successfully. The union of vitriolated kali often adds to its efficacy. Columbo root was first mentioned by Redi, in 1685. *Experimenta circa res Naturales*, 142.

COLUMNIFERUS.—Page 468, col. 2, line 40; "*bearing columns or pillars.*"—It is the thirty seventh order of Linnæus' fragments, consisting of plants, whose stamina and pistil have the appearance of a pillar in the centre of the flower. Plants of this order differ greatly in size and height; for the mallow, the tea tree, the lime and the silk cotton tree belong to it. On the whole, it is far from a natural order in any view.

COMPOSITUS.—Page 471, col. 2, line 12; "*in opposition to single.*"—A compound flower is an aggregate of many sessile florets on one common receptaculum, with a common perianthium, whose five antheræ unite in the form of a cylinder: the flosculi are monopetalous, and under each is a monopetalous germen. Compound flowers are *ligulated*, *tuberosus*, or *radiated*. The **COMPOSITÆ** are an order in Linnæus' natural method.

CONCEPTIO.—Page 471, col. 2, line 45; "*a living full grown fetus has been found.*"—These facts are sufficient to overturn the tales of authors, who contend that impregnation has taken place while the hymen was entire; that women have conceived who have never menstruated; and that the same event has occurred where the penis has been in part destroyed. In the first and last instances the causes of the deception are obvious. No conception has taken place where at least some passage has not remained pervious; and the conception depends often on the ejaculatory power, rather than the length of the penis. Where indeed the venereal inclination is strong in the female, a very slight influence is apparently sufficient. The second case has numerous and respectable authorities, among which we may reckon Morgagni, Fabricius Hildanus, Stark, Friend, Hollerius, &c. In fact, however, if there is such an evolution of the organs that a disposition to menstruation exists, it is of little consequence whether the discharge has taken place. A woman

more readily conceives soon after menstruation; but may do so in any circumstances, if the organs are duly evolved. Conception during menstruation is not so easily understood, yet facts of this kind are adduced by authors of credit; and they are not more difficult to explain, than that the menstrua shall recur soon after conception, without destroying the connection of the fœtus with the uterus.

CONCOCTIO.—Page 472, col. 2, line 53; “*δια πυρός, through the fire.*”—We have been entertained by a recurrence to the old authors on this subject, to observe the terrors they felt that the concoction should not be perfect; but disgusted by observing the apprehensions they entertained of every kind of evacuation, particularly purging, from the often repeated axiom of *cocta non cruda sunt movenda*. The best information may be obtained by those who wish to pursue the subject in Richter’s *Dissertatio de Coctionum Præsidii Abusu Evacuatum Eversis*, Gottingen. 1758; Quesnay in the first volume of the *Memoirs of the Academy of Surgery*, page 122; and De Gorter in his *Commentary on the Aphorisms of Hippocrates*, i. Stoll in Germany, and Cullen in Great Britain, first broke the spell; the former unwillingly and with hesitation, by confining concoction to inflammatory, and excluding it from gastric, fevers; the latter more decisively, by overturning the whole of the humoral pathology.

CONCOU, a plant found on the coast of Guinea, the leaves of which are bruised with oil, and employed, it is said, with success in destroying the *Guinea worm*. Its place in the botanical systems has not been ascertained.

CONESSI.—Page 477, col. 2, line 26; “*where it is called conessi.*”—*Nerium antidysentericum* Lin. Sp. Pl. 306. It is called, on the coast of Coromandel, the Tellicherry bark; and Lind informs us that it is employed in the peninsula of India to remove intermittents. Dr. Monro (*Medical Essays of Edinburgh*, iii. 32) found it useful in dysentery as well as diarrhœa. Dr. Brocklesby considers it as a narcotic.

CONFERVA, a genus of plant arranged with the algæ. The tubercles are of different sizes, on very long capillary fibres: they chiefly grow on stones, on the sides of cisterns, and on ponds where the current of water is inconsiderable.

CONFERVA RIVULALIS, Lin. Sp. Pl. 1633; a plant lately used in asthma and hectic, from the observation, that in sunshine it separates a large proportion of vital air; but this we now know to be injurious in such cases, so that it is no longer employed.

CONGESTIO.—Page 479, col. 1, line 39; “*quickly formed and terminated.*”—In pathology, it is the accumulation of blood in any one part, which the Boerhaavians considered as arising from lentor; the Stahlians and the Cullenians, from partial increased action of the vessels. We have not been able to trace this opinion beyond the era of Stahl, and now introduce the subject to notice more distinctly the titles of the dissertations in which this opinion was promulgated.

Stahlii *Dissertatio Epistolica de motu Tonico Vitali indeque Pendenti motu Sanguinis Particulari* Jenæ 1692; Ejusdem de *Commotione Sanguinis Translatoria et Eluctatoria* Halæ, 1694; Ej *Positiones de Estu Maris Microcosmici, seu Fluxu et Refluxu Sanguinis* Halæ, 1696; Ej. de *Motibus Humororum Spasmodicis, a motu Pulsus Ordinarii Diversis* Halæ, 1697.

CONGLUTINATIO, the union of two contiguous bodies by the interposition of a third, as of two fingers, each deprived of their integuments, by an effusion of gluten; or of the pleura to the lungs, by effusion, one of the terminations of inflammation.

CONIFERÆ ARBORES.—Page 479, col. 2, line 12; “*fir and pine.*”—The fruit of these trees is squamose and scaly, the substance ligneous. Under the scales the seeds are placed, and when these are ripe the squamæ separate. Linnæus has united them in a natural order, and the genera are the *cupressus*, *ephedra*, *equisetum*, *juniferus*, *pinus*, *taxus*, *thuja*.

CONNIVENTES VALVULÆ; those folds discovered on the inner surface of the duodenum and ilium.

CONSERVA.—Page 480, col. 1, line 11; “*become glutinous, and astringents soft.*”—Read less glutinous and astringents mild.

CONSOLIDA REGALIS. *Delphinium consolida* Lin. Sp. Pl. 748; a plant which we might resign with little loss. The flowers are bitter, and the taste remains in the watery as well as the spirituous extract; in the former there are some traces of mucilage, and the water is tinged with their blue colour. Authors have copied from each other with little examination, and the cure of ophthalmia by the distilled water recurs in almost every writer on the materia medica. Its utility as a diuretic, lithontriptic, an emmenagogue, and a deobstruent, scarcely rests on a better foundation. Ambrose Paré styles it a vulnerary.

CONTORTÆ, the thirtieth order of Linnæus’ fragments, comprising plants which have a single petal, bent on one side. The genera are *echites*, *gardenia*, *genipa*, *microcnemum*, *nerium*, *periploca*, *rawolfia*, *tabernaemontana*, *vinca*, *apocynum*, *asclepias*, *comeraria*, *ceroppegia*, *cynanchum*, *pulmeria*, *staphelia*.

CONTRACTURA PRIMARIA.—Page 485, col. 1, line 6; “*from irritating acrimony.*”—The causes of these varieties are numerous. Suppressed evacuations are frequent ones, and in Baldinger’s collection there is an instance of its arising from repelled itch, and yielding when the eruption was restored. It is said not to be uncommon if the hair is prematurely cut off in plica, and suppressed perspiration has often occasioned it. Anger and terror are enumerated among the causes; but more frequent ones are metallic vapours, particularly the fumes of arsenic, lead, and mercury. From an injudiciously conducted salivation it seems also to have arisen. The irritation of a ganglion on a nerve, or an injury of a nerve in bleeding (Plater), or from a fracture (Eason *Medical Commentaries*, v. 83), have occasioned the disease.

The causes will often suggest the remedies. Embro-

cations of every kind, stimulating plasters, the warm bath, mineral waters, electricity, and galvanism, have been employed: oily embrocations are sometimes successful; but the *pulsatilla nigricans* has been only recommended by Storck. A plaster of the gum ammoniac, softened with vinegar of squills, has been highly commended on the most respectable authorities.

CONTRAYERVA.—Page 485, col. 1, line 37; "Lin. Sp. Pl. 176."—There is still some difficulty respecting the real plant from which this officinal is procured. Dr. Houston (Philosophical Transactions, xxxvii. 196, 197) refers it, with great reason, to the *dorstenia drakena*, or to a species since distinguished by his own name (Sp. Pl. Wildenow, i. 683, 682); yet Wildenow still preserves the references under the *dorstenia contrayerva* (683). The name, which implies a plant against poisons, may have misled travellers, and indeed Hernandez (Rar. Med. Novæ Hispaniæ Thesaurus, 301) considers this plant to be a species of *passiflora*; and Jussieu has referred it to the *psoralea pentaphylla* Lin. Sp. Pl. 1076 (see the following article, **CONTRAYERVA NOVA**). The appearance of the root opposes the opinion that it is the *drakena* of Clusius, unless the fibres are supposed to have been destroyed in the voyage.

The colour of the root is a reddish brown, internally white; the taste and smell of the fibres are much weaker than those of the tubera. Vitriolated steel shows no astringent principle. The watery decoction is so mucilaginous that it will scarcely pass through a filter, and the aqueous extract is double the quantity of the spirituous. The tincture is, however, more elegant in its appearance, of a red colour, more pungent than the decoction, leaving a sensation of heat and pungency in the mouth. It seems to have been formerly a favourite medicine in low fevers, though now neglected. Whether it was too much extolled, and expectation too highly raised, or whether really useless, we know not; for we have never employed it, except with the bark in gargarisms in the angina maligna, and then rather from its mucilaginous than its pungent qualities.

CONTRE-COUP, a French word, implying a contra fissure, viz. a fissure on the side opposite to that on which the blow was inflicted. See **FISSURA**.

CONTUSA.—Page 486, col. 1, line 53; "often the consequence."—We have omitted, among the remedies, to mention leeches, or camphor combined in a large proportion with alcohol. The latter is chiefly useful when united with strong vinegar. In inward contusions the German Surgeons depend greatly on the efficacy of arnica.

CONVULSIO.—Page 488, col. 2, line 65; "is the only certain remedy."—Convulsions are sometimes periodical, and Bonetus mentions them as occasionally so violent as to break a bone. They often return periodically; are sometimes, it is said, epidemic (Stoll Ratio Medendi, iv. 80); often contagious (Collectio Societatis Med. Havniensis, ii. 3; Van Swieten's Commentaries). The malleatio is a singular form of this disease, viz. a convulsive action of one or both hands

striking the knee like a hammer. We remember a case of this kind, where it affected both hands clenched. If, however, they were separated, or the motion stopped, the convulsion became violent and general. Morgagni, de Sedibus, x. 16, records a case in which it came on in the sound hand, if the finger of the affected one was extended.

Convulsions have been most frequently induced by diseases of the brain or cranium, particularly by effusion of blood, serum, or pus in it (Morgagni de Sedibus, i. 236; ix. 18; x. 6, 9, 18; li. 45, &c.); by exostoses, particularly of the temporal bone; by a misshapen head (Morgagni de Sedibus, ix. 9; Smellie's Collections, 469); and by bony spiculæ irritating the falciform sinus: an irritation of the spinal marrow has produced the same effect. Suppressions of every kind of evacuation have occasioned them, and even the delay of those eruptions, which appear at determined periods, as small-pox, measles, &c. Terror is no uncommon cause, and the irritations are as numerous as the sensible organs of the body. Among these we have mentioned worms; but probably more frequent sources are acrid contents of the stomach. We may mention also as causes narcotics of every kind, acrid clysters, the more violent drastic purgatives, and arsenic (Helsham in the Edinburgh Commentaries). The deleterious gases have a similar effect. Wounds and punctures of the nerves are frequent causes, and distention of a nerve by an aneurismal tumour has been accused.

If the principle laid down be correct, the first step in the cure will be to remove irritation, or, secondly, to lessen the mobility, so as to render its influence less injurious. The former agrees very nearly with the plans laid down by Stoll (Ratio Medendi, ii. 155, &c.), who directs emetics, laxatives, bleeding, &c. with every method of removing irritation. Each must be, in the first place, useful. If the disease does not occur in worn-out constitutions, where excessive irritability is the only cause. When every suspected source of irritation is removed, the antispasmodics, the tonics, or the narcotics, are employed. The two former have been spoken of at some length (vide in verbis). The narcotics employed have been numerous. The *nuxvomica*; the *stramonium* Wedenberg de *Stramonii*, usu in *Morbis Convulsivis*; *Hyoscyamus*, *Faba St. Ignatii*, *belladonna* (Stoll Ratio Medendi, iii. 407); orange leaves (De Haen Ratio Medendi, vi. 301; and Dippe's animal oil. Morgagni mentions a singular remedy (De Sedibus, x. 21), two ounces of olive oil every night, instead of a supper. See **EPILEPSIA**.

CONYZA.—Page 489, col. 1, line 23; "covered with a downy substance."—The plant is the *coryza cærulea*, the *erigeron acre* Lin. Sp. Pl. 1211. It is sometimes used in heartburn, and in diseases of the chest.

CONYZA MINOR.—Page 489, col. 1, line 30; "**INULA DYSENTERICA.**"—As sometimes happens in a dictionary, the word referred to is not to be found, or its object is different. Thus, in the above article we are referred to *enula*, and then only find *enula helenium*, without any explanation. We should not have blazoned this error, but that it is almost the only one. The *conyzia media* is called the *Swedish arnica* and in the Berlin Transactions styled *arnica spuria*. The root is acrid and

slightly aromatic, though little known. It is more acrid and more astringent than the arnica, and, from the latter quality, better fitted for restraining hæmorrhages. The Russians, it is said, used it with success, in their Persian expedition, when attacked with the dysentery.

COR.—Page 493, col. 2, line 5; "*meliorated by the action of the air.*"—The diseases of the heart are those of original structure and situation, or the consequence of former complaints. The heart has been found on the right side, and out of the thorax; sometimes inverted; occasionally displaced by steatoma, or diseases of the other viscera. It has appeared on dissection globular, sometimes flattened, and (chiefly in animals and birds) double. The point, in one instance recorded by Bartholine (Historia Anatomica), was bifid. A concretion with the pericardium, and of both with the mediastinum, have been occasionally observed; and different authorities may be adduced in support of its being often found hairy. The hairy heart of Aristomenes of Messina has been often mentioned. Among the original diseases of the heart we may mention a rupture of different parts, since it probably depends on organic debility. Each part of the heart has been occasionally ruptured; but perhaps the left ventricle most frequently: in one instance it was the effect of an epileptic attack; in another (Ludwig Adversaria, i. 1, 4) the right auricle was ruptured from a blow. Portal also records a case of rupture from the same cause. An instance of the perforation of the septum is recorded by Dr. Hunter (Medical Observations and Inquiries, vi. 299), and another occurs in the Historia Anatomica of Bartholine (iv. 20). The foramen ovale is sometimes found open (Hunter l. c. case 2; Albini Annotationes Academicæ, i. 9) and, in one case recorded in the Bologna Transactions, vi. by Taceoni, it seems to have been again burst open by a fall. The heart is sometimes found enormously enlarged, sometimes loaded with fat.

The secondary diseases of the heart are, ossifications, hydatids, polypi, inflammations, aneurisms, and ulcerations. Mr. Cheston found, in one instance (Medical Observations and Inquiries, v. 31), the heart wholly without blood, containing air only. It is sometimes wholly consumed, perhaps, as Morgagni suggests, by the irritation of osseous matter (De Sedibus, xxvii. 24; see also xxv. 19, &c.; Meckell in Epistolis ad Hallerum Scriptis, iii.; Senac sur le Cœur, cap. 4). In many instances it is lean, tabid, and flaccid, particularly in some cases of hectic. Lancisi has observed, that diseases on the right side of the heart are pointed out by a pulsation of the jugular veins; a question which Morgagni examines at some length (Ep. xviii. 9, 10, 11). The effects of diseases of this organ are chiefly those of the convulsive kind.

CORALLINA HELMINTHOCORTON.—Page 494, col. 1, line 10;—"anthelmintic."—For *conserva* in the line before, read *conferva*. This is said to be a fucus, called by La Tourette (Journal de Physique, 1782), *fucus helminthocorton*. The last author who has treated of it medicinally is Schwendiman (Dissertatio Helminthocorti, Historia Natura atque Vires, Stasburg, 1780). When Corsica was invaded by the French armies it was tried by Stephanopoli, a Greek surgeon of the hos-

pital at Ajaccio, and by his recommendation conveyed to France and Switzerland. The Strasburg physicians seem to have found it successful as a vermifuge; but, from the few facts recorded, it appears not to have been eminently advantageous. It is chiefly mucilaginous, containing common salt in a large proportion, soda, with Glauber's salt selenite, and a considerable quantity of an inert earth. These facts do not support its vegetable nature, and, in reality, it does not differ from the other corallines. We believe, however, that the animal inhabiting any of the corallines has not been seen.

CORIANDRUM.—Page 495, col. 1, line 15; "*remarkable consequences.*"—The seeds certainly become milder by age; but the plant itself has always been suspected. A late author, Seguiet, remarks that in its native country, after rain, it will even affect the heads of passengers (Plantæ Veronenses, 28); and Avicenna has observed, that the plant, when moist, or its expressed juice, brings on vertigo, dimness of sight, and fatuity. Boiling seems to lessen its deleterious power; for the Egyptians used it as a condiment, and in Spain it is accounted a cordial, though sometimes with a suspicion of its affecting the head. Mathiolus is so apprehensive of the deleterious power of the seeds, that he orders them to be steeped three days in vinegar before they are used as a medicine. It has been recommended as a remedy in intermittents.

CORK.—Page 495, col. 1, line 45; "*but now disused.*"—When burnt, it is employed in the preparation of Spanish black, and is supposed to be, medicinally, useful, with burnt sponge, in bronchocele and scrofula.

CORNEA.—Page 495, col. 2, line 3; "*but soon evaporates.*"—The strata may be easily separated by maceration in cold water; but if macerated until it is nearly putrid, and then immersed in boiling water, the cornea separates from the sclerotica. It is thicker than the sclerotica, particularly at birth, when its posterior surface nearly touches the iris. The figure of the cornea approaches that of a segment of a circle: the circumference of the concave side is circular, but that of the convex transversely oval. See Oculi.

CORONA IMPERIALIS.—Page 496, col. 2, line 20; "*Crown imperial.*"—*Fritillaria imperialis* Lin. Sp. Pl.

CORPORA FIMBRIATA.—Page 497, col. 2, line 35; "*fornix of the brain.*"—They are the flattened terminations of the posterior crura of the fornix, which turn round into the inferior cavity of the lateral ventricles, and in the pes hippocampi.

CORPORA QUADRIGEMINA, tubercula quadrigemina, eminentiæ quadrigeminæ, four white, oval tubercles of the brain, situated, two on each side, over the posterior orifice of the third ventricle, and the *aqueduct* of Sylvius. From a supposed resemblance, they are called *nates* and *testes*.

CORPORA STRIATA.—Page 497, col. 2, line 46; "*mixed together.*"—They lie at the bottom of the superior cavity of the lateral ventricles, which they

distantly resemble in shape. The anterior parts are near the septum lucidum, from which they gradually separate, as they run backward, and diminish in size. They are, in reality, the convex bottoms of the ventricles; and, at the lower part of the interstice between the larger portions of them, is the anterior commissure of the cerebrum, a transverse medullary cord, which communicates with the bottom of the corpora striata by a turn towards each side.

Cortex Peruvianus.—Page 499, col. 2, line 49; “*virtue to this principle.*”—Since this article was printed we have received the experiments of Vauquelin on the different species of bark, of which we shall add an abstract from the fifty-ninth volume of the *Annales de Chimie*. It is difficult to ascertain, our author remarks, the real goodness of this medicine by its sensible qualities. M. Seguin proposed, as a criterion, the precipitation of tanin, while the bad kinds precipitate a solution of animal jelly; but there are many species of true bark which do not precipitate tanin, though they cure intermittents.

A superior kind of yellow bark, styled royal, infused for twenty-four hours in water, communicated a yellow colour, a very bitter and slightly astringent taste. It formed a copious flocculent precipitate, with a solution of isinglass; a green one of a bilious hue, by a solution of sulphat of iron; and a yellowish white sediment, by tartarized antimony. Oxalate of ammonia, precipitated oxalate of lime, and the solution sensibly reddened the tincture of turnsol.

After the precipitation by the isinglass, when filtered, it was colourless, scarcely astringent, though the bitter taste was sensibly preserved. It gave a green tinge to the solution of iron, as before, though with a yellower hue, and precipitated also the tartarized antimony; but the precipitate was whiter.

Another portion of the same infusion, precipitated by tartarized antimony, and filtered, still rendered an infusion of isinglass and of vitriolated iron turbid. The precipitate, first formed by the antimony, was rendered slightly green by the addition of some drops of sulphat of iron. It would seem, therefore, that the principle which precipitates tartarized antimony, isinglass, and the sulphat of iron was the same; and if the property still remains after precipitation with tartarized antimony, it is apparently owing to the combination of this principle with the antimony remaining in the solution. This supposition, however, is scarcely reconcileable with the very abundant precipitation of isinglass by some barks, which do not precipitate tartarized antimony, so that they seem rather to depend on two different principles. The decoctions afforded the same appearances; but the precipitates were more abundant, and were deposited more quickly. The decoction, as well as the infusion, precipitated solutions of sulphat of copper of a reddish yellow, and of acetat of lead of a yellowish white.

The *Santa Fé* bark, though lately introduced, has been found very efficacious. It is grey externally, red within, thick, slightly curled, with a taste strongly astringent, but an inconsiderable bitterness. Its infusion is much redder than that of the former species; it precipitates a solution of isinglass in red flocculi, and an infusion of yellow bark itself in a very copious red sediment. Though the effect on a solution of tartarized

antimony is inconsiderable, it precipitates a solution of iron in a beautiful deep green, sensibly reddens the tincture of turnsol, is precipitated by oxalate of ammonia in oxalate of lime, though less copiously than the infusion of yellow bark. It precipitates the acetat of lead and sulphat of copper in a reddish brown sediment; so that the principle which precipitates the antimony is probably different from that which precipitates the other salts; and, therefore, this species wants some component parts which the other possesses. If, too, they were the same, they would not render each other turbid.

The decoction of this species does not differ from the infusion; but it was not turbid on cooling, and does not possess a sufficient quantity of the principle which precipitates the antimonial and other metallic solutions; for M. Vauquelin is confident that the depositions formed by the decoction of bark, on cooling, are the same which in the bark of Santa Fé precipitates the iron of a green colour, lead yellow, and copper brown, without affecting the salts of antimony. We may, therefore, at least, in his opinion, presume that this species is a weaker bark than the yellow.

The third species was the *grey cincona*, styled *superior*. The infusion is colourless; but the taste bitter and astringent. It produces a copious white precipitate from a solution of isinglass, of red from tanin, of white from tartarized antimony, and of a beautiful emerald green from vitriolated iron, but induces no change in the infusion of yellow bark.

Grey canella cincona produces an infusion of a deep red colour, a bitter and astringent taste; precipitates in a fawn colour a solution of isinglass, and communicates a green colour to a solution of sulphat of iron; but does not precipitate a solution of the antimonial salt, and occasions no change in the infusion of the superior grey bark, or the infusion of tanin, though it throws down a copious fawn coloured precipitate from the infusion of yellow bark.

These vegetable infusions, precipitated one by the other most completely, no longer produce any effect on tartarized antimony; from whence it is probable that the principle which, in the yellow bark, precipitates the antimonial, is combined with some substance of the grey canella bark and of tan; but these infusions thus mutually precipitated, still copiously throw down the isinglass from its solution, so that the principle which precipitates the latter is not the same that decomposes the antimonial. What confirms this opinion is, that the infusion of yellow bark precipitated most completely by a solution of isinglass still decomposes the antimonial, though certainly in a less proportion. The precipitation of the metallic salt is not occasioned by the isinglass, which produces no effect on it. The mutual precipitates of the yellow and grey canella barks is brown, dries readily, bubbles when heated, exhales a smoke void of acrimony, and shows some analogy to animal matters, by leaving a light, spongy, coal.

The *red bark* has been improperly called the *pitton bark*; for the latter is a different substance. The infusion is of a red colour, with a light tint of the orange, a bitter and astringent taste. The precipitate, with isinglass, is copious and of a red colour; with emetic tartar, of a yellowish white; with the infusion of the grey canella, brown; with the sulphat of iron,

green. It acts on the other metallic solutions as the former species.

The *grey cincona* was put into our author's hands by M. Bouillon la Grange. The pieces are thin, curled, apparently from the branches or very young trees, apparently of the kind of the quinquina of Loxa, which will be soon noticed. The infusion of this bark, in colour, resembled the red Malaga wine, with an astringent and bitter taste; precipitated isinglass of a white colour, tannin of a yellowish red; infusion of yellow bark grey; emetic tartar in flakes of a yellowish white; sulphat of iron green, and the acetat of lead white. It did not precipitate the sulphat of copper, nor the infusion of the Santa Fé bark. This bark is seemingly an active medicine.

The *dead grey bark* is apparently the white Santa Fé bark, brought home by Humbolt, which will be soon described. The infusion is of the colour of Malaga wine, without astringency or bitterness, producing a copious precipitate of yellow bark, in brown flocculi, and giving a solution of red sulphat of iron a beautiful green, which soon forms a similar precipitate. Emetic tartar, isinglass, and the canella cincona produce no change in it; so that, if a species of bark, it is a very inert one.

The *yellow bark, cincona pubescens* of Wahl, macerated for twenty-four hours in distilled water, yielded a transparent fluid of a golden colour, very bitter, and frothing by agitation. Gallic alcohol threw down a copious precipitate re-dissolved by an excess of alcohol, and again precipitated by adding water, which proves that the matter separated by the tannin is not purely animal. It precipitates the solutions of tartar emetic and nitrated silver of a yellowish white, gives the sulphat of iron a decided green colour, without precipitating any thing. A solution of isinglass produced no change, and the tincture of turnsol was not reddened. The fluid, during evaporation, deposited a rose coloured substance on the sides of the capsule; when reduced to the consistence of a syrup, a precipitate was still formed of a brown marron colour: the fluid, when filtered, was coloured, and contained the salt peculiar to the bark. The brown substance, washed with a small quantity of cold water, is chiefly soluble in hot water and alcohol, very sparingly in cold: the taste is very bitter.

In the watery solution of this deposition galls form a copious precipitate. Tartar emetic and nitrat of mercury produce the same effects as in the maceration: sulphat of iron is changed to a green; oxygenated muriatic acid loses its smell, and forms, with the solution of this substance, a flocculent precipitate. Isinglass produces the same effect as in the maceration. The sulphuric and acetic acids produce no change, and, when diluted with caustic potash, no ammoniacal odour is exhaled.

Two hundred and twenty five grammes of this substance dried, and submitted to distillation, yielded much water, a sensible quantity of ammonia, and a purplish oil, which loses its colour by a solution in alcohol; but recovers it when its menstruum is evaporated. A small proportion of charcoal was left in the retort, which, by combustion, gave about one eleventh of ashes, soluble in muriatic acid, and which consisted of lime and iron.

The bitter coloured substance evidently produces all the phenomena just described; apparently holds a middle rank between vegetable and animal matter; and seems to M. Vauquelin to be the efficacious principle in the cure of agues. The fluid separated from this substance, was triturated with alcohol, which took up the colouring part, and seemed only a portion of the same substance which had been retained by water. The portion which the alcohol would not dissolve resembled a thick mucilage, with scarcely colour or taste. It dissolved copiously in water, yielding, by evaporation, lamellated crystals of a salt, to be soon noticed, which were slightly coloured.

The seventh maceration of the same bark still precipitated a solution of galls, and it was supposed that cold water could not wholly dissolve the principle which produced this effect. The remaining bark was consequently boiled, and the decoction resembled in every respect the cold infusion, except that it did not dissolve tartarized antimony, probably because its principle was too much diluted.

Eighty-four grammes of the *CINCONA OFFICINALIS*, treated like the last species, yielded a fluid equally bitter, but of a lighter colour and more mucilaginous. The infusion slightly reddened the tincture of turnsol, and, with reagents, the appearances were the same as with the *cincona pubescens*. All the infusions were inspissated by evaporation; but the remaining water, containing the *essential salt of the bark*, was evaporated separately, and crystallized. After separating "the colouring matter by means of alcohol, it furnished crystals in a few days." We have thus two species of bark which do not precipitate isinglass, and consequently do not possess the principle which produces this effect "in the other species; these then, according to M. Seguin should be styled the best kinds."

Cold water repeatedly effused, still furnished a precipitate with galls, and the residuum was consequently boiled. The decoction was less bitter than the infusion, but more mucilaginous than that of the *cincona pubescens*; precipitated gall-nuts, and nitrated mercury rendered the sulphat of iron green; but produced no precipitation with solutions of emetic tartar and isinglass. This species differs, therefore, from the *superior grey bark*.

The next kind examined was the *cincona magnifolia*. One hundred grammes of this bark, reduced to a fine powder, macerated for twenty-four hours in water, gave a solution which passed the filter with difficulty, was of a ruby red, slightly mucilaginous, and bitter; but with a decided astringency. The tincture of turnsol was not reddened, galls and tartarized antimony not precipitated by it, though a copious precipitate appeared on adding a solution of isinglass; and on infusion of the two last species, the sulphat of iron was changed to a light green, which the oxygenated muriatic acid rendered of a dirtier hue. The second infusion no longer precipitated isinglass.

The infusions, evaporated, were digested in warm alcohol, which acquired a very beautiful colour, and when diluted with water, and tried by the reagents employed in the first maceration, produced the same effects; so that the principle on which these depend is soluble in alcohol. The portion, not soluble in alcohol, was of an ochry red, blackened by the access of air, and

was soluble again in water. The solution neither precipitated isinglass nor galls, though it precipitated nitrat of mercury and emetic tartar, and rendered sulphat of iron green. This substance, insoluble in alcohol, yielded by distillation, ammonia and one twenty-fifth of coal.

A kind of bark sold without a name, but with all the characters of the *c. magnifolia*, yielded, however, a solution of a less deep colour, though more bitter and less astringent. This solution sensibly reddened the tincture of turnsol, precipitated neither galls nor tartar emetic, but rendered sulphat of iron green, and precipitated nitrat of mercury. In general, it agreed with the *c. magnifolia*; but a decoction of the residuum did not precipitate tartarized antimony.

The true pitton bark resembles in colour, form and bitter taste, the St. Domingo bark, analyzed by Mr Fourcroy. The infusion communicated to water the colour of veinous blood. The taste is more bitter and disagreeable than that of others. Tincture of galls, emetic tartar, nitrat of mercury, sulphat of iron, and oxygenated muriatic acid, produced with it copious precipitations. Solutions of isinglass were unchanged. The infusion left, on evaporation, a residuum which partly dissolved in alcohol, communicating to it a beautiful red: the portion insoluble in alcohol was grey, and appeared like earth. The solution resembled the infusions: the residuum gave out, on distillation, ammonia.

Some specimens of bark brought by Humbolt and Bonpland were next examined. The first was the *cincona of Loxa*, proceeding from branches of two years old, and destined for the repository of the king of Spain. The colour externally is grey; within yellow; in quills, with a bitter and astringent taste. The infusion was of a yellowish red, slightly coloured, with an inconsiderable smell of mould, a bitter taste, precipitating galls, tartar emetic, and acetat of lead of a yellowish white; iron of a bluish green; oxalate of ammonia, white; and solutions of isinglass in large, glutinous, white flocculi. The precipitates formed by isinglass and the antimonial salts were redissolved by an excess of the warm infusion. From these qualities M. Vauquelin supposes that it must be a very active medicine.

The white bark of *Santa Fé* is of a rusty yellow externally, and of a deeper colour within. The pieces are flat and thick, with a granulated fracture; the taste neither bitter nor astringent. The infusion is of a deeper yellow than that of the last species, precipitating neither galls, emetic tartar, nor isinglass; but rendering a solution of iron green, and precipitating acetat of lead of a brownish yellow. This is consequently not a species of *cincona*.

The orange *cincona of Santa Fé* is of the yellow colour of canella, without an epidermis, thick, of a very fibrous fracture. The thinnest pieces are in quills, the thickest flat, without astringency. The infusion is scarcely coloured, the bitter taste decided, precipitating copiously tanin and tartarized antimony of a white colour, rendering a solution of iron slightly green, without injuring the transparency of the infusion of the *Loxa* bark. We can, therefore, scarcely expect any decided febrifuge virtues from this bark.

The common bark of *Peru* is grey without, and of an ochry red within. The surface is wrinkled; the bark itself in quills of different thickness; the taste bitter

and astringent. The infusion is slightly yellow, with a bitter and astringent taste, precipitating tartar emetic, isinglass, and tanin, of a yellowish white, and sulphat of iron green. It reddens the turnsol, and appears to resemble the grey (*superior*) bark.

The red bark of *Santa Fé* seems to resemble that called the *Santa Fé* bark, without any distinction. It yields an infusion, resembling in colour Malaga wine, with a taste slightly bitter, but astringent, precipitating isinglass of a brown colour; but not emetic tartar, nor tanin; rendering the sulphat of iron green, and slightly reddening the turnsol.

The yellow bark of *Cuenza* was taken from branches of from four to six years old; but it seemed to have been damaged. It was covered with a white moss, of a yellowish brown internally, with a fibrous fracture and no taste. Its infusion is neither bitter nor astringent, precipitating neither tartarized antimony, isinglass, nor tanin; rendering the sulphat of iron green, and precipitating the acetat of lead.

To elucidate the nature of the principles of the bark, M. Vauquelin next examines some analogous vegetable substances better known. The first of these is the galls. The infusion of galls precipitates copiously the solution of isinglass white, iron blue, emetic tartar of a yellowish white, the infusion of yellow cincona in dirty white flocculi, copper of a yellow brown, and lead of a yellowish white, without affecting the infusions of the *Santa Fé* bark or of tan. Galls appear, therefore, to approach in properties the yellow bark. They differ, however, in their action on tan and iron, as well as in precipitating each other.

The infusion of tan precipitated the solution of isinglass yellow, iron blue, copper brown, without affecting the infusion of the *Santa Fé* bark, or a solution of emetic tartar. It reddens the tincture of turnsol, and is precipitated by the oxalate of ammonia. An essential difference is, therefore, perceivable in its want of influence on the antimonial salt. The bark of the cherry-tree, sometimes mixed with the Peruvian bark, has only one common property, viz. precipitating the sulphat of iron green. The *centaury* and *chamædrys* are exactly similar to the cherry-tree bark.

The white willow bark certainly possesses some of the properties of *cincona*, and precipitates, on infusion, isinglass, sulphat of iron green, and acetat of copper brown; uniting, therefore, the bitter and astringent principles, it is probably a febrifuge.

An infusion of *Angustura bark* does not precipitate isinglass, but throws down a copious precipitate from an infusion of galls and of yellow bark, rendering that of the *Santa Fé* very slightly turbid. Iron, emetic, tartar, copper, lead, and tanin, are all precipitated yellow. *Angustura* bark, therefore, differs from the Peruvian from its want of astringency, and the principle which occasions the precipitations is not probably the same, as their colour is different.

Those infusions and decoctions which precipitate neither the infusion of tan nor tartarized antimony communicate to water a red colour, often a yellowish, sometimes a brown red; froth by agitation; are bitter, with more or less astringency. Left to the air in a vessel not quite full they mould rapidly, and are covered with a greenish pellicle; some of these sensibly redden the tincture of turnsol, showing an acid at liberty. Alce-

hol, mixed in the proportion of two parts to one, precipitates a greyish matter, which, on drying, is black. The liquor then becomes clear and of a purer red: these appearances show the presence of a mucous matter.

A small quantity of pure alkali in the acid infusions throws down a red precipitate, approaching the violet; but a larger quantity redissolves the precipitate, adding to the intensity of the colour. When evaporated, the colour becomes deeper; and on cooling, after concentration, a brown, very bitter, matter is deposited, dissolved, especially with the assistance of heat, in alcohol, and again precipitated in water, if the solution is sufficiently concentrated. Water itself dissolves this matter, which it has abandoned during the evaporation; but it requires a much larger proportion than when the other principles of the cincona were present, which seem to prove that these principles assist the solution.

If the infusions of bark are allowed to cool frequently before they are reduced to dryness, they deposit, at each cooling, a matter similar to that just spoken of, and this has been supposed to have become insoluble by its union with oxygen; but is really deposited from the want of a sufficient proportion of water. This apparently resinous matter gives the infusions their bitter taste; for if mixed with the same proportion of water, after the separation the degree of bitterness is nearly the same. The whole of this portion is not, however, separated; the other principles retain a part of it in solution. If, however, these soft extracts are treated with alcohol, so as to separate the "*resiniform*" matter, a brown viscid substance only remains, which is not bitter to the taste, and which dissolves in water, without separating when cold. There are, consequently, in these kinds of bark two distinct substances, one bitter and astringent, soluble in alcohol, and scarcely soluble in water; the other insoluble in alcohol, of a sweet mucilaginous taste, wholly taken up by water.

The former of these substances in a dry state is of a red brown colour, intensely bitter, soluble in part only in cold water, while the other is dispersed in the fluid in the form of reddish flocculi. If heated, however, the latter dissolve also, and the liquor is clear, of a deep brown, turbid on cooling, but leaving only a slight deposit. It is singular that with a small proportion of water this substance dissolves wholly in a clear liquor; it becomes turbid if more water is added, and again clear, with a still larger proportion. It seems, therefore, accompanied with another principle, which, when concentrated, favours its solution; but this substance loses its property by dilution.

This is the matter which renders the decoctions of bark on cooling, and the infusions, evaporated to a certain degree, turbid; authors have styled it the resin. When dissolved in water it grows mouldy in a few days, forming little mushrooms, like a solution of gum, which shows that it is not a true resin; for this never grows mouldy.

The watery solution of this substance recently prepared is coagulated by ammonia, in a whitish, thick, matter which becomes brown in the air, and soon hardens considerably; but it is softened, and rendered ductile by heat, assuming the brilliant silkiness of turpentine, when moulded, in the hands. Nearly the same phenomena are produced by mild alkalis; but the acids produce no sensible change. The oxygenated muriatic acid renders it yellow, without occasioning any

precipitation; though, if ammonia is then added, a greyish white, light, flocculent deposit is thrown down. Animal jelly does not precipitate it; yet the infusion of these kinds of bark precipitate the solutions of animal glue: the principle which produces this effect is consequently altered by the evaporation. Muriat, or any other salt, of iron produces a deep green colour, and soon afterwards a precipitate of the same shade. Tartar emetic forms no precipitation, so that the substance is not the same which decomposes this metallic salt in some species of barks. It reddens very sensibly the tincture of turnsol.

The acidity of this peculiar principle, and the effects of acids, led to a suspicion, that part of its solubility was owing to a free acid; and the suspicion was confirmed on finding that, when first combined with an alkali, washed and dried, the remainder was scarcely soluble in water. To ascertain this fact, our author put some of this insoluble substance into water, sharpened with different acids, and he found the solubility and the bitter taste restored. A portion of the alkali, however, employed in the precipitation is apparently retained; for, after precipitating the infusion by ammonia, and repeatedly washing it, pure potash produced a very sensible smell of ammonia; an effect which it had not before the precipitation. This matter, then, seems sometimes to act as an alkali, sometimes as an acid, since it unites to both, neutralizing a part of their properties. If, after having precipitated this matter by acids, they are added in excess, it is re-dissolved, and the fluid assumes a brown, red colour.

The solubility of this substance in alcohol increases in a peculiar degree by heat. When the menstruum is saturated it has a red brown colour, and a very bitter taste. The addition of water throws down a copious precipitate of a beautiful red, approaching a rose colour. This alcoholic solution exposed to the air in an open vessel crystallizes in needles like a salt. The solution thus precipitated by water preserves a portion of the matter, which gives it a rose colour inclining to an orange, and a sensibly bitter taste. It deposits this substance in the form of plates of a red brown, by spontaneous evaporation.

The portion of cincona, insoluble in water, filtered and evaporated, spontaneously in a warm place, thickens like syrup, and crystallizes in laminæ, sometimes in hexaedra, sometimes in rhomboids, occasionally in squares, slightly coloured, of a reddish brown. A thick liquor incapable of crystallization remains, which must be separated by decantation. By successive solutions and crystallizations this salt may be obtained white and pure, in which state its properties will be soon explained. What may be styled the mother water is wholly mucilaginous, yet it contains some of the salt, which will not admit of crystallization.

The species of cincona of which the author has been treating, though exhausted by water, and even by alcohol, still furnish somewhat to acids. They all operate by simple solution, without changing sensibly the nature of the barks. If, however, reduced to a fine powder, and submitted repeatedly to the action of alcohol, assisted by heat, little remains for the acids, since the portion which the latter dissolve is similar to that taken up by the alcohol, as will be soon explained. The nitric acid acquires, by this combination, a red colour, bordering on the rose, sometimes on the orange; but

the shades vary in proportion to the concentration of the acid; for they are of a yellower hue when the concentration is greater. The acid loses a part of its acidity by taking up some lime, which the oxalate of ammonia discovers. If to this nitric solution a saturated, carbonated, alkali be added, a beautiful red precipitate is formed: if the common carbonat is added in excess, the colour of the precipitate passes to a violet and a blue. Thus alkalis turn to a blue those barks which are naturally red.

The metallic solutions form precipitates of different colours, in proportion as the nitric acid contains more or less vegetable matter; but, in saturating the excess of acid, the metallic salts produce copious precipitates, and the liquor is discoloured. Thus muriat of tin produces a rose or a flesh coloured precipitate; sulphat of iron a grey, of copper a marron brown; sulphat of titanium, assisted with a little carbonat of soda, an orange red, not unlike that produced by galls in solutions of this metal. Alum produces no change; but, with the assistance of a little alkali, throws down the colouring part, and the liquor becomes clear. In the country where these barks grow a solid red marron dye for linen or cotton might be prepared from them, which would become a rose colour by soap.

The sulphuric and muriatic acids dissolve the supposed resin of these barks, and may be saturated with it, like the nitric acid. The colour verges less on the yellow, and is of a more decided red. The precipitates formed by adding alkalis to these combinations are also of a purer red, and an excess of the alkali gives a stronger blue. The residue of these barks appear to contain a large quantity of lime, at least after adding the sulphuric acid much sulphat of lime may be obtained. If it be ever proved that this resiniform substance is the salutary medicinal ingredient, much advantage might be gained by joining acids or wine to the bark. In fact, in infusion and in slight decoctions, little of this matter is obtained, and of that little a part is deposited. It is well known that the salt of bark is not efficacious in fevers, in proportion to the quantity of powder from which it is extracted; which proves that something is left in the mock, the dried residuum, useful in these complaints. It is injurious, then, in making the essential salt of bark to evaporate the infusion till the resiniform deposition falls down, and to repeat this operation till the fluid remains clear; for a very small proportion of the supposed resin then remains in the water; but the principal ingredients are a gum and a calcareous salt, whose medicinal utility is very doubtful.

Is there any vegetable principle, then, to which this supposed resin can be referred? It is true that various substances have been styled so which have few common properties; but, in strict chemical language, this and many similar substances do not deserve the name. If it resembles resins by solubility in alcohol, it differs by its solubility in water, acids, and alkalis, particularly its property of precipitating metallic salts, and fixing as a dye on stuffs. This substance, then, is a peculiar vegetable principle, whose properties are not yet well known; nor is it, as we have seen, the same in every kind of bark; in those, for instance, which precipitate tanin and emetic tartar, and in those which precipitate isinglass only. The principle on which the bitter taste of vegetable depends is probably very analogous to it.

Recapitulation.—Barks may be divided into three classes from their chemical properties: 1. Those which precipitate tanin and not animal glue; 2. those which precipitate the latter, and not the former; 3. those which precipitate both, as well as tartarized antimony. Every vegetable substance, therefore, which does not possess one of these properties is probably not a cincona; and, in proportion to the greater number or degree of these, the febrifuge effects will be more striking. The property of precipitating tanin is not common to all the species, and on this, therefore, the febrifuge virtue does not depend; but all the more powerful kinds agree in precipitating an infusion of oak bark and of galls. This, however, is not the only febrifuge principle; for some barks have not this property.

The principle which precipitates the infusion of tan and of galls is brown, bitter, less soluble in water than in alcohol, and precipitates also tartarized antimony, but not isinglass. It has some analogy with resins, though it furnishes ammonia by distillation. The precipitations are formed by its union with tan and galls; but yet, as it exists in some species of cincona, which precipitate also isinglass, it is doubtful whether an union really takes place, or whether the principle which in other species of bark precipitates isinglass be truly tanin. One or other of these suppositions must, however, be true, since these infusions precipitate each other. The principle which precipitates isinglass has a bitter and astringent taste, is more soluble in water than that which in the other species precipitates the infusion of tan, is soluble also in alcohol, and does not precipitate emetic tartar. The substance which precipitates tanin seems the same which decomposes the antimonial salt. Much therefore still remains, to ascertain on what principle the cure of fevers by the bark depends.

M. Vauquelin next examines the essential salt of cincona, prepared by the younger Deschamps. It is white in square crystals, sometimes rhomboidal or truncated at the solid angles; the laminæ occasionally unite in groups. The taste is inconsiderable, the salt bends between the teeth, requiring five parts of water at the temperature of 10° of the centigrade thermometer. It swells on burning coals like tartar, which it then resembles in smell, leaving a greyish matter, which effervesces with acids, and appears to be a mixture of carbonat of lime with charcoal. The solution does not change the colour of turnsol, and the salt is wholly insoluble in alcohol. The lime is precipitated pure or carbonated by alkalis in either state; but ammonia produces no decomposition. The sulphuric and oxalic acids throw down, from solutions slightly concentrated, either sulphat or oxalat of lime; but acetat of lead or nitrat of silver produces no apparent change. The concentrated sulphuric acid, poured on the dry powder, renders it blackish; but separates no poignant vapours, as from acetats. It is remarkable that the infusion of tan, and of some kinds of bark, particularly of the Santa Fé species, occasions a yellow, flocculent precipitate from the solution of this salt, so that it appears to be composed of a vegetable acid and lime. When our author endeavoured to separate the acid by the oxalic he found the lime in a very small proportion, and the remaining fluid, evaporated in the open air, was thick like syrup; but produced crystals only after a slight

accidental agitation. These quickly formed a solid mass by the union of numerous laminæ, diverging from different centres of crystallization. The colour was a light brown, the taste very sour, and slightly bitter, as the acid was not perfectly purified.

This acid is neither deliquescent nor efflorescent, melts readily on burning coals, boils, blackens, and exhales white poignant vapours, leaving a slight coaly residuum, forming, with alkalis and earths, salts both soluble and crystallizable, precipitating neither the nitrates of silver, mercury, nor lead, like the greater number of other vegetable acids. It will be obvious, therefore, that it differs from the other vegetable acids; for the oxalic acid forms an insoluble salt with lime, and decomposes the union of this acid with lime; the citric and tartarous acids form also, with lime, insoluble compounds, and decompose the acetate of lead; the malic acid does not crystallize, and decomposes the saturnine salt: the benzoic acid is scarcely soluble in cold water, and is volatile, without being decomposed; the gallic acid is equally insoluble in cold water, and blackens the solution of iron; and the acetic acid does not crystallize, but rises by heat, without any change. M. Vauquelin, therefore, styles it the *kinic acid*, and this, when united with lime, the physicians at Lyons have found, it is said, such a powerful febrifuge, that no intermittent fever can resist two doses of thirty-six grains each: about a drachm of this salt is contained in five or six ounces of the common grey bark. Our author adds some very judicious doubts on this subject, on which we need not fully enlarge. The effects of the infusion and extract of bark prepared by Garaye, he observes, are by no means proportional to the quantity of bark from which they are taken, though they contain this salt; and tinctures which retain no portion of it are powerful febrifuges. Some kinds of bark, with very little of this salt, and vegetables, wholly without it, are found to cure fevers. If it has succeeded, M. Vauquelin suspects that the bitter principle has not been wholly separated.

We must apologize for this long abstract; but we are unwilling to omit a single fact of this very curious specimen of vegetable analysis, especially as foreign works now reach us irregularly, and this paper has only appeared in one journal, not extensively circulated among physicians, viz. Mr. Nicholson's. From this analysis many of the phenomena which attend the pharmaceutical preparations of bark are fully understood, particularly the effects of alkalis and magnesia in heightening the colour; and the mode of preparing the salt of bark is sufficiently obvious.

Page 503, col. 2, line 29, for *Cortex Poegeerebæ*, read *Cortex Poggeerebæ*. It was brought from America, and is wholly tasteless. Its pieces are convoluted, sometimes so small as a goose quill, sometimes an inch in diameter. In thickness they are about a line; hard, weighty, compact, sometimes strait, occasionally distorted. Externally they are wrinkled, sometimes annulated. The epidermis is closely attached, and of a deeper brown than the parenchyma. Some authors think they perceived, on tasting it, a stricture and a kind of aluminous taste on the tongue; in the younger branches, a slight bitterness, though Vo-

gel denies that it has any taste. *Materia Medica*, 295.

COSTÆ.—Page 504, col. 2, line 4; "*carried on by the diaphragm*."—Caries of the ribs is not a very uncommon disease, and often owing to aneurisms, sometimes to syphilis; but it requires no peculiar treatment. Severinus recommends the actual cautery. Fractures of the ribs also require no peculiar management, but the proper bandage to secure them from motion, with a cooling regimen and rest. Gooch, in his *Observations* (Appendix, 55), speaks of their being fractured by a cough, and it is said that the same effect has been produced by twisting the body. It requires greater credulity than we possess to believe the tale in the *Ephemerides Naturæ Curiosorum*, of their being broken by palpitation of the heart. Dyspnoea is sometimes occasioned by an ossification of their articulations. Van Doeveren *Specimen Observationum*, N°. 13.

COSTUS.—Page 504, col. 2, line 24; "*Alpinea of Linnæus*."—The bitter costus, according to Garcias, is the root, which has contracted a black colour and bitterness by keeping. The canella is usually sold for it.

COUNTER, a translation, or rather a corruption, of *contra*, against, often employed in surgery as a *counter stroke*, or a *counter fissure*, where the effect is perceived on the side opposite to that where the blow was inflicted; and *counter opening*, viz. an opening of an abscess in an opposite, generally a more depending, part.

CRANIUM.—Page 507, col. 2, line 44; "*SKULL*."—The shape of the skull is spherical, and more so in the infant than the adult, for in the latter the action of the temporal muscles depresses it at the sides. The management in childhood is said to alter the shape of the bones, and this is assigned as the reason why the skulls of Turks are round, of Germans, flattish behind, of the Dutch and English, oblong. It is supposed, that the flatness of the sides enlarges our sphere of vision; but a slight attention to the situation and structure of the eye will soon show the fallacy of the remark. The skulls of idiots are remarkably oblong. Pinel.

The external and internal surfaces of the upper part of the skull are smooth, but the back part externally has numerous risings and depressions; indeed, internally, the arteries occasion deep furrows, and occasionally pits, which the surgeon must guard against in the operation for the trepan: the arteries from the dura mater seem sometimes to pass into the cranium. The cranium consists of two plates, between which, in general, cancellæ are interposed, as in the long bones: the inner plate is the thinnest, and, in some parts, the cancellæ, (*diploe*) are wanting: particularly in the temporal bones.

The diploe is sometimes the seat of abscesses, but a caries and exostosis generally begin in the hardest parts. Tumours in the head have often no connection with the cranium, and are frequently wens or steatomata. These sometimes, apparently from their pressure, destroy the bones, and occasion apoplectic symptoms by compressing the brain. Tumours are occasionally supposed to occur in the head when the shape of the

cranium is defective; and in these cases the apparent tumour, on one side, is accompanied by a proportional depression on the other. When the skull is slightly depressed by a blow, and no apoplectic symptoms follow, the best surgeons usually trust the case to nature. It is sometimes relieved spontaneously, but if considerable the trepan must be applied, and the depressed portion raised. Petit, in the *Memoirs of the Academy of Surgeons* (i. 302. ii. 157), has described a new and more convenient instrument for elevating depressed portions of the cranium.

CRINONES.—Page 510, col. 2, line 47; “*after which she recovered.*”—The term, in English authors, is more commonly applied to the little pustules in the face, in the middle of which a black spot, the supposed head of a worm, is observable.

CRITHMUM—Page 511, col. 2, line 63, add, *crithmum maritimum* Lin. Sp. Pl. 354.

CRUCIFORMIS.—Page 513, col. 2, line 35; “*in a particular state.*”—The explanation is imperfect. The term is derived from the disposition of the petals, which are four, arranged in opposite directions, and consequently forming an imaginary cross. Such plants constitute a very natural order, styled *cruciform* by Tournefort, and chiefly found among the *tetradynamix* of Linnæus.

CRUOR.—Page 513, col. 2, line 52; “*occasionally the venal only.*”—The word is most commonly applied to the crassamentum, which in its coagulation entangles the red globules.

CUBEBA.—Page 516, col. 2, line 37; “*with a slender stalk.*”—Camelli, *Philosophical Transactions*, 1773. Cubebs, when broken, are found to contain a kernel much smaller than the shell, which is thin and brittle. The epidermis of the nucleus is brown, the parenchyma white, somewhat oily, and much warmer than the shell. Each part unites, with a considerable pungency, a bitterness, and renders the breath fragrant. Cubebs are seldom attacked by worms. They are supposed to be the cubebs of the Arabians, the *Κουβεβ* of Actuarius; but this is doubted: the arguments are, however, fairly detailed in Wedelius’s *Dissertation de Cubebis*. The oil does not contain their virtues, as asserted in the article; for it is mild, resembling the oil of almonds (*Baumé Elemens de Pharmacie*, ii. 41); but the acrimony is taken up by water, more completely by spirit. They are employed in cases of dyspepsia, particularly where the stomach is loaded with mucus, and, in some parts of the continent, are covered with sugar, in the form of confects.

CUBOIDES OS.—Page 517, col. 1, line 32; “*scarcely begun at birth.*”—This bone, behind, is formed into a long unequal concavity, adapted to the shape of the os calcis. On its internal side it joins the navicular bone by a small semicircular notch, and immediately before this an oblong smooth plane is made by the external cuneiform bone. Below it is hollow and rough. On the internal side of the lower surface are a round pro-

tuberance and a fossa; on the external side, a round knob, covered with cartilage, immediately before which is a smooth fossa, apparently formed by the tendon of the peronæus primus, where it runs obliquely across the foot; and on the knob the thin flat cartilage peculiar to this muscle rests. More externally than the knob, the strong ligaments between this bone and the os calcis are stretched in a rough hollow. The surface of the os cuboides anteriorly is flat, smooth, and slightly divided into two planes for sustaining two of the metatarsal bones. It has little motion, as it is so closely tied down by ligaments.

CUCUMIS AGRESTIS.—Page 417, col. 2, line 34; “*more active than the leaves.*”—The root contains all the virtues of the plant in a superior degree, and is an active emetic, as well as a powerful purgative. Indeed all the drastic purgatives act so violently on the stomach, as often to disappoint our expectations of the discharge by stool. Avicenna advises fifteen grains of the root; but Fallopius recommends a drachm. In smaller doses it is considered as an active deobstruent, particularly in infarctions of the viscera. Externally it is said to be discutient, and in a cataplasm to relieve oedematous swellings; united with vinegar, to mitigate the pains of the gout, and with water those of sciatica. When powdered, it is recommended by Dioscorides as useful in chronic exanthemata, rubbed on the pustules.

The elaterium in a perfect state, according to Dioscorides, should be white, with a slight moisture, light, extremely bitter, easily burning on the approach of a candle. If porraceous, it is not good. Different modern chemists have followed the directions of Dioscorides without success; for it is generally green, and most frequently porraceous. In the foreign pharmacopœias the juice of the fruit is prepared by inspissation, sometimes the juice of the whole plant. Boulduc prepares the elaterium from the root by means of water; and it is, in fact, a watery extract, more mild than the common elaterium, but equally useful, and more manageable. What we generally meet with in the shops is blackish, brittle, intensely bitter, and subacid. The dose varies; but in general from two to five grains are given.

CUCURUCU, an American serpent, whose bite is poisonous; but whose flesh is rich, and esteemed a great delicacy.

CULEX, a GNAT; an insect of the dipterous order, of the family of the *tipulariæ* of La Treille. Its characters are, setaceous antennæ, pectinated or plumous, of the length of the thorax; a trunk elongated or cylindrical, receiving, in a canal above, a sucker composed of very small pieces, and terminated by an enlarged diameter; two filiform antennulæ, elongated, inserted at the lateral base of the trunk, with four joints, of which the first are very short. The body is long, the head low, small, round, almost wholly occupied by the eyes; the thorax convex; the wings horizontal, lying down, covered with small scales; the balancers long; the abdomen long and cylindrical; the feet very long and thin, with very small cushions.

Gnats are known by their unpleasant buzzing, and by their sharp bites. Every country is more or less

infested by them, particularly the low marshy districts. In America, and the American islands, they are peculiarly troublesome, and are called mosquitos; in Sweden and Lapland, during the summer, the inhabitants can only guard against their bites by smearing their faces with grease. They wound with the trunk, and draw the blood by means of the instrument we have called the sucker, which they have the power of exhausting. The trunk with a lens appears to be barbed. Though the wound be slight, the inconvenience is considerable; for a poisonous fluid is introduced, it is said, to dilute or to dissolve the blood, that it may pass more freely through the sucker: some persons, though their skin be delicate, are not attacked by them. When they can find no animal to fix on, they suck the juices of plants, particularly the willow. They generally hide themselves in the day, and come out in the evening. Fire, at night, soon disperses them.

Various remedies are employed for their bites, as the fixed and volatile alkalis, brandy, lavender water, vinegar, lime or lemon juice, and Venice treacle, mixed with sweet oil. Some apply the leaves of the green willow bruised, to the juice of which they add vinegar and common salt: others prefer the leaves of plantain. The European species is the *Culex pipiens* Linnæi.

CULILAWAN.—Page 519, col. 2, line 16; "**CULILAWAN.**"—This term, originally given by Rumphius, has been softened down to culilawan, and it is taken from the genus *laurus*, with the same trivial appellation, described by Linnæus in his second Mantissa, 237; *laurus culilaban* of Willdenow, vol. ii. page 478. We have here resumed the subject, as in the article referred to the account is too short and unsatisfactory.

The term is Malayan, signifying the clove bark, from its smell. Its appearance differs with the country which produces it. In the Molucca islands it is browner than at Amboyna. The latter is also much thinner, harder, and of a more pleasant taste. The pieces are generally convexo-plane, about a line in thickness, of a yellowish red colour, with some remains of a grey epidermis, wrinkled, smooth within, and moderately hard. The taste is aromatic, not much unlike the Winter's bark; but more mild, mixed with an astringent and mucilaginous sensation. The smell is that of sassafras mixed with that of the cassia caryophyllata. The bark of the root resembles in taste and virtues the lignum sassafræ. Its distilled water is milky, of an acrid, aromatic, and bitterish taste, on which a thin, limpid, yellow oil swims, which is in so small a quantity that half a pound of the bark scarcely furnishes thirty drops. This also is acrid and aromatic, of a smell between that of cloves and sassafras (Cartheuser). Rumphius compares it to a mixture of cloves and nutmegs; Valentyn to the oil of cloves. From an ounce of the bark fifty grains of a spirituous extract were procured, in taste and smell resembling cloves. The quantity of the watery extract was somewhat less, resembling cloves in smell; but to the taste bitterish, and slightly aromatic. Each extract was mucilaginous but the younger bark was most so.

It is used in the east as a condiment, to amend the breath, and to strengthen the stomach. We can scarcely distinguish its effects from those of other aromatics; but, in Amboyna, five or six drops of the oil are given

in suppression of urine; and it is used externally in luxations, contusions, in palsy, and in gout. The oil of culilaban has been confounded with this procured from the *laurus culilawan*; but we are expressly told, that the former is procured from the roots of the nutmeg and clove trees. It is probably an imitation of the true oil.

CUPRESSUS.—Page 522, col. 2, line 37; "*oleum cyprinum.*"—The galbuli and leaves were formerly used as astringents (Ray Historia Plantarum, tom. i. ii. 282, and 1407); the nuts in intermittents. The wood is pale or reddish, undulated, of an agreeable smell, but without taste, except a flavour somewhat resinous. The bark is more decidedly astringent, with a bitterness, and in warmer countries turpentine can be drawn from it. It is used for chests, as worms do not eat it, and for coffins, as it resists putrefaction.

CURCUMA.—Page 524, col. 1, line 57; "*lively yellow tending to red.*"—The tubera are oval, annulated, and brown, of the size of a pullet's egg, from which processes three or four inches long, of a pale yellow, also annulated, are derived. The root in part consists of thick, long fibres, some of which terminate in a sharp point, some in a knot, resembling in form an olive. All the fibrous part is rejected. The root itself is of a pale yellow colour, wrinkled, solid, heavy, of a deep saffron or orange colour. Its smell is somewhat fragrant, its taste bitter, slightly acrid, exciting a sense of warmth in the mouth. It is softened by chewing, and tinges the spittle yellow. The infusion is of a saffron colour, which by alkalis is changed to a chestnut. As its yellow hue is, by means of starch, imparted to paper, it becomes an useful test of alkalis. Acids render the yellow paler. The spirituous tincture is of an elegant red, though it imparts to the fingers a saffron hue. The essential oil is in so small a proportion that Buchner obtained from half a pound only a drachm; others even a less quantity. The watery extract is mildly aromatic, bitter, and salt; but it amounted only to one fourth of the root employed. Neumann obtained a less proportion. The spirituous extract was equally variable in quantity; in general less, and its taste nauseous, and acridly aromatic.

In India the curcuma is chiefly used as a dye, both for the linen and the skin, and as a condiment; the Chinese employ it as an errhine. It enters the circulating system; for the urine is tinged of a yellow colour. In jaundice, as we have said, it has been highly celebrated, though Coe speaks of it slightly, and found no advantage derived from the dose of a drachm, repeated three times a day. It is said to be also lithontriptic, to cure dropsies and intermittents.

CUSCUTA.—Page 524, col. 2, line 45; "**DEVIL'S GUTS.**"—It chiefly grows on the *linum usitatissimum*, *urtica dioica*, *trifolium pratense*, &c. The *cuscuta epithymum*, the var. β , is separated from the *c. Europæa* in the Systema Vegetabilum, and constitutes another species. It is chiefly found on thyme, whence its name is derived; but it adheres also to the *origanum*, *siderites*, *erica*, &c. The latter seems to be the *epithymum* of the ancients. Each is acrid or mucilaginous, according to the plant which has nourished it. Haller compares the

dodders to the sedum, and supposes them resolvent in consequence of a nitrous saponaceous power. They have been recommended in hypochondriasis, melancholy, dyspnœ, intermittents, &c.: chiefly from the fancied theory of resolving lentor and pituita, or purging black bile.

CUTICULA.—Page 527, col. 2, line 2; "*putrefaction to take place.*"—The openings of the cuticle, which suffer the more insensible perspiration to escape, and even the fluid sweat, still deny a passage to the fluid poured out by the action of blisters. This apparently arises from some of the gluten being effused in their operation; for milder stimulants applied to the skin produce a more fluid discharge, which readily escapes. This we find on the application of warm plasters, where the exuded fluid throws them off. The origin of the scarf skin has been a subject of dispute. It is said to be an exudation, thickened by the air and by pressure; but it exists in the fœtus. Others suppose it to be an expansion of the extreme vessels, or the nervous papillæ; but this idea is opposed by its insensibility. It is evidently inorganic, and not a primordial part, as it is so frequently and extensively reproduced. In the fœtus it may be in part a deposition from the liquor amnii; in the infant, the hardened discharge from the mucous glands. We find some instances in Bartholine and Deckers of its deficiency, though the circumstances are not clearly explained. We are informed by Albinus (*Annotationes Academicæ*, i. 19) from Saviard, that the separation of the cuticle is not always a mark of the death of a fœtus.

The cuticle sometimes desquamates, or separates in scales; and when this separation takes place in any considerable degree the nails accompany it. After malignant fevers, scarlatina, and gout, this has happened; sometimes from terror, from the bite of a viper, and from arsenic. The scaly skin is a species of lepra. A singular instance of the disease occurs in one of the early volumes of the *Philosophical Transactions*; and Vater, in a separate dissertation, has described the appearance of a boy of fifteen, "whose skin resembled that of a rhinoceros, or the bark of a tree." See *CUTANEI MORBI*.

CUTIS.—Page 528, col. 1, line 1; "*the organs of touch.*"—The papillæ differ much in figure and disposition, according to the different parts of the body on which they are observed. The greater number is flat, differing in their breadth, divided by sulci in the form of irregular lozenges. Those of the palm, the fingers, and toes, are higher, smaller, and more closely united than in other parts, representing straight, crooked, or spiral lines. In the lips the villi are closely united; under the nails they are conical, and the points directed to the extremity: in the hairy scalp and scrotum they still differ; but the whole description would be endless and useless.

In inflammations, and minute injections, fine vessels are apparently spread on the surface of the skin, called by Mr. Cruickshanks *cuticula quaræ*; but these are raised above the membrane, in which they are placed by the unusual distention. The various folds of the skin in different parts are not of sufficient importance to detain us. Many of these depend on the action of the

muscles rather than the state of the skin, and are rendered permanent by the frequency of that action. From hence arise those traces of character in the face which so essentially assist the physiognomist. See *PHYSIONOMIA*.

CYANUS ORIENTALIS MAJOR MOSCHATUS.—Page 528, col. 1, line 38; "1286, *z.*"—It is the *centaurea cyanus* Lin. Sp. Pl. 1298. The spirituous extract is slightly austere and saline; the watery more decidedly saline. The whole plant is said to be diuretic, and the infusion or expressed juice to be useful in inflammation or weakness of the eyes.

CYNOGLOSSUM MAJUS VULGARE; CANINA LINGUA.—Page 529, col. 2, line 63; "*adversus pediculos.*"—It is anodyne, and in the spring highly narcotic. From the resemblance of its early leaves to those of comfrey the worst consequences have arisen (Morison and Haller). The root is large, branched, succulent, externally brown or black, internally white. In moist places it has a virose smell, and in dry ones is almost without any odour. The smell is always transitory, and does not remain either in the watery or spirituous extract. In the recent state it is, therefore, probably dangerous; in any other useless, or merely mucilaginous; and in the latter view it seems to have been employed in coughs, hæmorrhages, and diarrhœas. Ray informs us, that in decoction, and externally applied, it has been useful in scrofula (*Historia Plantarum*, 490); and Scopoli that it has been beneficial as a demulcent in dysentery (*Flora Carniol.* 440). The leaves have been equally useful in infusion as a demulcent in coughs. Scopoli.

CYNOSBATUS.—Page 530, col. 1, line 42; "*certainty of its power.*"—The *bedeguar* is a rough excrescence, about the size of a walnut, of a reddish-green colour, oblong or roundish, containing many cells, in which an insect, the *cynips rosæ*, has deposited its eggs. The situation of this excrescence on different parts of the plant, and even on the fruit, prevents any explanation of its origin. This substance has, however, been given in hydrophobia, epilepsy, calculus, and many other diseases, probably with equal success.

D.

DACTYLUS PALMULA.—Page 533, col. 1, line 43; "*food in Africa.*"—The date tree is celebrated for the chief support which the artificial impregnation of its female blossoms afforded to the sexual system, and which may probably have suggested it. It is a native of Asia, seemingly conveyed to Egypt, and found also in Africa, &c., but chiefly in the warmest climates. The date tree, like the cocoa-nut, supplies all the wants of the inhabitants of the tropics, and the riches of the possessor are estimated by their number: one farm often contains from three to four thousand. Independent of the fruit, the buds from the axillæ of the leaves, particularly their bases, and the upper convoluted tender leaves, the primordia of the spadix, are either eaten raw or boiled with animal food.

The fruit is an oblong drupa of the size of a plum:

when fresh the flesh is reddish, soft, pellucid, and very sweet. They are gathered some time before the period of their maturity, while yet acerb, and ripened in the sun. The seed is hard and stony, approaching a cylindrical shape, loosely covered with a pellucid epidermis, oblong, wrinkled, white, the apex compressed, marked on one side with a longitudinal furrow, on the other with an orbiculated hilum in the middle of the back. They differ greatly in colour and flavour, according to their soil and mode of drying: those brought to Europe are chiefly from Barbary. Through vast tracts the natives use no other food, and they are well adapted to the climate, by their cooling, antiseptic properties. The best kinds yield, by a slight pressure, a syrup, which is used in their dishes instead of butter. When fermented they yield a pleasant vinous liquor, and the unripe ones are eaten by camels. In a medical view they are refrigerant and demulcent. In strangury, cough, and hoarseness, they are generally employed internally, and externally in promoting suppuration. Kempfer tells us that they are moderately astringent: but he probably speaks of the unripe dates. They still remain as ingredients in the different formulæ of the Wirtemberg and Paris Dispensatories.

DAUCUS CRETICUS.—Page 533, col. 1, line 65; "*foul and offensive.*"—Carrots have gained credit as medicines from their supposed saponaceous quality; and Aretæus long since recommended them in elephantiasis. Lobb seems to think that they had some power in dissolving the stone, and Rosenstein recommends them in the ascariæ of children, eaten on an empty stomach. The seed is roundish, grey, rough, with serrated alæ, aromatic and fragrant, containing a small quantity of essential oil. Its diuretic power was first noticed by Aretæus.

DEBILITAS (from *debilis*, weak). **WEAKNESS.** Debility is a term often employed in medicine with little discrimination. It will be obvious that it is sometimes general, at others local; and we constantly see a weak arm, or a defective digestion, with health otherwise unimpaired. But even general debility admits of various modifications, or perhaps rather some kinds of local debility from sympathy appear general. In cases of chlorosis or amenorrhœa there appears to be a peculiar debility of the extreme vessels communicated to the stomach and to the brain: in fever there is a debility of the sensorial power, from which the stomach and circulation seem to suffer, though in the latter case the debility is soon general from the extensive influence of the functions of the brain. After apoplectic attacks the debility is general in the whole system; but peculiarly felt in the voluntary muscles, and not particularly in the sensorial power; for the circulation is carried on at least equably, if not freely. From the depressing passions, from plethora, and fatigue, the debility is also general, and the sensorial power suffers more than in apoplexy; for evening paroxysms of fever are often produced, and the body is very susceptible of fever from infection, cold, or any irregularities of diet. The debility from poisons introduced, as from lues or cancer, from impending lepra, infarctions of the viscera, as of the liver, &c. appears of a different kind. It seems to undermine the vital power; but does not produce any

very striking effect on any one function, except that of nutrition. The debility from hectic paroxysms is still different, and appears not to influence the mental energy, except in a few instances; but chiefly the sensorial power, and the circulation in the extreme vessels. We have thought that we could distinguish these different kinds of debility by the sight, and have brought the suspicion to the test of experience, by forming an opinion of the disease from the appearance of the patient, before hearing the case. It is not surprising that we should have been oftener right than in error, since many of the diseases mentioned, arising from these different species of debility, are sufficiently obvious. Yet in equivocal cases we have been, we think, often able to correct misinformation from the exercise of this faculty, and we would strongly recommend its constant exertion to the younger practitioner. He must be cautious, however, not to trust to it too confidently. These distinctions, though forming only the outline of what might be adduced on the subject, will frequently correct confusion, and obviate many difficulties. Had they occurred to Dr. Brown, much of the confusion, and, we may add, much of the mischief, which have arisen from the application of his system to practice would have been avoided.

The cure of debility must depend, therefore, on its cause; but in every instance a free open air, regular exercise, an appropriated diet, early hours, and a due regulation of what are styled the non-naturals, is of much greater importance than tonics.

DECUBITUS, (from *decombo*, to lie down). The position of a patient in bed is often of considerable importance in judging of his disease. It is noticed in the articles **FEBRIS** and **PROGNOSTICA**, q. v. A problem of much more difficult solution occurs in diseases of the chest, viz. whether the patient can lie best on the affected or on the opposite side. This has been considered in the articles **PERIPNEUMONIA** and **PHTHISIS**: we wish we could add that the problem had been solved. See Baglivi *Praxis Medica*, i. 9; Boneti *Sepulchretum*, lib. iv. vi. 2, 3, and five; Keller *Dissertatio cur plures Ægroti in alterum latus Decumbere nequeant*.

DEGLUTITIO.—Page 536, col. 1, line 24; "*neighbouring parts.*" These obstacles are not only every variety of substances incautiously swallowed, but abscesses and calculi formed in the canal, or the muscular structure destroyed by a cartilaginous hardness. A dilatation of the œsophagus has produced a similar effect (Bursarii, *Institutiones Medico-practicæ*, iv. 292); and a curious instance is mentioned by Lieutaud (*Historia Anatomica Medica*, ii. 313) of a double œsophagus, producing difficult deglutition. Polypous, steatomatous, cancerous, or scirrhus tumours, a dryness of the glands (Morgagni de *Sedibus*, xviii. 14), ossifications of the canal, perforations into the lungs, or produced by ulcers of the latter organ, excessive sensibility of the œsophagus from previous inflammation, an union of the sides, or a rupture of this part, have destroyed its functions. The diseases of the neighbouring organs, which equally induce the disease, are aneurisms of the aorta, or the carotid artery, a luxation of the os hyoidis, excrescences, or a destruction of the palate (Morgagni, l. c. xlvi. 60), diseases of the lungs, or of the epiglottis, tumours

between the œsophagus and the aspera arteria, and scrofulous swellings in the neighbourhood of the canal. Such are the associated motions between the stomach and œsophagus, that whatever disturbs the action of the former prevents that of the latter; so that when from injured organization, or any other cause, digestion is impaired or destroyed, swallowing is proportionally impeded. Among the causes of debility we have not mentioned narcotics, which may, however, primarily act on the stomach. We find the stramonium, tobacco and coffee in excess, considered as causes of difficult deglutition. Dr. Dobson (Medical Observations and Inquiries, vi.) mentions its arising from suppressed salivation, and Morgagni has recorded a case in which it was a symptom of hydrothorax. De Sedibus, xxiii. 4.

Among the remedies we have omitted the hemlock, which has certainly been sometimes found useful, and the friction with mercurial ointment is probably more generally successful than we have in the article represented it. Cupping glasses, leeches, and blisters, have sometimes relieved; but it is singular that the first have been applied to the stomach, and the last to the coronal suture. In the Edinburgh Medical Commentaries we find a case where the disease arose from spasm, in which the cuprum ammoniacale was singularly useful; and as it frequently arises from scrofulous tumours, the burnt sponge and salt water have been recommended.

DELIRIUM.—Page 539, col. 1, line 62; “*of which it is a symptom.*”—The causes are either those producing partial excess of excitement or its opposite state. Thus we find it arise from injuries on the brain, producing inflammation, from fever, repelled eruptions, or the checking of accustomed evacuations, and from pregnancy. The opposite causes are, grief, disappointment, hunger, narcotic poisons of every kind, particularly excess of drinking. Indigestion and disorders of the stomach are generally of the same kind, and effusions of water and other fluids on the brain belong also to the depressing powers. We hear of delirium being periodical or epidemic; but in these cases we suspect the source has been fever. The cure must depend on the causes; and when these are ascertained, they will lead to the different articles in which the remedies are described.

DEPURATIO.—Page 545, col. 2, line 14; “*the fluid to be depurated is hot.*”—Of these operations clarification is most commonly necessary in medicine, and a process of no little difficulty, as the feculæ are nearly of the same specific gravity as the fluid; and the mucilage, which vegetable expressed juices necessarily contain, is an additional obstacle to the separation. For this reason, vinous fermentation which destroys the saccharine mucilage, so completely depurates the juice of the grape and the infusion of malt. The coagulating fluids are albuminous and gelatinous, which should be previously mixed with the turbid fluid, and, on the application of heat, the coagulation takes place. The alcohol of vinous fluids produces the same effects without heat. M. Parmentier (Annales de Chimie, xxxix.) mentions the effects of marl in clarifying the latter. A handful of marl will, it is said, clarify a whole cistern of water. Heat alone will clarify many expressed

juices, particularly that of cabbages. When the virtue resides in the fecula clarification is injurious.

DIABETES.—Page 547, col. 1, line 51; “*without being uncommonly copious.*”—This peculiar disease of the urine has been understood only within these thirty years. It was suspected by Willis, and mentioned, after him, by other authors; but the real nature of the discharge was only ascertained by a French chemist in 1778, and more clearly established by Franck in 1791. The labours of our countrymen, Dr. Rollo and Mr. Cruickshanks, were followed by those of MM. Nicholas and Quendville, at Caen, in 1803; and we shall now add a mere abstract of a memoir on this subject, by MM. Dupuytren and Thenard, published since this article was printed, and shortly noticed in the article **MELLITUS**. The latest inquiries had before ascertained that the urine of diabetic persons contained no sensible proportion of urea or uric acid; that the most delicate reagents scarcely showed any traces of phosphoric or sulphuric salts; that no free acid was found, but only sugar, and different proportions of marine salt.

The first part of the memoir contains observations on the diabetic patient, whose urine they examined. All their conclusions we shall not transcribe; but they think the seat of the complaint to be in the kidneys, not in any part of the intestinal canal, and to consist in a “*perversion*” and “*exaltation*” of the action of these organs. We would translate these words if any precise meaning could be affixed to them. The reasons for this conclusion are, that the appetite and the digestion are not injured. The latter, in particular, is more rapid, and a larger proportion of aliment is absorbed; for the feces are comparatively small in quantity. The authors also remark, that, from the excessive discharges, a considerable absorption probably takes place from the surface to supply the wants, and that the only disease is too great action of the digestive and urinary organs. They found the plan of Dr. Rollo very successful.

They next offer the analysis of the urine of their diabetic patient. It contained no animal, and scarcely any saline, matter; almost wholly consisting of vegetable principles, and chiefly of a principle slightly saccharine. It possessed, however, all the properties of sugar; for it is changed to alcohol and carbonic acid by fermentation, affording much oxalic, and no mucous, acid by the addition of the nitric. The extract is scarcely soluble in alcohol at 36°; and produces, on calcination, a small proportion of oil, much water and carbonic acid. There are consequently many varieties of sugar, and we have shown that MANNA, q. v., contains only a small proportion of it, which may be destroyed by fermentation; while its chief constituent part is mild to the taste, does not ferment with leaven, yields the mucous, by the addition of the nitric, acid, is more soluble in hot than in cold water. Heat assists its solution in alcohol so powerfully, that on cooling it forms a crystalline mass. When an animalized diet was given to their diabetic patient, the changes were rapid. They first found an albuminous substance in the urine, the precursor of its proper state, which gradually increased. When this lessened, the kidneys secreted the urea and the uric acid, probably also the acetous.

We do not find in their memoir any striking advances in the knowledge of this disease. We have frequently

observed in this work, though it is not sufficiently insisted on in the article, that the assimilation of our food, rather than its digestion, constitutes the real disorder; and that the chyle, instead of becoming blood, is carried off as a foreign excrementitious fluid. What we have also observed in different articles we shall repeat, to elucidate more fully our opinion of the nature of the disease. The distinguishing character of animal substances is azote, and the supply of this azote is a problem of some difficulty, unless furnished by the liver, or from the air in respiration. (See JECUR and RESPIRATIO.) Azote is, however, apparently necessary for animalization, and in this disease seems wanting. It is supplied by a diet purely animal, and by the hepatic ammonia; but in this country, where animal food is so common, the disease is comparatively rare, and the changes, from an alteration of diet, by no means so rapid as represented by the French chemists. M. Place, in a dissertation published at Gottingen in 1784, has attributed the disease to a defect of assimilation.

We have accidentally omitted the remedies for the *diabetis insipidus*, as well as some of its causes. Authors have with reason attributed it to the abuse of diuretics, chiefly of cantharides and juniper berries, though the whole class have been occasionally accused. It sometimes arises from gout, from riding, suppressed discharges, organic diseases of the kidneys, as ossified arteries (Gooch), abscess (Ruysch), and worms (Duret); spasm as in hysteria, the retrograde action of the absorbents (Darwin). The chief remedies are astringents, tonics, and stimulants. The terra japonica, gum kino, and alum, are the chief of the first class; bark and steel of the second; cantharides and balsam of capivi of the third. The Bristol waters are recommended by Dr. Brocklesby, lime water by Fothergill, emetics by Wintringham.

DIAPHRAGMA.—Page 556, col. 1, line 25; "*enlarging the cavity of the thorax.*"—Through the crura of the lesser muscle the thoracic duct, as well as the aorta, pass; and on the outside of these the great sympathetic nerves, with the branches of the vena azygos, perforate the short heads. The diaphragm is assisted in its action by the intercostals, and in cases which demand an increased action of muscles which assist respiration by the serrati antici majores and postici superiores, as well as the scaleni. When, on the relaxation of the diaphragm, the elastic contents of the abdomen rise into its concavity, the sterno costalis and postici inferiores pull down the ribs; an action aided by the elasticity of their cartilages. In laborious expiration the quadrati lumborum, sacro-lumbales, and longissimi dorsi, concur.

The hint in the article, that the diaphragm has more important uses in the constitution than as yet are clearly understood, was taken from an author of character and reputation. It has led us in this revision to examine its diseases with peculiar care; but we cannot find any extensive influence of this part on the stomach, the brain, or the extreme vessels. It is a muscle interspersed with tendinous substance, to afford a more ready contraction, as in the hollow muscles the fibres are not continued all around; but inserted into tendinous lines, or connected with each other. It has been wounded, torn, its apertures enlarged, so as either by

laceration or dilatation to admit of the passage of the stomach, or a part of the colon into the thorax, without any uncommon symptoms; and the delirium and the spasms, supposed to be peculiar to its inflammation, we do not find enumerated among the consequences in the most respectable authors. In two strongly marked cases, which have occurred to us, they were not present.

DIAPYESIS. An abscess in the eye, producing blindness. *Sauvegesii Nosologia.*

DICTAMNUS ALBUS.—Page 560, col. 2, line 23; "*about the size of a quill, are the best.*"—The root is thick, branched, externally of a pale yellow, internally white, of a hircine odour, and an aromatic, bitterish taste. The thick, spongy, cortical part is only kept, as the ligneous is inert, and from this cause it appears rolled, like a quill. The dry root is bitter and slightly aromatic. The spirituous extract is most bitter; but in the smallest quantity. The tincture mentioned in the article has been given, it is said, with success in epilepsy; and the root forms a part of a very useless farra-go for the same purpose, "*pulvis ad guttetam*" of the Wirtemberg Pharmacopœia.

The whole plant exhales a fragrant bituminous odour, owing to its essential oil, which is contained in vesicles in the surface of the extreme branches, and the internal parts of the flower. This vapour takes fire on the approach of a candle. The resin collected from the flowers, not yet expanded, is said to be a powerful diuretic; but the capsules, disposed like stars, are supposed to be more efficacious in this respect.

DIGITALIS.—Page 565, col. 2, line 60; "*with little melioration.*"—Since this article was written numerous publications have announced the happy effects of digitalis, particularly in hydrothorax, and other dropsies, while many authors have confessed their disappointment at its failure. Whether owing to our timidity in the dose, or to the cases not being properly adapted to the remedy, we have not been among the fortunate practitioners who have succeeded with this medicine, and consequently can only report the success of others. A late author, Dr. Sanders, has endeavoured to show that the digitalis is a stimulant. This is a verbal dispute, worthy only of the disputing societies in the schools. We know that it makes the pulse often fuller, and apparently stronger; but it has this effect in common with every other narcotic, in consequence of its relaxing the arterial system, while the diminished frequency of the pulse is owing to the diminution of the irritability. When given in large doses it excites a discharge of saliva, produces vomiting, with very considerable anxiety, heartburn, hiccough, great coldness in the hands and feet. Given to turkeys it produced bloody discharges, with emaciation and death. These are not the effects of stimulants, and we have no instance, though so often asserted, of a medicine being stimulant at first, and sedative in its subsequent operation. We have repeatedly shown that this apparent stimulus is unequal excitement. In scrofula, it has been given internally with advantage (Haller *Historia Stirpium Helveticarum*, 330). The decoction has been preferred; sometimes the expressed juice in warm beer.

DIGITUS.—Page 566, col. 1, line 37; "*are convex, within flat.*"—All the bones of the fingers have round, convex surfaces, covered with an aponeurosis, formed by the tendons of the extensors, lumbricales, and interossei, and placed directly backward for greater strength. The concavity in front is designed for lodging the tendons of the flexor muscles, or formed by them. The ligaments for keeping down the tendons are fixed to the angles between the convex and concave sides. The bones of the first phalanx answer to the second bone of the thumb; but the cavity of the base is less oblong, and the motion less confined: they move laterally and circularly, though with very inconsiderable rotation, round their axis.

The base of the second bone of the fingers is formed into two lateral cavities, and a middle protuberance, and the lower end has two lateral protuberances and a middle cavity. It is joined, therefore, in the same manner at both ends, which is not the case with the bones of the thumb. The third bone differs only from the bones of the thumb in the general distinguishing marks. The upper end of the third phalanx is a cartilage in a grown child, afterwards an epiphysis, and not completely united till the body is fully grown. The bones of the middle finger are longest and largest: those of the fore finger are next in thickness, but not in length: the little finger has the smallest bones.

The first bone of the thumb resembles the metacarpal bone in size and strength, but differs in being set on the carpus with a large round head, in being separated from the line of the other fingers standing out on one side, and, as we have said, opposed to them. It rolls freely and widely, as the joint is a ball and socket.

DIPLOE.—Page 567, col. 1, line 57; "*bones of the skull.*"—It is rather the cavity filled with cancelli, like the large ends of the round bones. See **CRANIUM**, and the same article in the Appendix.

DIPLOPIA.—Page 567, col. 2, line 7; "*So long as the object &c.*" to "*and, therefore, double,*" line 18.—Instead of this erroneous representation of the subject, which has inadvertently crept in, read, It arises from the different direction of the *two optic axes*: for the image falling on corresponding points of each retina conveys, from experience, the idea of a single one. (See **OCULUS**.) It sometimes arises from an altered situation of the pupil, either from a blow or an operation, sometimes from a change in the situation of the lens, frequently from spasm, often from fulness. Morgagni describes a case of this disease from a slight paralysis of the abductor muscle of the eye (*De Sedibus, &c.* xiii. 20), and, when it arises from fulness, a partial palsy of some of these muscles may be suspected. Vater mentions a variety of diplopia where only one half of the second object was seen; and this probably may be the complaint described by Lentin, quoted as a case of *visus sesqui duplicatus*; but the work we have not been able to procure. Mr. Gooch recommends mercury, valerian, and sulphur. When it arises from spasm these medicines may be useful; but when from fulness, from abscess in the brain, or beginning hydrocephalus, they will have but little effect. It is chiefly the object of our practice when it arises from fulness, and in that case general and topical evacuations, pro-

portioned to the constitution of the patient, and the indications from other sources, will be alone sufficient. When from palsy, drawing electrical sparks has been sometimes useful.

DISPENSATORIUM.—Page 569, col. 2, line 51; "*must conclude our list.*"—This enumeration must not be considered as complete; but no work of importance is omitted. The London college, since this article was printed, have published a specimen of a new edition of their *Pharmacopœia*. In this state it is not an object of our attention, and the appearance of the corrected work cannot be expected till long after the publication of these volumes. We had intended to give an outline of their proposed plan in this Appendix, in the additions to the article **PHARMACOPŒIA**; but even this would convey little information.

DOG'S BANE, the *asclepias syriaca* Lin. Sp. Pl. 313. A plant poisonous to dogs, and deleterious in the human species. But in its younger state, when boiled, it may be safely eaten.

DOLICHOS PRURIENS.—Page 578, col. 1, line 14; "*given to destroy worms.*"—Bergius thinks that the anthelmintic power is rather confined to the *dolichos urens* Lin. Sp. Pl. 1020. The descriptions, however, of Dr. Kerr, in the Medical Commentaries, vol. ii. and of Jacquin (*Historia Stirpium American.* 201), seem to ascertain very strictly the accuracy of the representation in the article. The account of Dr. Bancroft equally supports it. The legumen is coriaceous, four or five inches long, about the thickness of the finger, twisted like the letter S, covered with dense, clean, ochry brown hair. These certainly act mechanically, since the decoction and tincture are useless. Though they irritate the skin to such a degree as to be highly troublesome, they seem to occasion no inconvenience in the intestines, if guarded only by a thin mucilage or syrup; nor does the dose seem to be an object of importance. The soy is prepared from a species of *dolichos*. See **CONDIMENTA**.

DORONICUM ROMANUM.—Page 579, col. 1, line 12; "*neglected in our present practice.*"—There was a violent controversy between Gesner and Mathioli respecting the salubrity or the poisonous quality of this plant, and to decide it Gesner took two drachms of the root, without any other bad effect than flatulence in the stomach, and general debility, which soon disappeared on using the warm bath. Costæus has, however, told us, and Boerhaave has repeated the tale, that Gesner was killed by it; though Haller, who has collected the chief points of the controversy, has expressly said that he died of the plague. The herb is, however, sweetish and aromatic, eaten frequently by the mountaineers, and, therefore, not suspicious. The doubts seem to have arisen from Mathioli supposing the *perdalianches* to be the *aconite* of the ancients.

DRUPACEÆ, (from *drupa*), a stone fruit surrounded by pulp. An order in Linnæus's *Fragments*, containing the *cerasus*, the *amygdalus*, *prunus*, and *padus*.

DUODENUM.—Page 581, col. 2, line 25; "*neigh-*

bouring parts.—This intestine, through its whole course, is firmly bound down by the peritoneum, particularly by a transverse duplicature, which gives origin to the mesocolon. The two laminae are at first separate, and afterwards unite, so as to leave a triangular space between them, lined with a cellular substance, by means of which the duodenum is connected to the neighbouring parts. By this duplicature the intestine is hid, except at its beginning and end; but the former is covered in the natural state by the colon, and the latter by the first convolutions of the jejunum. The first coat, therefore, does not wholly surround it; the muscular coat is thicker than in the jejunum and ileum, and the inner coat is described in the article. Brunner's glands are crowded near the beginning of the intestine, but become gradually less numerous, and towards the end are single. The nature of their fluid is little known: it seems to be very viscid.

DURA MATER.—Page 582, col. 1, line 51; "*the cerebrum and cerebellum.*"—There is a third process below, between the lobes of the cerebellum, called the occipital. It is very short and narrow, runs down from the middle of the transverse septum to the edge of the great occipital hole, fixed to the internal spine of the occipital bone. This septum is sometimes double. There are also two small lateral folds on the sides of the sella turcica, each running from the posterior and anterior clinoid apophysis on the same side. These, with the anterior and posterior parts of the sella turcica, form the cavity for the pituitary gland. There are two anterior folds at the edges of the sphenoidal or superior orbital fissures, which increase the depth of the middle fossulae of the basis of the skull. The processes which accompany the nerves are styled *elongations of the dura mater*.

DYSENTERIA MALIGNA.—Page 585, col. 1, line 5; "*weakness, and emaciation, are added.*"—The appearances, on dissection, are described by Morgagni in his work *De Sedibus*, &c. xxxi. 14, &c. These are generally warty excrescences in the rectum; the large intestines, livid, black, inflamed, eroded, hard, and thickened, sometimes ulcerated. The intestinal glands are swollen and inflamed (Stoll *Ratio Medendi*, iii. 345), sometimes eroded (Morgagni). Stoll denies that ulcerations ever take place; but, though not a frequent consequence, they certainly have occurred. The other abdominal viscera are occasionally affected, as the liver, spleen, mesentery, and omentum. These are, however, the effects of the disease; for the easy and complete relief sometimes experienced fully proves that no organic affection originally existed. The disease terminates sometimes in dropsy, in tinnitus aurium, and dulness of hearing (Stoll), in gangrene, in dysury, or ischury, in swellings of the thighs and wrists, in rheumatic or gouty pains, and in abscess of the rectum. These are, however, consequences, not salutary crises. In the chronic dysentery all these appearances are more striking and considerable.

Dysentery is often epidemic, and occasionally endemic, generally esteemed contagious, though this is denied by Stoll. When the faeces are without smell the disease is considered as dangerous; when without pain, it has been quickly fatal. Pringle thinks hiccough a

dangerous symptom; but Quarin and Stoll deny it. When the discharge has been incautiously suppressed, blindness, epilepsy, and a variety of diseases is said to have followed.

The causes are undoubtedly like those of putrid fever, to which it is nearly allied, miasmata or contagion, particularly that kind which is generated by numerous individuals crowded together. Unwholesome diet impure water, and suppressed evacuations, seem to have occasionally their share in producing the disease. Every cause of debility, as usual, assists the influence of miasmata or contagion.

To the treatment we can add little. Authors, in general, rest on astringents of different kinds, though Galen long ago informed us that the disease was not exclusively to be cured by such remedies (*De Simplicium Medicaminum Facultatibus*, i. 34); and Stoll observes that they are never salutary. The volatile alkali is recommended by a Berlin physician; the arnica by Stoll and Colin; starch by Pringle and Cartheuser; mercury by Clark and Lind in the chronic dysentery; opium by a variety of authors, though Stoll remarks, that in the inflammatory state it is injurious; the nuxvomica by the Swedish physicians, and the white vitriol by Moseley.

The rheumatic dysentery described by some authors we have not seen, nor can we discover on what the distinction rests, unless it be the cessation of rheumatic pains, when the dysentery attacks. In this disease we find all stimulants discouraged. Whatever induces a gentle, but free, diaphoresis is recommended, and in this species the Dover's powder is given by Stoll.

DYSERMATISMUS.—Page 587, col. 2, line 64; "*into the urinary bladder.*"—The cure of these species must depend on the causes; and, in general, when these are ascertained the remedy is easy. In the first and fourth, the frequent introduction of bougies will be found necessary. In the second, mercurial ointment may be rubbed on the part, or a hemlock poultice applied, while the mercurius muriatus is taken internally. The sixth and the ninth seem equally to depend on obstruction, and must be relieved, if susceptible of relief, by the same means. The seventh requires cold bathing and tonics. The fifth perhaps will be relieved without any particular medicine by indulgence, or at last by age.

DYSPNŒA.—Page 588, col. 1, line 44; "*easy ingress of the air into the lungs.*"—Though we exclude hydrothorax and empyema, many organic affections of the thorax and neighbouring parts have been enumerated among the causes; air in the cavity of the thorax, a collection of serum, or indeed fat, in the cavity of the mediastinum (*Medical Observations and Inquiries*, iii. 9), ossification or callosity of the pericardium, effusions of blood or serum in its cavity, polypous excrescences, hydatids, exostoses, or tumours of any kind pressing on the lungs, diseases of the sternum or the cartilago ensiformis, and obstructions in the trachea. Pressure, whatever be the cause, from the neighbouring organs must also induce it, and these must be as various as the organs themselves, or the enlargements to which they are subject. The enumeration would be tedious and useless. Other causes are, suppressed gout, repelled

eruptions, drying up old ulcers, deleterious vapours of every kind, and sometimes from idiosyncrasy, apparently innocent ones. The fumes or the fine powder of ipecacuanha floating in the air when pounded have produced this effect.

The cure will greatly depend on the cause: should no organic defect forbid, full vomiting may be advantageously employed; in the more languid states of the circulation, the ammonia and the squills.

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EBULUS.—Page 591, col. 1, line 3; "*in the beginning of September.*"—The whole plant has a disagreeable, virose smell, more unpleasant than that of the elder. The root is creeping, round, somewhat more than a finger's breadth, thick, white, and somewhat fleshy. It was formerly much celebrated in dropsy, both as a diuretic and a purgative. Two drachms in decoction are sufficient for the latter purpose. If the interior branch of the recent stalk be boiled in water, a very bitter decoction is produced, which excites vomiting, a discharge of stools and urine (Brocklesby). The leaves, thrown into a granary, drive away mice (Lorselius apud Linnæi Flor. Suec. 97). Boiled with wine in the form of a cataplasm, they discuss tumours of the joints, arising from contagion, particularly if a bandage is added. They are said to be useful applications in œdematous swellings. The rob of the berries is a domestic remedy in Switzerland and Carniola, as a deobstruent. When recent, the berries are gently laxative, less so in the form of a conserve.

The seeds are oval, somewhat triangular, and wrinkled; when recent, their cathartic effects are more certain in the dose of a drachm, taken in wine or broth, or with syrup, in the form of an electuary; but it sometimes excites vomiting. The expressed oil is equally efficacious.

ECCHYMOSES.—Page 591, col. 2, line 11; "*alone necessary.*"—Astringents and stimulants of a more active kind are often advantageous, and ardent spirits, from their astringent, perhaps their antiseptic, power are generally useful. When the ecchymosis is considerable, bark and vitriolic acid internally are required.

EFFLORATIO.—Page 593, col. 2, line 44; "*See EXANTHEMA.*"—In botany, this term means the time of flowering of each plant, which is variable according to the climate, and more so when the plant is kept in conservatories. Those which flower twice a year are called *bifera*; if oftener, as the monthly rose, *multifera*.

ELEMI.—Page 597, col. 1, line 12; "*kakuria.*"—Geoffroy distinguishes two kinds of gum elemi, the true, which is yellow, or of a greenish white, in cylindrical pieces, internally soft and glutinous, with the smell of fennel, covered with reeds and palm leaves, brought from Ethiopia; and the *spurious* brought from New Spain, the Brasils, and the American islands. When the bark is separated from the top of the trunk, in a dry season, within about three days, a gratefully smelling resin, with the odour of dill seeds recently

bruised, exudes, which sensibly hardens. It is imitated by uniting yellow resin with the oils of spike and turpentine; but the smell of the latter betrays the fraud.

ELEPHANTIASIS.—Page 597, col. 2, line 20; "*on bad diet.*"—It is not only endemic among the Moors, but in Sweden, in Java, in Barbadoes (Hillary), and around the river Jaik (Pallas). One of the common remedies recommended is the flesh of vipers; but Horstius, and, after him, Dr. Heberden, have informed us that it is of little utility. The bark and warm bathing have occasionally been useful. Hillary observed, on dissection, that the vessels of the cellular substance were considerably dilated.

Hillary's Diseases of Barbadoes; Albinus de Elephantiasi, 1694; and De Elephantia Javæ Novæ, 1683; Emerson de Elephantiasi vera Ulterioris Asiæ; Fracastorius de Morbis Contagiosis; Hendy and Rollo on the Diseases of Barbadoes.

EMANSIO.—Page 599, col. 1, line 62; "*usual period of appearing.*"—In modern authors, the term is more strictly limited, and "emansio" is applied to the deficiency of the discharge at the period of its first appearance.

EMBALMING, the art of preserving a dead body from putrefaction. The Egyptians excelled in this process, which consisted among them in discharging the contents of the cavities by means the least calculated to disfigure the corpse, and filling them with antiseptics and aromatics, particularly myrrh, cassia, and different spices. It was then laid for seventy days in a strong solution of nitre, and afterwards bound up with bandages and fillets, immersed in a bituminous substance. Sometimes the features were preserved, at others the face was bound up, and a resemblance probably, though a rude one, drawn on the mask. Another mode of preserving was by injecting a terebinthinate fluid into the anus, and covering the body with some drying powder, either fine calcareous earth or lime. In more modern times, the Egyptians wash the body frequently with rose water, perfume with incense, aloes, &c. and then bury it in silk or cotton, sometimes in a covering consisting of each, moistened with liquid perfume. Dr. Hunter recommends injecting the vessels with turpentine, impregnated with camphor. Faujas de St. Fond gives a very entertaining account of the method Mr. Sheldon employed to preserve the body of a young lady (Travels through England and Scotland, i. 42). The vessels were injected in different parts with alcohol saturated with camphor, mixed with a small proportion of turpentine. The skin was prepared with finely powdered alum, rubbed on with the hand. The intestines, and all the internal parts, were taken out and covered with a varnish, composed of a mixture of camphor and yellow resin, afterwards rubbed slightly with alum. The viscera were then replaced, and the crural artery injected with a strong solution of camphor in rectified spirit. To imitate the colour of the skin of a face, a coloured injection was thrown into the carotids. The body was then placed in a case of Virginia cedar, on a layer of calcined chalk, inclosed in another, and not again opened for five years. It was then found

perfect, without having experienced any injury from insects.

EMBRYOTOMIA.—Page 599, col. 2, line 55; "*easier delivery.*"—It has been asserted by Dr. Osborn, that the head of a full grown child cannot be diminished less than three inches, between the parietal protuberances by the action of the uterus, and that where either aperture is less, the operator ought to proceed, as soon as possible, to *embryotomy*. This assertion is perhaps somewhat too hasty, since the heads of different fœtuses yield in different degrees, and are of different sizes, nor is it easy, at all times, to determine the exact size of the aperture. It is best, therefore, to avoid the opposite errors of waiting too long, or too hastily attempting a disagreeable and dangerous operation. When, after a trial proportioned to the woman's strength, the fœtus does not advance, and the impediment appears to arise from the size of the aperture, the operation should be determined on. The aperture, which will admit of the extraction of the child after it is mangled by the operation, has been the subject of our consideration under the article *CÆSAREA SECTIO*.

When the operation is decided, the perforator is to be cautiously introduced, guided by the hand and finger to ascertain that the part to be perforated is really the head of the child; and it is almost indifferent what part of the head presents, if it be any portion of the upper part. The perforator must then be used cautiously till the skull is penetrated, and it enters the brain so far as the rests. The blades of the scissors must then be separated in different directions, to make a crucial opening, and the brain evacuated by a teaspoon, though it will be in a great measure discharged spontaneously. In this part of the operation we must avoid injuring the woman, and make the aperture sufficiently large for the evacuation. It is proposed by Dr. Osborn to wait for some time after the brain is evacuated, and should the strength permit, this may be allowed, but in emergencies we must hasten on. Though fatigued, she will gain some strength by the delay, if delay is admissible; the swelling of the soft parts will subside, and the bones collapse, when the distending cause is removed. To guard against injury, the ragged edges of the fœtal bones should be covered with the integuments.

When we proceed to the extraction, the crotchet, introduced like the forceps, is to be fixed at first on the inside of the cranium, with two fingers of the left hand on the outside, that if the blade should slip the mother should not be wounded. The operator will then draw downwards firmly and steadily, directing the head so that its largest diameter shall pass through the widest part of the pelvis. Much time, and sometimes very violent exertions are required, but if the operator imitate nature in occasional remissions, and increases the force when he finds any yielding, or, which rarely happens, any assistance from pains; if he supports the woman by cheering promises, and proper nourishment, the wished for end will be at last accomplished. The practitioner must be cautious not to use violence. If the resistance is considerable, it is not to be overcome by active exertion, but by steady perseverance. The force, which for ten minutes has not the least effect, will perhaps in fifteen overcome the resistance, and, in

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a moment of relaxation, we gain by steadiness what ten times the power would not otherwise effect.

If the head passes, the body sometimes remains, and it is then advised to introduce the flattened hand, by the side of the back or thorax, into the uterus, to bring down the feet. The distortion of the pelvis, however, seldom admits of this measure, and the crotchet must be fixed in the ribs; the contents of the thorax and the abdomen evacuated, and every method tried to lessen the bulk, or assist the expulsion.

The dangers to be apprehended from this operation are injuries to the passages from the instrument slipping, or violent inflammation of the parts from bruises, inflammation extending to the abdomen. Indeed more women die from this operation than practitioners are willing to admit; but we believe the greater number sink from its being delayed too long.

We have mentioned in another place, the proposal of bringing on labour at an earlier period, viz. at seven months, when the narrowness of the pelvis rendered the necessity of this or the *Cæsarean* operation probable; but the attempt is dangerous, and the execution often difficult. Mr. Lucas (*Memoirs of the Medical Society*, ii.), proposes, by a strictly abstemious diet, to lessen the bulk of the child. This, however, is a very precarious measure, and we suspect that it has not been properly tried.

EMOLLIENTI.—Page 605, col. 1, line 3; "*the whole more flexible.*"—We have very inconsiderable evidence of emollients having any effect internally, except in a very slight degree on the stomach. They can have none on the internal surfaces of the arteries; but we find that they operate beyond the part to which they are applied: an effect partly arising from the relaxation induced by the heat, partly from the communication of that produced by their immediate influence. If a state of tension be general, as it apparently is in the human body, the relaxation of one part will admit of the contiguous portion yielding; and this is probably the source of the benefit, for the relaxation is felt more evidently nearer the part to which the application is made. We have already mentioned that, on a principle not very different, Dr. Cullen has explained the action of the warm bath; and the more fully this doctrine is examined, the greater will the probability of its truth appear. Water alone we have considered as the principal emollient; but the frequent application of warm water will dissolve the sebaceous matter of the skin, and counteract its own effects. Some oily or mucilaginous substance ought, therefore, to be added. When the design is only to relieve tension, the warm water alone will be sufficient, and no addition will improve its salutary effects.

EMPHYSEMA.—Page 605, col. 2, line 20; "*without any injury to the pleura.*"—Dr. Blagden and Dr. Simmons mention a rupture of the air vessels as the consequence of labour pains, and Mr. Hicks as the effect of peripneumony (*Medical Communications*, i. 13). Dr. Wilmer, in his *Cases and Remarks*, observed it from a putrid fœtus, when it was relieved by acids.

Achard in the *Berlin Memoirs*, 1781, proposes the injection of different gases into the cellular substance

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as remedies; but neither this author nor Timmerman has adduced any facts in support of this novel practice, and, from our more intimate acquaintance with the nature of these artificial gases, there is not the slightest expectation of their success from this mode of employing them.

EMPLASTRUM.—Page 606, col. 2, line 53; “*in many plasters.*”—Iron is not mentioned as susceptible of an union with oil, but from the changes in the appearance of the oil from the action of wheels, it is probable that an union actually takes place, which may prove an useful addition to the list of external remedies.

EMPYEMA.—Page 608, col. 1, line 9; “*symptoms of hydrothorax.*”—The observation of Dr. Cullen that empyema may arise from vomica, and the distinctions enumerated in a subsequent part of the article taken from the strumous habit, apparently require correction. In vomica no real suppuration takes place except in the cyst of the tumour, and this is too inconsiderable to produce empyema. If true purulent matter is discharged in any quantity from the lungs, we have, as observed in another part of the work, considered it as a common abscess, and given a favourable prognostic, which the events have not yet contradicted.

After the external incision, the aperture of the pleura may be made of a less extent. This membrane should be very slowly and cautiously divided, lest any adhesions should have taken place. When a probe can be introduced it will serve as a director. If the adhesion be considerable, an opening must be made in another part; but, in general, by enlarging the external aperture, access to the cavity of the pleura may be obtained. When the first flow has escaped, a flat silver canula should be introduced, that it may be stopped should the patient be faint. The patient should lie on the side affected, that the matter may be gradually drained. It has been proposed to make the external incision lower, and to draw back the skin before the pleura is wounded, to prevent the access of air: but this is apparently unnecessary. The matter remaining will prevent any great danger, and the air may contribute to excite some salutary inflammation, which will obliterate the cyst. The wound must not be allowed to heal soon, as a discharge from it will contribute to prevent the return. When matter has formed near the pleura, when its seat can be ascertained, a deep issue will frequently evacuate it. Watson has succeeded by means of a seton.

It has sometimes happened that nature has made an effort to discharge it at different parts of the thorax; but when this has occurred under the scapula, and at the upper regions of the chest, the patient is only for a time relieved, and a depending opening must be made. The puncture has been made in many different parts, by David (*Memoires pour le Prix*, x.) near the sternum; by Saviard (*Observations Chirurgiques*) near the xiphoid cartilage. Borelli mentions sudden death, from too rapid evacuation of the purulent matter.

The older surgeons direct various injections of myrrh, wine, oil, &c. after the operation which induce dangerous inflammation; but could this be moderated it might occasion an obliteration of the cavity by the adhesive in-

flammation. The continuance of the discharge is a safer plan. The bark, the salix, and a variety of tonics, have been advised after the operation; but the circumstances of the patient, and the previous disease, will direct the proper remedies. As empyema has occasionally arisen from metastasis, as in a case described by Fabricius Hildanus, where it followed a suppuration of the thumb, induced from a wound made by broken glass, so it has been relieved in the same way, and the matter discharged by urine (*Buchner Dissertatio Sistens Solutionem Empyematis per Mictionem Purulentam Halæ*, 1762). Scultetus and Valisnieri have attempted to imitate this process by diuretics; but have succeeded only in those equivocal cases, which may have been collections of water only.

EMULSIO.—Page 609, col. 1, line 13; “*acute disorders.*”—Emulsions are often the vehicles of oils, resins, &c., and are generally useful in the exhibition of the more acrid medicines of this kind, from the demulcent nature of the oils. They are the vehicles in general of oils, and consequently useful in all cases where demulcents are required.

ENEMA.—Page 611, col. 1, line 4; “*its value offers.*”—Almost every medicine of the more active classes have been given in clysters, chiefly when they cannot be, from different causes, swallowed. The turpentine, however, in urinary complaints, and carminatives in flatulencies of the bowels, are often, in expectation of superior advantages, thrown into the rectum. The former is certainly conveyed nearer the part affected; but, except from the warmth, it operates only in consequence of absorption; and such clysters are chiefly useful from the greater dose which can be thus conveyed into the system. The latter, particularly in children, are often highly useful in this form. Clysters of vinegar and fixed air, as antiseptics, were some years very fashionable, but now disused. Those of tobacco smoke are often advantageous; but we have already spoken of them under the complaints for which they are particularly employed, *HERNIA* and *ILEUS*, q. v. When too warm, or wholly cold, they are said to be often injurious, and in some instances fatal; yet in Germany cold clysters are often recommended, so that the danger is apparently not so great as Paullini and Bartholine seem to apprehend. They are not employed in this country, though apparently well adapted to *mænorrhagia*, particularly the *m. puerperarum*.

Of Kæmpf's visceral clysters we have already spoken. They consist of the simple bitters, or rather the medicines styled by the older physicians aperients, and are not employed in this country, or deserving of confidence. Kæmpf's own account, *die Krankheiten des Underleibs zu Heilen*, is not accessible to every one, but the following works are more easily met with; *Elvert de Infarctibus Venarum Abdominalium Internarum Eorumque Resolutione per Enemata Potissimum Instituenda*; *Faber Expositio novæ Methodæ Kæmpfi- anæ Curandi Morbos Chronicos Inveteratos*; or, *Koch de Infarctibus Vascularum in Infima Ventre*.

ENGASTHRITHMOS, (*ἐν γαστρῇ*, and *θυμῷ*). A **VENTRILOQUIST**; one who speaks from his belly, at least without visibly employing the organs of speech.

On this account, by varying the loudness of the voice, or rather accommodating it to the supposed distance, it has seemingly proceeded from different spots. The faculty is possessed in various degrees of perfection by different persons; but from some the effects have been truly terrific, as apparently proceeding from the air, from an oyster, &c. This power it is supposed enabled the ancient priestesses to utter their prophecies, as if they came from the idols, and thus to impose on their votaries as the source of the vaticination.

ENSATÆ, (from *ensis*, a sword), the sixth order in Linnæus' natural method, consisting of plants with sword-shaped leaves.

ENYSTRON, the last ventricle of ruminant animals, synonymous, according to Gorreus, with *abomasum*. In this stomach the digestion is completed.

EPHELIDES.—Page 613, col. 1, line 52; "*close phial*."—Stoll recommends for their removal an infusion of horseradish in vinegar; Starke, a solution of borax.

Page 613, col. 2, line 38, for INCUBO, read INCUBUS.

EPIDIDYMIS.—Page 616, col. 2, line 59; "*forms the vas deferens*."—This body is oblong in its form, and surrounds the outer and posterior margin of the testicle, to which it is joined by cellular texture. In the lower, middle, and more slender part it occasionally adheres, though it is sometimes free. The vascular cones at the upper part of the epididymis unite by degrees, and form one duct, which composes the greater part of the testicle, and grows larger as it descends. From the bottom, where it is of course largest, it ascends along the posterior face of the testicle, spreads its spiral convolutions, enlarges, and is called *vas deferens*.

The membrane which connects it to the testicle at the middle is the doubling of an almost transparent continuation of the tunica albuginea. The epididymis is flat, a little concave next the testicle, irregularly convex on the other side. These sides are distinguished by two angular edges, the innermost of which is connected with the testicle, while the outermost is free. A duct is seen to pass off from the epididymis, whose use is unknown. It was supposed to be a lymphatic; but, in a few instances, Dr. Munro found it to originate in one end, and terminate in the other. May it not be a provision in nature to supply the communication, should this body, which consists of a single convoluted tube, be in any part obstructed?

The diseases of the epididymis are not numerous. Walter discovered a calculus in it, and Dr. Nisbet informs us that it was found in a decayed state, without diminishing the venereal appetite. If this be true, it can only be accounted for by the existence of such a duct as we have just described.

EPIGLOTTIS.—Page 617, col. 1, line 38; "*See ASPERA ARTERIA*."—The epiglottis is almost wholly ligamentous, having only a triangular space filled with cellular and fatty substance, in which small glands are

dispersed between the lateral and anterior ligaments, which bind it to the root of the tongue, the os hyoides, and the neighbouring cartilages of the larynx.

EPILEPSIA OCCASIONALIS.—Page 617, col. 2, line 25; "*conformation of the brain*."—It is almost impossible to enumerate all the changes which have been found in the brains of epileptic patients. Morgagni (De Sedibus, ix. 16, 17) mentions a preternatural softness; and again (25), too great hardness of the brain. Pacchioni describes the brain as hard in that part which was the seat of a hydatid. Other authors mention hardened tumours of different kinds, and the accretion of a hard dura mater to the brain. In one instance there was a hard tumour of a reddish white colour in the corpus callosum, and in another the cause seemed to be a preternatural thickness of the cranium. Accumulations of pus and of fluids, differing in their nature, qualities, and consistence, have been frequently described, as well as irritations from sharp bones, exostoses, &c.; hydatids, fulness of the vessels, particularly in the plexus choroides, steatoma of the pineal gland, and adipose matter in the ventricles, have been found on dissection, and accused as causes. See also Boneti Sepulchretum Anatomicum, lib. i. sect. xii. obs. 3, 4, 5, 12, 17, 20, 21, 23, 25, 26, 27, 30, and Appendix.

The diseases of the stomach, supposed to produce epilepsy, have been numerous. Morgagni, in one instance, attributes it to inflammation of that organ, and hard substances swallowed have certainly often occasioned it. We have already mentioned irritation on the nerves from hard bodies, apparently originating from them; but Theden adds a case where it apparently arose from tying the spermatic cord. There is reason, however, for suspecting that this was not true epilepsy. Worms, frights, contagion, or the sight of a person in a fit, and narcotic poisons, have been undoubtedly causes.

To repeat the numerous absurdities of practitioners, in their list of remedies, would be a tedious and an useless task. We have not, we think, inserted several of the narcotics, which have, it is said, been found useful. The chief of these are the tobacco, the aconite, nuxvomica, digitalis, oil of box, hyoscyamus, and bella donna. Where an affection of the head has been ascertained, as in cases where the disease has arisen from external violence, the application of the trepan has apparently succeeded.

EPIPHORA.—Page 621, col. 1, line 36; "*downwards to the nose*."—When the water does not succeed, and some thickening of the membrane which lines the duct seems to be the cause, a little blood, according to Mr. Ware, may be taken from the side of the nose by leeches, and the injection changed for a vitriolic or saturnine solution. If the obstruction seem to arise from spasm, some diluted tincture of opium may, with advantage, be substituted: but all astringents will be injurious. Mr. Ware seems inclined to try these plans in succession, as it is not easy to ascertain at first the real source of the obstruction. He employs also another method, viz. introducing a silver probe, about the size of a bristle, through the superior punctum into the nose, and injecting water through the inferior. By this means he has often succeeded in cleaning the

passage. In slighter cases a sternutatory powder has succeeded.

In line eighth of this paragraph for *Avel*, read *Anel*.

EPSOMENSIS AQUA.—Page 622, col. 2, line 20; “*probably contains some earth.*”—Read, some other earthy salts. These are selenite, and, probably, muriat of magnesia. The water is transparent, without any gas. It is very mildly cathartic, and often, in smaller quantities, diuretic. It is chiefly useful as an eccoprotic, and well adapted to scrofulous and hypochondriac patients.

EQUISETUM.—Page 622, col. 2, line 58; “*Hippuris vulgaris.*”—The species is erroneous. Linnæus considers the medicinal plant to be the *equisetum arvense* Sp. Pl. 1516. Haller thinks the medical virtues confined to the *e. palustre* and *limosum*, which he considers as a single species; Alston to the *e. fluviatile* and *arvense*; while Bergius gives the appellation of *e. minus* to the *e. arvense*, and of *e. majus* to the *e. hyemale*. These species do not, however, wholly agree in their qualities, so that, as we have numerous astringents, we need not employ them. The *equisetum arvense* is apparently not astringent. The *equisetum* is said to be diuretic, and to be useful in restraining hæmorrhages from the bladder, as well as in nephritis calculosa; but the uncertainty of the species renders it a precarious and uncertain remedy.

ERIGERUM.—Page 623, col. 2, line 13; “*senecio vulgaris.*”—It is the *erigeron acre* Lin. Sp. Pl. 1211.

ERUCA SATIVA.—Page 624, col. 1, line 27; “*the seeds have the same qualities.*”—The seeds are oval, somewhat compressed, of a yellowish red colour; the taste sharp and bitterish, like a weaker mustard. They were formerly used as a condiment, and preserved in vinegar. They promote the secretion of saliva when chewed, and on the skin are rubefacient. They are spoken of as useful in scurvy and in incipient dropsies; and were anciently considered as aphrodisiac.

ERVUM.—Page 624, col. 1, line 51; “*mixed with honey, expectorant.*”—The seeds, however, are said to be poisonous, and to bring on palsy of the lower extremities. The meal was formerly used as a resolvent in poullices.

ESCHAROTICA.—Page 628, col. 1, line 25; “*on account of their great fluidity.*”—In lues the mercurial caustics are chiefly employed, and it is doubtful whether they possess any specific power. If the cupreous preparations are equally efficacious, this is probably not the case. We suspect, however, that the mercurials are more useful.

ESULA MINOR.—Page 629, col. 1, line 53; “*euphorbia cypharissias* Lin. Sp. Pl. 661.”—There is the same confusion respecting the spurges, as we have just noticed in the article *EQUISETUM*. In many countries no distinction is made. In Sweden the *euphorbia helioscopia* is the only plant directed. Linnæus, in his *Materia Medica*, distinguishes exclusively the *euphorbia palustris*; and the Wirtemberg, as well as the Helvetic

Pharmacopœia, confine themselves to the *e. cypharissias*. The distinction, therefore, is probably of little importance.

The leaves of the *e. minor* resemble in taste those of the almond tree, and the oil is without any acrimony. The juice spontaneously exuding from the plant, in the dose of a scruple, did not injure a cat to whom it was given; but, applied to the eye lid when closed, brought on inflammation and blindness.

The root is highly acrid, and even in the smallest quantity stimulates very violently the tongue, the fauces, the œsophagus, and even the stomach; an effect which physicians have attempted to lessen by macerating it in vinegar and cream of tartar. From six to twenty grains of each species of *esula* is an active purgative; but Tournefort records the bark of the root being given in a dose from a scruple to a drachm. The extract, from the latter, prepared with vinegar, or the powder inspissated in simple oxymel, is more mild, and has been given with effect in dropsies, dissolved in whey, and combined with a decoction of juniper berries.

The recent juice of the *e. major* is given in the dose of from five to six drachms, or the same quantity of the dry root is infused in warm water, and given in Russia as a remedy in intermittents, visceral obstructions, and other chronic diseases (Pallas). Each excites violent vomiting and purging. This species, as well as the *e. verrucosa*, is given in Dauphigny for the same purpose.

EUPHORBIA.—Page 630, col. 2, line 4; “*euphorbia officinarum.*”—In a later work Linnæus referred this medicine to another species, *euphorbia antiquorum* Sp. Pl. 646. The gum brought to England, however, is the production of the *e. canariensis*. The powder is a violent errhine, inducing hæmorrhage from the nose and lungs: when introduced into the system the acrimony seems directed to the kidneys.

Notwithstanding many fatal events have followed its accidental exhibition, the ancients, particularly Ætius and Actuarius, gave it freely; and the moderns have followed them, endeavouring to correct its acrimony by oil of almonds, lemon juice, mastic, tragacanth, &c. The only way, however, of avoiding danger is to lessen the dose, which has varied from one grain to ten. Fallopius was more bold; but we gain nothing by this remedy which we may not obtain by safer ones.

Externally, however, it is highly useful, particularly in assisting the exfoliation of carious bones, and in that kind of cancer which arises from the contusion of squamous bones (Theden). It is sprinkled in the form of powder on the part every day, or every other day, sometimes applied in the form of a tincture; in other cases mixed with sal ammoniac (Theden). Some practitioners mix it with the root of orris or aristolochia rotunda. The lips of the wound must, however, be closed before the application, that its stimulus may not produce too violent inflammation. It was formerly applied to limbs wasted with atrophy, palsy, or chronic rheumatism.

Even externally, however, euphorbium is dangerous. The tops of the *e. esula*, applied to the abdomen induced swelling of the whole body, with a fatal sphacelus. In another case, the application brought on a tumour of the scrotum, with violent pains, and the patient escaped with difficulty. Scopoli.

EXCORIATIO.—Page 632, col. 1, line 51; "*ecdora*."—Excoriation is chiefly painful when the part is pressed against, or subject to, attrition; it then often degenerates into a deep ulcer. It is best guarded against by cold water, and most successfully relieved by the application of spirits, which destroy the too great sensibility of the vessels. De Haen recommends the white of an egg mixed, by agitation, with alcohol.

F.

FABA.—Page 638, col. 1, line 4; "*cyamus, phaseolus*."—It is the *faba vicia* Lin. Sp. Pl. 1039. As a food the seeds are flatulent, and often troublesome in weak stomachs. The farina is used in poultices as an emollient and maturing application.

Page 638, col. 1, line 46; "**FABA PECNURIM.**"—Read **PECHURIM**. It is certainly not procured, as was once conjectured, from the *copaifera*, and Bergius suspects that it is the production of the *lauraster amboyensis*. It was brought from the Brasils, or Paraguay, about the middle of the last century to Portugal, from thence to Stockholm, as a remedy for colic and diarrhœa, and was used with considerable success by the Swedish physicians in the seven years' war.

We receive only the kernel of the nut, which is oval, of a black brown colour, somewhat smooth, heavy, convex on one side, and concave on the other, with often a longitudinal furrow. Its length and breadth differ. The colour internally is of a reddish yellow, variegated by deeper coloured spots, mixed with a paler parenchyma. It is easily penetrated by the knife or teeth; the taste somewhat between nutmeg and sassafras.

A spurious bean is sometimes sold about double the size of the true, externally wrinkled and paler; internally deeper in its colour, more hard, and bitter, but less aromatic.

The watery infusion retains the taste and smell: from the decoction of the powdered seeds a fragrant odour exhales, and its surface, when cooled, is covered with an oil. When inspissated, the extract exceeds by a third part the quantity of the nuts. Alcohol is tinged by the bean with a red colour, and covered also with oil. The extract prepared from the tincture is warm and acrid; the original taste of the bean preserved. When it is used in diarrhœa, evacuations should be premised, and it has failed when the tongue has been dry. It has failed also in other circumstances, which have not been clearly understood or pointed out. In hectic diarrhœas it seems to have been very advantageous, and its effects are apparently rapid. In dysentery it also seems to have succeeded. The medicine is given in powder, from half a drachm to two scruples, two or three times a day. After the substance, the extract (we suppose the alcoholic) is said to be most useful; the infusion and tincture of inferior efficacy.

The bark of this tree is of a cinnamon colour, deeper internally; externally white. The best is about a line in thickness. The odour is highly aromatic, superior to that of cloves and nutmeg; at a distance resembling amber. The taste is stimulating, gently astringent, and bitter. It is brought from Panama; but is supposed to grow also in India. When reduced to powder,

the finest and most aromatic parts are highly volatile. Cold water extracts an aromatic odour. Two ounces by Garayé's process yield two drachms and a half; in the common way five drachms of an extract, which is bitter, astringent, and aromatic. The watery infusion is rendered brown by vitriolated iron; the vinous infusions more balsamic and bitter, though less astringent; the distilled water highly perfumed. The essential oil is warm, of a deep colour, sinking to the bottom. The magnet detects the presence of some iron in the bark. Its antiseptic power is equal to that of the cincona, and superior to camomile flowers. The infusion of the bark in vinegar is strongest in this respect.

It is given in Lisbon in dysentery, and with taffia in sciatica and gout. Mayer informs us that it strengthens the stomach, stops obstinate vomitings, and in one singular case relieved cholera. It is useful in dysentery, even in the early stage, where other astringents are injurious. It cured a double tertan, which had resisted the bark, and with filings of steel was successful in an obstinate leucorrhœa.

Page 638, col. 2, line 46; for "*soluble*," read *insoluble*.

FAGUS.—Page 639, col. 1, line 40; "*triangular seeds or nuts*."—The capsule often contains three or four nuts, and they resemble in taste almonds. They are a pleasing food to squirrels and many birds: the latter soon fatten on them; but the fat is yellow. In large quantities the nuts are deleterious, and affect the head, inducing, like the *lollium temulentum*, intoxication. This effect, it is said, they have on swine. The inner bark, which is so thin as to be scarcely visible, is used in Brunswick as a domestic remedy for hectic.

FAMES.—Page 639, col. 2, line 41; "*necessary supplies*."—Belinghieri denies that hunger disposes to putrefaction (*Considerazione alle Maladie dette Putride*). Haller describes the appearances on dissection of a person starved (*Opuscula Pathologica*, obs. 29), but was preceded by Bonnet (*Lib. ii. sect. ii. obs. 18*); and Morgagni (*De Sedibus*, xxviii. 5, &c.) those of a starved puppy. (See **BOULIMUS**.) Some animals bear hunger with little injury, particularly those which live torpid during the winter, and amphibious animals; but others, and even human beings, may be sometimes deprived of food for a long period with little permanent injury. For an account of the fasting woman, see *Philosophical Transactions*, vol. lxxvii. part 1; and for other instances, vol. lxxiii. and for 1777. The earlier volumes of this collection, viz. for 1668, 1669, &c.; the *Memoirs of the French Academy of Thoulouse*; the *Journal de Savans*, &c., contain many singular facts of this kind, some of which are too extraordinary to demand our confidence. Pliny remarks (*Historia Naturalis*, xi. 54) that fasting is fatal in seven days.

FEBRIS.—Page 654, col. 2, line 26; "*with little change*."—See **BILIOSA INFLAMMATORIA NERVOSA**, **PUTRIDA FEBRIS**, and **TYPHUS**. Under the article **NERVOSA FEBRIS** are inserted some remarks on Dr. Clutterbuck's new system, and, in this Appendix, referring to that article, Dr. Beddoes' observations on it.

FEMORIS OS.—Page 655, col. 2, line 64; “*at a distance backward.*”—The upper end of the bone is set off obliquely from its axis, and is formed into a large, smooth, round head, which is the greater portion of a sphere, unequally divided. Towards its lower, internal part there is a round, rough, spongy pit, where the round ligament is attached, and extended from thence to the lower internal part of the receiving cavity, where it expands in breadth. The small part, which projects at almost right angles from the head of the bone called the *cervix*, is marked with many holes, in which the fibres of the strong ligament, continued from the capsular, enter, and are consequently firmly joined to it, and round the root of the neck the capsular ligament is joined to a rough ridge. Below the back part of the root is a large unequal protuberance, called the great trochanter, the fore part of which is rough for the insertion of the *glutæus minimus*; the superior smooth, where the *glutæus medius* is attached; the inferior smooth and flat, from the action of the tendon of the *glutæus maximus*. The upper edge of this process is sharp and pointed behind; but forward more obtuse, for the insertion of different muscles. More internally a conoid process, called the less trochanter, rises for the more advantageous insertion of the *psoas* and *iliacus internus*: the *pectinæus* is implanted in a rough hollow below its internal root. The tendons which pass over the great trochanter render bruises on it highly dangerous.

The body of the *os femoris* is convex on the fore part, and hollowed behind, apparently from the action of the muscles. The fore part is a little flattened above by the beginning of the *cruræus*, and below by the same muscle and the *rectus*. Its external surface is also flattened by the *vastus externus*, where it is separated from the former by an obtuse ridge. At the upper part of the *linea aspera* the medullary vessels enter by a small hole that runs obliquely upwards, and a little above is a rough fossa, where the tendon of the *gluteus maximus* is fixed. The lower end of the *linea aspera* is divided into two, for the attachment, in part, of the two *vasti* muscles; and the long tendon of the *triceps* is fixed to the internal by a part of the aponeurotic fascia of the thigh. Between these rough lines the bone is flattened by the action of the large blood vessels, and near the end of each ridge sesamoid bones are sometimes found. From the fore part of the internal tubercle a strong ligament is extended to the inside of the tibia.

The internal condyle of the lower part of the *os femoris* is longer than the external, to lessen the effect of the obliquity of the thigh bone on the direction of the leg. Each condyle is divided into two surfaces, divided on the external one by a notch, and on the internal by a small protuberance. The fore part of this division, on which the *patella* moves, is formed like a pulley, the external side of which is the highest. Behind there are two oblong large heads, whose greatest extent is backward, for the motion of the tibia; and, from the rough cavity between them, nearer the base of the internal, the crucial ligament arises: the tendon of the *triceps* is inserted in a protuberance a little above. In every part of each condyle there are protuberances or depressions for the insertion of muscles or ligaments.

The motion of the head of the femur, though free in

rolling, is restrained outwardly by the high brims of the cavity, and by the round ligament inwardly, where the brims are shallower. The body of the femur has a very slight rotatory motion; for the oblique projection of the neck communicates only a motion forward and backward, though to a certain extent its motion may be considered as rotatory. When the thighs are fixed their muscles move the trunk, though very disadvantageously.

From the structure of this bone accidents are common and highly troublesome, often dangerous or fatal. We have already mentioned the bad effects of contusions on the tendons, and may refer for a fuller account to the *Memoires pour le Prix*, xi. The difficulty of distinguishing a fracture, particularly of the *cervix*, or of distinguishing fracture from luxation, will be sufficiently obvious. When the joint has been luxated it has sometimes formed a new articulation in the groin, and some degree of strength and motion have been recovered. In a case recorded in the *Medical Commentaries*, the head of the bone was forced through the *os innominatum* from a fall.

From its situation and office it is subject to various shocks, and, consequently, to inflammation and to abscesses. The latter are sometimes seated in the cavity of the thigh bone, often in its head, and are of a scrofulous origin, like the white swelling of the knee, or the source of the distortion of the spine. The best termination of this complaint is ankylosis; but it generally destroys by the attending hectic. The limb often shortens by the contraction of the ligaments; but this is frequently the case from confinement, and, according to Richter, has followed repeated fits of the gout: in one instance it was cured by burning moxa on the part. The head of the bone has, it is said, been separated spontaneously by a caries, designedly by an operation, and luxated by an abscess; the neck has been destroyed by a fracture, and the whole bone rendered spongy by œdema (Ruysch). This bone, like the humerus, has been torn off by violence by the action of a mill wheel, without any attending hæmorrhage. See AMPUTATIO, LUXATIO, and FRACTURA.

FIBRIN (of the blood). See BLOOD.

FIBULA.—Page 662, col. 2, line 15; “*outside of the astragalus.*”—The head of the fibula has a superficial circular cavity, formed on its inside, covered, in a recent subject, with cartilage; but so closely connected with the tibia, as to allow only of inconsiderable motion. There are several protuberances on this bone for the insertion of muscles, but either are of little importance.

The body of the bone is crooked inward and backward, from the action of the muscles. Its sharpest angle is forwards, and it is depressed on the sides by the muscles. Its external surface is depressed obliquely from above downward and backward; the internal unequally divided into two narrow longitudinal planes by an oblique ridge, extended from the upper part of the anterior angle, to join with the lower end of the internal. To this ridge the ligament, stretched between the two bones of the leg, is connected. To the internal angle of this bone a tendinous membrane is fixed, from which the fibres of the *flexor digitorum longus* arise. The posterior surface of the fibula is plainest and

smoothest, but flattened above by the solæus, and hollowed below by the flexor pollicis longus. In the middle of this surface the canal for the medullary vessels may be seen slanting downwards.

The malleolus externus is situated farther back than the internus, and in an oblique direction, which obliges us naturally to turn the fore part of our foot outwards, though we lose by it some of our firmness, and particularly the breadth of the basis on which the body rests. At the lower internal parts of this process there is a spongy cavity for mucilaginous glands: from its point ligaments are extended to the astragalus, the os calcis, and os naviculare; and from its inside strong short ones go to the astragalus. On the back part is a sinuosity, made by the tendons of the peronæus; and when the ligament which covers these tendons is broken or weakened, the tendons frequently start forward to the outside of the fibula. The union between the tibia and fibula is by cartilages, without any particular or strongly marked articulation, and the motion is inconsiderable. In old people the two bones of the leg have grown together. Monro.

Both the ends of the fibula are cartilaginous in young persons, and assume the form of appendices before they are united to the body.

FICUS SATIVA.—Page 662, col. 2, line 65; "*Materia Medica.*"—The milky juice of the fig tree is highly acrid. It was formerly a common domestic application to lepra, and many chronic impetigines: its utility is at present confined to the extirpation of warts. These must be frequently moistened with it, particularly about their bases.

FILAMENTUM.—Page 663, col. 1, line 16; "*called thread.*"—Dr. Darwin supposes that a filament is the element of which animal bodies are composed, and that the arrangement of these filaments, constituting the organization, is directed by the habits of the animal rather than any primordial construction. In this fanciful fabric they are only another appellation of *organic molecules*.

FILIPENDULA.—Page 663, col. 1, line 34; "*slightly pungent.*"—The root consists of long fibres, at intervals tuberos, of an agreeable smell in autumn; but less fragrant in summer, when it is also drier and bitterish. In the autumn the taste is sweetish. They contain a starch, and by decoction deposit a strong jelly. From hence they appear evidently nutritious, and have been employed as food in seasons of scarcity. The roots, when dry, are astringent, said, with little reason, to be also diuretic and lithontriptic.

FILIX FLORIDA.—Page 663, col. 1, line 60; "*Pteris aquilina.*"—The root is long, of the thickness of the finger, solitary, black externally, and spotted within, of a viscid, bitterish taste, and more nauseous than the root of the male fern. Three pounds yield six ounces of expressed juice of the consistence of honey. From a pound of the dry root in decoction nine ounces of a subastringent bitter extract is obtained: from the same quantity, by means of spirit, only 14 drachms 2 scruples are procured.

Authors think the female equal to the male fern in its

anthelmintic power. Haller and Alston are of opinion that it is superior. Two drachms in honey, or three in white wine, are given every day for three or four, omitting only that in which a laxative is exhibited. The eau de fougeres, a secret remedy of Andry for worms, probably contained a preparation of this plant, among many others, of which Dionis, his son-in-law, tells us it was composed. It is equally effectual in the cure of lumbrici as of tænia.

FILIX MAS.—Page 663, col. 2, line 2; "*often sold for it.*"—The root is oblong, of the thickness of the finger, surrounded by black, oval, oblong, incurvated bulbs, approaching each other, and scales of a dark ochry hue. The fibrous portions are separated. The recent root is of a pale green, changed by drying to a reddish white. The smell is somewhat nauseous. Six ounces of the dry root yield six drachms two scruples of a sweetish, gently astringent, and at last a bitter aqueous extract. The alcoholic extract from the same quantity is more bitter, and in quantity an ounce, seven drachms, and one scruple. Gmelin *Considerationes Generales Filicum*, 34.

Madame Nuffler's formula we have given in the article TÆNIA, q. v.; but may add, that the same remedy is equally useful in lumbrici, and when the larvæ of the musca meteorica cause considerable inconveniences in the bowels (Sparman in the *Swedish Transactions*, 1778, 65). In the latter case, however, the chief benefit is apparently derived from the drastic bolus, as the worms continued active for many hours after they were discharged. Many authors have substituted milder laxatives for the violent drastics of the Swiss widow, but apparently without equal success. The anthelmintic power of the male fern was known to Galen and Theophrastus.

This root has also been celebrated as a tonic, emmenagogue, and a vulnerary; but it has as little claim to these powers as to those attributed to it by the ancients, of killing the fœtus in utero. Boiled in beer, the inhabitants of the Feroe islands use it in cases of calculus: it is eaten as food in times of scarcity, and sometimes employed by the tanners. The herb is scarcely inferior. From three pounds of it, when recent, sixteen ounces of a viscid juice, of a yellow-brown colour, and an astringent taste, may be expressed. It contains also a large proportion of alkaline salt. A conserve of the young shoots was formerly employed in this country in rickets (Bowles ap Raium); and it has been used to stuff the pillows on which rachitic patients lay. Van Swieten.

FISTULA IN ANO.—Page 665, col. 2, line 5; "*nature of the case.*"—Fistulæ of the anus generally admit of a cure, unless very long continued, with numerous openings and callosities, which would require a large wound, and too great a destruction of substance, or those whose internal aperture is beyond the reach of the finger. The latter require only an attention to cleanliness; the others may be cured by caustics, by ligatures, by incision, and extirpation, as well as by suppositories introduced into the anus, which, by closing the internal orifice, destroy its callosities, and unite its sides. These suppositories are, however, only adapted for recent and superficial fistulas; for if deep they will

not prevent the faeces from penetrating, which will hinder the wound from healing.

The mode of cure by *caustics* was known to Hippocrates, and the method of employing them thus described. "Take," says he, "a linen tent moistened with the juice of tithymalus, sprinkled with verdigrise of the length of the fistulous cavity. Let this tent be conveyed into it by the help of a sound, to which it must be fastened by a thread, that is to be brought out by the anus, after having fixed it in the external orifice of the fistula. The sides of the anus must then be rubbed with the terra cimolia, and a suppository of horn introduced. This must be continued five days, and removed only on a necessary occasion. On the sixth the suppository and tent must be removed entirely, the former supplied by another of crude alum, &c." Though this detail is full and particular, the practice seems to have been neglected till the time of Dionis. He attributes the plan to a surgeon, called Lemoine, who introduced into the opening, he observes, a tent covered with a corrosive ointment, which was afterwards enlarged. In this way, by gradually enlarging the aperture, he was, after some time, successful, and though the practice was neglected, it was not wholly disused. Ward's paste is a remedy of this kind.

The ligature is a mode of cure equally ancient. A thread is to be carried by a sound to the extremity of the fistulous sore, and a wound made there to bring it back again by the anus. It is gradually made tighter, and by means of the old thread a new one may at any time be introduced when the former is worn. The process is slow and tedious, but not painful or inconvenient. It was for many years the common method, for a time neglected, and again revived. Foubert introduced the leaden wire, which was soon changed to a silver one.

The callosities which line the fistulous canal Paulus of Aegina recommends removing by the knife or scissors; but they disappear spontaneously by the removal of the fistula. Paré preferred incision in the more recent superficial fistulae; but the ligature in the deeper and more complicated ones.

When there is no external orifice the best means of ascertaining the termination of the fistula is to press round the anus, and at the part where the patient feels the pain the external aperture should be made. The decision will be more certain if a deep hardness is felt in it. Petit introduced into the anus a tent, so as to close the upper orifice. When, therefore, the pus was collected, the fluctuation showed the spot where the wound should be made.

Extirpation is the severer operation, which Mr. Pott attributes to Guy Chauliac; but it is a very ancient one, and is evidently described by Celsus. It consists in not only laying open the sinus, but in cutting out a small slip, lest the sides of the wound should unite. This operation is only advisable in the older and more complicated fistulae, attended with deep and extensive scirrhusities; for it is often followed by hæmorrhages, with fever, copious suppuration, diarrhoea, and a considerable contraction of the lower part of the gut. The patient must be prepared by purgatives, and a suitable diet, that he may not require frequent evacuations afterwards. With the same views he must have a clyster previously injected, and the T bandage put on. When placed in the usual position, the surgeon introduces,

at the external orifice of the fistula, the end of a flexible silver sound, about seven or eight inches long, following the point with the fore finger of his other hand to the upper orifice, or, in case there should be none, to the termination of the fistula. The upper extremity of the sound is now drawn out of the anus, while the lower is pushed on, that the part to be divided may be in its middle. This the surgeon cuts through with the bistoury, separating the slip, or as much as may appear diseased. Some operators recommend separating the scirrhus portions with the knife, or with the scissors; but this is unnecessary severity, and by dividing an artery may induce fatal hæmorrhage. In the common mode hæmorrhage is sometimes dangerous, and the artery often lies so deep as not to be discovered. The operator must then apply his finger successively to different parts of the wound, to perceive where the pressure most effectually stops the bleeding. A button soaked in a styptic fluid must then be applied, supported by compresses of lint. Sometimes the vessel leaks into the rectum, which is ascertained by paleness, fainting, and cold sweats. In that case the dressing must be removed, the coagulated blood taken out, and a vitriol button introduced on the wounded artery. Levret employed an ingenious method of stopping the blood. He introduced the flaccid bladder of a sheep, just killed, into the anus, and having previously fastened it to a large syringe, filled it with air, which he confined, and thus obtained an equable, steady pressure on every part of the gut. When the internal orifice of the fistula is at a distance from the anus, extirpation would require too great loss of substance, and practitioners have recommended simple incision only, taking care to scarify, or to destroy with caustics, the callosities which appear on the external surface of the fistula. The latter part of this advice is, however, wholly unnecessary, as we have already observed. When fistulae are of long standing, and have established a considerable discharge, it is recommended to form some drain, by an issue or seton, previous to the operation; lest checking so great an evacuation might be injurious. The advice is highly proper, and may perhaps be more generally followed than even the recommenders have intended.

FLAMMULA. See *RANUNCULUS LONGIFOLIUS PALUSTRIS MINOR*.

FLAMMULA JOVIS.—Page 668, col. 1, line 4; "*and with less success.*"—The leaves, when dried, are sweetish, combined with acidity, a slight astringency, and very little acrimony; in pounding, however, their powder is often inconvenient and injurious, producing considerable heat in the nose, fauces, and breast. The flowers are constantly acrid, either in powder or infusion. Two drachms of the leaves are infused for a quarter of an hour in a close vessel, and boiled for a moment in a sufficient quantity of water for a pint to be strained off. One drachm of the flowers is sometimes substituted, and each is occasionally made stronger. Of these infusions four ounces are taken two or three times a day. From half a grain to a grain of the extract, or three grains of the leaves, are also taken for a dose, which may be gradually increased. Other malignant and cancerous ulcers, besides syphilitic ones, have been, it is said, relieved by this medicine, as well as chronic

cutaneous complaints. It sometimes proves diuretic, occasionally sudorific or laxative.

FLATUS.—Page 668, col. 1, line 12; "*tympanites*."—There are some singular cases, on good authorities, of flatulence discharged by rather unusual outlets, particularly the penis and vagina. Cases of the former kind are described by Berger and Bartholine, in the Copenhagen Transactions; by Camper (*Observationes Pathologicae*, ii. 16), who traces the source to ulcers connected with the intestine; and by Marcellus Donatus (iv. 504), from an ulcer of the anus penetrating into the urethra. Zacutus Lusitanus, and some others, mention flatulent discharges from the penis instead of semen. The latter case is more easily understood to arise from ulcerations in the vagina or uterus, and no authorities are necessary in support of its existence.

FLORES SULPHURIS. *Sulphur precipitatum.* See SULPHUR.

FLORESCENTIA, (from *floresco*). The expansion of the corolla of a plant. See PLANTA and FLOS.

FLUCTUATIO, the free motion of a fluid perceived in any cavity by the touch, or by slight pressure of the fingers on each side. In ascites it is ascertained by striking gently one side of the abdomen, while the fingers are applied to the opposite parietes.

FLUIDITAS. FLUIDITY. The atomical philosophers considered this state of bodies to depend on their small size, the smooth surface, and the spherical form; and Mr. Boyle made sand imitate the motions of boiling water by heat and agitation. Particles of sand are, however, neither smooth, small, nor spherical. In fact, the diminution of size may lessen the gravity, so that the powder will rise in the atmosphere, but it will not approach fluidity. The spherical form of the particles is better demonstrated by the observation, that fluids press not in proportion to their mass, but to their perpendicular altitude.

We now know that the particles of fluids are in a state of repulsion to each other, owing to their union with caloric. On this the various forms of gas, vesicular vapour, fluidity and solidity, in different degrees depend. When we arrive at solidity, the opposite state, that of attraction, takes place, and cohesion is in proportion to its degree. In the case of fluidity also there is reason to suppose that the electrical fluid has some share, since electricity disappears on the change from a gaseous to a fluid state, and reappears on the opposite change. A similar effect takes place in the change from a fluid to a solid, but modified in a way somewhat different.

FLUOR ALBUS.—Page 671, col. 2, line 8; "*as those of menorrhagia*."—Authors seem not to have distinguished between the truly mucous discharge, to which leucorrhœa, should be confined, and the purulent one; nor have they clearly pointed out the state of the constitution, which sometimes makes a drain of this kind necessary. Among the changes in the system, traced by dissection in consequence of this complaint, we find

numerous instances of suppuration in the uterus and vagina, and even the Fallopian tubes. Morgagni describes the vessels of the uterus as turgid with blood (*De Sedibus*, lxxvii. 14, &c.); sometimes whitish tubercles in the uterus (l. c. 27). In a few cases, Bonetus found the glands of the urethra particularly affected.

Perhaps the idea of acrimony led to the suspicion of metastasis; but we see so many traces of the opinion that the disease is sometimes a general one, that we cannot wholly overlook it. There is not the slightest suspicion that a fluid, such as is evacuated, exists in the blood vessels; but we can easily perceive that a plethora, combined with a relaxed state of the excretories, may require and admit of some mucous discharge. We can, therefore, allow that a mucous evacuation from the head, breast, or eyes may have some effect in relieving fluor albus (*Acta Medica, Berolin, Decad i. v. i. 20*); and, on the contrary, that the latter may supervene on a suppression of any discharges which may occasion plethora. We have instances of this kind in suppressed discharge of sweat from the feet, of milk, of the expectoration in a chronic catarrh, and particularly of the catamenia. The disease is endemic in Holland, from the relaxation induced by their stoves, and, it is said, also in Sweden; but that it is contagious, as asserted in the Berlin Medical Transactions, is highly improbable. It often occasions sterility, dropsy, tabes, &c.

Topical irritations frequently induce it, and excess of venery, as well as unnatural indulgences, are not uncommon causes in high life. Polypi in the uterus, and pessaries, especially if too long worn, have the same effect. Gravidity is also a frequent source of the complaint.

We have omitted mentioning the stimulants which, when directed to these organs, often succeed. The balsams, particularly the balsamum copaibæ, is frequently useful; olibanum occasionally, and the turpentine in moderate doses. A late author has recommended the cantharides, which he has employed with some success.

The credit which the narcotics have obtained arises, we suspect, from not distinguishing between a discharge of a malignant, perhaps a cancerous, ulcer, and of the mucus of relaxed glands. The hemlock has been recommended by Baylies, by Quarin, and, as may be expected, by Storck; the solanum dulcamara, and the pulsatilla, by other authors. Numerous antisiphilitic remedies have gained reputation by not distinguishing between a leucorrhœal and a gonorrhœal discharge.

FÆNICULUM AQUATICUM. See PHELLANDRUM AQUATICUM.

FÆTUS.—Page 676, col. 1, line 62; "*generally comes away by parts*."—The cases of the foetus remaining for a long period are numerous, and almost exceed belief, though we reject the retailers of wonders. Boyle, in the Philosophical Transactions, No. 139, mentions its being retained for twenty-six years; others for a different, and in general a shorter, period; but when in the ovarium, or in the abdomen, it has not hindered a future pregnancy. Bones have been discharged from almost every different part of the pelvis, from the naval, the linea alba, or lower portion of the abdomen, often in small pieces, and after long intervals (*Morgagni de*

Sedibus, &c. xlviii. 42). To collect all the cases of this kind, or to add the authorities, would fill many of these pages.

Though we have denied the influence of imagination, the fœtus is often injured by blows on the abdomen of the mother. The bones are sometimes broken; and in one instance the vertebræ were fractured.

The diseases of the fœtus, if we except the variola, a rare occurrence, are chiefly defects of organization, and to this cause hydrocephalus may be generally attributed. We find an instance recorded of a child being born with a cutaneous eruption, resembling itch; but, if the fact be admitted, it is peculiarly rare. A child is often killed in the uterus by a fall, or by a fright, seldom if ever by excessive discharges; for these induce generally premature labour, while the child is alive, if so far advanced as that life is discoverable. The stories of ossified children *lithopædia*, are not sanctioned by any respectable author; those of pregnant fœtuses are still more absurd, though Dr. Plott's credulity seems to have been imposed on respecting a calf born in this state.

FORCEPS.—Page 678, col. 1, line 27; "Vide EMBRYULCIA."—Add, and PARTURITIO.

FORFICULA. EAR-WIG. *F. auricularia* Lin. An insect of the coleopterous order in Linnaeus, the *orthoptera* of La Treille, whose generic characters are tarsi at three joints, of which the last but one is bilobed; filiform antennæ of twelve joints, distinct and cylindrical; mandibles divided at their points; palpi filiform; the lower lip in two divisions. The abdomen is very long, obtuse at its termination, with two scaly hooks at the extremity, forming pincers, differing a little according to the sex. In the female the hooks are larger and more arched than in the male. It is by no means the formidable weapon which it appears, and the insect is injurious only to the gardener. It lives in the earth, among plants, and particularly within the loosened bark of a tree, and gnaws fruit, the buds of flowers, &c. It is a vulgar error that it ever enters the ear. Frisch and Degeer have been minute in their observations on the manners of this insect, and have particularly remarked the maternal care of the female.

FORMICATIO. See MYRMECISMUS.

FORMICA MINOR.—Page 678, col. 1, line 44; "The ANT or PISMIRE."—This genus of insects belongs to the hymenoptera, and its characters are, no borer; a needle or poisonous glands in the females and males; the males apterous; the lower lip shaped like a spoon at its end; antennæ of twelve or thirteen joints, according to the sex; the first very long, the second long, almost conical; the last of the size of the former, or a little larger; the feelers filiform or setaceous; the maxillaries of five or six joints; the lips of four. The pellicle of the abdomen in the form of scales or nodules. The pismires live in society, like the bees, and have also the three classes, of males, females, and labourers. These are distinguished particularly in their forms; but the minute description would lead us too far. The

labourers are much smaller than the females; but appear only smaller than the males because they have no wings. Ants raise conical habitations, burrow in the ground, conceal themselves in the holes of an old wall, the centre of a hollow tree, or under a stone; in short, wherever they can be secure from rain. The labourers are always employed in carrying straws, &c. the materials of their habitation, grain, or small insects. If too large for the powers of one insect, a reinforcement is soon procured. The copulation takes place in the open air, and the male soon afterwards dies; the female returns to the nest, when the labourers deprive her of her wings, that she may attend exclusively to her young. The larvæ are white, thick, and short, consisting of twelve rings. They have no paws; their mouth is furnished with two teeth, and a fleshy nipple, by which they receive their food; for the labourers pour into it the juices they have sucked from the fruits, and a honied fluid which they find in the vine fretters. This is the source of their seeming friendship. These larvæ are styled the *eggs of the ant*, and, as well as the nymphs, are incapable of motion; so that the labourers, when the nest is attacked, carry them into the deepest recesses of their habitation.

The first winged ants usually appear about the end of July, sometimes earlier. The males first undergo their final metamorphosis, and leave the nest never to return. Many of these insects form such considerable swarms, that they have been suspected of sending out colonies like bees. The females soon attain their last stage, and the workmen are perfect in about a fortnight after. Their prudence and foresight are somewhat equivocal; for they are said to be torpid during the winter: if so, they are pictures of the miser, rather than the careful provider of what they may want. Their torpid state, however, has not been satisfactorily demonstrated.

The sweet, slightly acidulated juices of some trees, and the internal parts of particular insects, as the carabus, &c. appear to be the favourite food of ants. From some experiments it appears that the sense of smelling resides in the antennæ. Some species have a sting strong enough to pierce our skin, and in the wound they pour an acid fluid, which occasions a sharp pain; relieved by a mixture of oil and honey. Those which have no sting throw a red transparent fluid on the skin, which raises painful pustules like those from the stings of nettles.

Ants are often injurious in many countries, particularly in France, by destroying fruit before it is ripe, and communicating to it a disagreeable smell. They injure the roots also of many useful plants when they obstruct the galleries which lead to their habitation, and carry a large quantity of corn to their nests, if not to eat, as a store in reserve. The mischiefs done by these animals in the American islands are by far more considerable; but these details must not detain us.

Ants contain an acid, which we shall soon describe, the *f. rufa* in so large a quantity as to occasion considerable inconvenience when the nest is disturbed. A living frog placed on it dies in a few minutes, without being bitten by the insects. When distilled with a gentle heat, the acid procured is one half the weight of the animal. Hot water extracts it, and a piece of sugar

placed in an ant's nest soon imbibes this acid from the ants which cover, to prey on, it.

Ants are destroyed by placing bottles of honey and water near their nests, which attracts them, and they are drowned. From drawers and chests they are driven by oil of juniper, and the extract of coffee. Urine, or boiling water, poured many days successively on ant nests, destroy the whole; and trees are defended by encircling them with a glutinous fluid, or with the soot of a chimney.

FORMIC ACID. The acid of ants is procured in the manner just described. It was first discovered by an Englishman, Mr. Fisher, and described in the Philosophical Transactions for 1670; but the subject was not pursued till the time of Margraaf, in 1749, who first procured the acid in substance. When purified, its specific gravity is about 1.0075; but by repeated rectification it may be brought to 1.045. In this state its taste is acid and acrimonious; but the latter quality is probably owing to some remaining oil: when diluted it is more agreeable. The acid is decomposed by the sulphuric, the nitrous, and the oxymuriatic acids; mixes readily with alcohol, more difficultly with the fixed oils, and with the essential only by the assistance of heat. Soot, when added to it, assumes a fawn colour, and lets down a brown sediment as it cools, which, by distillation, affords a liquor of a yellowish hue, and a disagreeable smell. The latest chemists who have examined this acid are Vauquelin and Fourcroy (Annales de Muséum National Cahier, v.). They found that these insects contained a large proportion of carbon, united to a small quantity of hydrogen, joined, we suppose, of course, to a due proportion of oxygen, and that this compound is mixed with phosphat of lime, which accounts for Thouvenel finding some analogy between the formic and the phosphoric acid. The chief component parts are, however, the acetous, with a proportion of the malic acid.

FORNIX.—Page 679, col. 1, line 1; "*arches of vaults.*"—The septum lucidum is united at its lower part to the anterior portion of the medulla, sometimes styled the *fornix with three pillars*; but it is only the corpus callosum, the lower part of which is like a hollow ceiling with three angles, two anterior and one posterior: the sides are consequently lateral, and one side only is posterior. The lateral edges are terminated by a large semicircular border, like two arches; these unite at the anterior angle, forming the anterior pillar of the fornix, and in their course to the posterior angles are called *posterior pillars*. The anterior middle is double, and consequently the largest, and below its basis is a short, white, medullary cord, passing between the two hemispheres, called the *anterior commissure* of the cerebrum, to which the septum lucidum adheres. The posterior pillars are bent downwards, and continued through the lower portions of the ventricles to their extremity, called, from the resemblance, the *ram's horn*. They gradually diminish in thickness, and at their outsides have a small, flat, thin, collateral border, the *corpora fimbriata*.

The posterior pillars of the crura of the fornix unite with the two medullary protuberances; *pedis hippocampi*. The inferior surface of the vault between these

arches is full of prominent medullary lines, which has procured it the name of *lyra*.

FOSSA OVALIS, a depression in the septum, between the two auricles of the heart, the remains of the foramen ovale.

FRAGA.—Page 684, col. 1, line 12; "*ripens in June.*"—The fruit is pleasant and cooling, though not laxative, unless eaten in large quantities, or combined, it is said, with the use of acidulous waters. They have been accused of inducing cutaneous eruptions of different kinds; but, in many constitutions, whatever disagrees with the stomach will occasion the same appearances. In hectics (Schulz and Hoffman); in mania (Van Swieten); in gout (Linnæus); and in calculus (Lobb), they have been celebrated; though according to Boerhaave, the lithontriptic virtue is more powerful in the seeds. The leaves and root are said to be astringent: the former are used for tea; the latter, in decoction, imparts a red colour to water.

FRAXINUS.—Page 684, col. 1, line 38; "*common in woods and hedges.*"—The bark is externally of an ash colour, internally of a yellowish white, somewhat brittle. The best kind is taken from the trunk, or the older thicker branches, in which there are deep furrows. In its recent or dry state it is bitter and austere; but without smell. Its infusion resembles that of the lignum nephriticum: against the light it is of a pale yellow; when below the eye, or viewed against an opaque object, blue. Mixed with a solution of martial vitriol a black colour is produced. The decoction is bitter and acrid: an ounce of the bark affords three drachms of watery extract, and half an ounce and thirty grains of spirituous: the pure resin is green. The extract is powerfully antiseptic. When prejudices against the cincona prevailed, this remedy was highly commended; but the formulæ are so prolix, that the ash bark could have had little share in the cure. It indeed very often fails, as Torti has observed in his *Therapeutice Specialis*, 19.

It has been used also as a lithontriptic, as an astringent in diarrhœas, in gout, scurvy, infarctions of the viscera, and worms; externally as a vulnerary. The leaves resemble senna in their laxative power; but require about one third more to produce the same effect. They were anciently celebrated for the cure of the bites of venomous serpents, and Pliny observes that these animals avoid the shade of the tree. More recent experiments have confirmed this opinion, particularly respecting the poison of the *coluber berus* and *chærea* Lin. From four to eight ounces of the juice are drank frequently; and the leaves fresh, or in cataplasms, applied to the part.

The seed is oblong, compressed, membranous, shaped like a tongue. It is acrid and bitter: but has been celebrated as an aphrodisiac, and as a remedy for removing barrenness.

FRONDESCENTIA, the period when each plant puts forth its first leaves. This, of course, differs not only according to the nature of the plant, but the season and climate: the former may depend on the temperature of the plant, but more on its irritability, and the state of the

rudiments of the leaves, at the end of the preceding season. Small and young trees show their leaves sooner than old ones.

FRONTIS, os.—Page 685, col. 1, line 24; “to reach the brain.”—The os frontis supports and defends the anterior lobes of the brain, forms a considerable part of the orbits of the eyes, and contributes some portion to the organ of smelling. In a perfect child it is divided through the middle; the superciliary holes are not formed; and a small round piece of each orbital process behind the superciliary ridge is not ossified: no sinus is discoverable in its substance.

FRUTESCENTIA, (from *fructus*.) the period of fruiting, still more variable than frondescence.

FULCRUM, a PROP, (a *fulcire*, to support). The botanical appellation of those small parts of plants which contribute to their support. Fulcra are either *stipulae*, scales or small leaves; *bractea*, floral leaves; *spinae*, thorns; *aculei*, prickles; *cirrhi*, claspers or tendrils; *glandulae*, glands; and *pili*, hairs. A viscid clammy fluid, exuding on the surfaces of some weak stalks, as in the clivers, often answers the same purpose.

FULMEN, THUNDER. This awful phenomenon is now known to arise from the sudden restoration of the equilibrium of the electrical fluid, when the state of the clouds, or of the earth, in this respect is different, whether the excess is in the earth or the superior regions. There are various means of restoring silently this equilibrium; but, in great accumulations, the violent discharges of superabundant electrical fire take place. It is a vulgar error to suppose that high places are peculiarly subject to the violence of these discharges.

—*feriuntque summos
Fulmina montes*

is a poetical, rather than a philosophical representation. The electrical cloud requires a conductor, and the high hills are usually so dry as to repel it. In the greater number of instances the thunder cloud has passed over high mountains, and its victim has been only an object near water, in a humbler situation. We have watched the progress of five clouds, that have struck objects many hundred feet lower than the hills that they passed without discharging their fire; for, in general the repeated explosions are more often communications between contiguous clouds than between these and the earth.

The injuries which we suffer from thunder are consequently more frequent; because the human body is an imperfect conductor, and not greatly elevated. In some states we have seen that the body is negatively electrified (see *ELECTRICITAS*); and it is then not a conductor, and will not consequently be greatly injured. There is reason to believe that a person intoxicated is in this state, and it is rare to find a drunken man struck with lightning. If thoroughly wetted, also, a person is secure, and only suffers when the discharge is greater than his conducting powers will safely convey to the earth.

When a person is killed by lightning there is sel-

dom any very obvious injury. A black spot may be occasionally observed where the discharge entered, or passed out; and slight extravasations are sometimes found internally. As the electric fluid follows the course of the nerves it seems to destroy their excitability, and the irritability of those muscular organs to which the nerves are directed. This is rendered more probable, from the insensibility and numbness which attend violent shocks from the electrical battery. Electricity also decomposes the fluids, and there are some appearances which show that this change is occasionally produced in the human body. Extravasations proceed either from the violence of the shock (for electrical sparks produce slight petechial eruptions), or from the relaxation produced.

When a person is killed by electricity, recovery is hopeless; for the vital spark is wholly destroyed. Apparent death is produced by another cause, viz. the shock communicated around. A discharge of electricity diminishes the quantity of air; but more frequently expands it. In each case a violent shock is felt, either from the atmosphere rushing in to restore the equilibrium, or from its expansion. By this power persons are often rendered insensible; but soon again recover. It is possible also that a less discharge may have the same effect, and, in some instances, it has been rendered probable by external extravasations. Within these few weeks, however, the author felt very severely a shock from a thunder stroke, which burst about a quarter of a mile from him. He was on a high hill, and the storm came from a higher one, at some distance; but the object struck and injured was in the lowest part of the valley between.

The means of recovery have not been varied. The usual stimuli have been employed; but, when life was not wholly destroyed, reanimation takes place without much difficulty. The extravasations have been usually washed with a saturnine lotion, though a spirituous discutient one might have been better adapted to the injury. The severe pains which often follow have been relieved by opium.

See *Commentaria Petropolitana*, i. 385; *Charleton Inquisitiones Anatomico-physicae*; *Ackermann de Morbo et Sectione Fulmine Nuper adusti*; *Philosophical Transactions*, N° 13, 61, &c. *Stoll Ratio Mendendi*, vi. 308.

FUMARIA BULBOSA.—Page 686, col. 1, line 32; “*f. officinalis*.”—The root preferred is roundish, of the size of a chestnut, hollow within, as if eaten by worms: the epidermis brown, the substance white. It is neglected as superfluous, perhaps; but it is not inert; for the bitterness joined with acrimony connects it with the *aristolochia*, and the size of the root as it renders the substitution of one for the other easy, so it is frequent. The spirituous extract is bitter and acrid; the watery bitter, with less acrimony, and less in weight. It has been used as an emmenagogue, to clean foul ulcers, and is sprinkled on carious bones to promote exfoliation.

FUNGUS.—Page 688, col. 2, line 51; “into mucous matter.”—It is now ascertained that fungi are really vegetables, differing from other plants in not being herbaceous, and having neither leaves nor flowers; in being

more simple in their form and organization. They agree with them in their manner of growing. The animal nature of mushrooms was defended not long ago by naturalists of credit, and both Necker and Medicus supposed their generation equivocal; the one pronouncing them a reunion of the cellular texture of decomposed vegetables, the other a vegetable crystallization. Belliard, however, showed that mushrooms did not differ from vegetables. They have, he remarks, fibres, vessels, roots, efflorescences, and seeds, without the concurrence of which no reproduction takes place. "They are evolved, grow, and perish like other vegetables; but not without leaving beings similar to themselves, which experience the same revolutions." What is called the *white of the mushroom* is, according to this author, the seed agglutinated to different bodies; and to obtain it from the greater number, it is sufficient only to expose them, while fresh, on glass, which will soon be covered by their seeds. These vary, as in other vegetables, in their number, situation, dimensions, form, and colour. Some are so large as to be seen without a lens; others require the largest magnifiers. They are dissipated by the winds, fixed to bodies by their glutinous substance, and washed to the earth by rains.

What Belliard has, however, called the seeds, other authors have styled the grains, and considered them as buds, rather than seeds. Gaertner first suggested the idea, and it has been since supported by Parmentier. If this, however, be true, the pretended male and female organs described in mushrooms must be illusions; and indeed the different accounts given of them are sufficient to excite suspicion. Some mushrooms arrive at perfection in five or six hours, others require a year for this purpose. Their nourishment is certainly absorbed by roots, and carried by internal canals to every part of the plant. The more solid mushrooms agree in their appearance and structure with trees, and the nutritious juices are conveyed and applied in ways nearly similar. In the more temporary kinds the nutritious juices are apparently poured into cells, while the proper juices circulate in capillary vessels.

Some mushrooms are employed in the arts, others are eatable, others poisonous, others useless; but all contain legions of insects in a larvated state, which prey on them. Mushrooms either grow on the ground or on other plants: they sometimes rise naked, at others covered with a coil (*volva*), which is soon torn. The substance of some resembles cork or wood, that of others is soft and fleshy, or mucilaginous. Some are simple, others branched: the greater number are covered with a cap, stipulated or sessile, orbicular or pelated, or semiorbicular and attached to the side. The taste of many is acrid and corrosive, of some sweet; but the greater number are insipid. Some discharge a white fluid when gathered; others, in the same circumstances, change their colour; many exhale a sweet smell; but several are inodorous, or produce a nauseous effluvium, particularly when they begin to be decomposed. Their putrefaction attracts those insects which prey on dead animal substances.

Ventenat includes twenty-nine genera in four divisions, resting on Belliard's system of seeds. 1. Those whose seeds are in the internal part, as *tuber*, *reticularia*, *mucor*, *trichia*, *spherocarpus*, *lycoperdon*; *nidularia*,

hypoxylon, *variolaria*, and *clathrus*: 2dly, those, whose seeds are on every part of the surface; *clavaria* and *tremella*: 3dly, those whose seeds are on the upper part, *peziza* and *morillus*: 4thly, those whose seeds are on the inferior part, *auricularia*, *helvella*, *echinus*, *fistulina*, *boletus*, and *agaricus*.

FUNGUS MELITENSIS.—Page 639, col. 1, line 45; "*diarrhæas and dysenteries*."—It is improperly called a fungus, though it differs essentially in structure from other plants. On a stalk, without leaves, about half a foot in length, and the thickness of the finger, a spike or amentum, equalling in length the stalk, rests, but of double thickness. The juice is red, of a bitter, styptic taste. Boccone recommended it in dysenteries, hæmorrhages, scelotyrbe, and malignant ulcers. It is said to be an excellent dentifrice; and supposed to be preferable to other astringents, as it does not coagulate the blood. Deidier used it with success in old venereal ulcers of the urethra.

FUNGUS SALICIS.—Page 689, col. 1, line 48; "*but is now disused*."—The smell of the recent fungus is particularly grateful, resembling, according to some authors, violets, to others orris root or aniseed. When dry, it is rather displeasing and ammoniacal. Distilled water preserves but little of the smell, though by decoction in water it is retained. No essential oil can be procured from it. The watery extract from two ounces was two drachms and a half, bitter, saltish, and unpleasant. The resinous extract from the same quantity amounted only to fifty grains, salt, bitter, with a more manifest smell. On burning, besides an alkali, it leaves some Glauber's salt, a little flint, and a few atoms of iron.

The dose which Sartorius found effectual in hectic was two drachms night and morning, in goats' milk. A less dose has been employed, and it is said to have succeeded also in hypochondriasis and spasmodic asthma. In drying it must be covered with mucilage, and when moderately dried moistened with alcohol, in pounding.

FUNGUS CEREBRI, a morbid growth of the brain, when a part of the cranium, which usually confined it, is removed by a fracture or the application of the trepan. It seems to arise from a paralytic state of the vessels of the brain, occasioned by the violence, and a consequent effusion or extravasation, which might, if the skull were sound, have induced symptoms of compression. The dura and pia mater successively ulcerate, and the tumour increases with great rapidity. In general it requires only a careful attention; for the effusion gradually lessens, and hardened parts drop in pieces. No pressure must be allowed; but should the tumour be very large, the external parts may be pared down with a knife.

If, however, the increase of the tumour is attended with symptoms of compression of the brain, which shows that it extends inwardly also, the opening of the cranium must be enlarged; for this disease was less common when larger pieces of the cranium were formerly taken away in the operation. In this case, however, we must act with caution, as the hæmorrhage is occasionally dangerous. Should this be considerable,

Mr. Abernethy advises taking away the coagulum and admit the loss of a little blood, to deplete the vessels, and assist their contraction.

As an external application, the tinctura ferri muriati we have found sometimes serviceable; and good effects are said to have resulted from sprinkling the fungus with equal parts of myrrh and lapis calaminaris.

FUNIS.—Page 689, col. 2, line 45; “*employing the forceps.*”—We perceive a great diversity of opinion among the forensic physicians respecting the necessity of tying the funis. Kaltschmid, Roederer, Plaz, and others, contend that it is not absolutely necessary, and to these may be opposed Fischer and Hebenstreit. Mr. White and the practitioners of this country are not anxious to tie it immediately. The last author, Hebenstreit, has published an excellent dissertation at Leipsic on the pathology of the funis. The cord has been found double, sometimes contorted, or in knots, and is occasionally broken off with little danger.

FURCÆ, one of the offensive weapons of plants, similar in origin, &c. to the prickles, but double at the extremity.

G

GALANGA.—Page 691, col. 1, line 44; “*in the East Indies.*”—The plant is by no means accurately ascertained; but this is of little importance, since we have many medicines of the same class. Some persons have ignorantly substituted the roots of the cyperis longus for galangals; but the error is detected by the bitterness and astringency joined with the aroma. About a drachm of essential oil may be extracted from each pound of the root. Its smell is sweet, and the acrimony less. Water extracts more than spirit, viz. six ounces from a pound, which is very acrimonious, though less so than the spirituous extract. The Indians use this root as a condiment.

GALBANUM.—Page 691, col. 2, line 37; “*of the plant.*”—It distils spontaneously, or by incisions from the tree when about three or four years old; but it is a Turkish custom to cut the trunk transversely, about two or three fingers breadth above the root. An inferior kind is sometimes imported in cakes, and it is tolerably good, if whitish, and somewhat opaque particles are observable in it, which tinge alcohol with a golden colour. What is of a dark brown colour, of the consistence of wax, is of no value. There is a liquid galbanum brought from Persia, of the consistence of turpentine; but it has not the smell of the true resin, and is of little use. Galbanum contains about $\frac{1}{11}$ of essential oil, and in the warmth which this imparts its chief superiority to the other gums seems to consist.

GALDA GUMMI RESINA.—Page 692, col. 1, line 63; “*it is not at present to be procured.*”—Buchner describes it as greyish, milky, friable, lamellated, inodorous, of a very bitter and acrid taste; Spielman as externally black and internally white, hard, of the taste and smell of gum elemi, softening between the teeth, melting in

flame, and diffusing no unpleasant odour when warm. It affords no essential oil, and is chiefly resinous.

GALEGA.—Page 692, col. 2, line 21; “*noted in medicine.*”—Yet this trifling medicine has been supposed to be useful in the bites of serpents, and from a forced analogy, in malignant fevers and plague. The credulity of Mr. Boyle has led him to record the recovery of two persons from the plague, after taking the conserve of the fresh leaves of this plant.

GALLIUM.—Page 693, col. 2, line 28: “*seldom used in medicine.*”—The root, like that of madder, gives a red tinge to the bones. The herb and flowers have been used in epilepsy, and the latter have the authority of Lieutaud in their support. Jussieu used them with success in hysteria (*Amœnitates Academicæ*, iv. 40), and they are sometimes taken in infusion by arthritics.

GALLIUM ALBUM, *galium molugo* Lin. Sp. Pl. 155, resembles the galium aparine, and has been employed in epilepsy.

GAMBOGIA.—Page 696, col. 1, line 47; “*leaves a gray ash.*”—The resin is intimately united with the gum, so that water and spirit dissolve nearly an equal quantity; the latter about one sixteenth more. The tincture is of a deep golden colour, the solution of a dilute yellow, turbid, and on standing some resin falls to the bottom. It was first brought to Europe by Clusius from China in 1603. Great apprehensions were formerly entertained of its violence, and various means were employed to correct it. One method was to inclose the powder in a bag, and afterwards put it into a warm loaf: this was to be kept hot for a night, and the experiment repeated four or five times. The crumb of the bread became by this process a drastic purge, and the gum was proportionally weakened. Long continued boiling was for a time supposed to be useful; and different authors have advised combining it with vinegar, lemon juice, cream of tartar, mineral acids, alkalis, aromatics, and ethereal oils, for the same purpose of correcting its virulence. The vomiting which it frequently occasions has, it is supposed, been prevented by uniting it with calomel. Solutions with alkali are said to act weakly on the bowels, and powerfully on the kidneys: the observation in the article, that they “are supposed to act only by stool and urine,” is incorrect. It frequently vomits at first; but after a day or two this effect appears to pass off.

In dropsies it was formerly given in large doses; but at present a portion only is added to quicken the milder purgatives: a scruple was formerly no uncommon dose, and it is not then surprising that it was found powerfully drastic. In the asthmas of children, by its emetic and cathartic power, it seems to have been of considerable service. In icterus it is said greatly to assist the action of rhubarb. Its use in intermittents we learn from the Turks (*Amœnitates Academicæ*, ix. 168).

In tænia its utility has been sufficiently ascertained by the effect of Madame Nuffler's remedy, and many other boasted specifics. Herrenschwand's specific for this worm, some years ago, excited a considerable sensation in Germany, and numerous conjectures were

hazarded on the subject. There was much preparatory mystery; but the powder itself was the principal object. Herrenschwand informed Schroder, a veteran professor of Gottingen, that it contained from ten to fifteen grains of gamboge, with from fifteen to twenty of kali. Others have given the same formula; but in less doses more frequently repeated. Herrenschwand told Vogel that the ashes of the fraxinus were added. Perhaps he might mean these instead of the kali; but, when this medicine was recommended to the empress of Russia (Elizabeth), she ordered it to be analyzed by Model; who found, it is said, in it both mercury and arsenic (Pallas). It certainly acted unequally; on many with great violence; on others slowly, and not till the next day (Bonnet). A fact observed by Herrenschwand is worth recording. "If there is any doubt," he observes, in his letters to Rosenstein, "whether the disease be from tænia, an ounce of the syrup of peach flowers may be given, and should there be a worm, some grains, or molecules, of a white matter will be discharged." The specific of Clossius has also the gutta gamba for its basis.

GANGLION.—Page 696, col. 2, line 42; "*in many other parts of the body.*"—The various uses assigned to ganglia are very unsatisfactory; but we have shown that in these bodies the nerves sent to any one vital organ are mixed with those which pass from different parts of the spinal marrow; so that if any one is destroyed at its source, the power of the organ is not lost, but weakened in proportion to the number of nerves mixed. In ganglia also there is frequently some nervous and cortical matter, so that the nerve probably gains additional energy. This has led to the distinction between the *cerebral* and *ganglionic* systems, or those subservient to volition, and those independent of it. The brain is the great distinction of the higher orders of animals, and as this lessens, the ganglionic system rises in importance, till, in the lower classes, it is almost the whole animating power. See **NERVUS**.

GANGLION.—Page 696, col. 2, line 53; "*fixed upon a tendon.*"—Their seat seems in the *bursæ mucosæ*, and their contents are usually a glairy, gelatinous, elastic fluid, sometimes with little hard bodies, occasionally distinguished by peduncles, by which they seem to be fixed to the sides of the cavity. They are produced by strains, by contusions of the joint, and sometimes they appear to follow rheumatisms. Frequent friction, with occasional pressure, will sometimes remove them, and they may be safely burst by violent compression, after which their contents are absorbed. Blisters have also succeeded. If the seton fails, some gently stimulating fluid may be injected, as port wine and water, to excite the adhesive inflammation. They are most frequently found on the back of the wrist, or near the ankle.

Chalybeates are sometimes said to destroy ganglia, and the preparation recommended by Zwelfer is the essential martis. Gum ammoniac dissolved in vinegar, the essential oils, particularly the *oleum laurinum*, the balsam of sulphur, and the *sedum majus*, have been recommended by different authors, and hemlock has been ridiculously given internally. Plater records a case of a ganglion in the ham, and Bartholine, in the

Copenhagen Transactions, one on the carpus, which yielded during pregnancy, and returned afterwards.

GASTRICUS SUCCUS.—Page 697, col. 2, line 46; "*remains of former meals.*"—If it be alleged that the gastric juice of different classes of animals differs, it may be added, that their food does the same. The gastric juice of the human species, when the stomach has been long empty, scarcely differs from mucus. We see no apparatus for the preparation of a complicated fluid, and we shall find that, independent of Dr. Rush's hypothesis, there are other functions which the *vasa brevia* may supply (Home in the Philosophical Transactions for 1808, part i). See **SPLEN**, Appendix.

The constant ingredients of gastric juice are the muriatic acid, soda, ammonia, and phosphoric acid, in their different combinations. Marquart found that twenty ounces of the gastric juice of a sheep yielded but seventy-seven grains of solid matter, which contained twenty-nine grains of common salt, seventeen of phosphoric acid, fourteen of muriatic acid, ten of albumen, five of phosphat of lime, and two of resinous and extractive matter. The power of coagulating fluids resides in the substance of the stomach, since it remains after it has been most carefully washed. The antiseptic power is certainly observable in the fluid itself, but is in a great degree connected with the stomach as a living organ, since it is greatly impaired by any cause of debility.

GELATINA.—Page 698, col. 2, line 22; "*by evaporation.*"—We shall resume this subject of animal gelatine at greater length, under the guidance of Mr. Hatchett's excellent paper in the ninetieth volume of the Philosophical Transactions.

When pure it is inodorous, insipid, and transparent, with a slight shade of yellow. Dry gelatin absorbs water, swells to many times its original bulk, softens, and becomes extremely elastic. In cold water it does not dissolve; but returns to its former state, when taken from it; while with warm water the solution is perfect, without any chemical change; for by evaporation the gelatin resumes its original consistence, differing, in this respect, from a solution of albumen, which, when coagulated by heat, never again becomes soluble.

Gelatins are soluble in all the acids, particularly in nitric acid, even when cold and dilute; and in this way they are easily separable from condensed albumen. When much concentrated, the acid is decomposed, and, as observed in the article, oxalic and malic acid procured. The muriatic acid agrees with the nitric in its action on this substance. The acid solutions of gelatine yield no precipitate by the addition of alkalis or earths. The caustic fixed alkalis dissolve gelatine, forming a brown, viscid substance, very different from soap. We may thus distinguish gelatine from albumen, fibrin, and many of the soft parts of animals, which form a true soap with pure alkalis.

Gelatine is insoluble in pure alcohol, and, when the latter is poured into a watery solution of it, part is precipitated; but, unless a large quantity of spirit is added, the mixture soon again becomes clear. Gelatine, when dry, is unchanged by keeping; but when moist, it soon becomes sour by the evolution of the acetic acid, then mouldy and fetid, at last exhaling ammonia. When

dry gelatin is strongly heated, it curls, swells, and yields an oily ammoniacal liquor. In close vessels it leaves a bulky, but light, soft coal, somewhat less than 0.1 of the original substance. When this is burnt, the quantity of earthy and saline matter remaining is scarcely more than 0.003. Condensed albumen by long digestion in dilute nitric acid, when evaporated, assumes the properties of gelatin. Of the effects of its addition to solutions of tan we have already spoken. When a solution contains only 0.005 part of isinglass, the precipitation was immediate and considerable. Solutions of albumen give a precipitate with tan, but not immediate.

The tenacity and viscosity of gelatine does not depend on its proportion of water; but on the age and constitution of the animal. Different parts of the same animal furnish it of different consistency: that from the skin is the strongest.

Animal mucilage, though resembling gelatine, differs from it. In some parts of the animal body, we find a clammy, insipid, whitish, and almost colourless liquor, uncoagulable by heat; but leaving, after a gentle evaporation to dryness, a small proportion of slimy, tenacious matter, resembling gelatine, and equally soluble. The saliva is an example of this kind; but the mucus is more copious in the oyster. It differs from gelatine, in being soluble in cold water, though when dissolved in hot it does not stiffen on cooling; but the viscosity wholly depends on the proportion of water. Mr. Hatchett considers it as gelatine, though the lowest in the scale of cohesion; but Dr. Bostock has endeavoured to establish some distinguishing marks between the latter and mucus. He tried a solution of mucus from an oyster, by the addition of a solution of muriat of mercury, which produced no effect, so that the mucus did not contain albumen; by tan, which occasioned only a slight inconsiderable precipitate, though a solution of gelatine, in 100 times its weight of water, was copiously precipitated; with aqua lithargyri acetati, which gave an immediate opacity, and after some time a dense white precipitate: this will have no effect on animal gelatine, and we may therefore safely consider mucus as a distinct animal principle.

GEMINI. See MONSTRUM.

GEMMA, a BUD; in botany the embryo of a plant, found on the stem and branches of the parent tree, and covered with scales to defend it from cold or injuries. Bulbs are buds seated near the root, and both are called *hybernacula* by Linnæus, *winter habitations*. Many animals of the lowest orders are produced also by buds, as the polypus; but this mode of reproduction gradually disappears. It is at last confined to a lost limb, and in the more perfect animal is no longer observed.

Buds are covered with imbricated, hollow scales of no inconsiderable hardness, and defended by hairs. All the parts of the plant thus concealed are perfect; but tender, delicate, convoluted, covered with a viscid juice, which is sometimes resinous and odoriferous. The *gemma florifera* contains the flower often found at the extremity of small branches, which are more short and rough, with fewer leaves, than the other branches: it is usually thicker, shorter, less uniform, and often terminated obtusely, called by Pliny *oculus gemmae*. The *gemma folifera* contains the leaves in their tender state,

equally convoluted, covered with small scales, from which the stipulæ, seated at the foot of young branches, are commonly produced; except in the hazel-nut and horse chestnut, these are more pointed than the former. In another kind of bud, *gemma florifera* and *folifera*, the leaves and flowers are contained indifferently. Sometimes the leaves emerge on a small branch, which afterwards produces flowers; sometimes they produce leaves only, and are then called *barren*; sometimes flowers also, then styled *fertile*.

In all buds the roots are wanting, and in various buds shoots are contained with leaves only; but, in proper situations, both roots and flowers are supplied. When placed in the earth they often perish from excess of moisture, and are consequently inserted within the bark of another branch or stock, so that the medulla of each may be contiguous, and the new branch is supported by a mass of thick loam. This process is styled *inoculation* or *ingrafting*.

On annual plants true buds are never seen; but the branches are protruded from the wings of the leaves without any scaly covering, as they require no protection. They die with a parent plant, and often before it. Linnæus, in a trunk scarcely a span in breadth, calculated that 10,000 buds might be produced. Such is the magnificent profusion of nature.

GENIPI VERUM.—Page 701, col. 1, line 30; "*in the system of Linnæus.*"—It most nearly resembles the *achillea atrata* of Linnæus Sp. Pl. 1267; and the *a. nana* 1267 is sometimes called genipi. Its smell is aromatic, and it is given in weakness of the stomach, sometimes even in pleurisy. Tissot.

GENTIANA.—Page 702, col. 1, line 14; "*gentiana lutea.*"—The pharmaceutic appellation is *red gentian*, and, when this plant cannot be procured, the purple gentian is substituted. Should the marks of distinction between the true gentian and the roots of the thora be considered as insufficient, we may add, that the wrinkles (for the gentian root is also wrinkled) are smaller and closer, and the taste acrid, instead of bitter.

Gentian enters the composition of the Portland powder, and like all bitters, is considered as antiarthritic. It is recommended in intermittents with the bark, when there is any weakness of the stomach, or obstructions in the viscera. We have seen that bitters best merit the title of deobstruents. From this analogy, perhaps, Plenck recommends it in scrofula; and all bitters are in some degree anthelmintic.

GENU.—Page 703, col. 1, line 15; "*flexion pulled down.*"—See **TIBIA FEMUR** and **PATELLA**. There are occasionally some soft, elastic tumours of the knee which are painful on motion. These are sometimes relieved by common volatile linament; sometimes by blisters, but more frequently by a plaster of the gum ammoniac, softened by vinegar of squills. See **HYDRARTHUS**.

GEOFFRÆ INERMIS.—Page 704, col. 1, line 31; "*powerful anthelmintic.*"—There are two varieties of this bark; one is paler than the other, and more active, inducing violent griping and copious stools. The second is of a darker colour, resembling cassia lignea. The descriptions vary greatly. Chamberlain describes

it of an ash colour, occasionally spotted with reddish brown marks, the epidermis easily slipping off, while the bark beneath, if dry, resembles rusty iron. In external appearance, from this account, it resembles cascarilla. The smell is so nauseous that it has been called *bilge water tree*. The Indians distinguish the male from the female tree, and think the former the weakest; but no marks of distinction are known. Dr. Wright seems to consider it, with reason, as a narcotic, nor does its occasional cathartic power oppose this opinion. The distilled water is acrid, and of a nauseous smell. The extract from six drachms amounted to one drachm, bitter, and somewhat acrid. The tincture is of the colour of rhenish, and its extract from the same quantity was only twenty eight grains. The acrimony remains long on the fauces, and the gum is intimately united with the resin. With martial vitriol the colour is a yellow purple, never black.

GEOFFROYA.—Page 704, col. 2, line 10; "*Surinamensis*."—We owe the knowledge of this bark to an American physician, *Macari*, who observed its effects on a negro slave, and prevailed on the governor to purchase the secret. It was first put into the hands of an apothecary at Utrecht, *Juliaans*, with specimens of the plant, who freely communicated what he knew to several physicians of Holland. The chief part of our account we shall select from Bondt's *Dissertatio de Cortice Geoffræ Surinamensis cum Tabulis*.

Some caution is necessary to distinguish this bark from another, called *tinkihonde*, which is narcotic and inebriating, and which, by the way, has been sold for the mezereon bark. The genuine bark is separated in longitudinal, plane pieces, about a foot long, and some inches broad, weighty, and differing in thickness according to the age and part of the tree from whence it is taken. It is covered by ash-coloured lichens; but the epidermis is red, or a brownish purple, intermixed, according to its age, with an ash-coloured hue. Under this, its structure is filamentous, lamellated, of an iron colour, mixed with striæ or spots of a deeper red. Cut transversely it shines, and is variegated: near the wood it is tinged of a dark purple, variegated with white spots. When powdered it is of a pale cinnamon colour. When recent only, its smell is nauseous, taste slightly bitter, and somewhat austere; but the bitterness is stronger in the dark purple part.

By distillation the water resembles that of the g. inermis: the more saturated decoction, after filtering, is of a brownish red; but to extract all the active particles, the boiling must be continued for two hours. The watery extract has a sharp, bitter taste, and, during inspissation, smells like bitter almonds; eight ounces of bark produce an ounce and two drachms of extract of the consistence of honey, with more than three drachms of pellicles. The tincture is of a deep red, and from the same quantity one drachm twenty-four grains of a friable bitterish extract is only obtained. Each ounce of the bark contains ten grains of oxalated lime, sometimes called the *earth of rhubarb*.

This bark is chiefly useful in the destruction of lumbrici, though it is also injurious to tænia and ascarides. It is not only cathartic, but diuretic; and the last quality it possesses in so great a degree as often to excite strangury. The worms are sometimes discharged alive, ap-

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parently escaping from the poison, of whose nature they seem apprized. Though in general safe, it sometimes excites considerable disturbances, as nausea, vomiting, anxiety, faintness, &c.; but these chiefly happen when the dose is too large, or when the medicine fails to loosen the belly. It is more easily borne by children; but the effects on the bladder are most sensibly felt by elderly persons. The effects on the bowels often produce tenesmus, with bloody striæ.

From observing its effects in worms it has been given in those cases where the stomach, from weakness, is loaded with mucus, in quartans, leucophlegmasia, anasarca, "nephritis from pituita," and in tussis convulsiva. In anasarca it has sometimes failed; but has been supposed an useful addition to other medicines in this disease. About three drachms, boiled in a sufficient quantity of water to strain off eight ounces, is a sufficient dose for an adult, to be taken in the morning: it must be, of course, lessened, according to the age. This must be continued for four days, and, if the worms do not come off, an active cathartic must be taken. Some practitioners make the decoction stronger, and others add a proportion of spirit to the water at the end of the coction. The watery extract may be given in a dose of twenty-four grains, and the spirituous watery extract has been used, it is said, with success in scrofula and affections of the glands. A tincture, made with an ounce of the bark, is directed in a dose of sixty drops; and the resin is given to children from three grains to eight, to an adult in one of a scruple. The powder is seldom used: it has been exhibited with extract of wormwood in pills, or in an electuary with currant jelly. In ascarides, an ounce of the bark has been boiled in a sufficient quantity of water to strain off six ounces, and thrown up as a clyster.

GERANIUM SANGUINARIUM.—Page 705, col. 1, line 1; "*remains in the extract*."—The leaves have been applied to erysipelatous swellings, in tinea, and in cancer (*Sennertus*). In hæmorrhages the powder sprinkled on the part is said to have been useful, and snuffed up the nostril to have relieved epistaxis. At Montpellier it was a favourite remedy in icterus, and, like other astringents, has been given in nephritis and calculus; with perhaps equal success.

GERMEN, the SEED-BUD, according to Linnæus the basis of the pistillum, containing the rudiments of the seeds, and gradually increasing to the seed vessel; by analogy, the vegetable ovium. In Pliny, it is synonymous with GEMMA, q. v.

GERMINATION, the period which the seed takes to rise, after being committed to the earth. This differs greatly in different seeds, and sometimes seems to depend on the air; for purslane rises before lettuce in vacuo, and after it in the open air. Seeds preserve their germinating virtue for a considerable time, and, if this is not lost, the form and appearances are not seemingly affected by the delay. Some poppies, now before our eyes, are as full and beautiful as their parents were twenty years since, from which time they have lain in the earth. Adanson contends that the seeds of the *mimosa pudica* preserve their germinating power for thirty years.

GEUM RIVALE.—Page 706, col. 2, line 41; "*specific for intermittents.*"—The root is brown or red, cylindrical, about the thickness of a goose quill, sometimes branched above, and at its extremity sending out filiform fibres. An ounce of the dry root yields three drachms of watery and two of spirituous extract. Each is saline and austere. It is singular, that, though known since the time of Kalm's publication of his Travels in America, it has not found its way into any pharmacopœia, except the Swedish, especially as Bergius, in the Stockholm Transactions, has given a series of experiments on its use. He found the *geum rivale*, though not "a specific in intermittents," highly useful in this complaint, especially after due evacuations. It was also of considerable service in diarrhœas of long continuance, in hæmorrhages of the uterus, excessive discharges of the hæmorrhoids, and other diseases arising from a weakness of the stomach. Other authors have found it useful in slight diarrhœas; but not in dysentery.

GIBBER.—Page 706, col. 2, line 50; "*faulty arrangement of the vertebræ.*"—Acrimony, as usual, has been accused as the cause of distorted spine; and Pouteau, in his posthumous works, has attributed it to variolous, rubeolous, and rheumatic acrimony, omitting, if it deserve the name, the principal, the scrofulous. In fact we find no traces of its arising from metastasis, nor from suppressed discharges, except as they produce debility, which is one of its principal causes. A rickety habit often occasions diseases of the vertebræ as of the other bones; and excessive fatigue, particularly in those labours which require a bent posture, as well as straight ligatures on children, is a common cause. Triller has attributed it to nephritis. See DISTORTIO.

See Halleri Opuscula Pathologica, Obs. 12, 13; Ejusdem Gibbi Descriptio; Morgagni de Sedibus, &c. xvii. 31, &c.; and lxii. 11.; Petit Maladies des Os, tom. ii.; Camper Demonstrationes Anatomico Pathologicæ, ii. 3.

GINGIVÆ.—Page 707, col. 2, line 41; "*diluted with water.*"—Cancer of the gums seems, in some countries, to be no uncommon complaint, and an instance is recorded of its arising from the pressure of a tobacco pipe. They often shrink from the teeth, independent of the pressure of tartar, appearing to decay without any cause, and are sometimes eroded, it is said, from acrimony in the bowels. A fungus is no unfrequent occurrence (Mémoires de l'Académie de Chirurgie, v. 14). A gangrene in the gums occurs often, it is remarked, in Paris, particularly in the Foundling Hospital. Mem. de l'Acad. de Chirur. v. 381, 396. See PARULIS and EPULIS.

GLUTÆUS MINIMUS.—Page 710, col. 1, line 47; "*abductor of the thigh.*"—Between each glutæus and the trochanter, bursæ mucosæ are usually interposed.

GLUTEN.—Page 710, col. 1, line 50; "*firmness to its texture.*"—It is an elastic, ductile, seemingly fibrous or membranous substance, insipid, slightly soluble in alcohol, and alkalis, insoluble in water, and subject to putrefaction. If gently dried, it is hard, semitransparent, and breaks, with a smooth fracture. It consists of hydrogen, carbone, and azote.

GLYCYRRHYZA ECHINATA, Lin. Systema Vegetabilium, 557, differs in no respect from the former, and is used in Russia for it. Indeed, it appears that it was not only the liquorice of the ancients (Dioscorides Materia Medica, iii. 7), for the description of the fruit does not agree with that of Dioscorides; but it is probably the plant which furnishes the liquorice we receive chiefly from Russia. The juice of either is not susceptible of fermentation, and perhaps the sweet portion may be found to resemble manna. The inspissated juice is disagreeably bitter.

GRACILIS.—Page 715, col. 1, line 47; "*thin and flat muscles.*"—The muscle chiefly termed *gracilis* is the *rectus internus femoris*, a long, strait, slender muscle immediately under the integuments, at the inner part of the thigh, rising by a broad, thin tendon from the anterior part of the ischium and pubis, terminating above the knee in a slender, roundish tendon, which soon becomes flatter, and is inserted into the middle of the tibia, behind and under the sartorius. Under the tendons of this and the rectus there is a large bursa mucosa: it contributes to bend the thigh inwards.

GRAMEN CANINUM.—Page 716, col. 2, line 30; "*variously bent and interwoven.*"—There is little accuracy in the collectors of herbs to select the true variety, which is, in fact, the *α. muticum*; but they often take the roots of the lolium perenne; in this, however, the calyx is monophyllous, not diphyllous, and the spiculæ are on the sides, not on the surface. The panicum dactylon is occasionally taken; but there is little injury from either error.

A pound of the root yields about five ounces of expressed juice, and the saccharine matter which it contains renders it susceptible of fermentation, though the taste of the vinous liquor is not pleasant. The fæcula which can be produced from them is soluble in boiling water, and jellies on cooling. Though the juice will not concrete into sugar, yet, with the nitric acid, the saccharine may be procured from it.

A ptisan, prepared from grass roots, is a common drink among the French in fevers, and in the Boerhaavian school they were highly extolled as medicines for resolving visceral obstructions. In later periods, they have been considered as particularly useful in jaundice and intermittents. Tode Bibliotheca.

GRAMINA, GRASSES, one of the seven natural families into which vegetables are divided. They are defined, "plants with simple leaves, a jointed stem, a husky calyx (*gluma*), and a single seed." In the sexual system, they are chiefly contained in the second order of the third class. The same name is also given by Linnæus to the fourth order of his fragments.

GRATIOLA.—Page 717, col. 2, line 36; "*than the plant itself.*"—From sixteen ounces of the dry herb four ounces and two drachms of the watery extract were procured: spirit extracted only forty-five grains, so that water is its proper menstruum. Besides milk, aromatics, liquorice, sugar, and raisins have been employed as correctors of the virulence of this medicine. The watery extract acts also as a diuretic, and, it is said, as a resolvent. It is, therefore, used in dropsies, particularly in those

where there is reason to suppose that visceral obstructions have been the cause. Externally the leaves are used as vulneraries, and, in recent wounds, are said to act as a warm fomentation. They are applied as resolvers in tumours of the mammae, from a collection of milk, as well as in gouty and rheumatic swellings.

The root chiefly alluded to at the end of the article, is cylindrical, of the thickness of a quill, geniculated, white, horizontal, with descending fibres. It is intensely bitter, with a strong sensation of astringency. Twelve drachms produce two and a half drachms of watery extract, of which from fifteen to twenty-four grains purge more mildly than the extract of the leaves. Spirit extracts less than water. Many of the observations respecting the virtues of the leaves were apparently taken from experiments made with the root.

GRUINALES, (from *grus*, a crane,) the nineteenth order of Linnæus' fragments, consisting of the different geraniums, and a few other plants analogous to them.

GRUTUM, a hard white tubercle of the skin, resembling in size and appearance a millet seed.

GUAIACUM.—Page 719, col. 1, line 35; "*but wholly to spirits.*"—It is more convenient to import it with the bark untouched. It soon burns on the approach of flame, and throws out a large quantity of resin. When, after cutting or rasping, it is exposed to the open air, the brown portion assumes a bluish green colour. The resin is so intimately united with the gum, that the decoction or tincture contains a large share of each; but the resin is generally most copious in the wood. The actual quantity and the proportions have differed in the hands of different chemists. Neumann seems to have obtained the largest quantity, Lewis the least. The acrimony in either extract is much greater than in the decoction.

The bark is ponderous, somewhat more than a line in thickness, apparently formed of different laminæ, which can be easily separated, rough externally, and divided by numerous fissures. It is variegated with dark and yellow-grey spots, internally grey or yellowish; in fragments of a pale brown. Murray thinks it more bitter and acrimonious than the wood: Lewis the contrary. It contains less resin than the wood, but more gum. The bark was for a long time thought more efficacious than the wood; for which reason Linnæus omits the latter entirely.

The use and the value of the guaiacum in lues is now sufficiently established, and we need not enlarge on the numerous and contrary opinions that have prevailed on the subject. In gout and rheumatism the gum is preferred, and it is generally considered that the spirituous menstruum adds greatly to the efficacy of the remedy. Berger, however, in the Copenhagen Transactions, combines it with gum arabic, and he found it highly salutary in these complaints, and in angina pectoris, which he considers as of a gouty origin. Theden prefers uniting it with soap, others with antimonials, asa-fetida, &c., according to the constitution of the patient or the particular form of the complaint.

The other diseases for which guaiacum has been recommended are those supposed to be owing to the ima-

inary PITUITA, q. v.; as asthma, coryza, leucophlegmatia, mucous diarrhoea, &c. Losecke recommends it in phthisis, apparently in those relaxed states when the expectoration is checked from debility. In palsy, cancer, caries, and exostosis of the bones, it has had its advocates, led either by analogy from its use in lues, or by their connection with this disease as their source.

GUMMI ARABICUM.—Page 720, col. 2, line 63; "*than the former.*"—See MUCILAGE, Appendix.

GUTTA.—Page 722, col. 1, line 40; "*quantity administered.*"—We find, from some late medical journals, that in the specimen of the new pharmacopœia now circulating among the members of the college, that drops are to be measured by graduated phials, a plan peculiarly proper; nor can there be any doubt of the nicety of the divisions in a country where the graduation of astronomical instruments is conducted with such minute accuracy. We have already observed (see ARTHRITIS) that *gutta* is the probable etymon of *gout*.

GUTTÆ NIGRÆ.—Page 722, col. 1, line 63; "*in another article.*"—From a more recent and careful examination, we have little doubt but that they are merely a diffusion of a nicely prepared aqueous extract of opium.

GUTTA ROSACEA.—Page 722, col. 2, line 34; "*called the golden ointment.*"—In the golden ointment the argentine is lowered with a large proportion, seven-eighths of axunge, or some saturine ointment.

GYPSUM is a calcareous sulphat, often styled selenite, plaster of Paris, alabaster, or, in a form approaching to crystallization, stalactite, &c. In other forms it is more perfectly crystallized. One hundred parts contain thirty of sulphuric acid, thirty-two of pure earth, and thirty-eight of water. Selenite seems to be produced by the decomposition of pyrites, and its crystals are compressed tetrahedral rhomboidal prisms; hexaedral prisms truncated at their summit; and decahedral rhomboids. It is sometimes coloured with iron, and from its heterogeneous contents the varieties in its specific gravity may arise, which varies from 2.32 to 1.87. It is soluble in about 500 times its weight of water, in 60° of Fahrenheit. We have corrected already in this Appendix, the opinion hastily offered in the work, that selenite, the distinguishing ingredient of hard waters, is not injurious to the constitution. We have since found it to be so. We know of no other connection of gypsum with medicine except its employment in making anatomical casts.

H

HÆMATOCELE.—Page 724, col. 2, line 19; "*but the operation is generally necessary.*"—The operation alluded to is laying the sac open as for hydrocele.

HÆMOPTYSIS VICARIA.—Page 725, col. 2, line 51; "*the event will probably be fatal.*"—The source of the blood can be sometimes distinctly perceived by a slight pain or tickling at one part of the thorax; and we can

often judge that the wounded vessel is near the top of the trachea, by the facility with which it comes up. But each prognostic is fallacious, though the latter is most so. A tickling of the epiglottis is generally felt, whatever part of the internal surface of the lungs is affected. Blood is sometimes brought up in streaks, with some very viscid phlegm. This appearance is not always dangerous; for it arises from the violence with which the mucus is separated from the follicle; but, on the other hand, if it come up without violence, and evidently from the lungs, however small the quantity, it is an alarming symptom: the alarm is greater if there be a continual drain. In some instances it has continued for many years without danger; nor have we been always able to distinguish such cases at first, except from the time of life: after thirty-five it is seldom dangerous. Hæmoptysis is hereditary, so far as it depends on a similarity of form, which is often propagated from the parents; and it is the disease of particular trades, where the labour confines the workmen to a stooping posture, which impedes the circulation through the lungs. Stoll particularly enumerates among these, weavers, shoemakers, and taylor (Ratio Medendi, iii. 11). It is sometimes periodical; but this chiefly happens when it is the vicarious discharge of the catamenia. The substances discharged with the blood are sometimes bloody masses; membranes apparently of a new formation, in consequence of inflammation not unlike the decidua, small portions of vessels, calculi, hydatids, &c.

We have mentioned, in the article PHTHISIS, q. v. and it ought to have claimed our attention in this place, that it is often caused by infarctions of the liver, and probably by diseases of the other abdominal viscera, if, from their vicinity, the inflammation can be communicated, or from their bulk, the circulation through the lungs is impeded. We have a striking instance of this effect in Stoll (Ratio Medendi, iii. 21), where hæmoptysis was relieved by the operation of paracentesis. Violent exertions operate in the same way; for the circulation is not free during strong inspiration. An aneurism of the pulmonary artery may undoubtedly produce it; but there is an instance of its arising from one of the subclavian; and indeed an impediment to the circulation above must always determine a larger quantity of blood into the bronchial artery. We have a case in the Memoires de Paris of an aneurism opening in the trachea; and, in Stark's works, of another opening into a vomica. Suppressed evacuations frequently induce it, particularly those from the uterus, and it is said the hæmorrhoidal vessels. These apparently act in part by inducing plethora, which is undoubtedly often a cause (Stoll); and we have seen a slight discharge of blood, almost constant, from full living, with want of exercise. Hæmoptysis often attends, as remarked in the article, inflammation of the lungs, and an habitual discharge of blood from the lungs is mentioned by Stoll as an evidence of the existence of a latent chronic inflammation. A dissolved state of the blood is a well known cause of this as well as other hæmorrhages.

The use of emetics is sanctioned, we perceive, by the authority of Stoll, when followed by laxatives: in his opinion bleeding is seldom advantageous, often injurious. Among the tonics, the arnica, the blue and white vitriol in small doses; among the astringents the

vitriolated iron and the mineral acids have been omitted; among the sedatives, cold, the saturine salts, the hyoscyamus, and the dulcamara. The blue and white vitriol have appeared to be useful in doses somewhat below even the nauseating, though perhaps they should be so great as to produce some effect of this kind. The saturnine salts, particularly the plumbum acetatum, may certainly be exhibited in doses far beyond those which modern timidity has sanctioned; and five grains twice a day at least may be given with little danger, if the bowels are kept free by castor oil. We have often found it useful. Astringents are, in general, reprobated by the best practitioners, or at least are so cautiously guarded as almost to preclude their use. Cold is a remedy of the highest importance; and cold free air, cold drinks, probably cold clysters, will be often serviceable. Mercury is mentioned by many authors; but calomel is chiefly given in those cases where bilious accumulations, or infarctions of the liver, appear to produce the disease; and Bang, in the Copenhagen Transactions, mentions its yielding to a spontaneous salivation. We recollect one case of obstinate hæmoptysis which resisted every medicine, when it was suggested that it might be owing to a venereal complaint. Mercury was immediately given for the latter; but however it may be explained, the bleeding from the lungs never returned.

HÆMORRHAGIA INTERNA. Vessels are often ruptured where the blood cannot escape, and it is poured into different cavities, particularly into those of the cranium, thorax, stomach, intestines, uterus, and vesica. This accident frequently happens from falls, or other violence; but more often from irregular determinations of the fluids in a system of vessels naturally weak (Morgagni de Sedibus, &c. liii. 7, 8; liv. 18, 19; Calvet de Hæmorrhagiis Internis). The symptoms of blood discharged into the cavities are in general sufficiently obvious from the injury experienced in their functions. In the head the hæmorrhage produces apoplexy: in the lungs it excites dyspnoea and cough, by which at least a part is brought up; in the pericardium syncope; in the stomach sickness and vomiting; in the intestines fulness, with a sanguineous discharge; in the cavity of the abdomen symptoms of ascites, with languor, anxiety, and cold sweats; from the uterus and vesica it is soon, in part, discharged; but in the former it is sometimes accumulated from the imperforated state of the more external parts. When none of these particular symptoms occur, the occasional cause, with subsequent faintness, will at once point out with great probability the real disease.

The causes of internal hæmorrhage in the cavity of the abdomen are a rupture of the larger vessels, often aneurism, sometimes wounds. Jenty mentions a case where the vena cava was ruptured from a distortion of the spine; and Sandifort one where the stomach and vasa brevia were ruptured (Observationes Anatomico-pathologicæ, iv. 5). Morgagni records a hæmorrhage between the laminæ of the mediastinum (l. c. xxvi. 40), and Lieutaud an effusion of blood in the interstices of the abdominal muscles.

Hæmorrhage seems more frequently to have happened within the pericardium than we should have suspected, not only from a rupture of the coronary arteries, but from wounds or rupture of the vena cava

near its entrance into the heart. In the cavity of the thorax it chiefly happens from aneurism, in one instance from a rupture in the vena azygos. In the intestines it has occasionally occurred from poisons, from the acrid discharges of dysentery and diarrhoea, or from plethora. With moderate care this disease is seldom dangerous. When the blood is discharged from the vessels of the kidneys or bladder, so as to distend the bladder, it often produces unconquerable strangury; for, when in a large proportion compared to the urine, we suspect that it coagulates in the vesica, and we have turned a catheter round its cavity, apparently immersed in cruor.

In all these cases it is first necessary to prevent the discharge by every remedy recommended in the article HÆMORRHAGIA, and the most appropriate methods must then be employed to discharge the blood. These will be the same as to discharge water or purulent matter. In the greater number, however, of these complaints, the fatal termination is at no great distance.

HÆMORRHAGIA NASI.—Page 730, col. 1, line 3; “*the young and the plethoric.*”—The frequent recurrence of this hæmorrhage, and the quantities of blood lost, if medical records do not lie, is immense, and it is said to be often fatal.

HÆMORRHOIDES.—Page 732, col. 1, line 46; “*by a recurrence of the hæmorrhage.*”—The discharge is sometimes periodical, sometimes so profuse that if it does not immediately endanger life, it lays the foundation for every asthenic disease, particularly dropsy. The hæmorrhage is occasionally hereditary, and has appeared, it is said, at an early age, particularly in gouty habits. Gout, indeed, is reckoned among the causes; and Petit, in his posthumous works, mentions its connection with obstructed liver.

There is little to be added to the remedies mentioned. We find cold clysters recommended in the Medical Journal, and cupping glasses have been applied to the mammae when the discharge has been profuse. Pessaries of cucumber and melon have been recommended; and Morgagni mentions pessaries of gourds. De Sedi-bus, &c. xxxii. 12.

The blind piles, viz. those which do not discharge blood, require nearly the same conduct; but warm vapours may be received by sitting over a pan containing hot water, impregnated with any vegetable which may be preferred: the water, however, is equally beneficial with any impregnation. Some essential oils, as the oil of juniper, and common oil, in which beetles have been boiled, are occasionally applied; but the most singular remedy is the sea mice, the eggs of the ray. See MUS MARINUS.

On the salubrity of hæmorrhoids, see Hoffmann de Salubritate Fluxus Hæmorrhoidalis; Stahl de Consultâ Utilitate Hæmorrhoidum; Alberti de Hæmorrhoidibus Medicinâ Hypochondriacorum, et Ej. de Hæmorrhoidibus Longevi atis causis; Triller de Hæmorrhoidum fluxu, nunc Salutari nunc Noxio; Richter Censura nimix laudis Hæmorrhoidum; De Overcamp Fallax Hæmorrhoidum Utilitas.

On hæmorrhoids, in general, see Hamberger, Doctrina Generalis Hæmorrhoidum; Eyselius de Hæmorrhoidibus Secundum et præter Naturam; Alberti Dissertationes Practicæ de Hæmorrhoidibus; De Haen Theses Pathologicæ de Hæmorrhoidibus.

HEDERA ARBOREA.—Page 736, col. 2, line 43; “*extractum furgans.*”—The leaves are not only nauseous, but bitter and austere, and are applied to burns, erysipelas, and even to inflamed eyes. We ought to add, that the author who recommends them in atrophy (Nebel in the Acta Naturæ Curiosorum), orders the medicine to be taken only at full moon! The resin is brought from the east, in pretty large masses, compact, semipellucid, of a reddish brown, with ferruginous spots or veins. It burns on approaching flame, is of a resinous, subastringent taste, and, when rubbed, of an agreeable smell. About three fourths are dissolved in spirit, and the tincture is of a reddish brown. It is supposed to resolve viscid humours, and assist the discharge of the catamenia. The berries were formerly considered as emetic and cathartic, but are never now employed.

HEDERA TERRESTRIS.—Page 736, col. 2, line 63; “*bitterish, warm taste.*”—The watery extract is mildly bitter; the spirituous more evidently acrid. This, however, Cartheuser denies, and says that the former is very acrid after some time, and the latter bitter and balsamic. From its effects on external wounds, it was employed in hecetics. Willis and Morton speak highly of its utility; the German and Swedish physicians commend it.

Ground ivy is certainly diuretic, and on this account has been considered as a lithontriptic: as an errhine it has relieved violent head aches, and as a bitter has been supposed effectual in slighter intermittents, given at the commencement of the fit.

HELLEBORUS ALBUS.—Page 738, col. 1, line 60; “*and durable taste.*”—The root is, externally, of an ash colour, internally white; the medullary part grey, and less compact, the rest firmer and paler. From a base of about an inch in diameter, it is contracted almost to a point. Externally it is rough, with little protuberances, from whence numerous fibres were derived. Water does not completely extract its virtues; for the aqueous extract is mild, and not more than half the quantity of the plant employed. Spirit leaves a bitter, acrid, extract, and from an ounce six drachms were procured, of which scarcely sixteen grains are pure resin; but the most pungent particles in both escape during the process.

The experience of the ancients with their hellebore is of little advantage to us, since, whatever it may have been, it certainly differs from ours. We have employed the white hellebore in mania and melancholia with some success, as its active powers in exciting vomiting and stools seem to show that it will be useful in such complaints. In dropsies it is given with much success in Siberia. A decoction is drank daily for twelve or fourteen days, so as to produce violent vomiting and purging. (Gmelin.) The Janisees, in open foul ulcers of the feet, take the root; and about thirty-five grains of it mixed with honey are given in Russia to destroy worms. (Pallas.) The country people sprinkle the dry root on the ulcers of oxen, produced by the æstrus; and in England it is given to dogs in hydrophobia. Hellebore is, however, poisonous to almost every animal.

HELLEBORUS NIGER.—Page 739, col. 1, line 5;

"its flowers are lost."—The chemical analysis conducted by Boulduc was probably that of the helleborous viridis or fœtidus; for the plants were collected in Switzerland, where the true black hellebore does not grow (Memoires de l'Academie de Paris, 1701, 192). The gummy portion of the true kind seems to constitute one half of its weight; but is very intimately connected with the resin, so that spirit dissolves nearly as much as water, and its oil adheres so closely to the resin that the latter is generally tenacious. The remainder consists chiefly of earth; for it contains a very small proportion only of salt. Its more active parts are, however, lost in boiling, as by this means its purgative quality disappears, but is found in the distilled water.

There is a great difference of opinion in authors respecting its dose and effects, so that they often used roots too long kept, or those of other plants: the utmost caution is, therefore, necessary in the choice, or the medicine should be perhaps wholly neglected. For the reasons already stated, we cannot avail ourselves of the experience of the ancients; and, from the variations just noticed, are by no means confident of the observations of the moderns: from our own experience we can say nothing. In melancholy, mania, amenorrhœa, a suppression of the hæmorrhoidal discharge, in dropsy (v. ASCITES), quartan fevers, lepra, and other cutaneous diseases, as well as in worms, it has been celebrated by authors of credit, perhaps justly.

HERMAPHRODITUS.—Page 744, col. 1, line 24; "*supposed species of the human kind.*"—See Hunter in the Philosophical Transactions, vol. 69; Edinburgh Medical and Physical Journal, N° 3.

HERPES.—Page 748, col. 2, line 41; "*and then disappear.*"—Herpetic eruptions are said to be hereditary, and sometimes contagious; but of contagion there is considerable doubt. They are sometimes critical and salutary; but the chronic herpes is seldom so, though as an established discharge its repulsion is dangerous, inducing cough, dyspnœa, and hectic (Aaschow in the Copenhagen Transactions, vol. i.; Haller Commentaria nova Gottingens, viii. 4). Herpes is often a mark of decayed constitution, of visceral infarctions, of saburral accumulations in the stomach, and of scrofula (Stoll Prælect. i. 45). Helstein, in the Medical Commentaries, attributes it to an accidental impregnation with arsenic, of mercury used in the preparation for the small pox. It is impossible to lay down any general plan of cure. The medicines employed have been as various as the circumstances of the patients. All the narcotics, the metallic tonics, the milder sudorifics, mercury, and the mineral acids, have been employed. The milder diaphoretics, with mercury gradually supporting the strength, when the disease occurs in debilitated constitutions, offer the most probable means of relief. The particular kind are enumerated with their causes and treatment in the article.

HIERACIUM MINUS.—Page 751, col. 1, line 2, for *hyoseris*, read *hypochaeris*.

HILUM. A mark or scar in a seed, the point at which the seed vessel or receptacle is attached, and by which the nourishment contributing to the evolution of the seed is conveyed. Each part of the seed, there-

fore, meets at the hilum, or rather every organized part divaricates from it. In describing the form or external portions of the seed the hilum is the base, and when the seed is ripe the connection, like the umbilical cord, is thrown off; but, when committed to the earth, the hilum resumes its office, and through it the nourishment assisting the germination is conveyed.

HIPPOCASTANUM.—Page 751, col. 2, line 28; "*the administration of laxatives.*"—On the whole, as a febrifuge the bark is inferior to the Peruvian; and though as an antiseptic its power is considerable, it will not restore substances, most slightly putrid, to their former state. The powder is preferred, if the stomach can bear it; but the dose is large, and usually exceeds a drachm, so that the extract is preferred. In bilious vomiting, with violent tormina; in bilious fever, with copious evacuations; in pleurisy and peripneumony, after proper evacuations; in gleet; in convulsions and tremors, it has been of service. Externally, with lime water, it has relieved foul ulcers, and, boiled in wine, has been useful in gangrene from œdema.

HIPPURUS. See EQUISETUM.

HORMINUM.—Page 762, col. 1, line 41; "*salvia horminum.*"—The species is *salvia sclarea* Lin. Sp. Pl. 38.

HUMERALIS ARTERIA.—Page 762, col. 2, line 22; "*to which it is distributed.*"—When the axillary artery has passed the tendon of the great pectoral muscle it is styled *humeral* or *brachial*, and retains the name till its division into *radial* and *ulnar*. In this course it gives off the *superior profunda*, which goes round the back of the arm to the exterior muscles; the *inferior profunda*, and the *ramus anastomaticus major*.

HUMERI OS.—Page 762, col. 2, line 33; "*neck of the humerus.*"—Its upper extremity is formed somewhat laterally and internally into a large, round, smooth head, which rotates in what is styled the glenoid cavity of the scapula. There is a circular fossa round its basis, deepest externally and before, forming the neck of the bone, and to this the capsular ligament is fixed, strengthened by a strong membrane, extending to the upper edge of the glenoid cavity, and the coracoid process of the scapula, as well as by the tendinous expansion of the different muscles. The cartilage which covers the head is much thicker in the middle than at the sides, so that it appears much more convex in the recent subject than in the skeleton. An irregular, oblong protuberance is placed at the back of the head of the bone, from which it is separated by a groove that makes part of the neck. Its upper surface is the place of insertion of the supra spinalis muscle; the middle of the infra spinalis, and the lowest, which is a little behind, of the teres minor. At a smaller tuberosity, situated between this and the head of the bone, the subscapularis is inserted: between them is a deep groove for the tendinous head of the biceps brachii, which is continued in the cylindrical body of the bone, extending downwards, in an oblique direction, about the fourth part of its length. It is lined with a substance resembling cartilage, but really tendinous, and at its edges different muscles are inserted. Somewhat lower,

towards the external and anterior side, it rises in a rough ridge for the insertion of the deltoid; and on each side of the ridge the bone is smooth and flat, for the lodgment of the brachialis internus muscle; and behind the middle of its outermost side is a channel for the transmission of vessels into the substance of the bone. Near the inner side, and a little lower, is a similar channel for the same purpose. It becomes at its lower extremity broader and flatter, affording two surfaces, of which the anterior is broadest, and somewhat convex, the posterior narrower and smoother.

The two outermost processes, which terminate the os humeri, are called *condyles*, though not designed for the articulation of the bone. They are rough, irregular protuberances on each side of the bone for the insertion of ligaments and muscles. The external condyle is somewhat forwarder than the internal, which, on the other hand, is longer and more protuberant than the other. From each a ridge is continued upward; and in the interval between them are placed the two articulating processes contiguous to each other, and covered with cartilage. From the manner in which the ulna moves in this process, it is called the *trochlea*, or pulley. The side of the pulley towards the little head is the highest; the other contiguous to the condyle slants from within outwards, so that when the fore arm is fully extended, it does not form a straight line with the os humeri; and the hand, when the joint is bent, comes to the fore part of the breast. The cavities of the root of these processes on the anterior surface, are divided into two, the external of which receives the end of the radius, and the internal lodges the coronoid process of the ulna in the flexion of the fore arm.

The cavity on the posterior surface, as the basis of the pulley, is much larger, and lodges the olecranon, when the arm is extended. In the fœtus both ends are cartilaginous, and the large head with the two tubercles above, the two condyles, and the two articulating processes below, become epiphyses before they are united to the body of the bone.

The humerus, like other bones, is subject to fractures, dislocation, caries, &c. It has been sometimes broken by the force of its own muscles; and a fracture, when in an oblique direction, is with difficulty cured. Mr. White records a case in the Philosophical Transactions where a callus was prevented by some interposed body, which was removed by an operation. It is a judicious remark of Treacourt, in the Memoirs of Surgery, that the humerus, when fractured, is elongated by its weight, and that therefore extension was unnecessary.

Luxations are often attended with laceration of the ligament, and reduction is consequently difficult, or impossible (Medical Observations and Inquiries, ii. 29). The strength and force of the muscles offer strong impediments; but we have a case in the Philosophical Transactions, where, during the languor excited by a large dose of tartarized antimony, it was readily effected; and an Italian author succeeded by the continued application of emollients for many days, and then bleeding ad deliquium. Might not tobacco clysters answer the same purpose, with less real loss of strength?

The head of the bone has been extirpated; and a considerable degree of motion retained. Cases of this kind occur in the Philosophical Transactions for 1774 and 1779; in Mr. Park's account of his New Method, &c.; and in Mr. White's Cases. Caries of the humerus has

been often cured; in one instance, we recollect, from the use of the trepan.

HYBERNACULUM, a winter lodgment. It is applied to the covering and defence of a tender vegetable embryo, and is either a bud (*gemma*), or a bulb (*bulbus*), as it is above or covered with the ground.

HYDROPS.—Page 774, col. 2, line 42; "*coagulated lymph.*"—Anatomy has pointed out various sources of this complaint, and the pathologist will find many dissections of this kind in Morgagni's thirty-eighth epistle, and one in his seventieth; in De Haen's Ratio Medendi, Pars xi. 4; and passim. The fluid evacuated has been of almost every colour and consistence; sometimes very viscid and tenacious, with filamentous concretions, sometimes black and fetid, occasionally bloody, sanious, or milky (Willis Pharmacœuticæ Rationalis), green, yellowish, or peculiarly acrid. In some instances it is said to have been oily (Guattani); sometimes purulent, very frequently that glairy fluid often discharged from sores, in which the circulation is languid. The fluid discharged in dropsies is often coagulable by heat, sometimes by galls, and by the nitrous acid; not, it is said, by the vitriolic, the muriatic, nor the acetous (De Verney Memoirs de Paris, 1701, 1793). Rouelle found in it soda (Medical Commentaries). The quantity taken by the paracentesis, or by different operations on the same person, is almost incredible. Bianchi informs us that in dropsy the bile is usually pale and insipid; Ridley found it of the consistence of mucus; Morgagni in small quantity, turbid, and viscid. Gall stones were a frequent occurrence.

The chief causes (sometimes effects) of dropsy which anatomy has discovered are diseases of the different viscera. The liver, the gall-ducts, the mesenteric glands, the intestines, the lymphatics of the abdomen, the pancreas, the uterus, the omentum, the kidneys, the peritonæum, the spleen, and the ureters, have been diseased in almost every varied form. In one instance the dura mater adhered with little firmness to the brain (Malacarne Encephalotomia). In the thorax the mediastinum has been found full of fat, the pericardium scirrhus, the heart itself diseased in its substance, oppressed with fat, filled with polypi, and distended or contracted by different causes; the valves osseous, cartilaginous, or fleshy; the aorta and coronaries bony or cartilaginous, the large vein ossified, particularly the vena portæ. Hydatids in different parts are no uncommon occurrence.

The cure is, in general, doubtful; for the greater number of dropsies are in the end fatal. The bad signs are dark spots, rather vibices than petechiæ, on the legs, or other swollen parts; aphthæ; a constant burning heat at the sternum (Storck An. i. 85, 88); an acrid serous effusion from the skin; offensive stools; and sudden metastases to the head or breast.

The remote causes of dropsy are various. Every cause of debility induces it, and it is often the closing symptom of the last scene. Among causes of debility are repressed gout, repressed evacuations; among which Stoll reckons a too sudden stoppage of the dysenteric and the hæmorrhoidal discharges: damp, marshy situations; unalimentary food (Willis); fevers, particularly asthenic ones, and intermittents checked before evacuations have been properly procured; cold; excessive

hæmorrhages, or other discharges of blood; hydatids (De Haen Ratio Medendi, v. 44; Morgagni de Sedibus, xxxviii. 35, 40, 41, 43, 71); plethora; cold drinks, particularly when the body is heated; scarlatina; rheumatism (Morgagni, li. 17); and a dissolved state of the blood.

On the cure of dropsies we find but little to add. The remedies are indeed numerous, and the list would be extensive; but, if we except the absurd, the trifling, and the superstitious modes of cure, we have not been able to discover any medicine which we have not noticed separately, or in its appropriate group, in the articles ANASARCA, ASCITES, HYDROTHORAX, and HYDROCEPHALUS.

HYDROPS SCROTI.—Page 776, col. 2, line 71; "**HYDROCELE.**"—Though the hydrops scroti is the most common effect of accumulations of water in the cellular substance of the lower extremities, yet it sometimes exists independent of it. Swellings in the groin and the abdomen, pressing on the lymphatics, may occasion the disease, and these it is generally impossible to remove. In suppression of urine, from strictures or stones impacted in the urethra, the canal often bursts below, and the urine escapes into the cellular substance, exciting not only swelling, but erysipelatous inflammation, hastening to gangrene. In the former case, as already mentioned in the article referred to, punctures will relieve, and should inflammation come on, a solution of acetated lead, or, more certainly, one of vitriolated zinc, will be of advantage. In the latter, not only punctures should be made, but the warmest antiseptic discutient fomentations employed, as decoctions of camomile and bark, adding, at the time of the application, highly camphorated spirit; in many cases hot brandy alone. When complicated with lues, mercury externally and internally should be employed, though the disease generally resists every remedy.

HYMENEÆ.—Page 778, col. 2, line 43; "*the gum anime of the materia medica.*"—It is often confounded with gum copal, which it resembles; but the latter is in smaller, more compact, pieces, and are not covered with the farina. The anime is wholly soluble in alcohol, giving it a bitterish, pungent taste. It has been used in colic, catarrhs, and asthma; in vapour, to relieve rheumatism.

HYOSCIAMUS NIGER.—Page 780, col. 1, line 20; "*without advantage.*"—On referring to Ludwig's Adversaria (vol. i. 71, &c.), we found, as we suspected, a misrepresentation in this passage. The effects which he describes are a copious sweat, tranquil sleep, a serene mind, and strength of body. Some felt in the beginning a weight, and pain in the head, with a dulness of sense, and little serpiginous eruptions, sometimes boils, and in one instance a parotid tumour appeared: the urine was more copious, the stools more frequent. The menstrual flux returned, and became irregular; in two women a discharge of saliva and of mucus from the nose came on. He does not deny that the principal disease did not in some measure yield, or that the more troublesome symptoms were not removed; but the relief was not to be put in the slightest competition with the inconvenience; and he adds, that *no one was cured but at the hazard of his life from the deleterious effects of the remedy*, (118)

The author thought that he alone had employed the seeds; but as he has detected the supposed novelties of other practitioners, so he has not spared himself. Platerus united them with other remedies in restraining hæmoptysis and the hæmorrhoidal flux. Boyle preferred them to every other remedy in curing hæmorrhages, and Mayerne ordered them in epilepsy.

The leaves, *externally*, are emollient, resolvent, and sedative. Boiled with vinegar, and with the addition of the oil of bitter almonds, Riverius recommends them as a cataplasm in scirrhus liver. Tournefort recommends the leaves, boiled in milk, as an application to gout; or the leaves, softened in the fire, to dissipate nodes of the mammæ from coagulated milk. Other authors have extended their use to rheumatism, and they are sometimes smoked like tobacco in toothach.

HYPERCATHARSIS, HYPEREMESIS, and HYPERDIURESIS, (from *υπερ*, *in excess*). Excessive action of cathartics, emetics, and diuretics.

HYPOÆMA, (from *υπο*, *under*, and *αιμα*, *blood*), an effusion of blood under the cornea, which often happens in the operation for the cataract, but is of little importance, as it is soon absorbed.

HYPOCHONDRIACUS MORBUS.—Page 781, col. 2, line 49; "*palsy, and apoplexy.*"—The corporeal effects of the causes enumerated are, obstinate costiveness, diminished irritability, and a want of a regular determination to the surface. These changes are the sources of infarcted liver, of diseases of the pancreas, omentum, spleen and stomach. Bonetus found the pylorus scirrhus; Lieutaud the vena portæ greatly dilated: the other abdominal veins are often in the same state. Morgagni found the kidneys diseased (De Sedibus, xxxvi. 21). Whatever produces internal accumulations from a suppression of the cuticular discharge, produces hypochondriasis; and it is, therefore, often the consequence of repelled eruptions and hæmorrhoids, of cosmetics, &c.

In the cure the German physicians have been anxious to bring back the hæmorrhoids by aloetic purgatives, or to supply the discharge by the applications of leeches to the anus. We have not found either method peculiarly successful. Of Kæmpf's visceral clysters we have no experience; but the bitters, called by the Boerhaavians resolvents and deobstruents, that is, the simple bitters, with rhubarb or the neutral salts, are often useful; but no method will avail, except what equally determines to the skin, and relieves the over-distended vessels of the abdominal viscera. The calomel, in the latter view, is often highly useful; but Fourcroy's favourite medicine, oxygenous gas, has failed, we believe, as often as it has been tried.

See Hoffmann de Affectione Hypochondriaca Supplementum, ii. 2; Haller de Malo Hypochondriaco; Bisset's Medical Essays; Cheyne's English Malady; Burton's Anatomy of Melancholy; Pommé Essais sur les Affections Vaporeuses de deux Sexes; Willis Pathologia Affectuum Hystericæ and Hypochondriacæ Opera, i.; Stoll Prælectiones, ii. 316; Ej. Ratio Medendi, iv. 371, 401; Stahl de Malo Hypochondriaco-hystericæ.

HYSTERITIS. See INFLAMMATIO UTERI.

I.

ICHTHYOCOLLA.—Page 789, col. 2, line 16; “*smell or taste.*”—See GELATINE, *Appendix*.

ICTERUS.—Page 790, col. 2, line 12; “*more sedentary life.*”—Dissection has discovered the chief defects in the biliary ducts. The ductus hepaticus and choledochus are often free; but the cystic duct is obstructed (De Haen Ratio Medendi Contin., iii. 6). Stoll has also found the cystic duct obstructed, though sometimes all the passages are open. Small tubercles were also discovered in them (Ratio Medendi, iii. 361, &c. 388, iv. 84). The ductus choledochus is sometimes obstructed (Morgagni de Sedibus, &c. xxxvii. 10, 35, 38; Stoll iii. 373, 379); and occasionally the hepatic duct. The gall bladder has been obstructed by calcareous concretions, perforated, eroded, scirrhus, cartilaginous, and sometimes destroyed. The liver is found to be diseased in almost every way in which it can admit of a change.

Diseases of the neighbouring organs seem to have had an effect in producing this disease. Stoll found the pylorus with a part of the duodenum scirrhus and cancerous; the spleen has been found scirrhus, and in one instance wanting (Zacutus Lusitanus, Prax. admir. iii. obs. 123); the mesentery scirrhus or osseous (Stoll); in a single case the diaphragm cartilaginous (Stoll, iii. 386). The blood has been said to be mucilaginous and watery, while the bile was viscid and dark; but this was probably the effect rather than the cause of the disease. The yellowness has been found universally diffused, tinging the bones, the cartilages, the heart, the pericardium, the peritonæum, the brain, and meninges, the semen, and water contained in the abdomen. Borellus tells us that it tinges money in the purse.

Jaundice is said to be often critical in fever; but, if we confine the term with accuracy, this view is erroneous. The yellowness on the skin in these circumstances is transitory only, as well as in new born children, and arises from a too copious secretion of the bile. That it has been removed by scarlatina and miliaria, as Stoll has remarked, is equally inaccurate, unless it be attributed to the effects of the remedies. The jaundice that appears occasionally epidemic (Clegborn on the Diseases of Minorca) is more probably owing to a superabundance than an obstruction of bile, as well as the yellowness from concussions of the brain. The arnica, iron, bark, and other tonics, have occasionally been given; but they have, by the best practitioners, been united with tartarized antimony and the neutral salts. Solvents of biliary calculi have been spoken of, and their solution attempted, but with little success. See CALCULUS and LITHONTRIPTICUS.

Page 792, col. 2, line 44; for *Macquer*, read *Marquet*.

IMPERATORIA.—Page 793, col. 2, line 3; “*is said to be an expectorant.*”—The epithet “*divinum*” seems to have been given from its utility in flatulent colics, and its supposed expectorant virtues have rendered it a favourite in asthma. It is also said to be diuretic, and highly useful in intermittents. The chief benefit, how-

ever, received from it is as a sialogue in palsy of the tongue, mixed with aniseeds. Its stimulus is more readily communicated to its spirit than to water.

INCENDIUM.—Page 795, col. 1, line 30; “*inflammatory tumour.*”—There have been instances of the body being consumed without any access of fire, and Dupont, in his Dissertation de Corporis Humani Incendiis Spontaneis, has collected several instances of this kind, which we might have rejected as incredible, if we had not some well authenticated accounts of similar events. (See Mortimer in the Philosophical Transactions, 1745, and Wilmer in the same collection for 1774.) In all the instances the person was addicted to drinking spirits, and inflammable air, from their decomposition, is, we know, copiously produced; but the means of inflaming it are not known. An electrical shock might have the effect; but that so great a quantity of electricity could be collected as to produce the inflammation can scarcely be conceived, and its rapid communication to some body in a different state would be required. As inflammable air is light, it is possible that it may be attracted by a candle or the fire, and produce a train which may convey flame to the body. The fact is, however, well established.

INFLAMMATIO.—Page 801, col. 2, line 19; “*dissolved in the serum.*”—More mature consideration, and a farther examination, have suggested a different opinion. See Pus.

INFLAMMATIO VENTRICULI.—Page 809, col. 1, line 53; “*external cold.*”—Not only acrid substances, but even deleterious poisons produce this disease, and there are many instances of its arising from nitre in large doses. The stomach is often the seat of misplaced gout, as well as the lungs and intestines, and it frequently suffers from a languid, chronic inflammation, in consequence of repelled eruptions and the use of saturnine cosmetics.

INFUNDIBULIFORMIS. Monopetalous flowers, resembling in shape a funnel, *infundibulum*.

INNOMINATA ARTERIA.—Page 819, col. 1, line 45; “*branches to the ilius internus.*”—It is also the first branch given off from the arch of the aorta, which soon divides into the right carotid and subclavian arteries.

INTERCOSTALES NERVI.—Page 823, col. 1, line 31; “*See CEREBRUM.*”—Add, and NERVUS.

INTESTINA.—Page 829, col. 1, line 60; “*stomach and intestines.*”—The intestines are subject to a variety of diseases, of which we have in some degree already spoken, particularly ENTERITIS, ILLIACA PASSIO, INTUS SUSCEPTIO, and HERNIA. They are sometimes found considerably contracted in their diameter, and often as much enlarged; nor is it uncommon to discover numerous contracted portions contiguous to dilated ones. Erosion and excoriation of the intestines are not uncommon after long continued diarrhoeas, and sometimes portions of the internal villous coat are apparently thrown off. Sandifort, in his Observations

Anatómico pathologica, lib. i. mentions some preternatural appendices which he observed issuing from them. Excrescences, bony or sebaceous, are sometimes discharged from the anus, which had apparently grown from their internal coat; and the latter have been the subjects of frequent observations in old dysenteries. Gangrene has sometimes occurred without preceding inflammation. Stoll (Ratio Medendi, viii. 129) mentions its occurrence, without preceding pain: Haller (Comment. nova Gottingens, viii. 1), and Morgagni (De Sedibus, xxxv. 19, 21) both describe gangrene without being preceded by manifest inflammation. In this complaint we have already observed that a portion of intestine is sometimes thrown off without fatal consequences; a circumstance readily understood, if their convolutions are considered. In one instance, however, the part thrown off was afterwards found to be the caput coli. The intestines have been sometimes perforated, and this has happened from worms, from foreign bodies, &c. In Hautesierk's collection an epidemic is described in which erosion was not uncommon; and we know from the experiment on sheep, that they may be occasionally wounded in emphysema without injury. The intestines are sometimes ruptured from a blow, and the accident is usually fatal. Wounds of the intestines by sharp instruments are, however, often healed. All the intestines are occasionally scirrhus, or compressed by enlargement of the contiguous viscera.

IPECACUANHA.—Page 831, col. 1, line 4; "*called hexuguillo*."—Europe first heard of the ipecacuanha from Piso; but it was scarcely employed until a French physician, Le Gras, who went three times to America, brought some of it to market in 1672. Fourteen years afterwards a French merchant, Grenier, imported it more largely, and associated, in the sale, Helvetius, under whose patronage it was employed with so much success that Louis XIV. purchased the secret. Dekkers speaks of it in high terms, and regrets that it was not to be procured in Holland; and Leibnitz celebrates it in his letter to the Academia Naturæ Curisorum. It was at first used almost exclusively in diarrhœa and dysentery, particularly in the latter. In dysentery, however, it is often at first given so as to produce full vomiting, and the smaller doses are designed to keep up nausea. The directions of sir John Pringle, Monro, Cleghorn, Baker, Brocklesby, &c. are in every one's hands.

Ipecacuanha is also employed in spasmodic asthma, particularly those varieties of the disease to which hypochondriacs and hysteric women are subject; but it must be administered in such a dose as to excite vomiting. In the more chronic form of the disease five grains are given every morning for six weeks; a dose that generally produces a slight nausea, and often some discharge. Baglivi also recommends it not only in dysenteric fluxes, but in all other hæmorrhages; and Barbeyrac adds, that it is not only peculiarly beneficial in hæmorrhages from the uterus, and hæmorrhoidal vessels, but even from the lungs. It has lately become a fashionable remedy in dyspepsia, since the publication of Daubenton's little tract in an English dress; but the dose is very small, and does not exceed a grain or a grain and a half. We can scarcely see in what

respect so small a quantity can be beneficial, but while it continues fashionable, its commendations will be warm.

IRIS FLORENTINA.—Page 832, col. 2, line 32; "*its bitter remaining in the extract*."—The watery extract is about three eighths of the root, and the spirituous one eighth; but the gum and the resin are so intimately united that the same menstruum takes up both. The spirituous extract is very highly acrid. Neumann could collect no essential oil from it, and others, who succeeded better, have obtained very little. It acts in the mouth as a sialogogue, and, reduced to powder, as an errhine.

ISCHIADICUS MORBUS.—Page 835, col. 1, line 32; "*when speaking of rheumatism*."—Perhaps blisters may be considered as remedies more appropriate to sciatica than to other kinds of rheumatism; and Plenicz has remarked that they should be long continued, as they produce little benefit till a viscid serum is discharged. Burning with the actual cautery, or with moxa, is a similar remedy, and from the depth of the sore produced, perhaps more effectual. Hemlock, aconite, and the whole tribe of narcotics, have been given, *it is said*, with success, and we have lately received some observations from Dr. Bardsley, which lead us to suspect that the arsenic would be an useful remedy. We have followed this hint; but cannot boast of our success.

ISCHURIA URETHRALIS.—Page 837, col. 1, line 36; "*press on the aperture*."—To this head must be referred ischuria from an enlargement of the prostate. This gland is frequently swollen, and often of a scirrhus hardness, sometimes containing calculi, and occasionally enlarged by excrescences (Morgagni de Sedibus, xli. 6, 13, 17; lxvi. 5; Ware Memoirs of the Medical Society of London, ii. 30; Petit Oeuvres Post Humes, iii. 20, &c.). Ischuria is sometimes the consequence of misplaced gout, when it is referrible to inflammation.

The bladder is not only punctured through the perinæum, as recommended by Mr. Pott, but often through the rectum; and this is the method preferred by many practitioners of credit. Others have recommended the puncture above the pubes: an operation whose advantages and inconveniences are explained in the article LITHOTOMY. Mr. Cheston, with great propriety, confines this operation to the ischuria, produced by the reverted uterus. In females it is sometimes punctured through the vagina. Each is a difficult and a dangerous operation; in the greater number of cases merely palliative; and the variety of opinions seem to show that no very decided advantages attend either. To compare them with the inconveniences would be a difficult task, within a moderate compass; and the practitioner must, at last, be decided by circumstances which can make no part of our consideration. In males we have preferred the rectum; in females it is rare, but the most ready access to the bladder is through the vagina.

JACOBÆA VULGARIS; *senecio jacobæa* Lin. Sp. Pl. 1219. The leaves are extremely nauseous, bitter, rough, and subacid. The decoction has been used in camp dysenteries.

J.

JALAPA.—Page 839, col. 2, line 26; "*genus iho-maa.*"—The root in its natural state is of a roundish form, or rather a long oval, fleshy, white and milky, particularly when fresh. From its inferior part many radicles arise of unequal thickness, which plunge perpendicularly, or obliquely, into the earth; and on its surface are some depressions, apparently the situation of buds or radicles. Thierry tells us that he has seen roots of jalap which weighed from twelve to twenty-five pounds. By cutting transversely they assume the appearance described in the article. Raynal declares that Europe consumes annually 7500 quintals, for which she pays 972000 francs. When burnt it gives out a strong and not a disagreeable smell.

When Mexico was discovered, the Spaniards found the jalap freely employed by the inhabitants; and towards the end of the seventeenth century, C. Bauhine informs us that the trade in this article was extensive in Europe. It was imported into Marseilles. He adds, that it is preferable to the white mechoacanna, because it more effectually discharges the watery fluids and strengthens the stomach; the dose, which he recommends is a drachm; but it was afterwards reduced to twelve grains and a scruple. C. Bauhine thinks that it is not adapted for acute fevers, nor for warm, dry temperaments; but is chiefly useful in dropsies, and in phlegmatic habits. In tænia Wepfer informs us that it has been effectual. The resin, triturated with sugar, is a convenient medicine for children, as it is tasteless, and by no means violent in its operation: with an equal quantity of cream of tartar it is a safe purgative in almost every complaint; and, notwithstanding the apprehensions of Bauhine, may be safely given in acute fevers. *Memoires de l'Institut.* tom. vi. 386.

JECUR.—Page 843, col. 1, line 14; "*become more fashionable.*"—The liver is subject to chronic inflammation, which often terminates quickly in abscess, without any symptoms which give the alarm. This complaint arises from shocks, either general or on the brain; drinking cold liquors while warm, frequent attacks of intermittents or bilious remittents; and, indeed, every cause which alters the determination of the blood, and throws it back from the surface, in constitutions where there is not sufficient inflammatory tendency to produce fever. These abscesses, from their vicinity, irritate the lungs, inducing cough and other symptoms of phthisis; often phthisis itself. The purulent matter is sometimes discharged by the intestines, finding a passage through the ducts, sometimes into the cavity of the peritonæum. In general, however, the patient sinks from atrophy or hectic. The liver is said to have been absent, sometimes double, occasionally to have been forced on the left side, and the round ligament of the liver to have been found in a herniary sac.

The enlargement of the liver has been occasioned by cold drinks when warm, repelled eruptions, and the abuse of spirituous liquors. Besides mercury and laxatives, the Bath waters are often of service. Hemlock has been given joined with rhubarb and neutral salts; sometimes the laurocerases, arnica, and even cha-

lybeate preparations. A constant drain, by a perpetual blister, is often of service. Wounds of the liver frequently heal without inconvenience, if the gall bladder or ducts are untouched.

JUBABÆ CORTEX. The plant is unknown; but the bark is brought to us in pieces some inches long, convoluted, brittle, of a pale brown, sometimes branched, as if taken from a larger branch, and followed into a smaller. The epidermis is grey, has longitudinal striæ. The bark below is of a deeper brown than the parenchyma, which is nearly white. It is brought from India. Spielman compares its taste and smell with those of the vanilloe; but some specimens are bitter. It is celebrated as a nervous medicine.

JUNIPERUS.—Page 844, col. 2, line 34; "*considerable bitterness.*"—The pulp of the berry is red, and somewhat viscid; the seeds three; about $\frac{1}{3}$ of essential oil may be obtained from them, and about half the quantity of extract, either aqueous or spirituous. They impart a violet smell to the urine, and are generally employed in dropsies, in the form of a conserve, but in this country the oil is preferred. In calculous diathesis they are used as preservatives, and as solvents of calculi, when these are supposed to be formed.

A decoction of the wood has been commended in catarrhus senilis, in itch, ozæna, sciatica, obstruction of the liver, gout, gonorrhœa, incipient cataract, &c. The fumes of the wood have been considered as preservatives from small pox, malignant fevers, and plague; the ashes celebrated in dropsy. The sandarach burnt, and its smoke received in clothes, has been supposed useful in rickets, if the whole body be rubbed with them.

K.

KIKEKUNEMALO.—Page 846, col. 2, line 61; "*nervous diseases.*"—The descriptions of different authors vary greatly. Buchner, the most intelligent of these in his dissertation on this substance, which is an almost pure resin, describes it as of a greenish colour, rather opaque than transparent, very brittle and not unlike the gum guaiacum. The smell is slightly balsamic; but, when thrown on burning coals, powerful, and not disagreeable. Between the teeth a sandy substance is felt, which indeed may be discovered by the eye on the surface. Distilled with water it imparts a strong balsamic and agreeable smell; and a balsamic, slightly acrid, ethereal oil swims on the surface, of which two drachms may be obtained from a pound of the resin; for it affords but one-twenty-fourth of a gummy extract. The water, after boiling this resin, becomes brown, bitter, and of a taste somewhat acrid. Spirit also becomes brown, with a balsamic smell and taste, and slightly acrid. The inspissated resin is white, and of the same taste. It has been considered as a discutient and antispasmodic; is given in powder, or in the essential oil. In one instance it relieved tetanus; but we suspect that the greatest utility of the kikekunemalo, which is brought from America, consists in its forming a beautiful crystalline varnish.

L.

LABIATUS.—Page 848, col. 2, line 23; “See *FLOS LABIATUS*.”—Linnæus includes the labiated and personate flowers under the epithet *ringens*; but, by this means, some confusion is introduced. It would be better to style an irregular monopetalous flower with two lips *labiated*; those gaping and open, *ringent*; those closed, *personate*. When the upper lip is wanting, and its place supplied by the antheræ and pistil, botanists have styled it on *unilabiate* flower. Sometimes the upper lip is turned upward, as in the ground ivy, though most commonly the upper lip is convex above, or turns the hollow part down to the under lip, representing a helmet. The flowers have been consequently called *galeated*, *cucullated*, and *galericated*.

LAC.—Page 853, col. 2, line 47; “*exhibited in milk*.”—Since this article was printed we have received the sixth volume of the *Memoires of the Institute*, which contains experiments on cows’ milk by Fourcroy and Vauquelin (p. 332). Of this Memoir we shall add a short abstract, without attempting to connect it with the former facts.

The results are undoubtedly very different, as they observe, from former experiments. They found that cheese, produced by the spontaneous coagulation of milk, is formed by the caseous matter joined to the acetic acid; and that the precipitation of milk by acids is owing to the union of this matter with these acids, which, unless in excess, are entangled in the cheese, and are not found in the whey. The phosphat of lime is deposited with the cheese when there is not an excess of acid, which renders it soluble in the serum. This excess may be that of the milk when very sour, or the acid added. It dissolves also a little of the cheesy matter, which renders the whey turbid, or at least which may be precipitated by ammonia. The phosphat of lime is accompanied by the phosphats of magnesia and iron.

The lactic acid of Scheele is the acetic acid, holding in solution animal matter, some sulphats and muriats, with a little ammonia; but, in its freshest state, milk contains acetic acid, and, neither in this nor any other experiments, does it offer the slightest trace of any foreign acid. The native acid of milk is found in the alcohol employed to coagulate it. This, as well as the lactic acid of Scheele, resembles very strongly the acetous products of fermentation, particularly those from the fermentation of the cerealia.

The animal matter contained in the acid of milk prepared by Scheele’s process has a considerable analogy with fermented gluten: it is dissolved in the serum, not precipitated by acids. It is this portion which is converted into acetic acid, which precipitates by tannin, galls, the oxygenated muriatic acid, and metallic solutions, which is the source of the bituminous matter formed by iron, so conspicuous in the authors’ experiments. The caseous matter, separated from milk by alcohol, retains all the phosphats of the milk and the butter; this curd is consequently more opaque, and does not become semitransparent by drying. The phosphat of iron, which in the curd accompanies the phosphat of lime, gives it the property

of becoming blue by calcination, like the bones of animals. There are no alkaline phosphats in milk, or they are in so small a quantity that they cannot be demonstrated.

The sugar of milk is neither the cause nor the subject of fermentation. It exists without a change after this has taken place, and is so little disposed to ferment, that leaven did not occasion the slightest intestine motion in it. In this respect it differs greatly from common sugar.

From these facts milk must be considered as a mixed fluid, formed of a large proportion of water, and two kinds of matter differing in their state; for some are truly dissolved, as the sugar of milk, which makes 0.02 of the whole; animal mucilage, muriat and sulphat of potash, and the acetic acid, of which the quantity cannot be easily ascertained. The cheesy matter which forms about 0.10 of the milk, is seemingly dissolved like the other matters. The ingredients simply suspended, and ready to separate on the least alteration of the equilibrium, are the butter, which forms about 0.08, and the phosphats of lime, magnesia, and iron, which are precipitated by the cheese, when there is not an excess of acid. Their quantity, which does not exceed 0.006 or 0.007, can scarcely be appreciated, except with respect to the phosphat of lime.

The applications of these results to animal chemistry and medicine we shall select in the authors’ own words, as we are not disposed to consent implicitly to every one of these positions.

1. “The presence of phosphats of lime and magnesia, in milk, explains the rapid increase of the bones of young animals during the time they live on this food. Nature seems to have appropriated this nourishment to the most rapid acceleration of ossification. The caseous and the animal matter are so many ingredients of milk, appropriated to the formation of membranes, muscles, &c.

2. “The existence of phosphat of iron in milk shows how this nutritious fluid is converted into red blood, which owes, as we have proved elsewhere, its colour to superoxygenated phosphat of iron, and to an excess of oxide. So that the milky fluid is constituted by nature to fulfil all the functions which the rapid nutrition of young animals requires.

3. “The acid serum of milk, holding the phosphats of lime, magnesia, and iron, in solution, offers a convenient vehicle for these salts in such cases as physicians will think it necessary to employ them, and to convey them in a divided state, united also with animal matter, into the blood.

4. “On the contrary, when they wish to employ whey as nourishment, as demulcent, and relaxant, they will order it in its sweet taste.

5. “Cheese made with sweet milk contains the phosphats of milk; and those prepared with sour milk do not contain them. This fact may explain the difference between cheeses of different countries.”

LACTATIO.—Page 855, col. 1, line 65; “*should be avoided*.”—In general, the diet of the nurse should not be greatly altered from that to which she has been accustomed. Vegetables in excess will produce flatulence, and a diet more nutritious than usual; an error often committed, as it is a vulgar prejudice that a nurse

should live well, renders the milk viscid and indigestible. The usual exercise, as well as the usual diet, should be also employed.

When the milk is in excess it is often thin and watery. The parents are surprised that the child does not thrive when the nurse has such a flow of milk. In these cases we can give little help by medicine; for a full diet will often increase the quantity, without improving the quality, and repellents are dangerous in one view, without being efficacious in the object desired. If the milk is young, time may improve it; but, if old, it must be changed. When the discharge of milk is inconsiderable, if no cold or irregularity has occasioned it, we are still unable to supply the defect. If from cold or fever, on the return of health the milk will return also, often in circumstances apparently unfavourable. When it disagrees with the child, occasioning uneasiness in the stomach, the warm carminatives, particularly the caruiseeds, the galbanum, &c., given to the nurse, will remove the inconvenience. The child often vomits the milk, and this is supposed to be in no degree injurious. Children indeed vomit freely and frequently; and, should the infant thrive, it may be neglected; but it sometimes happens that the child pines: still the vomiting is hailed as a healthy prognostic, till it sinks irrecoverably. It is necessary, therefore, to look to *its* health, and should that be good, lesser circumstances may be neglected; but should that fail, whatever be the other appearances, some active plan should be adopted to change the diet. An admixture of animal food will often be of service, and the pap may be made with the jelly of young animals, with the juices of beef or mutton, with a small proportion of the least unpleasing spice. Nutmeg or cinnamon is the most effectual. When a child vomits the milk without being coagulated, it is a symptom peculiarly unpleasant; for the stomach, or the milk, are essentially in fault. The latter should be immediately changed, and a mixture of animal diet in the forms just mentioned substituted.

When the milk is repelled, particularly in the earlier periods, it seems to be thrown out with every secreted fluid. It has been fashionable to deny that these are really milky depositions; but, as they so strongly resemble milk, and occur in no other circumstances, it is not easy to prove the negative. It has been said that they are really purulent, and in some cases they appear to resemble pus; but it is not impossible that suppuration may accompany them, nor indeed is it improbable, that a man, full of one opinion, may see only what supports it: numerous instances of this kind occur in medicine.

LACTIC ACID.—Page 857, col. 2, line 5; “*differs very little from the acetous.*”—The difference is explained in the preceding article of this Appendix.

LACTUCA VIROSA.—Page 858, col. 1, line 1; “*half an ounce a day.*”—This plant seems to be the *ἐρίδαξ αγγία* of Dioscorides, and forms, with the sclarea, a striking exception to the general character of the semi-flocculosæ. In making the extract, the expressed juice must be carefully depurated, since the earthy and saline particles obtund its more efficacious principles. If rejected in dropsy it will probably form an useful ano-

dyne; and it is said to have been beneficial in those intermittent fevers where there is much restlessness and agitation. *Histoire de la Societe Royale de Medecine*, ii. 297.

LAPATHUM ACUTUM.—Page 859, col. 1, line 28; “*with no remarkable smell.*”—The root is cylindrical, about an inch in thickness, externally brown, internally yellow. When chewed, it tinges the saliva of a yellow colour, like rhubarb. It has been long employed in chronic, cutaneous affections, and even in elephantiasis.

LAPATHUM AQUATICUM.—Page 859, col. 2, line 2; “*obstructed viscera.*”—It is said to be useful in rickets, and to be at least equal to the madder. If not superior, we may without regret resign it. The *rumex Britannica* of Linnæus, Sp. Pl. 476, excels the hydrolapathum in the cure of phagedenic ulcers. It is an American plant, and Colden was informed of its virtues by the natives.

LARYNX.—Page 860, col. 1, line 65; “*ASPERA ARTERIA.*”—The cartilaginous cavity behind the tongue, in the anterior part of the fauces. It is composed of the *CARTILAGO CRICOIDEA*, *THYROIDEA*, and the *CARTILAGINES ARETENOIDEÆ*, q. v. The superior opening is styled the *GLOTTIS*, and it is covered with a kind of valve, styled *EPIGLOTTIS*, q. v. The sterno-thyroidæus arises from the upper part of the inside of the sternum, and ascending on the sides of the trachea is inserted at the lower part of the scutiform cartilage: the hyothyroidæus arises from the lower part of the os hyoides, and is inserted at the same part of the scutiform cartilage. These are common muscles; but there are five pair of proper ones connecting the cartilages, and deriving their names from their origin and insertion. These have been already mentioned. The laryngeal arteries are branches of the external carotids. The laryngeal veins pour their blood into the external jugulars. The nerves are from the eighth pair.

LASERPITIUM VULGARE.—Page 860, col. 2, line 14; “*somewhat acrid.*”—The root is thick and round, aromatic, warm, acrid, and bitterish. It is said not only to be an uterine, but a warm tonic. Its sensible qualities are not inconsiderable.

LATERALIS SINUS. One of these is formed on each side by the division and continuation of the longitudinal sinus. They commence about the middle of the tentorium, one passing along each horizontal crucial spine, within the tentorium, and round to the foramen lacerum, in the basis of the skull, where the internal jugular begins.

LEDUM PADUSTRE.—Page 863, col. 2, line 3; “*bitter to the taste.*”—By distillation the water resembles in smell that of roses: the watery extract is at first bitter, and then styptic to the taste; and the essence, as well as the resinous extract, is very bitter and styptic. The empyreumatic oil is of a most nauseous smell, and of the consistence of pitch. It destroys bugs, but attracts bees into new hives; and was formerly used in Sweden instead of hops, till its inebriating quality was

found to be injurious. In whooping cough, in a various epidemic, combined with this cough, in a peculiar epidemic angina, resembling the mumps, and in tinea it has been employed in success. Linnæus and Scopoli.

LEGUMEN.—Page 863, col. 2, line 11; “*usually gathered by the hand.*”—A species of seed vessel which has two valves or openings, inclosing seeds fixed to one side only. In this it differs from a siliqua, where the seeds are fixed, alternately, to opposite sides.

LENTICULARIS FEBRIS, a fever distinguished by small spots, synonymous with **PETECHIALIS FEBRIS**.

LENTISCUS.—Page 864, col. 1, line 38; “*as a masticatory.*”—The resin (for it is scarcely a gum) consists of little masses of different sizes, semipellucid, yellow, of a light, not unpleasant, smell, and a taste almost imperceptible. It is chewed to sweeten the breath and strengthen the gums, and is the usual basis of the best tooth-powders; while, for similar reasons, the wood is preferred for toothpicks. As a masticatory, joined with ginger and more acrid substances, it has been recommended by Boerhaave in palsy, particularly where it affects the tongue; and internally, from its supposed tonic and astringent powers, in hæmoptysis, fluor albus, dyspepsia, diarrhoea, and ulcers of the intestines (Degner). Its fumes conveyed to the rectum are considered as useful in prolapsus; and, generally diffused, have been employed in rachitis.

LEPRA.—Page 864, col. 2, line 53; “*occur in this country.*”—It was formerly very general not only in England but on the continent, and seems to have arisen from the unalimentary food taken during the winter. We have still many institutions founded for lepers, since the disease was supposed to be contagious. In Iceland (Koenig), on the banks of the Jack (Pallas), in Cayenne (Bajon), and in Gaudaloupe (Peyssonnel), it still seems to be frequent. In this country it is now rare.

The *ledum palustre* (Linnæus), the juice of the fumitory hemlock (Quarin), Kæmpf's visceral clysters, and preparations of tin have been recommended in this complaint.

LIBER. The inner bark of a tree or plant, continued, according to Linnæus, in the corolla.

LIGULATÆ; floscules, which have a strait end turned downward, with three indentures, but not separated into segments.

LILIACEÆ; a natural order of plants in Murray's system, from their flowers resembling the lily.

LILIUM ALBUM.—Page 871, col. 2, line 19; “*flowers in June.*”—The root is a bulb, large, oval, acuminate, scaly, with loose, fleshy, white squamæ. When dry they are reddish, somewhat diaphanous, and hard. On chewing they are bitterish and mucilaginous: the mucilage amounts to about the fourth part of the weight. While it putrifies in water the stench is

intolerable. The recent root, roasted in the ashes, and mixed with the oil of nuts, is a remedy often applied to burns.

The smell of the flowers, though pleasing, is to many very deleterious. It is lost by drying, but is taken up by water, alcohol, and expressed oils. They have been considered as antiepileptic; but if they have any virtue it is in their freshest state.

LILIUM CONVALLIUM.—Page 871, col. 2, line 37; “*spasmodic asthma, or catarrhs.*”—The berries are very rarely employed. The pulp is sweetish, and somewhat bitter; the seeds more so. From a scruple to a drachm of the powder of the berries is said to be useful in such epilepsies as recur according to the changes of the moon. After due evacuations, half a drachm of the same powder, repeated after due intervals, is said to be useful in intermittents.

LIMONUM.—Page 872, col. 1, line 29; “*by means of the vitriolic.*”—See **CITRIC ACID**.

LINGUA.—Page 872, col. 2, line 42; “*the tip, frog-glossis.*”—The tongue, like other organs, is subject to inflammation and suppuration; but what does not often happen in muscular parts sometimes to cancer. We now know that in every disease, notwithstanding its great apparent irritability, it may be treated like any other part similarly affected. A burning heat at the back part of the tongue is often a symptom of hypochondriasis, or, more generally, of acrid saburra in the stomach. A burning heat at the extremity is often extremely troublesome, and with great difficulty relieved. Indeed it has seemed to disappear naturally, rather than from the effect of remedies. A calculus is often found in it, or rather in the salivary ducts in the neighbourhood below. After a part of this organ has been taken off it is said to have been again restored; but this has not occurred in many operations of this kind under our own eyes; and the account of M. Louis (*Memoires de Chirurgie*, v.) of the loss of the tongue not affecting the articulation, deglutition, or mastication, is scarcely credible. There are some instances of a double, or more properly a divided, tongue, and of a violent pain in it, called by Eyselius *glossagra*, perhaps a rheumatic affection.

A palsy of the tongue is an accompaniment of general palsy; but sometimes a single complaint. It is occasioned by the most common causes of paralysis, and cured by the same remedies. A swelling of the tongue is often a symptom of fever, and, even though threatening cancer, has been cured, it is said, by the *bella donna*: at other times, it has yielded to leeches, to scarifications, and to blisters on the back and neck. It attends salivation when in a great degree, and sometimes is a symptom in fevers.

LINUM.—Page 873, col. 2, line 5; “*on sulphureous bodies.*”—The seeds contain one sixth of mucilage, and one fifth of fat oil. Half an ounce of the seeds is sufficient for six ounces of water. As food they were observed, even in the time of Galen, to distend and weaken the stomach. This was confirmed at Middleburg, where the inhabitants, during a season of scarcity, employed them as food, and felt, in consequence,

tumours of the hypochondria and other parts. Domestic fowls, if fed on them, are scarcely eatable, from the rancidity imparted to the flesh.

As an emollient gargle in sore throats, as a demulcent not only in coughs but in pleurisy and peripneumony, the infusion of lintseed is highly useful. In aphthæ internally, united with mel rosarum, it is often advantageous, and frequently used as an emollient clyster.

LINUM CATHARTICUM.—Page 873, col. 2, line 47; "*is sufficient.*"—Linnaeus is the chief modern author who has recommended it; but this flax seems to have been, in the seventeenth century, a favourite laxative in this kingdom. It is sometimes joined with cream of tartar, sometimes with aniseeds. Two drachms are also infused in four ounces of water, and taken for a dose. In a larger proportion it vomits. The infusion is excessively bitter, and the tincture still more active. *Linnaei Amoenitates Academicæ*, vii. 300, &c.; *Morison Historia Plantarum*, ii. 575.

LIPOTHYMIA.—Page 874, col. 1, line 31; "*or effluvia.*"—It sometimes arises from diseases of the head (*Morgagni de Sedibus*, xxv. 2, 4, 6, 10, 14, 15, 17), sometimes from idiosyncrasy or particular antipathies, from abscesses suddenly bursting in the abdomen, suppressed evacuations, or a habit exhausted by violent discharges, either of blood or excrementitious fluids. Bites of insects are said to have occasioned the disease.

The whole tribe of antispasmodics has been occasionally employed, and in the intervals myrrh, bark, and valerian, with little discrimination of circumstances. The oxygenous gas has its usual advocate. *Fourcroy*.

LIQUIDAMBAR.—Page 874, col. 2, line 40; "*chiefly used as a perfume.*"—It has a moderately warm, pungent, balsamic taste, with a smell resembling that of storax calamita, heightened by a small proportion of ambergrise.

LIQUOR AMNII.—Page 874, col. 2, line 55; "*or the child is weak.*"—This fluid is generally transparent, often milky, sometimes of a yellow or light brown colour, not coagulating like serum with heat, and consisting of water, some mucus, a little earthy matter, and sea salt. The proportions vary greatly.

LITHOSPERMUM.—Page 876, col. 1, line 50; "*hard seeds.*"—These seeds consist of a greyish white, shining and insipid crust, and at their larger extremity have a brown umbilicus. The kernel, when fresh, is sweet and oily. Grew seems to have been deceived in his experiment, when he thought the shell was dissolved in acids; and their absorbent power is now no longer trusted. The lithontripic power of the seeds is equally doubtful; but calculous patients may obtain relief from them; for the whole plant is narcotic, and the fresh seeds form a pleasant emulsion; but they soon become highly rancid on keeping.

LITMUS; the inspissated juice of the *croton tinctorium* Lin. Sp. Pl. 1425, chiefly useful as a chemical test of acids and alkalis. It is sometimes prepared from the archill.

LOMENTACEÆ, (from *lomentum*, a colour used by painters). An order in the fragments of Linnaeus from their use, rather than their botanical relations.

LONGITUDINALIS SINUS. A large receptacle of blood in the brain, of a triangular shape, by one part being suspended from the cranium, while the basis is flattened by the lateral distention. It proceeds from the crista galli to the tentorium, where it divides into the lateral sinuses, and conducts the blood from the brain to the jugulars.

LOOK.—Page 881, col. 2, line 16; "*supposed to be a resolvent.*"—It resembles at first sight amber, for it is so hard as not to be scratched by the nail, pellucid, inclining to a yellow more or less deep, the fracture shining. It seems to have very little, if any, taste, and a slightly resinous smell, cracks between the teeth, and does not soften on chewing. In a candle it burns with a bright flame, froths, and melts, with no unpleasing odour, and without leaving any ashes. Half a pound of the gum scarcely yields twenty drops of oil. An ounce contains five drachms of a resinous extract; but of gummy only fifteen grains. Each is said to have some acrimony. It is brought from Japan.

LUMBRICOIDES. A species of acaris described by Mr. Church and Dr. Hooper in the *Memoirs of the Medical Society*, vol. ii. and v. See **VERMES**.

LUPINI SEMEN. *Lupinus albus* Lin. Sp. Pl. 1015, a large orbicular compressed seed, with a white arillus and a yellow medulla. Its taste is bitter and disagreeable, which is lost by boiling. It has been used as food by all the nations of antiquity; but, though not poisonous, for none of the papilionaceæ are so, it is a flatulent food, producing, if long continued, constipation. Externally, like all the farinaceæ, it is resolvent.

LUPULUS.—Page 889, col. 2, line 7; "*lues venerea.*" The cones are oblong strobili composed of large imbricated bractæ, each of which contain two roundish seeds at their base. The bractæ and the seeds are covered with a yellow farina; their smell is strongly aromatic; their taste very bitter, not disagreeable, with a sense of warmth; and the seeds are said to be the strongest. They yield only a small portion of their virtues to cold water, a larger to hot; but proof or rectified spirit extracts them readily. The watery infusion is yellowish, and grows black with sulphurated iron. Lobb supposes that the decoction of hops is lithontripic, as it softened the calculus in his experiments. A more saturated decoction is said to destroy worms; and the cones boiled are applied warm to the neck in cases of angina, and cold to luxated limbs. The young sprouts are bitterish, with a light aroma, and are supposed to sweeten the blood, to be mildly diuretic and laxative. They are eaten as pickles, or boiled as other vegetables.

LYCOPODIUM.—Page 895, col. 2, line 13; "*vegetable kingdom.*"—The analysis of Bergius is not very different, and each shows a strong analogy between this powder and bees' wax. Water extracts a very

small portion of it; alcohol about one eighth, which is either a resinous extract or an oil; but of a very nauseous taste. It has been given externally in the ischuria and chronic pains of children, and has been supposed useful in calculus. The moss itself is emetic, and very rarely used, except in plica.

LYSIMACHIA.—Page 899, col. 2, line 57; “*to be astringent.*”—De Haen revived the use of this remedy in 1776, and since that time it has been frequently used on the continent in diarrhoea and dysentery. From its sensible qualities, its astringency is slight; but it is very mucilaginous, and its watery extract is in a considerable proportion. The spirituous is austere and disagreeable (De Haen Ratio Medendi, iii. 196; iv. 250; Storck An. Medicus, i. 108). After the necessary evacuations, a drachm or four scruples of the powder are given night and morning.

M.

MALIC ACID.—Page 904, col. 2, line 54; “*carbonic acid by distillation.*”—It is procured by combining the acid in the juice of apples with kali, and adding acetated lead. The malat of lead is thus precipitated, and by adding the sulphuric acid the malic swims on the top. It is not crystallizable, and is decomposed by evaporating it to dryness. This acid is contained in the juices of many other vegetables, generally united with lime, and the neutral is rendered soluble by the excess of the acid (Annales de Chimie, xxxiv. xxxv.). The juices which contain it are so sensibly acidulous as to redden litmus paper, yield a copious precipitate by pure alkalis, by oxalat of ammonia, sulphuric acid, and indeed lime water, which acts by saturating the excess of acid. Acetated lead is, however, the best criterion, since its precipitate is freely dissolved by the acetous acid. The precipitate with the citric, tartareous, and oxalic acids, which are also redissolved by the acetous, are heavy and curdled in appearance, while that with the malic acid is light and flocculent. When each acid is pure, the malic is distinguished by its being uncrystallizable. This acid also, in vegetable juices, is known by its furnishing, on the addition of alcohol, a soft homogeneous magma, resembling thick soap; and these juices, when dry, leave a glossy matter, which yields mild calcareous earth by burning.

The malic is often found mixed with other acids, particularly the citric, in the native juices of vegetables. Scheele, to separate them, adds alcohol to precipitate the mucilage; the spirit is then carried off by distillation, and the remaining liquor nearly saturated with chalk, which dissolves in both acids; but the latter is deposited by gentle evaporation, while the former remains in a great degree in the fluid. By adding alcohol, which takes up the acid, the malat of lime which was left is separated in a flocculent mass, and is decomposed by acetated lead. Malic acid, as we have seen is also produced by sugar in the process for obtaining oxalic acid, and it seems to be the first step in the change. It is said, however, by Aikin, to crystallize in an intense degree of cold, about 7°; but, on keeping, it soon ferments, and is changed into acetous and carbonic acids.

MALVA.—Page 905, col. 2, line 51; “*by those of the latter.*”—The herb of the malva contains a large proportion of mucilage, and the root a less. In the althæa the contrary takes place, and its root is more mucilaginous than that of the malva. The dark purple flowers of the malva arborea are said to be astringent.

MANDRAGORA.—Page 908, col. 1, line 32; “*kidney shaped.*”—The root is spindle-shaped, thick, sinking sometimes to the depth of four feet, divided into two or three branches, externally brown, sometimes, a circumstance said to distinguish the female kind, blackish, internally white, of a subviscid taste, bitter, nauseous, and, as it has been sometimes said, fetid. This, from the effects, appears to be the *mandragora* of Dioscorides, which differs greatly from the plant under that name in Theophrastus. It was formerly given in pervigilium, in severe pains, and when a surgical operation was to be performed. Hippocrates mentions its use in melancholy, convulsions, and to relieve severe pains of the joints. Dioscorides speaks of its resolvent power in scrofulous and other tubercles, and for this purpose the inspissated juice of the plant was employed, or the root or bark steeped in wine. In Russia, Pallas informs us that it is given in various chronic complaints, and by the Swedish physicians in scirrhi of the parotid or maxillary glands, after fever; indeed, in glandular indurations of every kind, from whatever cause. Three grains of the powder or a few drops of the tincture have been said to relieve gouty pains. (Hoffberg in the Swedish Transactions.)

Line 34, in this article, for *internally*, read *externally*.

MANIA.—Page 911, col. 2, line 13; “*muttering delirium.*”—As some authors have lately contended that there is, scarcely in any instance, an organic affection of the brain in mania, we have collected the observations of the best anatomists on the subject. Morgagni's dissections occur in the eight and the sixty first epistle. Almost all the articles in the former, from the second to the eighteenth, are on this subject. He frequently found the brain harder, though sometimes softer, than usual; the dura mater sometimes thicker; white, soft bodies at the sides of the longitudinal sinus in the dura mater, and polypous concretions in the sinus itself. There were diseases also in the pineal gland and some large glands in the plexus choroides. Fabricius, he remarks, found also the plexus choroides turgid and inflated.

Meckel found the brain denser and harder than usual, and Jones, in the Medical Commentaries, describes the membranes thickened, the dura mater adhering firmly to the skull, the brain softer than usual, the ventricles full, of a turbid fluid. In the Medical Observations and Inquiries, vi. Dr. Smith mentions a bony concretion in the brain in a case of mania, which arose from a blow on the head; Plenciz and many other authors describe the brain as peculiarly tenacious, and bony, or calculeous concretions in different parts.

Among the causes, black bile is mentioned by the earliest authors, and we repeat it chiefly to add, that in the collection of the changes discovered by dissection we often find diseases of the liver. These, however, appear to be effects only; but the aneurisms and

diseases of the heart, often occasionally discovered are probably produced by the violence of the paroxysms, or are concomitant diseases.

It was scarcely necessary to enumerate among the causes, blows of the head, or previous phrenitis. We may add, however, that the deleterious narcotics have often occasioned mania; and though their effects are usually temporary, they are sometimes permanent.

MARANTA ARUNDINACEA, Lin. Sp. Pl. 2. The plant whose starch forms the arrow root. To procure this fecula, roots of a year old are well washed, then beat to a pulp: this is thrown into a pail of water, and the fibrous part carefully separated. The milky liquor, passed through a coarse cloth, is allowed to settle, and the starch which subsides is dried in the sun. It is reckoned a mild, nutritious aliment, and much used in fevers and hectic, indeed in every case of debility where the digestion is weak.

MARUM SYRIACUM.—Page 917, col. 2, line 24; "*powerful emmenagogue*."—Linnæus considers it as a powerful analeptic, and not injurious, though fever be present, as it does not heat, and in this respect as superior to cinnamon. It is, however, to be lamented that the relief it affords is as transitory as it is rapid. In asthma, and in hectic, with colliquative sweats, it has been said to be useful. Rosenstein and Bergius seem to support, by their experience, the commendations of Linnæus.

MASOY CORTEX. We were first informed of this bark from the letters of Rumphius from Amboyna (*Miscellanea Naturæ Curiosorum*, dec. ii. an. i. xxii. 55). It comes from New Guinea; is almost flat, of an obscure cinnamon colour, covered with a grey striated bark, of a sweet smell and taste, mixed with the aroma of cinnamon. The Indians bruise, make it into a cataplasm, and anoint the body with it in cold, rainy weather, as it warms, relieves pains in the bowels, and is pleasingly odoriferous.

MATRICARIA.—Page 934, col. 2, line 53; "*and bitter*."—Its chief virtues, as its generic and trivial names import, are supposed to be uterine, and, with little consistency, it has been employed both in obstructions and profluvia. It is said also to destroy worms, to be particularly beneficial in hysteria and intermittents; from the latter its English appellation is derived.

MATURATIO, the process of suppuration, or that change in the state of the vessels which admits of their secreting purulent matter.

MAXILLA INFERIOR.—Page 935, col. 1, line 33; "*os temporis*."—The coronoid is the highest process, thin and pointed: the condyloid is narrower, thicker, and shorter, terminating in an oblong rounded head, formed for a moveable articulation in the cranium, and received into the fore part of the fossa in the temporal bone. In this joint is a moveable cartilage, more closely connected to the jaw than the cranium, but united to both by distinct ligaments rising from the edges around. These attachments are strengthened,

and the whole secured by an external ligament common to both. On the inner surface of the ligament, which attaches the cartilage to the temporal bone, and backward in the cavity, is what is styled the gland of the joint, at least the ligament is peculiarly vascular in that part. At the bottom of the inner part of each coronoid process is a canal terminating at the outer surface of the bone near the chin, affording a passage to an artery, vein, and nerve, which send branches to the teeth.

The lower jaw is capable of performing many motions. The condyles, by sliding from the cavity towards the eminences on each side, bring the jaw horizontally forward; or the condyles only may be brought forward, while the rest of the jaw is thrown backward, as in opening the mouth. The condyles may also slide alternately backwards and forwards, moving the jaw laterally, as in eating. The cartilages secure the articulation, by adapting themselves to these several inequalities, and prevent injury by friction. Yet the lower jaw is sometimes luxated, chiefly in the convulsive action of gaping, and restored by the hand. It is more singular, that, by a caries, the lower jaw is said to have wholly separated from the cranium, and that the patient survived.

MAXILLA SUPERIOR.—Page 935, col. 1, line 43; "*the vomer*."—The upper jaw is divided into two bones, which in adults is sometimes united, but often remain distinct during life. An eminence at the upper and fore part of the bone is called the *nasal process*, and in the inferior portion of this process, is a fossa, which, with the *os unguis*, forms a passage for the lacrymal duct. Into this process, too, is inserted the short round tendon of the *orbicularis palpebrarum*. Backwards and outwards from the root of this process the bone contributes to form the lower side of the orbit, and it is called the *orbital process*. Behind this last there is a considerable tuberosity, on which is a channel, forming almost a complete foramen; in this a branch of the fifth pair of nerves and a small artery are transmitted through the external *orbital foramen* to the face. At the junction of the upper jaw to the cheek-bone is the *malar process*; the lower and anterior parts forming a portion of a circle, give room for the insertion of the teeth; for this purpose it swells, particularly on the inside. Above it, and just behind the fore teeth, is an irregular hole, the *foramen incisivum*, which separates into two or more, giving a passage to small arteries, veins, and nerves. Behind the alveolar process are two horizontal lamellæ, which, uniting, contribute to form the roof of the mouth, and divide it from the nose; and as it is seated higher than the edge of the alveolar process, the mouth is arched, and the voice consequently more sonorous. Where the maxillary bones are united they form a furrow from the projecting edges, which receives the inferior portion of the *septum nasi*. Under the orbital part of each bone is a sinus, called *antrum Highmorianum*, which, like the other sinuses of the nose, communicate with that organ, by an opening, small in the recent subject, though large in the skeleton. In the fœtus these sinuses do not exist, and there is an oblong depression only on each side of the nostrils; nor is the alveolar process then formed. On the side of the palate in young subjects

a fissure seems to separate a portion of the bone which contains the incisores from that which contains the canini; but this is seldom seen after the sixth year.

MECHOACANA ALBA.—Page 936, col. 1, line 30; "*but with no peculiar precision.*"—Murray thinks it most resembles the *convolvulus sepium* Lin. Amœnitates Academicæ, vii. 302. The slices are somewhat more than an inch in diameter, white, or of a yellowish white, compact, and covered with a greyish bark. The first impression on the tongue is that of sweetness: it is afterwards subacid, and a little nauseous: the roots of bryony sometimes mixed with it are distinguished by their bitterness. The dose is inconveniently large, at least two drachms; but it was for a time retained, as, from its mildness, suitable to children, though they can often bear more acrid purgatives than adults. It was supposed to be peculiarly serviceable in evacuating arthritic and rheumatic matter.

MELICERIS.—Page 973, col. 1, line 2; "*exciting suffuration.*"—See TUMOUR.

MENSURA. The Linnæan measures in botany are so often employed as to require a short notice. These are, 1. the hair's-breadth, the smallest perceptible portion; 2. *linea*, the line, one-twelfth of a Parisian inch; 3. a nail's breadth (*unguis*, equal to six lines, half an inch; 4. the length of the outermost joint of the thumb (*pollex*), equal to one inch; 5. the breadth of the palm exclusive of the thumb (*palmus*), equal to three inches; 6. the span (*spithama*), seven inches, equal to the distance between the top of the thumb and fore finger when extended; 7. *dodrans*, the great span extending from the thumb to the extremity of the little finger, equal to nine inches; 8. a *foot*, measuring from the elbow to the basis of the thumb, equal to twelve inches; 9. *cubitus*, from the elbow to the extremity of the middle finger, equal to seventeen inches; 10. *brachium*, from the armpit to the extremity of the middle finger, equal to two feet; 11. *orgya*, a fathom, the measure from the extremities of the two middle fingers when the arms are extended, equal to six feet.

MESENTERIUM.—Page 985, col. 1, line 10; "*as frequently as is suspected.*"—The dissection of morbid bodies, however, discovers such changes in this membrane and its glands as must produce the most fatal consequences. The glands have been found almost wholly obstructed, and atrophy has arisen from the deficiency of the supply. That it does not arise more frequently is owing to a lymphatic occasionally passing over a gland without pouring its fluid into it. We find the glands often suppurated, and hectic fever comes on from absorption, or death suddenly on the abscess breaking (Morgagni de Sedibus, xlv. 20). In the purulent sac, and sometimes in glands not suppurated, calculi or ossifications are discovered, but never in such a degree or extent as to produce disease, and, were they known, are beyond the reach of medicine. Obstructed glands also are seldom relieved, though the most promising plan is the use of small doses of calomel at night, with neutral salts or sea water in the morning. See SCROFULA.

The other diseases of the mesentery are hydatids, steatons, ulcerations, and wounds: these also are beyond our powers to cure. Wounds are usually fatal.

METALLA.—Page 986, col. 1, line 60; "*anatomical preparations.*"—Mr. Davy has lately disturbed the definition of metals, and the precision with which they were formerly limited, by his very singular and important discovery, that soda and potash are real oxides, and that, when deprived of oxygen, they assume the metallic appearance, though of very inconsiderable specific gravity. As, in the work itself (vide SAL), we have given the abstract of his discoveries before they were published in the Philosophical Transactions, we shall add, in the appendix to that article, a short account of what has been since discovered. See p. 150.

METAMORPHOSIA, (from *metamorphosis*). **DISTORTED VISION.** These distortions relate to the size of objects, their motion, their straight or bent position, or their inversion. In mania and delirium objects are supposed present that are not so, and after a strong impression the object still seems to continue, though the eyes are closed.

MEU.—Page 987, col. 1, line 1; "*Athamanta meum.*"—In the System of Nature this plant is referred to the genus *æthusa* with the same trivial name. It appears to be a plant of considerable powers from its sensible qualities, and has been celebrated as an emmenagogue, a sudorific, and diuretic. It has been given in England in intermittents, in other countries in flatulent colic, in hysteria, and in humoral asthma. The seeds are similar in their virtues to the plant and root.

MILIARIA.—Page 988, col. 1, line 6; "*its appearance has been rare.*"—Since that time we have seen two cases which have appeared to us true idiopathic miliaria. The pustules were not purple, and the disease was mild. They have, however, led us to a more accurate examination of the subject in some of the original authors; and it cannot, we think, be denied that it is occasionally, though rarely, idiopathic. It is sometimes endemic, occasionally epidemic.

See Colin Epistola ad Baldingerum quâ Demonstratur Pustulas Miliarias malefactitias et symptomaticas dici, Viennæ, 1765; Quarin Methodus Medendi Februm, &c.; Mémoires de l'Académie Royale de Médecine, 1779; Salzmann Historia Purpuræ Miliaris albæ Argentoratum et Viciniam infestantis; Baraldi Storia di una Costituzione Endemico-epidemica di Febri Migliari Modenæ, 1781.

MILLIUM, grutum. A very white, hard tumour under the skin, resembling a millet seed. It is immediately under the cuticle, and its contents, which resemble those of an atheroma, may be easily pressed out.

MOLA.—Page 992, col. 1, line 6; "*coagulum of blood.*"—The latter is frequently the case; and when the external part is apparently organized, the internal is merely cruor. When it is really an organized produc-

tion, traces of organization are discoverable through the whole, and the part by which it is attached to the uterus appears to be vascular. This at once determines that it is not a polypus; and, indeed, on the whole, it is probable that a mole is most commonly a monstrous production, whose structure admits not of regular and considerable evolution, and is, therefore, incompatible with an extended period of life. A mole is sometimes a collection of hydatids. Buchner *Miscellanea*, 316; Morgagni *de Sedibus*, &c. *xlvi.* 12—14.

MOLLITIES.—Page 992, col. 2, line 19; “*previously corrected.*”—This disease is nearly connected with rickets (see *RACHITIS*); but it sometimes occurs in more advanced life, when no other symptom of rachitis can be discovered. It consists not only in the deficiency or the defective application of the phosphat of lime, but in an increased absorption of the bony matter previously deposited, since a large quantity of this earthy salt is discharged with the urine. No cause is obvious but the general one of debility. Those who die of this disease are found to have the arteries of the bones greatly enlarged and diseased; for the blood is grumous and of a chocolate colour, injurious probably to the nervous power, and consequently destroying the life of the bone.

MOLYBDÆNA.—Page 993, col. 1, line 57; “*gravity exceeding 6.*”—This scarcely, however, forms a distinguishing mark, since molybdæna has sometimes a specific gravity of 7.5. Though infusible, it unites to many metals by fusion, to sulphur and phosphorus: it is acidifiable by the nitrous acid, and exists in four different degrees of oxygenation. Molybdæna is an acidifiable metal, and its acid styled the *molybdic*.

MUCILAGO.—Page 1009, col. 1, line 24; “*in water.*”—Mucilage is insipid, very soluble in water, to which it imparts viscosity, and a clammy feel, insoluble in alcohol, not coagulated by a boiling heat, nor changed by drying. After some time it becomes mouldy, and slightly sour; but these changes are produced slowly. In the fire it swells, softens, becomes yellow, brown, and black, burns with much flame, exhaling a dense acid vapour, and leaving a spongy coal. Several of the lichens, the leaves of comfrey and mullein, the root of the harebell, and the whole of the plant marsh-mallow, yield it by decoction and inspissation.

When distilled in close vessels pure water first comes over, next a reddish brown acid liquor, with an empyreumatic smell, mixed with a little brownish oil, much carbonic acid gas, and carburetted hydrogen. The acid will not crystallize; but may be concentrated by freezing, and appears from its affinities to be acetous acid combined with an empyreumatic oil. On combining gum with nitric acid till the nitrous gas begins to be disengaged, an acid is deposited on cooling in the form of a white powder. This is styled the mucous acid, which in distillation yields a red, sharp tasted oil, and much carbonic acid gas, while a portion sublimes in brown scales, with the smell of the benzoic acid. If the process be stopped when the mucous acid is deposited, the fluid above contains the malic acid, and continuing the process we obtain the oxalic. (See

MALIC ACID.) The mucous acid is no longer to be changed. The sulphuric acid blackens gum, and produces the acetous acid, but more slowly. Mucilage alone is not susceptible of fermentation.

Animal mucilage very nearly resembles *GELATINE*, *q. v.*; but if to a solution of animal with vegetable mucilage the aqua lithargyri acetati be added, the former is separated in a copious, white precipitate (*Bostock* in the *Edinburgh Medical and Surgical Journal*). The infusion of galls, on the contrary, which precipitates gelatine has no effect on mucilage, while a solution of corrosive sublimate will only separate albumen, without affecting either gelatine or mucus. The solution of litharge will, however, also precipitate different neutrals, so that the exact quantity of mucus cannot be ascertained by this experiment.

MUNGOS RADIX.—Page 1010, col. 2, line 10; “*serpient naya.*”—The full grown roots are about a span (*spithama*) in length, of the thickness of the finger, curved, knotty, bent, white, covered with a wrinkled bark, and a red fungus. The younger roots, of inferior powers, are long and straight. They have no smell, but are intensely bitter; so that the Malay appellation implies the gall of the earth. By analogy its utility has been transferred to poisons of all kinds, hydrophobia, putrid fevers, intermittents, and worms of the intestines.

MUS MARINUS, *fulvinar marinum*, a name applied to the eggs of rays, supposing them an animal. These were suspected to possess medicinal virtues, and, among the absurdities, some of which we must record, we have mentioned this remedy. According to *For-skål*, the modern Greeks and Turks still employ them in the cure of intermittents, by breathing the fumes when these eggs are thrown on hot coals. Though we speak of eggs, the ray is a viviparous animal, and, in reality, the sea mouse is only the oviform matrix, which contains the egg. It is in the form of a cushion, with four appendices, by which it is apparently attached to the fish till the young one is strong enough to “burst its carment.” On the southern coast it is called a fairy’s purse.

MUSCULUS.—Page 1016, col. 2, line 20; “*fulness, shape, and beauty.*”—Since this article was printed *Mr. Barclay* has published a very elaborate work on the muscular motions. It is divided into three parts. In the first is the arrangement of muscles into regions, with the synonyms of *Innes* and *Dumas*, following the appellation of *Albinus*, with references to each author. From this arrangement the student will at once perceive what muscles are likely to be supplied by the same branches of arteries and nerves, and, of course, be able to appreciate the effects of any wound or other injury.

The second part contains “the muscles belonging to the osseous structure, arranged according to the several bones to which they are attached, with general observations on the different parts constituting a muscle, and general observations on muscular action.”

The third part contains “different arrangements of the muscles, according to the motions in which they co-operate, and occasional explanations also of the man-

ner in which they co-operate." The author's object is to explain the nature and causes of a number of sympathies which arise from attachment, situation, and functions; many singular symptoms which occur in diseases; and to enable the practitioner to provide a safe and expeditious remedy where others, unacquainted with myology, might "torture their patient with all the contrivances of ignorant empiricism."

We cannot help, however, suspecting that Mr. Barclay has greatly overrated the importance of myology, and it is singular, that the tedious case which he has transcribed at length in support of his opinion did not require a knowledge of the origin and insertion of any muscle. In cases, however, of luxation and fracture, not only the action of each muscle, but the conspiring actions of all are necessary to be known, that the most perfect relaxation may be obtained in order to reduce the joint or the broken limb. In this point of view our author's labours are of great importance, and we would highly recommend them to the attention of surgeons. They will not admit of an abstract; and indeed the attempt would be unfair: we shall, however, select a few observations to point out the importance of our author's considerations.

"In those cases where the humerus is luxated, a steady attention to the situation in which it is placed, and deliberate reflection on what muscles are relaxed and stretched, what muscles are ready to assist or oppose, and likewise what muscles, as, for instance, the biceps, may be affected by the flexion or extension of some other joints, must always be objects of importance with the surgeon; and if he should wonder, in attempting the reduction, at the varied, sudden, and vigorous exertions which are made by these muscles, and at the great unavailing force that is not unfrequently made to overpower them, he surely cannot help being equally surprised at the slight causes which in some instances produce the luxation, and the small force which in other instances is required in the reduction. To explain the phenomena, we have only to reflect that the bone is preserved in its situation chiefly by the muscles; and that when any of the powerful muscles are taken by surprise, and without the others being prepared to moderate and direct it, the joint must always be in danger of luxation, however trifling be the force or the stimulus that introduced the derangement of action. The same is the case after luxation: the surgeon taking the patient by surprise, may often with a slight and a sudden jerk throw those particular muscles into action which favour the reduction, before the muscles calculated to oppose them are prepared to make any forcible resistance. Thus may a slight force, properly contrived and accurately timed, do more at one period than a great force directed by skill can do at another. As a proof of this assertion, it is not the joints that have the most vigorous actions to perform, nor is it the joints that are least secured by the strength of their ligaments or by articulation, that are most liable to accidents of luxation; it is those joints which, like the joints at the hip and the shoulder, admit of the greatest variety of motion, which require the greatest variety of action in their muscular forces, and where harmony, amidst this variety of action, is most difficultly preserved, from the number of rotators, motors, moderators, and directors that must necessarily act at

the same time with a precise and definite force, and yet may have other functions to execute on different bones and articulations. Let it not be said that in these cases the capsular ligaments perform not their office; for what, in general, is the strength of these capsules where the muscles adhere to them? they are little more than cellular membrane; and if the bone usually burst through them where they are strongest, and where they are least supported by muscles, it will only prove that muscles are the principal security of the joint, as we may see in that connection formed between the trunk and scapulae of quadrupeds, without the intervention of clavicles."

MUSCUS ARBOREUS.—Page 1016, col. 2, line 45; "*usnæ officinarum*."—This is not the *usnæ* of the shops, which is the lichen saxatilis. See *USNÆA*, Appendix.

MUSCUS PYXIDATUS.—Page 1016, col. 2, line 57; "*lichen cocciferus*."—Though Linnæus has fixed on this species, yet a variety of the *l. pyxidatus*, *l. coralloides*, *caule simplici*, *pyxidato*, *nudo*, *marginibus integerrimis* of Scopoli, and the *l. pyxidatus* of Linnæus, Sp. Pl. 1619, var. *b.* of Weiss, have been employed. We mention this particularly to observe, that the lichen islandicus, and probably a large number of this family, are equally efficacious. The taste at first is merely herbaceous, but soon bitterish, and the smell somewhat disagreeable. The decoction has the unpleasant smell of the moss, as well as the bitter taste, and it throws down a bitter mucilage. From four ounces, three drachms of watery and one of spirituous extract were procured: each was bitter. From the same quantity six drachms of ashes were obtained. The decoction became brown with sulphat of iron. It was first recommended in hooping cough by Willis, and others have freely copied from him. More lately, however, Van Woensel used it with success at Petersburg, not only in pertussis but phthisis (*Histoire de la Société Royale de Médecine*, ii. 295). Stark has also found it very advantageous in hectic. As these mosses are common, it will be unnecessary to send to the arctic circle for a similar remedy.

MUTILLA.—Page 1017, col. 1, line 18; "*troublesome from its sting*."—It is the *mutilla* of the System of Nature, a very numerous genus, which contains more than thirty species, and in the works of modern naturalists forms a family *mutillareæ*. The sting is confined to the female; the abdomen is connected to the thorax by a small portion of its thickness: the lower lip is very small, membranous, and of the shape of a spoon at its extremity; the antennæ filiform inserted near the mouth, admitting of vibrations, with strait joints; the first long and cylindrical, the third elongated. The maxillary palpi are long; the mandibles arched and pointed. The males only have wings. There is a very superb species in South America, called the *scarlet mutilla*.

MYODESOPSIA, (from *μύια*, a fly, and *ὥψις*, vision). The appearance of flies and cobwebs before the eyes, the precursor often of amaurosis, sometimes of apoplexy or palsy.

MYRMECISMUS, (from *μυρμηξ*, a *formicula*). *Formicatio*; a sense of creeping over the whole body. It sometimes occurs in that kind of paralysis which affects the nerves chiefly destined for sensation. But it is more commonly the earliest symptom of the RAPHANIA, q. v.

MYRRHA.—Page 1018, col. 2, line 32; "*it should be rejected.*"—The myrrh is obtained by wounding the tree above the first ramifications at the end of the rainy season, and the gum exudes about three months afterwards. It continues to flow from the first wound; but, after the next rainy season, is of a darker colour, and inferior value. Fresh myrrh exhales a strong, somewhat mouldy, smell, and thrown into water emits an oil, collected from the goat skins, in which it is conveyed. The inferior gum with which it is adulterated is undoubtedly from a species of *mimosa*; but the myrrh itself is certainly the production of a different plant.

Genuine myrrh consists of masses of different bulks, of the size sometimes of a walnut, though usually less, and the larger masses seem to be made up of less agglutinated tears, which are of a reddish brown, somewhat pellucid, solid, brittle, of an unequal surface, and a shining fracture. Its smell is grateful and fragrant;

its taste intensely bitter, pungent, with some traces of aroma. When masticated, it sticks to the teeth, and then in a great measure dissolves in the saliva, which, in consequence, grows milky. It burns slowly, with a sooty flame, and a crackling noise, leaving a grey coal.

In moderate doses it increases the appetite and digestion; so that Cartheuser thinks we have no better remedy in diseases of the *primæ viæ*. This opinion he confirms by its good effects in a case of hypochondriasis. In inveterate coughs and asthmas it has been celebrated from the earliest periods; and in later times it has been given, as we have said, with success in hectic. In such cases the gummy extract is supposed to be less heating than the myrrh itself.

MYRTILLORUM BACCÆ. *Vaccinium myrtillus* Lin. Sp. Pl. 498. These berries are of a deep purple, round, of the size of a large pea. The juice is sweet, joined with acidity, and considerable austeriety. When eaten raw in any quantity they produce flatulence and violent colics; but when dressed are often taken with impunity. They are supposed to be antiscorbutic, and are used to give inferior mixtures the resemblance of port wine. When dried they are astringent, and employed to check diarrhœas, or are added, like other astringents, to gargles.

CURÆ POSTERIORES.

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NAPPELLUS.—Page 4, col. 1, line 3; "*the turnip napsus.*"—The WOLF'S BANE. See ACONITUM.

NAPHE FLORES, the flowers of the orange tree. See AURANTIUM.

NAPHTHA.—Page 4, col. 1, line 27; "*paralytic affections.*"—It is either colourless, or of a very dilute yellow, with an oily lustre, and an unctuous feel. The smell is penetrating and not disagreeable; specific gravity 0.845, not congealing at 0 of Fahrenheit. By the slightest contact of a burning body it takes fire, and burns with a copious, bluish yellow flame, a penetrating odour, and much smoke. On distillation the colourless kind passes over unchanged; the coloured leaves behind a small residum. By exposure to the air it is in part volatilized, and the remainder is scarcely distinguishable from petroleum.

True naphtha communicates part of its aroma to water and alcohol; but appears insoluble in either, corrodes the corks of bottles in which it is kept, combines with ether, essential oils, and resins: pure alkalis form with it a soap resembling Starkey's. (See SAPO). It is the only fluid which will preserve, without any change, the new metals discovered by Mr. Davy in his decomposition of the alkalis, which shows that it either contains no water, or that the union between the hydrogen and the water is stronger than the affinity of these metals to water, or rather to the oxygen which it contains.

NARES.—Page 5, col. 1, line 2; "*too viscid mucus.*"—The nostrils are subject to a variety of diseases and accidents. Many of these, however, would be of little importance but to swell the volume. The chief are, OZÆNA, or ABSCESSUS, NARIUM, and POLYPUS, q. v. Besides these, worms are sometimes discharged from the nostrils, which have been bred in some of the sinuses, chiefly the frontal, and received in the state of ova from the air, possibly with snuff. These produce great pain, and their existence cannot be ascertained till they are discharged. If suspected,

the most acrid errhines should be administered. The worms supposed to be pressed out from the nose externally are only the sebaceous matter formed into small cylinders by stagnating in the ducts.

NASTURTIIUM AQUATICUM.—Page 5, col. 1, line 48; "*though weaker.*"—The earliest chemists attributed the volatile acrimony to ammonia existing formally in the plant, and the siliquosæ, or tetradynamixæ, are still styled alkaliescent, and certainly possess qualities different from the generality of vegetable substances. The minute researches of Wiegand have indeed discovered in these plants some traces of the volatile alkali; but too inconsiderable to explain their effects, and their pungency is undoubtedly owing to an aroma, most probably of an oily nature.

In the caries of phlegmatic habits, or, in the language of Forestus, from cold pituita, it has been of service, and in a tertian attended with coma connected with scurvy, it is praised by Eugelenus, and admitted by Werlhoff to have been of some advantage. In coughs, and even in phthisis, it is said to relieve; but not on authority we have been accustomed to trust.

NERVOUS FEVER.—Page 19, col. 1, line 35; "*ill-directed.*"—Since this article was printed Dr. Beddoes has published remarks on Dr. Clutterbuck's system, in which he seems to insinuate some suspicions of its originality, and endeavours to show that, in reality, the stomach is more generally diseased than the brain. In the view we have given, we might shelter ourselves under his auspices; but we have rather rested on the infarction of the liver than any affection of the stomach; and, though it is certainly true that the stomach is greatly disordered, and that, in dissection, it is most frequently found diseased, yet this is rather the effect than among the first consequences of febrile impression. The disorder of the stomach originally arises apparently from the debility of the sensorial power communicated to this organ; nor is it suprising that, when digestion is impaired, and the contents of the stomach become in consequence acrid or putrid, considerable changes

should be found in it. The fulness in the early stages of fever is, however, almost exclusively in the brain and liver.

NICOTIANA AMERICANA.—Page 23, col. 2, line 4; “to have discussed tumours.”—Even externally applied, tobacco sometimes exerts its deleterious power, and produces all its debilitating effects. The bad consequences of smoking are said by Tissot to be apoplexy, epilepsy, gout, jaundice, tabes, and different diseases of the breast. It sometimes relieves tooth ach, and smoking is said to ward off the infection of putrid fevers and the plague: in the damp climate of Holland it is certainly salutary.

NIGELLA.—Page 23, col. 2, line 23; “and a curminative.”—The seeds were chiefly used, and are slightly aromatic and very pungent, employed by the Hanoverians as a condiment, and called *allspice*. They contain about one twelfth of essential oil, and are not injurious, unless taken in a very large quantity.

NINZIN.—Page 23, col. 2, line 23; “similar to the Gensing.”—The plant resembles the sisarum, and its root is less sweet, somewhat bitter, and more agreeable than the parsnip. It is spindle-shaped, throwing out lateral fibres, and, about the middle, divided into two, from whence its name *nin-d-sin*, like a man, is derived. The roots are collected at the beginning of winter, are partly boiled in rice water, and dried. They have the art of rendering the lower part transparent, and the price is very high. The root is considered as highly cordial and corroborant.

NORLANDICÆ BACCÆ.—Page 28, col. 1, line 2; Lin. Sp. Pl. 395.

NUX AQUATICA. See CALTROPIS.

NUX MOSCHATA.—Page 52, col. 2, line 65; “and unctuous.”—The smell of a nutmeg, newly grated, is highly grateful. The matter which swims on the distilled water is not camphor, as has been supposed from its appearance; but merely a congealed oil. When separated it resembles butter, and has been called so. From its warm nature, it is only used in chronic cases. Various accounts of the inconveniences of nutmegs in large quantities may be found in Rumphius and Lobelius, as well as in Cullen. Even the vapour of the trees affects those who sleep under them.

NUX VOMICA.—Page 53, col. 2, line 40; “success in dysentery.”—We perceive that it has been chiefly used in dysentery by the Swedish physicians, and authors of considerable credit speak highly of it. The best accounts are in the Swedish Transactions for 1773: they add either rhubarb or cream of tartar to it. In intermittents, especially if joined with gentian, it is said to be very successful, and to act in these, as well as in pestilential fevers, by exciting sweat (Gesner and Buchner). With white vitriol it has been given in herpes and other cutaneous eruptions, sometimes in gout and rheumatism; but its utility in these diseases is not supported by good authority. It is certainly one of the most useful and effectual narcotic bitters.

O.

ŒSOPHAGUS.—Page 67, col. 1, line 56; “*nourishing clysters*.”—Under the article *DEGLUTITIO* we have spoken of the causes of difficult deglutition from foreign bodies, impacted in the œsophagus, and it is scarcely necessary to observe, in this place, that the œsophagus is subject to various organic diseases. Tophaceous concretions have been found in it, sometimes ossifications, abscesses, fungi, and polypi. Inflammation and sphacelus are rare occurrences. These, if curable, are to be treated by the appropriate remedies, and it is only necessary to mention their occasional occurrence, to guard the practitioner against disappointment from common plans. We observe in a German collection a curious mode of relief for the removal of any foreign body sticking in the œsophagus, viz. a solution of emetic tartar injected into the veins, which the author, Koeler, thinks will excite vomiting, as indeed it has been known to do.

OLAMPI.—Page 67, col. 2, line 20; “not used in this country.”—It is sold, says Spielman (*Pharmacopœia Generalis*, 156), in small pieces, externally grey, within shining, somewhat transparent, and brown. It is inodorous, insipid, friable, does not soften by chewing, does not dissolve in water, or melt by heat, burns in flame, exhaling a pleasant, resinous odour.

OLEA.—Page 67, col. 2, line 30; “*drypha*.”—The olives used as condiments, and preserved for exportation, are the largest and most fleshy fruit, which contain a less quantity of oil than the smaller ones, and are less sapid. They are unpleasantly bitter, and to lessen this taste, as well as to give them a saline aromatic flavour, they are repeatedly washed and macerated both in hot and cold water, with different aromatics, particularly fennel, dill, and coriander seeds, sometimes steeped in a lie of pure alkali. When properly prepared they are to many persons highly palatable, and are supposed to assist digestion.

OLIBANUM.—Page 71, col. 2, line 9; “*juniperus lycia*.”—Linnæus seems to have established this plant, as the source of olibanum, on insufficient evidence, and Murray appears anxious to evade the dispute. The *juniperus lycia* grows in the south of France, and certainly does not produce this gum. Niebhur and Bruce were unable to discover the tree from which the olibanum was produced, and Forskål was probably equally unsuccessful, since he does not mention it. In the time of Pliny the plant was as little known, and he tells us that the ambassadors from Arabia had rendered it, from their accounts, still more uncertain.

Mr. Colebrook, in the volume of the Asiatic Researches lately imported, has elucidated the question, and it seems very certain that the olibanum is produced from a tree, named by Roxburgh *boswellia serrata*. This tree is large, and produces a fragrant resin, which has been for many years imported, at first without a name, and was very early recognized by the dealers as the olibanum. The generic character of the plant is “calyx beneath, five toothed, corol five petalled, nectary, a crenulated, fleshy cup surrounding the lower

part of the germ, with stamens inserted on its outside; capsule three sided, three celled, three valved; seeds solitary, membrane winged.

"*Specific character*, leaves pinnate; leaflets serrate, downy; racemes simple, axillary. Petals ovate; filaments inserted on the exterior margin of the nectary." Asiatic Researches, ix. 377.

ONONIS.—Page 73, col. 1, line 8; "See ANONIS."—It was used, even in the time of Galen, as an aperient and diuretic; in later periods in ischury. Bergius observes (*Materia Medica*, 600), that, in his hands, it has often afforded relief in ischury and the paroxysms of calculus; in sarcocoele, probably hydrocoe. It is given in powder, in doses of a drachm. The bark is preferred when used in decoction, and a handful is boiled, for a short time, with a moderate heat in half a pint of water. De Haen *Ratio Medendi*, vi. 289.

OPHTALMIA.—Page 77, col. 1, line 3; "and scrofula."—Add *lues*, a disease accidentally omitted.

ORCHIS.—Page 316, col. 2, line 12; "*orchis morio*."—Many authors prefer the *orchis mascula* Lin. Sp. Pl. 1333, for the preparation of salep; but all the orchises, with round roots, as the *o. militaris* and *coriophora* (Gmelin), and even those with palmated roots, as the *o. latifolia* (Percival), afford excellent salep. Pallas informs us, that the roots of the orchis bifolia (the satyrion of the shops) may be substituted for the preparation of salep. Geoffroy, indeed, for the accommodation of the druggists of Paris, directs every species of orchis to be taken indiscriminately.

OREOSELINUM.—Page 85, col. 1, line 28; "*fun- gent and diuretic*."—It was formerly so much esteemed as to be styled *polychrestos*, and was long used with the most vague views as an aperient and attenuant in jaundice and obstructions of the spleen. The vinous extract is, at first, acidulous, afterwards bitter and astringent. The watery extract is less bitter; but considered as useful in weakness of the stomach. The tincture is said to restrain the vomiting in intermittents, and that which occurs after excesses. The seeds are pungent to the smell, and resemble in taste the peel of an orange. Their empyreumatic oil is said to relieve the pain of a carious tooth.

The herb itself is warm; but the distilled water is without smell. The infusion has the agreeable smell and taste of lemon peel. It is said to be diuretic and sudorific, as well as a corroborant.

OVARIA.—Page 99, col. 1, line 23; "*is to be supplied*."—The diseases of the ovary are singular. We mean not to allude to dropsy, to hydatids, the most common causes of its dropsies, to its cartilaginous or scirrhus state, its suppuration, or ossification, but to the marks of organization which are sometimes found in these parts wholly independent of impregnation (*Ballie Phil. Transactions*, vol. lxxix.; *London Medical Journal*, x. iii.; *Haller de Uteri raris Morbis*; *Ruysch Thesaurus*, i.; *Adversaria Medico-chirurgica* dec. iii.). Various instances of teeth and hair have been described in young women, whose characters

have been unimpeached; and these strongly support the idea of a germ pre-existing in the female, though they equally militate against another part of the same theory, the animation of the germ by the semen of the male. Whether in a salacious habit, a venereal orgasm may be sufficient to produce imperfect animation and an irregular form, without any connection with the male may be doubted; but the affirmative can scarcely be admitted, consistently with the rules of strict induction; and we should rather be inclined to admit such instances, when they occur in married women, among the monsters where a part only of the weaker child has been preserved. See MONSTRUM.

Page 99, col. 1, line 65; "OXALIC ACID."—This acid is prepared by boiling the nitric acid in sugar, mucilage, alcohol, silk, animal jelly, &c.; and many of the vegetable acids are convertible into the oxalic in the same way, except the acetous, which is, in all, the ultimate state. About fifty eight parts of this acid may be obtained from one hundred of sugar. The oxalic acid crystallizes in four-sided prisms, the faces of which are alternately broad and narrow, terminating in dihedral summits, not deliquescent; but in the air falling into a dry powder. The acidity to the taste is highly pungent; but, when diluted, grateful. The crystals dissolve in their own weight of boiling water, and twice their weight of cold. The specific gravity of a cold saturated solution is 1.06. Its properties are destroyed by heat, in proportion to the degree of temperature. On heating in a retort, with a gentle fire, the water of crystallization, three tenths, or according to Dr. Thomson's late experiments (*Phil. Trans.*, 1808, part 1.), one fourth first comes over, and the acid melts. In a greater heat the acid grows brown, part is sublimed in a white crust, the remainder resolved into carbonic acid and carburetted hydrogen, which come over in large quantities, and have a pungent, empyreumatic smell. What remains in the retort burns in the open air, without leaving any ash.

Alcohol, in a boiling heat dissolves somewhat more than half its weight of oxalic acid, part of which only is deposited in scaly crystals on cooling. On distillation a portion of the acid comes over with the alcohol, accompanied with a small quantity of imperfect ether. The acid contains seventy-seven parts of oxygen, thirteen of carbon, and ten of hydrogen. The proportion of oxygen is, therefore, very considerable. The malic acid generally accompanies the oxalic, and remains in the mother liquor after crystallization. It appears an imperfect oxalic acid, convertible into the latter by a continuation or repetition of the process. The acid of woodsorrel, in common language its *essential salt*, is an oxalat of potash, with an excess of acid.

Oxalat of lime contains 62.5 of acid, 37.5 of the basis; and the oxalic acid itself, according to Dr. Thomson, consists of oxygen 64, carbon 32, hydrogen 4. These principles are differently combined, forming, in the primary analysis, water, carbonic acid, and oxide, carburetted hydrogen and charcoal. We shall add the properties of the different oxalats in Dr. Thomson's own words, from the volume just referred to.

"The oxalats of barytes and strontian are white, tasteless powders, which may be obtained by mixing

oxalate of ammonia with the muriats of these alkaline earths. It is said that these earths are capable of forming soluble superoxalates with this acid; but I have not tried the experiment. These oxalates, as well as oxalate of lime, are partially soluble in the strong acids.

Oxalate of magnesia is a soft white powder, bearing a considerable resemblance to oxalate of lime. It is tasteless, and not sensibly soluble in water; yet when oxalate of ammonia is mixed with sulphate of magnesia, no precipitate falls; but if the solution be heated and concentrated sufficiently, or if it be evaporated to dryness, and redissolved in water, in both cases the oxalate of magnesia separates in the state of an insoluble powder.

"Oxalate of potash readily crystallizes in flat rhomboids, commonly terminated by dihedral summits. The lateral edges of the prism are usually bevelled. The taste of this salt is cooling and bitter. At the temperature of 60° it dissolves in thrice its weight of water. When dried on the sand bath, and afterwards exposed in a damp place, it absorbs a little moisture from the atmosphere.

"This salt combines with an excess of acid, and forms a superoxalate, long known by the name of *salt of sorrel*. It is very sparingly soluble in water, though more so than tartar. It occurs in commerce in beautiful four sided prisms attached to each other. The acid contained in this salt is very nearly double of what is contained in oxalate of potash. Suppose a hundred parts of potash; if the weight of acid necessary to convert this quantity into oxalate be x , then $2x$ will convert it into superoxalate.

"Oxalate of soda readily crystallizes. Its taste is nearly the same as that of oxalate of potash. When heated it falls to powder, and loses the whole of its water of crystallization. Soda is said to be capable of combining with an excess of acid, and of forming a superoxalate. I have not tried the experiment.

"Oxalate of ammonia is the most important of all the oxalates, being very much employed by chemists to detect the presence of lime, and to separate it from solutions. It crystallizes in long transparent prisms, rhomboidal, and terminated by dihedral summits. The lateral edges are often truncated, so as to make the prism six or eight sided. Sometimes the original faces of the prism are nearly effaced.

"The taste of this salt is bitter and unpleasant, somewhat like that of sal ammoniac. At the temperature of 60° , 1000 grains of water dissolve only forty-five grains of this salt. Hence 1000 grains of saturated solution of oxalate of ammonia contain only 43.2 grains of this salt. The specific gravity of this solution is 1.0186."

The very minute and correct analysis of this acid which follows belongs rather to the chemist than the physician.

P.

PALPEBRÆ.—Page 95, col. 2, line 9; "*surface of the globe*."—The eye lids are subject to all the diseases of external parts, even cancer; they are sometimes inverted, everted, or reflected, occasionally inflamed, or subject to meliceris, tubercles, warts, or steatoma. The

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thickening of the eye lids, with inflammation, is most commonly a symptom of scrofula. All these complaints are noticed under their appropriate titles. The palsy of the upper eye lid, which occasions its falling down, seems to merit particular notice. It is often periodical, sometimes spasmodic, or from a wound of the elevator muscle. Topical stimulants of every kind with tonics internally, have usually succeeded, and when periodical, as we have, in two cases, seen it, occurring towards night, the bark seems to have been advantageous. Richter advised musk with emetic tartar in a case which arose from spasm (Commentaria Gottingen, iii. 35), and Severinus the actual cautery. See also TRICHIASIS and HORDEOLUM.

PANCREAS.—Page 97, col. 2, line 6; "*appropriate distinguishing symptoms*."—Like the other internal viscera, it is occasionally subject to scirrhus and cancer; but these complaints are only known by the general indisposition, from the infarction of different internal organs. It is sometimes suppurated, or calculi are found in it. Storck (Anus Medicus, ii. 245) mentions it as the source of hæmorrhage, and it has, in many instances, been found of an enormous magnitude.

PANTOPHAGUS, (from *πας παντος*, and *φαγω*, *edo*). INDISCRIMINATE EATERS. These are chiefly maniacs or itinerants who devour every thing the most disgusting and indigestible, to excite wonder and pick pockets. It is astonishing, however, what substances have been occasionally taken into the stomach with little injury. Toads, spiders, leeches, cantharides, living fish, &c. as well as knives, pieces of glass, and leaden bullets. The favourite food of the pantophagus appears to be a knife or a piece of glass. It is useless to adduce authorities on this subject, or to enlarge the article with numerous instances.

PARAPLEGIA.—Page 105, col. 1, line 40; "*lower extremities only*."—It is perhaps more correct to extend the limits to all cases of palsy below the neck, as it so often happens from falls and injuries in the neck, from blows, gun shot wounds, &c. Morgagni mentions it as following apoplexy (De Sedibus, ii. 2), in a case selected from Gorræus; and Saviard has observed it, independent of luxation or fracture (Observations Chirurgiques). In the Memoires de Chirurgie, tom. iv. it is said, by Howset, to have been owing to syphilis.

PAROTIS.—Page 107, col. 2, line 34; "*synonymous with bubo*."—Swellings of the parotids constitute the disease called the mumps (see *ANGINA PAROTIDÆA*), and, in this view, it is sometimes epidemic and occasionally contagious, or, at least, so in appearance, from the number of persons attacked at the same time. In general, however, these tumours, though they yield slowly, are seldom dangerous. They have been relieved by leeches, by blisters in the neighbourhood, by cold, and sometimes by stimulating applications, with bark, and hemlock, or both internally. Parotids are said to happen more frequently on the left side, on account of the disadvantageous insertion of the left jugular vein. A more dangerous disease, however, of this organ is what has been styled the *malignant parotid*. It swells

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like the milder kind, and is, at first, scarcely distinguishable from it, but by its attacking in advanced life, and in females about the periodical change. It is not painful, and advances slowly to suppuration. If the latter can be prevented by leeches, cooling applications, &c. the inconvenience, for many years, is not considerable; but when it suppurates, the pus is seldom laudable, and the patient soon sinks from the discharge. In this case, bark, hemlock, and the whole tribe of poisons, have been tried in vain. The wound enlarges, the sloughs become deeper, till the constitution is completely undermined, and gradually sinks. The scirrhus parotids may be extirpated, but the malignant sink deeper, and will not admit of the operation, which is always dangerous, from the numerous large vessels in the neighbourhood.

PASTINACA OLUSATRA.—Page 116, col. 1, line 39; "*Germanicæ affinis panax*."—*Pastinaca ophionax* Lin. Sp. Pl. 376.

PELVIS.—Page 122, col. 1, line 35; "*at least in that instance*."—M. Tenon, in the first part of an elaborate memoir on the bones of the pelvis, has examined this subject at considerable length. He has shown that the cartilage at the articulation of the pubes is sometimes single, at others double, and that those have been mistaken who have exclusively described one or two cartilages. The double cartilage exists in men, as well as in women, but in the latter more frequently, and in women who have not conceived, as well as those who have borne children. Between these cartilages there is sometimes a partial, sometimes a general, separation, both in length and breadth. This cleft is in many instances only capillary; in a young woman who had just lain in, it was nearly a finger's breadth. None of the cartilages, at any period, had altered their consistence, and were neither softened nor thickened; so that in cases where the ossa pubis seem to have separated, the disunion depends on the double cartilage, not any softening of the cartilage, but in such circumstances, the ligaments seem to have softened and yielded.

The great object of dispute is, whether any separation of the bones takes place where there is a single cartilage only. M. Tenon thinks that, in such a case, the cartilage is truly softened; and this leads to a more general conclusion, that the separation of the bones is either natural when there are two cartilages, or arising from a softening of the cartilage, or from a rupture when there is a single one. This separation is found in women not parturient, and even in men, and supports the observations of Paré, Riolan, &c. that it has really taken place in labour; observations denied, eluded, or explained away. These inquiries, explain also why such separation does not always occur, as well as the remark of Morgagni, who saw, with astonishment, the evacuation of a fluid when the symphysis was divided. Such are the observations of M. Tenon, and we can only add that, though they elucidate the sigault operation to a certain point, they do not decide on its merits, which depend on the space really obtained by the section. The first attempt of this kind on a dead subject is recorded by Thomas Bartholine, in his tract "*De insolitis partus humani viis*." It will de-

tract from the high opinion entertained of the new institution of the capital of France, when we remark, that this memoir, published in 1806 (*Memoirs de l'Institut*, v. 6.), was really read in 1774.

The bones of the pelvis, in general, have often receded from falls, and shocks of different kinds; nor are there wanting numerous instances where they are said to have separated in the time of labour—a circumstance which M. Tenon's researches may explain.

PEMPHIGUS.—Page 124, col. 1, line 64; "*opiates and demulcents*."—Since the printing of this article, we have received the concluding part of Dr. Willan's first volume, in which, with his usual accuracy of discrimination, he treats of pemphigus. He considers the varieties described by different authors as referrible to the *common contagious* and *infantile pemphigus*. The first appears to him to be the only idiopathic disease. The history collected by Dr. Willan from different authors we shall add.

"From the different accounts of this complaint, it appears, that after a series of febrile symptoms, as shiverings, heat of the skin, headach, thirst, nausea, a sense of oppression, with anxiety in the stomach and chest, difficulty of swallowing, and often a delirium, the bullæ arise, with a slight redness at their bases, generally on the second or third day, but, in some cases, on the fourth, fifth, or sixth day. They are, at their first appearance, very small, but within forty-eight hours they increase to the size of a filbert or a walnut, and are surrounded by a dark red border: they are distributed over all the surface of the body, and sometimes over the tongue, fauces, and inside of the cheeks. The eruption of them takes place successively, and is, in different cases, completed in four, six, or eight days: during that time, the febrile symptoms, in which there are only short remissions, denote considerable danger. As the bullæ or phlyctænæ decline, the contents of some of them become yellowish, of others slightly livid. When they are broken, the ulcerated surface appears also livid, and discharges a thin serous fluid for some days, being finally covered with a black or yellowish scab. Two or three weeks elapse before these scabs dry off, and the cuticle is restored."

The *pemphigus contagiosus* we have referred to, in the *Acta Helvetica*. It is, as Dr. Willan observes, an endemic disease, resembling scarlatina anginosa, but certainly differing from it, as the pustules differ greatly in appearance from the ulcerations in the latter case, and as the danger vanishes, on a metastasis to the external parts, particularly the conglobate glands. If no metastasis takes place, and the disease be neglected, the pustules collapse, and a corroding ichor produces deep, fetid ulcers, which destroy very quickly. This indeed appears to us a truly idiopathic disease, while those bullæ which attend the plague and camp fevers, are symptomatic only. The latter are distinguished by their arising at no particular period of the disease, and by their occurring in fevers of various types. Of this kind were the tumours described by Thucydides, which he observed in the plague in Athens. The *pemphigus indicus* from Bontius was characterized by similar eruptions attending a dysentery.

The *pemphigus infantilis* is scarcely a febrile disease. The bullæ appear soon after birth, and seem to arise

from an impoverished state of blood, producing effusions, which in a weak habit soon terminate in putrid ulcers.

PENIS.—Page 124, col. 2, line 34; “*any other part.*”—The penis differs singularly in size without detracting from its office. Its diseases are the common ones of suppuration, excoriation, cancer, &c. But, independent of these, we find sometimes a partial ossification in the corpora cavernosa, sometimes a contraction of these from previous inflammation, which renders the turgescence of these bodies painful, or the penis itself curved on erection. The latter effect has arisen from a tophaceous concretion under the glans (Ab Heer), and this is probably the cause of the curvature of the penis, noticed by Hunter, as arising from gout. It is said to be sometimes double, or rather perhaps bifid.

PERICARDIUM.—Page 126, col. 1, line 11; “*inflammation and suppuration.*”—Senac has informed us, that the pericardium sometimes contains pus, bones, and calculi, sometimes air or blood. It is occasionally wanting, or more probably adheres closely to the heart, is cartilaginous and steatomatous. The best authors consider wounds in it to be fatal, though there appear to be some instances, probably where the heart itself was unhurt, in which the patient recovered.

PERITONEUM.—Page 132, col. 2, line 7; “*processes of the peritoneum.*”—In the duplicature calculi are sometimes found, and the whole membrane is often greatly thickened. For its connection with the womb, see UTERUS, Appendix.

PERSICARIA URENS.—Page 133, col. 2, line 34; “*destroyed in distillation.*”—In some instances, however, the distilled water has appeared slightly acrid, and the spirituous tincture was equally mild. Its acrimony is dissipated in drying. It is used by veterinary surgeons, to destroy fungous flesh, and clean putrid ulcers. The leaves, boiled in water, have been sometimes applied to œdematous swellings, and in Astracchan it is said to be employed in cancer, and ulcers of the nose and throat. Its distilled water was formerly used by tea-spoonfuls in calculus, alternated with oil of almonds, to blunt its acrimony; but in no form had it any action on the calculus out of the body.

PETECHIA.—Page 141, col. 1, line 29; “*peculiarly violent.*”—In the moment of writing, another case has occurred in a young married woman, strong, and otherwise healthy, without any known cause. The petechiæ were general, and the hæmorrhage, which was from the nose only, continued, with scarcely any intermission, for four days. It ceased as soon as the spots recovered their florid hue, and within a few days, at the accustomed period of the catamenia, they came on in their usual manner.

PEUCEDANUM.—Page 142, col. 2, line 2; “*flowering in July.*”—The roots are thick and elongated; externally of an obscure brown, internally, white: when wounded they exhale a milky juice, which, on drying, becomes yellow, from which, and its fetid smell, the plant has obtained one of its appellations. It is said to

be an aperient, and is certainly a narcotic, sometimes a laxative and emmenagogue. The decoction is externally applied in itch, perhaps from the colour of the juice and the name.

PHELLANDRIUM AQUATICUM.—Page 153, col. 1, line 11; “*petals white.*”—The plant, like the other umbellatæ, is suspicious. The seed is oblong, striated, of a yellowish green, of the size of the dill seed, slightly aromatic, and constantly acrid; in taste resembling the seed of the levisticum. Distilled with water, it yields an oil of a pale yellow, pungent to the smell, which imparts to spirit the same colour. A pound of the seeds yields an ounce of watery extract, and nearly two of spirituous, of which three drachms and five grains are a pure resin. It is commended as a lithontriptic by Pliny; but it is uncertain whether the plant is the same: and the numerous virtues ascribed to it by Dodonæus, who recommends it as a lithontriptic, emmenagogue, a diuretic, &c., have not been sanctioned by the experience of others.

PHYTOLACCA AMERICANA.—Page 176, col. 2, line 20; “*dissolves them.*”—The berries, when unripe, are equally acrid, and often smartly laxative: when ripe they are eaten without injury. The colour is so deep that they are often employed as dyes, and the port wines are said to derive their deep redness from them. The inspissated juice of the whole plant is applied to cancers, and excites most violent pain, which must be borne for twenty-four hours. The application is repeated at proper intervals, and the cancer is thrown off. The juice must, however, be expressed in the autumn; for in the spring it is comparatively mild. This practice, which originated in America, was at last brought to Europe; and some cases, illustrating its success, are published in the Memoirs of the Economical Society at Berne, 1764, iii. 184. An infusion of the leaves was there given in the dose of a pint, twice a day, the part fomented with the expressed juice of the leaves, or rubbed with the fresh leaves bruised. Haller speaks favourably of its effects; but in other hands the remedy has failed, and it has become the secret of quacks. In foul ulcers, resembling cancer, it is said to be equally effectual.

PIMPINELLA.—Page 178, col. 2, line 19; “*dry pasture grounds.*”—The root is acrid; but the heat it excites on the tongue is not of a long continuance: the odour is volatile and transitory. It is said to dissolve viscid humours, and is consequently used in asthma, coughs, cold phlegm in the stomach, &c. When chewed it excites a copious discharge of saliva. Like other stimulants, it occasionally proves sudorific. Its true menstruum is alcohol: its essential oil is yellow, and very pungent. Linnæus, in the system of vegetables, has lately separated this variety from the following; and the pimpinella alba, in that work, is styled pimpinella magna. Systema Vegetabilium, 241.

PLANTA.—Page 191, col. 2, line 11; “*mushroom tribe.*”—Carious corn has been examined by the most refined arts of modern chemistry. The analysis of Cornette, twenty years since, taught him that wheat thus injured contained an ammoniacal extractive matter; &

fat thick oil, which imparted a colour to water and alcohol; much gas, and a little calcareous earth with a fixed alkali. More lately, M. Girod-Chantrous thought he discovered in it an acid peculiarly fixed, and in this respect differing from every other vegetable acid, partly combined with lime. These experiments MM. Fourcroy and Vauquelin particularly examined, and the result is lately published in the sixth volume of the *Memoirs of the Institute*. They found in it, 1. A green oil resembling butter, forming nearly one third of its weight, with a strong fetid smell, dissolving in boiling, scarcely at all in cold, alcohol, giving the damaged corn its consistence, and unctuous feel. 2. A vegeto-animal matter, soluble in water, insoluble in alcohol, precipitating the sulphat of iron, the nitrats of silver and mercury, the acetat of lead, and the infusion of galls. This matter, which seems to arise from the decomposed gluten, amounts to one fourth of its weight. 3. A coaly substance, intimately united with the two former, colouring the carious corn, and arising from the same putrid decomposition as we see in mould, and amounting to 0.2 of the whole. 4. Uncombined phosphoric acid, forming only 0.004 of the whole; but in sufficient quantity to give this deteriorated seed the property of reddening the blue tinctures of vegetables. This acid, which dissolves only in water, draws with it a portion of vegeto-animal matter, whose solubility, in that liquid, is thus augmented, and which is precipitated when the acid is saturated by alkalis. 5. Small proportions of phosphats of ammonia, magnesia and lime, with a very little phosphat of iron, as in all vegeto-animal remains. Thus wheat is reduced to an oily, coaly, matter, almost bituminous, containing neither gluten, starch, nor saccharine matter.

Though these authors admit the existence of a carious germ, they think that the disease may be often produced, accidentally, by different causes, which act previous to the formation of starch; a substance admitting of little change. These causes are, 1. an excess of animal manure; 2. of rain at the season of bloom; 3. an imperfect fecundation from copious rains; 4. warmth with moisture.

PLUMBAGO.—Page 198, col. 2, line 49; "*substitute for it.*"—It is sometimes called dentaria, from its use in toothach; and the leaves, infused in olive oil, have been considered as an efficacious remedy in cancers.

POMPHOLYX.—Page 210, col. 1, line 30; "*resembling the urticaria.*"—Dr. Willan confines the term to an eruption of bullæ, without inflammation at the base, and without fever; and he particularly speaks of pompholyx benignus, diutinus, and solitarius.

The *pompholyx benignus* consists of slight watery vesications from the heat of the weather; from some acrid matter in the stomach; in some instances from mercury, when the constitution is irritable; from vaccine inoculation, when old dry matter has been used; and, in infants, from dentition. The vesications appear sometimes yellowish, but the fluid in general contains less of gluten than the serum of the blood.

The *pompholyx diutinus* is more violent and general, preceded by a smart tingling of the skin, and accompanied often by a slight fever, which seems, in a few instances, to be the precursor of the bullæ. If the fluid

is discharged from a small orifice, it is soon supplied; but if the skin is much broken, a foul, painful, irritable sore is often left. The bullæ are frequently numerous, rising in succession, and the duration of the disease consequently variable. It often attends anasarca, is described by Eulalenus as a symptom of scurvy, and it occasionally supervenes in some kinds of lepra. This complaint arises from excesses of every kind, fatigue, watching, violent passions, the repulsion of exanthemata, or other eruptions; in fact, from every cause of debility. The chief remedies are, the Peruvian bark, or Plummer's pill, with the decoction of sarsa, dulcamara, elm bark, &c. In old persons, as in these it seems to arise from an impervious cuticle, the warm bath is useful, but not so in younger subjects: in the latter, the bark jointed with diuretics is often successful.

The *pompholyx solitarius* affects, in appearance, women only. A bulla rises in different parts, leaving, when broken, a slight ulceration. This disease is attended with sickness and languor, without fever.

Willan on Cutaneous Diseases, order iv.; Burserius de Pemphigo; Lorry, de Morbis Cutaneis; Memoirs of the Medical Society, London, iv. 1; London Medical Journal, x. xi. 234; Hoffmann de Affectu raro, Scorbutico, Pustulari, Supplem. ii.; Medical Commentaries, vi. (Pemphigus Major of Sauvages); Journal de Physique, ii. 2.

POPULUS NIGRA.—Page 211, col. 2, line 41; "*resembling storax.*"—This tincture is used in inveterate diarrhoeas and internal ulcers, in a dose of from half a drachm to a drachm. The oil was formerly called *agerinum*, and used for softening the skin and relieving the pains of gout. A similar oil is obtained from the *populus alba*.

PULMONARIA.—Page 247, col. 2, line 44; "*lichen fulmonarius* Lin. Sp. Pl. 1612."—The taste is mucilaginous, subastringent, and somewhat acrid, softening by mastication. From four ounces, six drachms and two scruples of a watery extract were procured, slightly acrid and bitter. The resinous extract was half an ounce in quantity, somewhat more bitter. It is mucilaginous; but less so than the lichen islandicus, and, with the solution of sulphat of iron, becomes slightly livid. The Siberian variety is so bitter that it is used instead of hops. As the name imports, this lichen has been used in pulmonary complaints; but it is not superior to the other lichens; inferior, it is said, to the *LICHEN ISLANDICUS*, q. v.

PULSATILLA.—Page 249, col. 1, line 38; "*considerably active.*"—The herb and flowers, rejecting the root, distilled with eight parts of water to one half, is highly acrid and penetrating. When saturated with the herb in a recent state, after some weeks, it deposits milky, plain, striated crystals, resembling camphor in its unctuous taste, deflagrating in flame, and evaporating in pungent vapours. Some of these crystals, though insipid to the taste when entire, become, on melting, highly acrid, leaving a sense of stupor on the tongue. The aqueous extract, though at first highly astringent, soon excites a pungent sensation, and a very permanent heat.

It is said to cure foul ulcers, though not proceeding from a venereal cause, to be of considerable service in palsy, and in one case of melancholia. Patients bear the extract more easily than the distilled water; but the latter, or an infusion of the plant, is used with success when applied to ulcers, caries, and serpigo. It is said to be particularly useful in amaurosis, though its efficacy in this complaint is denied by Richter.

PURPURA.—Page 253, col. 1, line 16; “*of a very different nature.*”—Dr. Willan, in his late publication, confines the term to an efflorescence, consisting of small, distinct, purple specks, attended with great debility; but not always with fever. The varieties are *purpura simplex*, *hæmorrhagica*, and *urticans*.

The *purpura simplex* resembles petechiæ, and may be distinguished from flea-bites by the spot in the middle, the mark of the animal's spear. It is attended with languor, debility, and pains in the limbs; nor does it differ from the morbus petechialis sine febre.

The *purpura hæmorrhagica* is attended with hæmorrhages, anasarcaous swellings, and vibices, preceded by lassitude and faintness, sometimes by shivering, vomiting, and acute pain. The spots attack every part; but chiefly the inside of the mouth and fauces, where they sometimes assume a papular form, and, on the surface, are occasionally interspersed with larger livid patches, like enchymoses from a bruise. It is, in reality, only a more violent degree of the former variety. It chiefly affects persons of a weak, delicate, and irritable habit, chiefly females, sometimes boys, particularly those confined to close damp rooms, whose diet is not sufficiently nutritive. The great remedies are air, exercise, alimentary diet, with Peruvian bark and vitriolic acid.

The *purpura urticans* begins with hard, reddish, rounded elevations of the cuticle, which gradually dilate; but, within twenty-four hours, subside to the former level, and are succeeded by livid spots of the same extent, with a little redness and livor intermixed. The spots are not permanent; but succeed each other in different places, chiefly on the legs, sometimes on the thighs, arms, and breast; and, after some time, are attended with anasarcaous swellings. The languor and debility are highly distressing. The disease appears chiefly in summer and autumn, affecting those exposed to great fatigue, with a diet unalimentary, and young women who live luxuriously, and use little exercise: in the latter, previous to the anasarca: which is chiefly confined to the legs, these parts are hard and enlarged. The remedies for this variety also are the bark, with the mineral acids. In all its forms, Dr. Willan thinks the disease connected with scurvy. Like scurvy, the purpura is owing to a dissolved state of the blood; but differs from it in the most essential circumstances. See the references collected by Dr. Willan, vol. i. p. 463—6.

Q.

QUASSIA LIGNUM.—Page 264, col. 2, line 48; “*quassia amara.*”—The root was at first employed; but it seems to differ little from the wood, which is now chiefly used. The size of the pieces imported varies from that of the arm to a quill. The bark, which remains attached to some of the pieces, is thin, rough,

wrinkled, of a grey colour, variegated with white, easily separated, friable, and, on its internal surface, grey. The thicker the pieces the more compact is the wood (but its specific gravity is at no time considerable), the whiter the colour internally, and the bitterer the taste. Where a darker colour appears on the surface, and penetrates into the wood, the latter is insipid and inert.

The bitterness is considerable in every part, but most so in the bark. The wood, however, is so bitter that a scruple imparts a bitter taste to a pint of water, and, in summer, twelve successive infusions scarcely deprived the wood of the whole of its flavour. It excels every other bitter, except the colocynth and gentian, and seems in no instance to excite the action of the heart and arteries.

In the exhibition of quassia it is of consequence to attend to its affinities. Vegetable acids seem to destroy its bitterness, probably its efficacy; but the mineral acids produce no change. The cinnamon and its preparations, the orange-peel, cloves, ginger, or vitriolic ether, do not affect it, but render it more agreeable: the change is, however, temporary; for the bitter flavour returns with increased intensity, unless these substances are added in a quantity which may probably destroy the virtues of the quassia. The most agreeable preparation of this wood is a tincture made with Spanish white wine. Quassia imparts its virtue to water, wines, or spirit: the infusion in water is, however, preferable to the decoction. The quantity of watery extract varies from one fourth to one ninth; but it is intensely bitter. The spirituous extract varies from one twenty fourth to one thirtieth; and a very small quantity, if any, of essential oil can be extracted from it.

Quassia is said to be a powerful antiseptic; but its chief use is in remittent fevers. In intermittents, with other bitters, and in putrid continued fevers, it is said to have been successful. In weakness of the stomach, and all the mischief it produces, quassia is supposed to be highly useful; and its virtues are said, by a French author, to be increased by adding the flowers of zinc. In hysteria, hypochondriasis, in gout (except when highly inflammatory or misplaced), in calculus, and worms, it has been recommended; but, as we have remarked, it appears to have no very striking preference over other bitters.

QUERCUS MARINA. “See KALI.” *Fucus vesiculosus* Lin. Syst. Vegetabilium, 906. The Kamtschadales use this fucus in diarrhoeas; but it is chiefly celebrated for its good effects in obstructions of the glands. About the vernal equinox, the little bladders that distinguish this weed are filled with a saponaceous juice, which grows thicker till about July, when the vesicles burst. This fluid is said to render the skin smooth and soft. But, when it becomes fetid, it possesses some pungency, which is felt in the fingers, and corrugates the skin. It is chiefly useful as a discutient about its decline, and then changes the juice of violets to a green colour, and after evaporation a pungent salt is left. The saponaceous fluid is more easily collected if the weed is kept in sea water, and for this purpose a pound must be kept in a quart of sea water till it grows thick. When the disease is declining, the recent weed is sufficiently strong.

When burnt to ashes it affords the *ethiops vegetabilis*, and an ounce of the weed yields ninety grains of ashes, which have a saltish and sulphureous taste, not unlike that of hepar sulphuris. The magnet attracts some particles from it. By lixiviation, from a drachm of the *æthiops* twenty-two grains of salts may be procured, which are the same with those from sea water. The coal, with the assistance of Glauber's salt and selenite, forms a kind of hepar sulphuris. About a drachm is a proper dose, though in such a quantity, it often excites nausea. Russel highly commends it in scrofula; but he added too many other medicines to enable us to ascertain the real merit of the vegetable *ethiops*.

QUINOA. See ANSERINA.

RHODIÆ RADIX. *Rhodiola rosea* Lin. Sp. Pl. 1465. The root is thick, branched, cinereous, marked with frequent furrows, internally white and fleshy, of the odour of roses, and styptic. In the Lapland alps it is peculiarly fragrant, and the distilled water resembles in smell and taste that of roses. A pound yields a drachm of essential oil, of the same smell and taste, and of a yellow colour; nor is the odour lost in the dry root. (Bergius.) In the Ferroc islands it is a remedy for scurvy, and is applied to the forehead in pains of the head.

RHODODENDRON CHRYSANTHEMUM.—Page 288, col. 2, line 22; "*flowering in June and July.*"—Its qualities are said to differ greatly, according to the soil in which it is produced. The leaves, gathered near the Baikal lake, are said to be narcotic only; on the banks of the Lena, cathartic; in Kamtschatka, more weak; and in the island Beringium, it induces suffocation, without either a narcotic or cathartic power. The alpine plant is preferable to what grows in lower situations, and it should be gathered before its flowering, or during this period. The leaves and tops are chiefly employed; but the stalk seems not without its merits, as, though less bitter, it is more austere. The smell of the dry plant resembles that of rhubarb. The decoction is of a reddish brown, and of a nauseous smell: the taste is a combination of austere, bitter, and acrid. The concentrated infusion resembles bohea tea, and it is blackened with sulphat of iron.

Its inebriating quality shows a narcotic power, and it is used with success in rheumatism and gout. It is not advantageous in fever; for, though it is said to lower the pulse, it often increases the heat. In some it evacuates both the stomach and bowels, in others produces a troublesome constriction of the fauces, itching, pricking and exanthemata on the skin; sometimes a fetid sweat; at others a copious flow of urine. It has been singularly useful in a nervous sciatica; in coughs with troublesome expectoration, externally in arthritic ulcers, in scirrhus and cancers. In Siberia the powdered leaves are used as an errhine in catarrh and headach.

R.

ROSEOLA. A term employed by Dr. Willan to denote a rose coloured efflorescence variously figured,

without wheals or papulæ, and not contagious; scarcely in any instance idiopathic. He notices as varieties the *roseola æstiva*, *autumnalis*, *annulata*, *infantilis*, *variolosa*, *vaccina*, and *miliaris*.

The *roseola æstiva* is preceded by slight symptoms of fever, and the appearance of the eruption is sometimes prolonged from the third to the seventh day. The patches are distinguished from measles by being large and more irregular: they are at first red, but soon assume their peculiar roseate hue, and extend to the mouth and fauces. The itching or the tingling of the skin, is troublesome; but, on the fifth day, all appearances vanish. It is sometimes more partial, and the rash is slightly raised above the surface, occasionally disappearing, with nausea, headach, and faintness, and again recurring. Women of a tender, irritable constitution are chiefly affected, and the eruption is occasioned by fatigue, sudden alternations of heat and cold, drinking cold water, or sleeping in damp sheets: it sometimes has attended the summer dysenteries. The fever and the peculiar symptoms distinguish it from scarlatina, with which it may at first sight be easily confounded. (See SCARLATINA.) This species is relieved by cool air, acidulated drinks, and occasional laxatives; nor is it dangerous unless suddenly repelled by cold.

The *roseola autumnalis* consists of spots of an oval or circular shape, sometimes of the size of a shilling, of a dark hue, and not accompanied by itching or tingling. It occurs chiefly in boys, and is removed by vitriolic acid.

The *roseola annulata* is sometimes attended with fever, sometimes without; but, in the latter case, it often continues for a long time, in a great degree disappearing in the morning, and returning at night. Disagreeable symptoms seldom arise, except the rings grow faint, or disappear. Dr. Willan thinks sea bathing and the mineral acids, internally, have been the most successful remedies.

The *roseola infantilis* (at the period of teething), *variola*, *vaccina*, and *miliaris*, are sufficiently known. In typhus too, it sometimes occurs as a symptom. The *iris*, a cutaneous disease, which we mentioned in noticing Dr. Willan's arrangement, he refers to herpes, as the central speck appears to be a vesicle, and the ring immediately surrounding it to be often vesicular.

S.

SAL.—Page 302, col. 2, line 9; "*constituent principles.*"—Since the article was printed, Mr. Davy has, we find, continued his analysis and discoveries. The alkaline earths, barytes, strontites, lime and magnesia, were united with metallic oxides, and revided, by the galvanic current, together. The metals, thus forming an amalgam, were afterwards separated by distillation. Alumine and silex, mixed with potash, by the same power are said to have shown some marks of decomposition. MM. Berzelius and Ponten, of Stockholm, by uniting hydrogen and nitrogen with quicksilver, formed an amalgam, which, by oxydation, it is said produced volatile alkali.

SAMBUCUS.—Page 308, col. 1, line 40; "*eruptive dis-*

orders."—As they stimulate, however, they should be used with caution. The fomentation is applied in external inflammations, and as a discutient in bruises. The flowers are applied also in bags in erysipelatous and œdematous swellings, joined with camomile flowers, and occasionally with camphor.

The berries are oval, black, of the size of a pea, with an elevated stellated umbilicus, juicy, containing three seeds. The juice is red, but does not stain; sweetly acidulous, without flavour. The seeds are linear, approaching an oval, slightly wrinkled, covered with a hard arillus, and within the berry with a pulp slightly gelatinous. When dried they yield by expression about one eighth of a green oil, of scarcely any taste or smell. The tops are often violently cathartic.

SARSA.—Page 314, col. 2, line 19; "*is indisputable.*"—It is sometimes given with success in chronic rheumatism, and is useful in discussing indolent tumours, not venereal. As a preservative from gout, in foul ulcers, approaching in their appearance cancers, and in different cutaneous complaints, the decoction has been useful. The *carex arenaria* is sometimes a successful substitute for it.

SCAMMONIUM.—Page 316, col. 1, line 29; "*forms the scammony.*"—The internal part of the root consists of two kinds of substance: that next the bark is wholly woody, and the part below is formed of a congeries of vessels containing the milky fluid. The juice is collected in the beginning of June, by removing the earth from the upper part of the root, and dividing it by an oblique section. A vessel is placed below and filled in twelve hours. The colour greatly varies; but, if it retain the properties described, it is not of a less value. In its room the inspissated juice of the cynanchum monspeliacum is often sold, which is of a blacker colour, and inferior as a cathartic, as well as that of the other species of convolvulus, apocynum, &c. The true scammony is at first insipid, then slightly acrid, bitterish, exciting the discharge of saliva, and of a nauseous smell. Boulduc, from an ounce of scammony, obtained six drachms of resin, a drachm, or a drachm and a half, of gum, and about half a drachm of fæces. Geoffroy, from six ounces, obtained five of resin. These proportions differ greatly from Lewis's experiments, mentioned in the article. The root only is cathartic, and the decoction acts more mildly; for half an ounce of the dry root, boiled in twelve ounces of water till a third part is consumed, produced five evacuations, while the same decoction from the root, deprived of its milky juice, procured three only. On this account Hippocrates and Dioscorides preferred the decoction; for the ancients, the Arabians, and even Hoffman, were apprehensive of danger from its too great activity.

SCILLA.—Page 320, col. 1, line 55; "*are preferred.*"—Many authors, contrary to the opinion of Lewis, preferred the red squill. When recent, the quantity of mucilage is so considerable, that when rubbed with water or with vinegar the fluid will not pass through a filter. When dry, from the hardened mucilage, it is tenacious, and with difficulty powdered; impressing on

the tongue an intense, disagreeable, and permanent bitterness, though without evident marks of acrimony, which seems to be covered by the mucilage. In drying it loses four parts in five, which appear to be water only. The watery infusion is of a pale yellow, intensely bitter and acrid; and the smell, during evaporation, resembles that of the root of the apium hortense. If inspissated, the extract is of a yellow brown, bitter, acrid, and burning; in quantity about three fourths of the dry root. The tincture is of a golden colour, and not less bitter or acrid. An alkali lessens the bitterness considerably, an acid slightly only. The ancients used various means of correcting its acrimony; but involving it in paste, and baking it, is the only method now retained. In this country we are not apprehensive of its bad effects, and, therefore, neglect these plans, which only render it more manageable by lessening its powers. The additions to diminish its virulence were honey, vinegar, spices, &c.

Foreign physicians forbid the use of squills in a variety of circumstances, few of which influence the British practitioner, as too great sensibility and irritability; a warm bilious temperament; too great a discharge of urine, or an internal ulcer (see Tissot Epistolæ, Medicinales, 406; Quarin Animadversiones Practicæ, 164, &c.; Stoll Prælectiones in Morbos Chronicos, 61, &c.). In general, we should avoid squills when the renal vessels are too much relaxed, or when acute inflammation exists in the lungs. When the inflammation in the latter case is somewhat moderated, or when the sputum in hectics is checked from debility, they may be admitted. In a mucous discharge from the urinary passages, and in nephritis sabulosa, it is given by the German physicians; in each of which cases we should admit it with hesitation, on account of its acrimony. It has been given also in scurvy and in worms; but in neither with any marked success.

SENEKA.—Page 342, col. 1, line 51; "*cultivated in our gardens.*"—The taste is at first farinaceous, then subacid, followed by a pungency and a sense of constriction in the larynx. Some authors consider it as an aromatic, and Du Hamel calls it a strong aromatic. The sapid parts are confined, however, to the bark of the root, which in the thickest root constitutes about a third part; in the thinner pieces a sixth.

A watery infusion of the bark is at first bitterish, then pungent, with a constriction in the fauces. The watery extract, about one third of the whole, has the same taste. The spirituous extract is much milder, and scarcely equal to one quarter. The wood offers nearly the same results. Sarcocolla gave it, in rheumatism, from its supposed resolvent power; others in dropsy, particularly in hydrothorax.

SILER MONTANUM, *lasarhitium siler* Lin. Sp. Pl. 357; supposed to be the *ligusticum* of Dioscorides, and often found in the shops under the name of *seseli creticum*. The seed is oblong, striated, and highly odorous, and it affords a blue essential oil, of the smell of cumin. Its aromatic powers seem to be considerable; but it is neglected in practice, though a domestic remedy at Brunswick in diseases of the uterus. The root is warmer than the seeds, and used as a sialagogue in toothach.

SIMAROUBA.—Page 352, col. 1, line 29; "*under the name of macer.*"—The bark of the root is the most active part; but that of the wood is scarcely inferior: the wood itself is light, fibrous, and almost insipid. It has no smell, and the taste is extremely bitter, without any astringency; but different specimens, from some unknown cause, differ in this respect. Nothing is separated by distillation, and the simarouba yields its virtues equally to water and to spirit; nor in a greater degree to warm than to cold water. The decoction is yellow, and on cooling becomes of a reddish brown. The milky colour which Jussieu observed on boiling it has not been seen by other physicians. From one sixth to one fourth of a watery extract may be obtained from it, though but one fortieth by means of alcohol, and from the latter no resin could be separated.

In dysenteries, as usual, evacuations should be premised. In worms (De Haen), in uterine hæmorrhages (Degner de dysenteria Biliosa 289; Duncan's Medical Commentaries, iv. 443), fluor albus, and hysteria (Jussieu), it has been employed with success.

SOLANUM LIGNOSUM.—Page 357, col. 2, line 2; "*in June and July.*"—The berries are violently purgative and emetic, though apparently unchanged in the stomach. The stalks and roots are much milder, but efficacious, and frequently used in Austria, Sweden, and Germany. Each part is at first bitter, then sweet: the smell is virose. The stalks are less bitter than the polypody root; but must not be long boiled, lest the bitterness should be offensive. If given in large doses, before the stomach is accustomed to it, nausea and vomiting are the consequence; if too long continued, a palsy of the tongue. At first, delirium is often induced. From its narcotic power, the dulcamara seems to relax not only the vessels of the skin but those of the kidneys and the uterus. It is recommended in pleurisy, peripneumonia notha (Boerhaave), in hetics (Trewin Commentaria Norimbergica et Sagar), in scurvy, spasms, and convulsions; and in intermittent fevers. Collin.

SOPHIA.—Page 363, col. 2, line 19; "*like that of mustard.*"—The plant was used as an astringent in all cases of increased evacuations; and the seeds which are small, oval, smooth, red, and of an acrid taste, are said to relieve diarrhœa, dysentery, nephritic and calculous affections, and to kill worms.

SPLEN.—Page 375, col. 2, line 46; "*from argument or analogy.*"—Since this article was printed, Mr. Home's opinion on this subject has appeared in the first part of the Philosophical Transactions for the present year. We may first remark some additional observations on the structure of the spleen. The small corpuscles, which we have correctly in the article styled cells, were found to be distended when the stomach had received an unusual quantity of liquids, and their membranous coat was then visible. Mr. Home, therefore, thinks it probable that the state of the cells is connected with the state of the stomach, that their distention is occasional only, and that the elastic capsule surrounding the spleen adapts it for the different states of fulness which it appears to experience. In the spleens of bullocks, horses, and hogs, these cells are found to have numerous arterial branches dispersed on their coats:

but no venal ones. When the cells are, therefore, contracted, and the arteries minutely filled, the cellular appearance is lost. The intervals of the cells are sparingly supplied with arterial branches, which have no particular distribution. The veins, when injected, are more numerous and larger than the arteries, imparting a red colour to the whole substance of the spleen. They proceed from every part at right angles to the circumference: where the injection has been minute, they appear to form plexuses round the cells. The trunk of the splenic vein is to that of the artery as five to one; a greater disproportion than between any other corresponding vein and artery in the body.

Mr. Home's idea of the use of the spleen is, that it serves to convey the superfluous portion of fluid beyond what the process of digestion requires to the spleen. The opinions we suggested, that different portions of the stomach act independently of each other, he carries farther, and thinks that a division takes place between the left and the right (the cardiac and pyloric) portion of the stomach, so that no more fluid is carried to the latter than the process of digestion requires. He finds by experiment, that a large extra proportion of fluid is lost; and, on employing coloured fluids, he discovered them in the spleen before they reached in their usual course the circulating system; at least some hours before they tinged the urine. Yet no canals are detected in conveying away this superfluous water; and, as we know that the same office is rapidly performed by the lymphatics, we have no reason to erect the spleen into an office, at least unnecessary. We must confess also that we have little dependence on appearances, where animals are so much tortured. When the pylorus is previously tied, and an acrid fluid poured into the stomach, there can be no fair conclusion respecting what takes place in health; not to add, that in the stomach little change apparently takes place in the food, except from an intimate mixture with the animal fluids.

STÆCHAS CITRINA, gnaphalium arenarium Lin. Sp. Pl. 1195. The flowers were formerly used, but are now neglected; and we know little of their real merits, but that they are slightly astringent, supposed to be deobstruent, and to cure old catarrhs and jaundice.

STOMACHUS.—Page 387, col. 2, line 26; "*wholly uninfluenced.*"—Mr. Home has endeavoured to show, that it not only acts partially lengthways, but in the opposite direction, dividing the cardiac from the pyloric portion. See SPLEN, Appendix.

STRAMONIUM.—Page 389, col. 2, line 55; "*equally successful.*"—We suspected that this assertion was too general, and, on examination, we find it so. Many of the German and Swedish physicians have supported the observations of Storck by their own experience, and Greding only (see Ludwig Adversaria) opposes them.

SUDOR.—Page 400, col. 1, line 25; "*contents of the serum.*"—Since this article was printed we have received M. Thenard's analysis of this excrementitious fluid. He found it to contain a large proportion of water, some uncombined acetous acid, muriat of soda, almost imperceptible quantities of oxide of iron, and phosphat of lime; with a very minute quantity of

animal matter, resembling gelatin rather than any other substance.

SULPHURIS RESINA FETIDA. From the analysis of sulphureous mineral waters, which contain the hydro-sulphuret of lime, Westrumb has procured a substance to which he has given this appellation. (See Gehlen's Journal.) He distilled these waters without air, and dissolved the residuum in alcohol. When the spirit is drawn off, the residuum resembles yellowish fat, changing successively to a brown colour, and becoming resinous. By repeated solutions in alcohol and evaporations, it becomes sulphur, and a blackish brown resin. This resin has a garlic smell, increased by pouring water into the alcoholic solution, and seems to perform the functions of an acid. It gives a yellow colour to ammonia, and with lime water we obtain an hydro-sulphuret. All these solutions act on metallic combinations, like sulphureted hydrogen. Michaelis found this substance in the fluid floating above the precipitated sulphat of the hydrogenated sulphuret of antimoniated potash.

SWIETENIA MAHAGONI Lin. Sp. Pl. 548. The beautiful wood which this tree affords is well known; but the bark is the medicinal portion. It is brought to us in plano-convex pieces. When freed from its spongy covering, it is of a reddish brown, of a lamellated texture, tough, and about a line in thickness. It is more bitter than the Peruvian bark, which it rivals in astringency. It is equally useful with the latter in fever, without any apprehension of its inducing obstruction in the viscera (Lauder). In a healthy person it produces no inconvenience, nor any sensible effects. A drachm of the powder is too large a dose.

T.

TACAMAHACA.—Page 411, col. 1, line 39; "*populus balsamifera*."—It is generally admitted, at present, to be the production of the former. In deep seated pains these fumigations have been often found injurious, either inducing suppuration, or repelling the inflammation to a more important organ.

TARANTISMUS.—Page 413, col. 1, line 25; "*fevers of Apulia*."—In a late number of the Medical and Physical Journal is a case of this disease related by Dr. Comstock of America, in consequence of a black spider running over the hand: but in this narrative there are certainly some exaggerations of the imagination, and many, we more than suspect, of imposition. The distinction of colours and her father's hand are certainly the latter; for the acutest blind man cannot distinguish colours by the touch, except aided by the smell.

THUYA.—Page 425, col. 2, line 54; "*and other northern countries*."—Its smell is resinous, and the vesicles at the basis of the leaves are full of a balsamic juice. The leaves are supposed to be carminative and sudorific: the decoction is used in coughs and in intermittents. The wood is scarcely inferior.

VOL. II.

THYMALEA MONSPELIACA.—Page 426, col. 1, line 13; "*a single seed*."—This is true *bark of Garou*, so much celebrated by Le Roy and the French surgeons. It is acrid to the taste, and caustic on the skin, properties derived both from its acid salt and resin. Vinegar takes up both its gum and resin, leaving the acid free. It has been introduced into a perforation of the lobe of the ear, to relieve headach, chronic ophthalmia, &c.; and the recent bark, or moistened with vinegar if dry, is employed to form issues, which are afterwards dressed with ivy leaves. The advantages obtained by this means are the same as result from similar drains, in any way, established.

TORCULAR.—Page 433, col. 1, line 24; "*wounds or amputations*."—Mr. Sharp has remarked that this instrument was invented by M. Morel, a French surgeon, at the siege of Besançon, in 1674; but the priority is apparently rather due to Mr. Loudham, a surgeon of Exeter; for it is mentioned by Mr. Young of Plymouth, in his *Currus Triumphalis Terebinthinæ*, published in 1678. This has been the history of the tourniquet, circulated in almost every surgical work. In the little volume, however, here referred to, Mr. Young recommends this plan as his own, without claiming any merit from it (p. 30); and, when describing amputation with the flap, he speaks of "the manner of compression which *I have recommended*" (iii). As he so ingeniously gives the credit of the flap operation to Mr. Loudham, who was alive at the time of the publication, and lived many years afterwards, there is little claim on the side of that respectable surgeon to the invention. At the period mentioned, scientific communications were not common; and it is highly improbable that any plan practised at the siege of Besançon in 1674, should have been known in a provincial town, a few years afterwards. To this we may add, that Mr. Young's letter is addressed to Mr. James Pearce, surgeon general to his majesty's navy, who would of course have detected so gross a plagiarism.

As we have engaged in the subject, we may carry on the history of this very important invention a little farther. It is next mentioned by Maurice, a French surgeon, in his *Art of Bleeding*, published at Paris in 1686, and by Nuck in 1692. These authors, and indeed Morel, applied only a towel round the limb, straitened by two sticks on each side in opposite directions: Young used but a single one. No precaution was taken to prevent bruising the parts, as the compression was circular, and Garengeot mentions gangrene as a frequent consequence. This inconvenience apparently continued till the time of Verduc; and even this rude instrument was not brought to all the perfection it was capable of till about the year 1730. Dr. Monro's improvements are described in the *Medical Essays of Edinburgh*; and the modern instruments are engraved in our plates.

U.

ULMARIA.—Page 452, col. 2, line 8; "*highly fragrant*."—The flowers are accounted sudorific, and an

4 Q

infusion of them is given when exanthemata appear slowly, or are suppressed. With sulphur they are given in repelled itch. The leaves are astringent.

URINA.—Page 456, col. 1, line 14; "*redden the blue vegetable juices.*"—M. Thenard, in the fifty-ninth volume of the *Annales de Chimie*, has endeavoured to show that this uncombined acid, which renders the phosphat of lime soluble, is indeed the acetous. The existence of the benzoic acid he has also demonstrated by a process more unexceptionable than the usual one of sublimation.

URTICARIA.—Page 459, col. 1, line, 12; "*be critical.*"—This disease has been considered at greater length by Dr. Willan in the fourth number of his very valuable work, on Cutaneous Diseases, published since the article was printed. Urticaria, he observes, is characterized by round, oval, or longitudinal elevations of the cuticle, commonly styled *wheals*, which have a white top, often surrounded by a diffuse redness. Some of the orbicular wheals, are said to resemble tubercles; but they have no tendency to suppuration, nor are they permanent; slight fever often attends, but the disease is not contagious. They itch and burn violently, and pass off in branny scales. The varieties noticed by Dr. Willan, are urticaria febrilis, evanida, perstans, conferta, subcutanea, and tuberosa.

Urticaria febrilis. The fever which precedes this disease resembles those which precede other eruptions, and is attended with similar nausea, anxiety, and load in the head. The eruption is preceded by fits of coldness and shivering, attended with the very peculiar itching and tingling. It appears about the third day, and sometimes later, like an efflorescence in patches, of a vivid red, or a crimson colour. The itching is greatly increased on going to bed, apparently from the little chill in uncovering the body. When peculiarly troublesome at night, the eruptions are ushered in by a slight return of the febrile paroxysm; but, at other times, they return and disappear irregularly: scratching always brings them on. At the latter end of the disease the eye lids swell, and are red, often with inflammation on the sides of the feet. When the eruption comes out, the stomach is generally relieved; but the pain and nausea return when it recedes. The disease usually continues seven or eight days; the eruptions become of a pink colour, and the cuticle desquamates. In a very few instances it has been fatal. This species is nearly allied to erysipelas, and spoken of by Sydenham under this title.

Urticaria perstans chiefly attacks the luxurious and the plethoric, most commonly in summer. Any irritation, as teething in children, will bring it on; but its chief source is food peculiarly rich, or, from idiosyncrasy, any food. It is said to be often induced by eating an almond, frequently by muscles, crabs, and lobsters. We cannot but suspect, however, that the imagination had some share in the disease, which we are informed, in Tode's *Bibliotheca*, came on from taking *lapides canerorum*. Patients are not very liable to relapse; but a singular case is quoted by Dr. Willan, from Frank, of a young man who had a return of it every day after dinner, though he confined himself to the mildest diet.

Another is recorded by himself. The practice is very simple, consisting of the usual remedies for fever, with every means of regulating the cuticular discharge.

The *urticaria evanida* is without fever, or any extensive efflorescence. The wheals are white at the top, with sometimes a slight redness at the base; but, though hard, neither contain a fluid nor tend to suppuration. The disease is irregular in its appearance, and the parts it affects; in its duration and return. The persons affected are those of a sanguine temperament, an irritable skin, and a weak stomach; females rather than men; and induced by fatigue, watching or agitation of mind. Heberden in the *Medical Transactions*, iii. 174; Van Swieten's *Commentaries*, § 723.

Various substances in the stomach have, it is said, produced the disease; but these are occasional causes only: the true morbid state is in the constitution; and though Dr. Willan has found that by omitting particular articles he has at times detected the real cause, he allows that he has not been always successful. The urticaria will appear with every diet, while in others nothing will induce it.

In the *urticaria conferta* the eruption is full and general. The spots are less than in the other species; but by coalescing they appear larger. The patches are often much inflamed at the base, and the itching at night is intolerable. The disease occurs, according to Dr. Willan, in persons who have a dry swarthy skin, and are above the age of forty, induced by excesses, too much heat, and immoderate exercise. Cooling diet and mild alternatives are the best remedies.

Urticaria subcutanea appears only occasionally on the surface; but the tingling and itching are constant. The inconvenience is first confined to one spot; but soon extends to the whole limb, and often more extensively to different parts of the body, with pricking pains, like needles, a slight torpor in the muscles of the part most affected, and occasionally with cramp, or severe pain in the extremities. Such patients have seldom any perspiration. These troublesome complaints are best relieved by a warm salt-water bath, and frequent frictions.

In the *urticaria tuberosa* the wheals in different places become tuberosus, sink into the muscles, and impede their action. The tops are whitish, and they are hot and troublesome for several hours. This eruption usually takes place at night, and disappears in the morning, leaving the patient languid and sore. It sometimes continues, with but few intervals, for a long time; and is attributed by our author, to irregularities in diet, violent exercise taken by persons usually sedentary, and the free use of spirituous liquors. Urticaria is described by the Greek and Arabian authors chiefly as symptomatic.

USNEA. *Cranii humani herba, lichen saxatilis* Lin. Sp. Pl. 1609. A sad monument of human folly and superstition! Under this title, however, many of the villous and crustaceous lichens have been used, which, if useful in dysenteries, hæmorrhages, &c. are so as lichens only, which are in general slightly astringent. In epilepsy they may borrow some of their virtue from the horror they excite; for the dry bone only affords them a support. It is of real utility, however, as a dyeing material.

UTERUS.—Page 459, col. 2, line 32; “*regular about the fundus.*”—M. Tenon, in the sixth volume of the memoirs of the Institute, lately published, though read in the spring of 1800, has given some experiments on the spongy substance of the uterus, by which he means the body of the uterus from which the peritonæum only has been separated. He found that water, urine, and the spirit of sal ammoniac softened it; but that ether, alcohol, vinegar and the dulcified nitrous acid rendered it more solid in the same order; ether had the least effect. The softening substances increased its weight, bulk, and length; and urine enlarged and lengthened it more than pure water; but its principal effect was greater on the membranous part at the neck than on the denser portion of the fundus; and the effect of all these fluids was more conspicuous on the uterus of a woman newly delivered than on one at a distance from the period of parturition. Vinegar seemed not only a powerful astringent, but it increased the elasticity of the uterus: the aqua ammoniæ not only softened it, but gave it the colour and semitransparency of horn. It was whitened in water, but remained opaque in all the other experiments. The uterus is more susceptible of contraction by vinegar, than its envelope, the peritonæum. We have thought it necessary to notice these experiments; but the phenomena seem to have been greatly influenced by preconceived ideas; and the first consequence drawn, that milk thrown by metastasis on the uterus in the puerperal state, by its acidity gives tone to that organ, will be sufficient to show the futility of the author's object and his experiments.

The last memoir in the volume just referred to, by the same author, is entitled “Remarks on the Membranous Covering which the Peritonæum furnishes to the Uterus.” Many authors, he observes, have supposed that the peritonæum, in passing from the posterior and inferior surface of the bladder to the womb, rises over the whole anterior surface of the latter. Haller, however, in his last great work, the Elements of Physiology, has changed his former opinion, and contends that the peritonæum does not cover the whole anterior surface of the uterus. Later authors, he remarks, have been either doubtful or silent on the subject, and he therefore inquires how, and at what spot, the urinary bladder is applied to the matrix. In this minute and interesting piece of anatomy we must employ the author's own description.

“We must begin,” he observes “with determining where the vagina at its upper extremity is attached to the neck of the uterus. This point is different in the infant girl, the woman who has had children, and one who has just lain in. In the first, where the vagina is minutely folded, it is extended to the middle of the neck of the uterus before it is attached. At the point of union it occasions a swelling in form of the ferrule of a cane; and then the two lips of the os tinæ project considerably into this membranous glove. In the second case, the lips of the os tinæ are comparatively shorter than in the newly born infant. Sometimes one of these, usually the posterior, is effaced, occasionally both. In these three cases the attachment of the vagina to the matrix gives a greater length to the neck on which it is fixed. It is still more extensive at the end of pregnancy, and during the first days which follow parturition.

“If, at the same time, we consider the attachment of the basis of the bladder, we shall find that the canal of the urethra, and this basis are applied to the anterior surface of the vagina, so far as its insertion into the neck of the uterus, and that it even contracts adhesions with the neck, above the part where the vagina is attached. This last adhesion is more extensive in proportion to the prolongation of this part of the neck, and it is the substance of the bladder itself which is applied immediately to the substance of the vagina, and to that of the upper part of the collum uteri; for it is not applied to that part where the vagina is inserted.

“The peritonæum, therefore, which covers the upper part of the fundus vesicæ is prolonged on the anterior surface of the uterus, and extends only towards the bottom of its body, without any communication in front with its neck. Where it joins the uterus it adheres to it, forming a kind of transverse bridle. The anterior part of the sheath, therefore, which the uterus receives from the peritonæum, commences from this bridle. It rises over the rest of its body, and is closely joined to it by a short, dense, cellular substance, covering its basis, and reflected back on its posterior surface, covering this surface in its whole extent. The sheath, therefore, afforded by the peritonæum is sensibly longer behind than before. The two ligaments by which it is terminated on each side, and which join the sides of the rectum, are two parts constantly found. Their extent, form, and position are most properly learnt on young subjects; for all the disposition is changed in those who have had children.”

The second question examined in this paper respects the result of this connection of the urinary bladder with the upper part of the collum uteri. The first result is, that the vesica urinaria, during pregnancy, is drawn by its basis with the uterus, by the expansion of the latter from the lower to the upper region of the belly. 2. That the vesica is distended at its basis from one side to the other, at the period of parturition, in proportion to the expansion of the neck of the uterus. This explains the reason why, at the end of pregnancy, the meatus urinarius is drawn upward, and why the basis of the vesica in those women who have had children is differently shaped from the vesicæ of males, or of those women who have never been pregnant. 3. This adhesion of the vesica also, with the matrix, suggests a caution in practising the Cæsarean operation that we do not cut the bladder. The surgeon must not, therefore, open the body of the uterus lower than six or seven millimeters above the part where the peritonæum is attached anteriorly to that viscus, even though the finger introduced into the wound discovers a space of considerable depth in that viscus. The same adhesion suggests a pathological observation of considerable importance in surgery. In a complete prolapsus of the uterus, where its orifice is at the lower part, the matrix is wholly covered by the vagina, which is inverted. The basis of the vesica, then, is naturally drawn with the neck of the uterus out of the body. This double descent, our author adds, he has often confirmed by dissection.

This connection is of considerable importance, in M. Tenon's opinion, as it admits of the access of the urine to soften the neck of the uterus in the last months of pregnancy. The vesica, he thinks, always admits of

transudation; for on, opening the abdomen of a living dog, the smell of the urine is obvious (Memoires de la Academie, 1701); and when the vesica is distended with the uterus, he supposes that the intervals of the net work will be larger. He found also, by experiment that the bladder of a woman who had not been pregnant for a long time, and that of another's newly delivered, suffered a considerable quantity of water and urine to percolate; but we can scarcely with safety transfer the analogy from the dead to the living subject. Other membranous viscera, however, do admit of percolation; and it must be observed that the vesica urinaria is immediately attached to the collum uteri without any intervening cellular substance. Our author, too, confines this office of an emollient to the thinner parts of the urine; for when the urine is stagnated it becomes acrid, and contributes to harden those organs to which it finds a passage. There are undoubtedly many other objections to our author's theory, which must not, at present detain us. It is enough to have communicated his principles: the judicious inquirer will decide.

V.

VERBASCUM.—Page 482, col. 1, line 34; "*a quart must be drank daily.*"—The flowers smell sweetly, and have a honied taste. Their texture is so tender, that if bruised, inclosed in a vessel, and exposed to a moderate heat, they melt into a brown, mucilaginous, oily fluid. They yield by distillation a water smelling like roses, on which a thick, butyraceous, oily cuticle swims, but in small quantity. The chief virtue of these flowers seems to consist in their mucilaginous nature, assisted perhaps by an anodyne quality, which has been admitted by Boerhaave, Haller, and Linnæus. The melted flowers are used as an application in gout, hæmorrhoids, tenesmus, and dysentery (Degner). Reduced to a conserve, they are recommended by Boerhaave in hæmorrhages. Others have employed them in internal ulcers and hectic; but we have not such authorities for their use in these complaints as will allow us to enlarge on them.

VERBASCUM NIGRUM, Lin. Sp. Pl. 253. Linnæus advises us to select the root from this species, though many authors take it from the former. It is employed to relieve the pain of paronychia, and the flowers are recommended in epilepsy.

VERONICA.—Page 485, col. 1, line 18; "*bitter and rough.*"—The plant is bitterish and subastringent, so as to become black with sulphat of iron: the distilled water has some, but an indistinct, odour, and the tincture has a balsamic smell. The spirituous extract is bitterer than the aqueous, and nearly of equal weight. Those who expect any virtue from the volatile parts direct it to be infused in close vessels. It has been recommended in hectic, and in catarrhal suffocations; but there is reason to apprehend that, from its astringency, it may prevent expectoration. From this power it has been supposed useful in calculus and in bloody urine. The pruritus of old persons is said to be relieved by it, and sometimes the itch.

VIOLA.—Page 494, col. 1, line 46; "*derived from the sugar.*"—On examination we find some respectable authorities for the laxative power of violets, either in the form of an expressed juice or powder. Dioscorides recommends the flowers in epilepsy (lib. iv. 122); Baglivi in convulsive and nervous disorders. The herb is used as an emollient in cataplasms, fomentations, &c.

The seed is diuretic, and on this quality its reputed lithontriptic power seems to depend. The root is said to be both emetic and laxative; but, when dried, to have either effect in an inconsiderable degree.

VIOLA TRICOLA.—Page 494, col. 1, line 65; "*at present disused.*"—The fresh herb chewed is bitterish, with the flavour of naphtha flowers, rendering the spittle green, and leaving for a long time a sense of acrimony. When strongly bruised it has the smell of the kernels of peaches, and on agitation from the tenacity of its mucilage resembles a cataplasm. On boiling, the odour disappears. On distillation with water a small quantity of oil is found to swim on it, of a subacid taste. The extract, by means of water, is equal to one half of the dry; and one eighth of the recent plant. In the sixteenth and seventeenth centuries the viola tricola was highly celebrated in cutaneous diseases and pruritus, in epilepsy and asthma; but was forgotten till Strack, in 1779, in a dissertation which obtained the prize at Leyden, again introduced it as a remedy in crusta lactea. Its use has been since extended to herpes, impetigo, itch, &c. It has also been given, it is said with success, in gout, rheumatism, hernia humoralis, and even in epilepsy. For a tender boy, in crusta lactea, a handful of the herb was boiled in a quart of milk, and double that quantity in as much water, till half was consumed, for a lady. The taste of the decoction is rendered more palatable by fennel or coriander seeds. The simplest form is in powder with sugar.

VIRGA AUREA.—Page 494, col. 2, line 63; "*the best preparation.*"—Its chief use is in weakness of the urinary organs, calculus, and nephritic complaints. It has been recommended also in hectic, in incipient dropsies, and in hæmoptysis from an external cause.

Viscus.—Page 496, col. 1, line 62; "*introduce it.*"—The viscus has been used in all convulsive diseases, in chorea, hysteria, spasmodic asthma, and singultus. In gout, dysentery, vertigo, and apoplexy it has been recommended, but on a very uncertain foundation.

The leaves were recommended by Hippocrates in obstructions of the spleen, and no one can accuse him of druidical superstition. The berries are accounted poisonous, and produce violent discharges from, with inflammation of, the bowels. Boerhaave, probably from the qualities of bird lime, styled them *incrassants*.

W.

WINTERANUS CORTEX.—Page 507, col. 2, line 9; "*proof spirit.*"—Though Dr. Morris discovered no essential oil in the distilled waters of the Winter's bark, Cartheuser, however, procured from it an oil of a very fragrant smell, of a bitter terebinthinate taste, specifically lighter than water. When this oil was suffered

to remain at rest it separated into two substances; one was white, sebaceous, and heavy, falling to the bottom; the other lighter, and of a pale yellow.

Z.

ZEDOARIA.—Page 510, col. 1, line 43; "*pungent essential oil.*"—The quantity of this oil is from $\frac{1}{2}$ to $\frac{1}{1\frac{1}{2}}$, which in a moderate heat is of a greenish blue colour, but in a higher temperature, blackish. Geoffroy intimates, that this oil concretes to camphor, which Crell denies. Water, by maceration, dissolves the fragrant and bitter portions. The decoction is of a yellow brown, and yields about one third of a disagreeable bitter and sub-

acid extract. Spirit is tinged by it of a reddish yellow, rendered more acrid and bitter than water, but with a less smell of camphor than the decoction. Its extract is moderately bitter and aromatic, warm and grateful. The quantity varies from an eleventh to a sixteenth part.

ZINGIBER.—Page 512, col. 1, line 25; "*nearly the whole behind.*"—A drachm only of essential oil can be obtained from a pound, which retains the smell, but has not the pungency of the ginger. The watery infusion is at first acrid, and in smell resembles the root. The extract is about one fourth, the spirituous extract one sixteenth: each retains the taste only of the ginger.

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N. B. When an English name does not occur in this Index, it will be found in the Dictionary itself, in the alphabetical order, or a Latin word too nearly resembling it to be overlooked. The figures preceded by the letter A refer to the Appendix.

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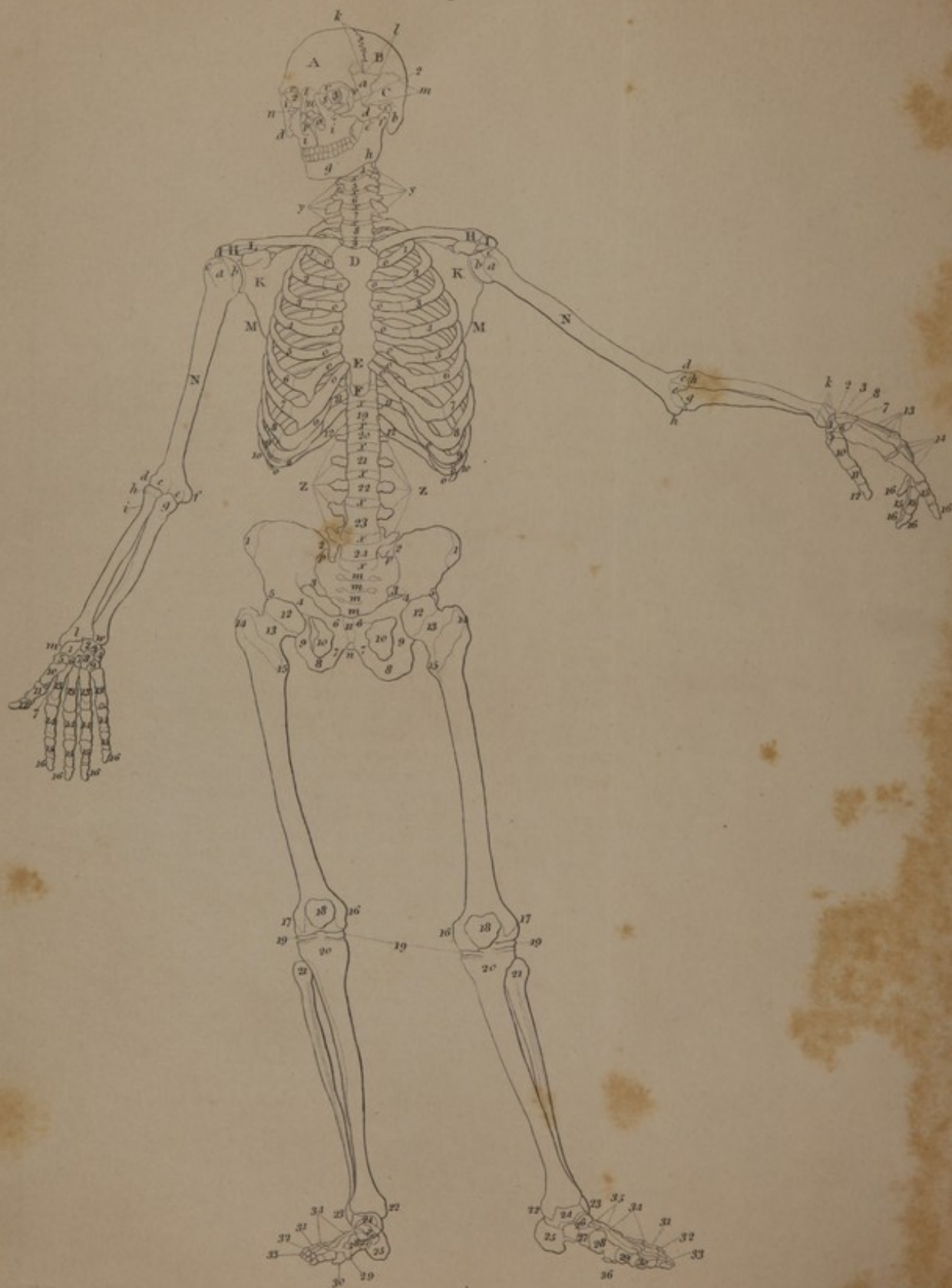
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THE END.

Map &c. of Sheldon. Front View.



FRONT VIEW OF THE SKELETON.

HEAD.

- A Frontal bone
- B Parietal bone
- C Temporal bone
- d Part of the sphenoidal bone.
- e Mastoid process of the temporal bone.
- f Zygomatic process.
- g Cheek bones.—d c Between these two references is seen the zygomatic suture, joining the temporal and cheek bones, by their processes of that name.
- h Lower jaw—(c) coronoid process—(f) condyloid process—(h f) ramus of the jaw—(h g) base of the jaw—(g) Symphysis of the lower jaw.
- i Upper jaw bones.—Between these, extending from the fore teeth to the entrance of the nostrils, is seen a suture called mystachial: just above this letter of reference the inferior orbital hole may be seen.
- k A portion of the coronal suture joining the frontal and parietal bones.
- l A portion of the sphenoidal suture.
- m The squamous suture.
- n The two nasal bones joined to each other by the anterior nasal suture.
- o The left nostril, in which is seen the vomer, and a small part of the inferior turbinate, or spongy bone projecting within the edge of the upper jaw bone.
- p The right nostril, with the inferior turbinate bone seen more plainly.
- rr Orbital processes of the frontal bone.
- r f r v A suture passing across the upper part of the face, and sinking to the bottom of the orbits, joining the frontal bone to the bones of the face chiefly.
- s Lacrymal bone, or os unguis.
- u Orbital process of the upper jaw bone.
- 1 1 Orbital processes of the malar or cheek bone.
- 2 2 Orbital processes of the sphenoid bone.
- 3 Os planum.

RIBS AND STERNUM.

- 1 2 3 4 5 6 7 The seven true ribs; their cartilages (o) are seen to join the sternum.

- 8 9 10 11 12 The five lower, or false ribs, whose cartilages do not join the sternum.
- D E The sternum, or breast bone, articulated above to the collar bones; at its sides to the ribs; and at its lower extremity to the sword-like appendix or cartilage, F.

SPINE.

- 4 5 6 7 The bodies of the four lower vertebrae of the neck.
- 8 9 The bodies of the two first vertebrae of the back; to which the two first ribs are attached.
- 19 The body of the last vertebra of the back; to which the last rib is attached.
- 20 21 22 23 24 The bodies of the five lumbar vertebrae, being the broadest and thickest in the spine.
- x x x This letter is placed on the intervertebral substance; a substance appearing to be a mixture of ligament and cartilage: it is found between the bodies of all the vertebrae; but thickest between the lumbar vertebrae.
- y y Transverse processes of the vertebrae of the neck, and the first of the back.
- z z Transverse processes of the lumbar vertebrae.
- p p m m The sacrum—p p The part next the hip bone—m m m m Four of the bodies of the vertebrae, into which it was separated in the fetal state: between the letters m is seen a line passing in the direction of the intervertebral substance, which formerly united them, but which, in the adult state, is become bone. At each extremity of these lines is seen a hole: these are the anterior sacral holes, through which large nerves pass from the cauda equina.
- n The lower extremity of the coccyx.

SUPERIOR EXTREMITY.

- G H Clavicle, or collar bone—G Sternal extremity—H Acromial extremity.
- I K L M Scapula—M Inferior costa—K Cervix—L Coracoid process—I Acromion of the scapula.

- N a b d f The arm bone, or humerus—(c) The great protuberance—(a) The lesser protuberance; between these is a groove for lodging the tendon of the long head of the biceps muscle—(b) A portion of the articulating surface covered with smooth cartilage—(f) The internal condyle—(d) The external condyle—(e e) Articulating surfaces, forming part of the elbow joint.

- g w The ulna, or greater bone of the fore arm—(g) The coronoid process—(w) The lesser extremity, with its styloid process.

- h i n The radius, or lesser bone of the fore arm—(h) The cartilaginous part articulated with the ulna—(i) The tubercle into which the tendon of the biceps muscle is inserted—(f) The greater extremity, sustaining the first row of carpal bones—(n) A projecting point of the bone, which some have called styloid—(e) Grooves through which some of the extensor tendons pass.

- 1 2 3 4 The first row of carpal bones, or bones of the wrist—(1) The navicular bone—(2) The lunar bone—(3) The cuneiform bone—(4) The pisiform, or pea like bone.

- 5 6 7 8 The second row of carpal bones—(5) The trapezoid bone—(6) The trapezoid bone—(7) The great bone—(8) The unciform bone—(9) The nail like process of the unciform bone.

- 10 Metacarpal, or first bone of the thumb.

- 11 Second bone of the thumb.

- 12 Third bone of the thumb.

- 17 Sesamoid bones of the thumb.

- 13 13 13 13 Metacarpal bones of the fingers.

- 14 14 14 14 First phalanx, or row of finger bones.

- 15 15 15 15 Second phalanx of finger bones.

- 16 16 16 16 Third phalanx of finger bones.

PELVIS AND LOWER EXTREMITY.

- 1 2 3 4 5 Ilium or hip bone—(1) Spine of the ilium; at this end of the spine is a projecting point called superior anterior spinous process—(5) Inferior an-

- terior spinous process—(4) Head of union with sacrum; under 3 is seen the opening of the sacro ischiatic notch.

- 4 6 7 Pubis or share bone—(4) Descending ramus—(6 7) Descending ramus—(6 6) Bodies of the pubes—(11) Symphysis, or junction of the pubes.

- 7 8 9 Ischium, or hitch bone—(8) Tuberosity of the ischium—(7) Union of the ascending branch of the ischium with the descending branch of the pubis.

- 10 Thyroid hole; through this hole, formed by the ilium, ischium, and pubis, is seen projecting the point of the spinous process of the ischium.

- 12 14 15 16 17 Thigh bone, or femur—(12) Head of the bone covered with cartilage, for articulation at the hip joint—(15) Cervix, or neck of the bone—(14) Great trochanter—(15) Lesser trochanter—(16) Internal condyle—(17) External condyle—(18) Patella, or knee pan: under the patella is seen part of the bone, covered with cartilage, entering into the knee joint.

- 19 Interarticular cartilages.

- 20 21 Tibia, or great bone of the leg—(20) Head of the bone—(21) Lower extremity of the bone, forming the inner ankle.

- 21 23 Fibula, or small bone of the leg—(21) Upper extremity articulated with the tibia—(22) Lower extremity forming the outer ankle.

- 24 Astragalus; the bone by which the foot is articulated with the leg.

- 25 The calcaneum, or heel bone.

- 26 The navicular bone.

- 27 The great cuneiform bone.

- 28 The lesser and middle cuneiform bones.

- 29 The metatarsal, or first bone of the great toe.

- 30 The second bone of the great toe.

- 31 The third bone of the great toe.

- 32 Metatarsal bones of the other four toes.

- 33 Bones of the first phalanx, or row of the four lesser toes.

- 34 Second row of bones of the toes.

- 35 Third row of bones of the toes.

- 36 Sesamoid bones of the great toe.

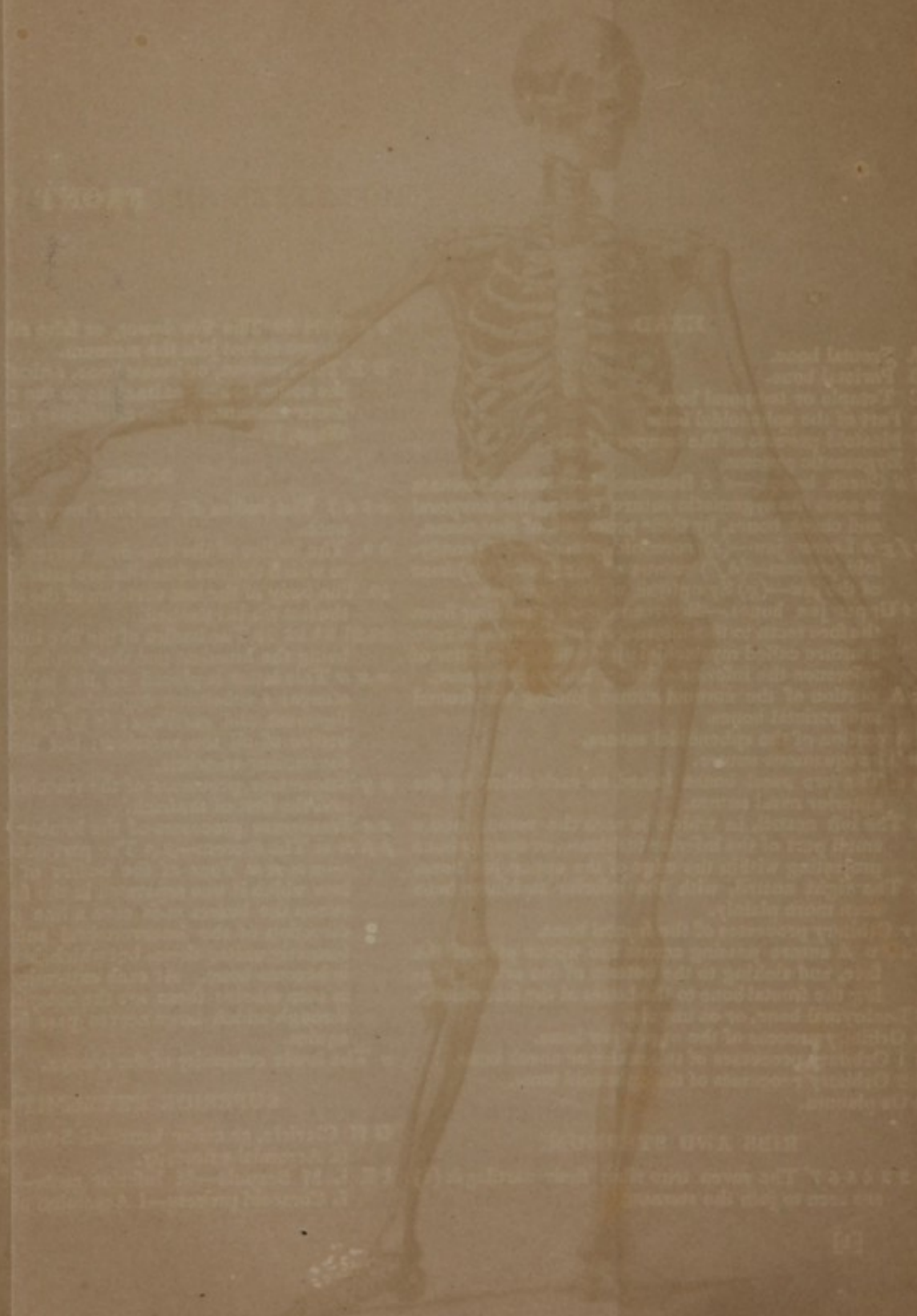


FIGURE 1
The human skeleton, showing the bones of the skull, ribcage, spine, pelvis, and legs. The skeleton is shown in a standing pose, with the right arm extended forward and the left arm hanging down. The bones are labeled with letters A through Z.

A. Skull
B. Ribcage
C. Spine
D. Pelvis
E. Legs
F. Feet
G. Humerus
H. Radius
I. Ulna
J. Carpals
K. Metacarpals
L. Phalanges
M. Femur
N. Patella
O. Tibia
P. Fibula
Q. Tarsals
R. Metatarsals
S. Phalanges
T. Clavicle
U. Scapula
V. Sternum
W. Ribs
X. Vertebrae
Y. Sacrum
Z. Coccyx

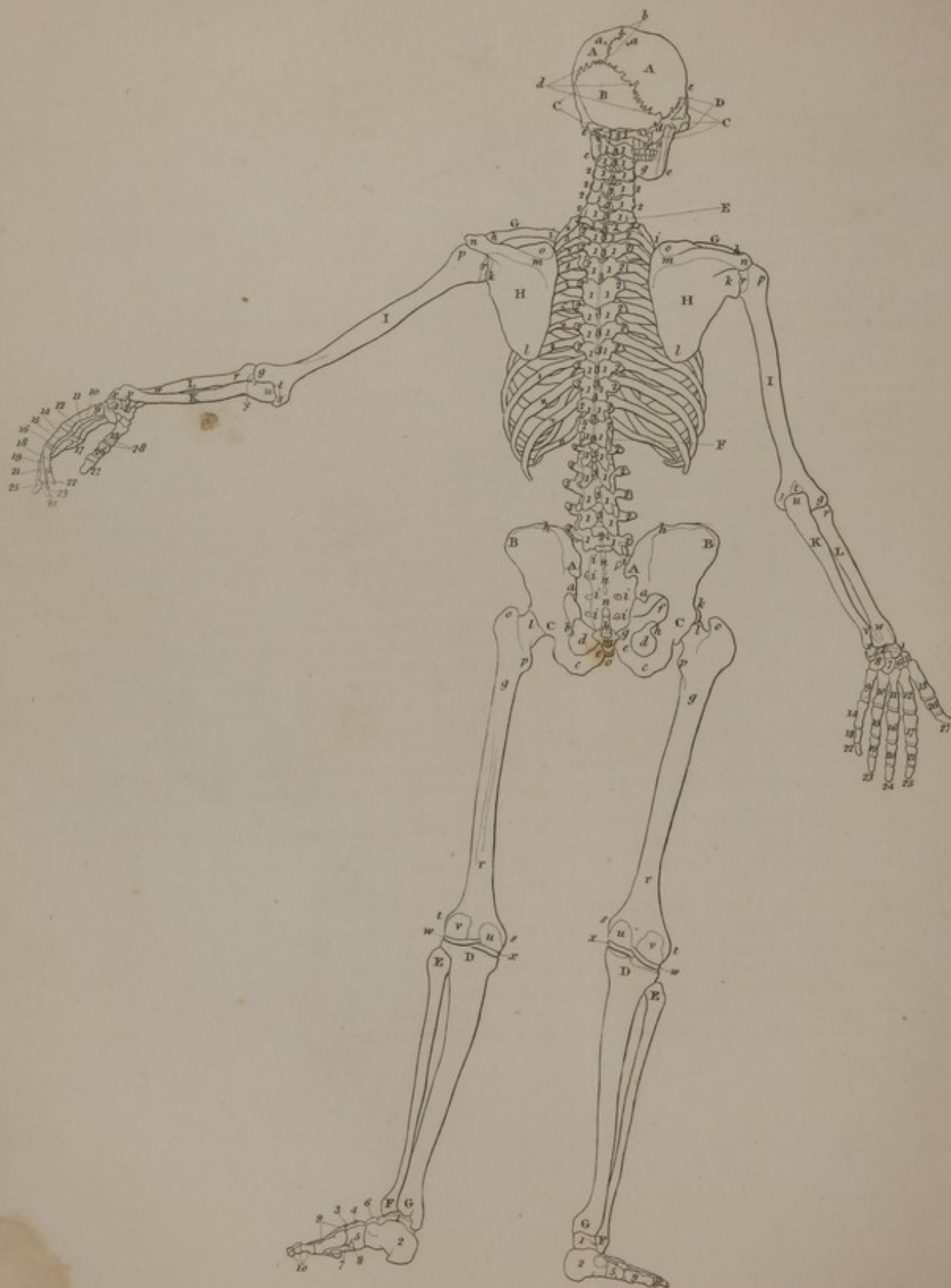
FIGURE 2
The human skeleton, showing the bones of the skull, ribcage, spine, pelvis, and legs. The skeleton is shown in a standing pose, with the right arm extended forward and the left arm hanging down. The bones are labeled with letters A through Z.

A. Skull
B. Ribcage
C. Spine
D. Pelvis
E. Legs
F. Feet
G. Humerus
H. Radius
I. Ulna
J. Carpals
K. Metacarpals
L. Phalanges
M. Femur
N. Patella
O. Tibia
P. Fibula
Q. Tarsals
R. Metatarsals
S. Phalanges
T. Clavicle
U. Scapula
V. Sternum
W. Ribs
X. Vertebrae
Y. Sacrum
Z. Coccyx

Front View.



Map &c. of Skeleton. Back View.



BACK VIEW OF THE SKELETON.

AD.

- A A Parietal bone
B Occipital bone
C Temporal bone
D Cheek bone
E The lowest or seventh vertebra of the neck
F The lowest or twelfth vertebra of the back
G Clavicle or collar bone
H Scapula or shoulder bone
I Inferior angle
K Cervix or neck
L Radius or lesser bone of the fore arm
M Ulna or larger bone of the fore arm
N Sacrum or first set of false vertebrae
O Coccyx, tail bone, or second set of false vertebrae
P The femur or thigh bone
Q The tibia or greater bone of the leg
R The fibula or lesser bone of the leg
S The astragalus
T Calcaneum or heel bone
U Lesser cuneiform bone
V Middle cuneiform bone
W Cubic bone
X Navicular bone
Y Metatarsal bone of the great toe
Z Metatarsal bones of the other toes
1 Phalanges of the toes

west dotted line points to the middle one to the zygomatic process, and the upper line points to the flat portion of the bone. The zygomatic process joined to a bone of the same name, re. bones, through which veins al sinus.

mid suture. two upper *ee* mark the condyloid processes, or the points of articulation, with the temporal bone. That part of the upper jaw, called the alveolar process, which assists in forming the sockets for the teeth, and constitutes the lower fore part of the roof of the mouth: at the end of this dotted line, the point of the styloid process of the temporal bone is seen.

SPINE AND RIBS.

- 1 2 3 4 5 6 7 8 9 10 11 12 The twenty-four true vertebrae forming the greater part of the spine, and divided into vertebrae of the neck, vertebrae of the back, and vertebrae of the loins.
1 2 3 4 5 6 7 8 9 10 11 12 The twenty-four true vertebrae forming the greater part of the spine, and divided into vertebrae of the neck, vertebrae of the back, and vertebrae of the loins.
1 2 3 4 5 6 7 8 9 10 11 12 The twenty-four true vertebrae forming the greater part of the spine, and divided into vertebrae of the neck, vertebrae of the back, and vertebrae of the loins.

in the vertebrae of the neck generally project less than the others, are bifurcated, and have each a foramen for the passage of the vertebral artery; the first and second have not, in general, this bifurcation; the transverse processes of the vertebrae of the back are more distinct, and project obliquely backwards; in the loins they are stronger and more directly transverse.

- 3 The spinous processes of the vertebrae in the neck; except the first, they are in general bifurcated. In the back they are turned more obliquely downwards; but as they approach the loins they become more horizontal and are stronger; in the loins they are larger and nearly horizontal.

E The lowest or seventh vertebra of the neck.
F The lowest or twelfth vertebra of the back—The five vertebrae below this are those of the loins.

G The sacrum or first set of false vertebrae: *iiii* the posterior holes of the sacrum; *nnnn* spinous processes of the sacrum; near *iiii* are the remains of the transverse processes; A a deficiency of bone at the lower extremity of the sacrum, supplied, during life, by ligament; part of the bodies of the fourth and fifth vertebrae are seen through this deficiency.

M O Coccyx, tail bone, or second set of false vertebrae—(m) the first bone of the coccyx articulated with the lower extremity of the sacrum; (o) the lower extremity of the coccyx and termination of the spine.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 10 11 12 The twelve ribs—The first seven are called true ribs, from having their cartilages articulated with the sternum; the other five, false ribs, from not having their cartilages so affixed; the posterior extremities are articulated to the bodies of the vertebrae, mostly at the junction of two; at the part where the rib is hid by the end of the transverse process; (2) is a small smooth cartilage, which is articulated with a similar one on the anterior surface of the process.

SUPERIOR EXTREMITY, OR ARM.

G Clavicle or collar bone.
H Scapula or shoulder bone—*o* superior angle; *i* inferior angle; *k* cervix or neck; on this neck

is borne a broad superficial cavity, facing outwardly, and covered with a smooth cartilage for receiving the round head of the arm bone; *mn* the spine of the scapula; *n* that part of the spine called acromion; the superior edge *o k* is called the superior costa; *k i* the inferior costa; and *o l* the base: the whole triangular surface *o k l* is sometimes called dorsum.

I P *q r s t* The arm bone or humerus—*h* the posterior great tubercle; *r a* part of the round articulating head covered with cartilage; *g* the external condyle; *s* the internal condyle; *t* a cavity situated between the condyles behind for receiving a portion of the olecranon in extension of the fore arm.

K V *u x* The ulna or larger bone of the fore arm—*u* the olecranon or great protuberance, covered on the fore part with cartilage, and principally concerned in the formation of the elbow joint; *v* the lower or lesser end of the ulna, on which the radius plays; *x* a projecting process called styloid.

L R *w* The radius or lesser bone of the fore arm—*r* the upper extremity of the bone, furnished with a superficial socket, and covered with cartilage for articulation, with the round head at the external condyle of the humerus; (*y*) a smooth cartilage at the inner side of the head, by which it is articulated with, and rolls in a corresponding hollow of the ulna; (*w*) the lower or greater extremity by which it is articulated with, and rolls on the lower extremity of the ulna, and affords articulation to the first row of carpal or wrist bones.

1 2 3 4 The first row of carpal or wrist bones—1 The navicular bone; 2 the lunar bone; 3 the cuneiform bone; 4 the pisiform or pea-like bone: these constitute the first row of carpal bones: the three former are articulated at one extremity with the radius, and roll with it on the ulna; at the other extremity they are articulated with the second row, and laterally with each other.

5 6 7 8 The second row of carpal bones—5 the trapezial bone; 6 the trapezoid bone; 7 the os magnum or great bone; 8 the unciform bone; these are articulated at the extremity next the arm with the first row of carpal bones, laterally with each other, and at the extremity next the hand, with the metacarpal bones of the hand.

9 10 11 12 The four metacarpal bones of the fingers—

9 of the little finger; 10 of the ring finger; 11 of the middle finger; 12 of the index finger.
14 15 16 17 The first row of metacarpal bones.
18 19 20 21 The second row of metacarpal bones, or second phalanx.
22 23 24 25 The third order of metacarpal bones, or third phalanx.
26 The second phalanx of the thumb.
27 The third phalanx of the thumb.
The bones of these phalanges, except the last, are furnished with an articulating cartilage at each extremity.
28 Two sesamoid bones of the thumb.

OSSEA INNOMINATA AND OF THE LOWER EXTREMITIES.

A B C Os ilium or hip bone.
A B Spine of the ilium.
C D The great or sacro ischiatic notch; *b c e* ischium or hitch bone; *d* spinous process; *e* tuberosity of the ischium; *c e* ascending ramus of the ischium; *e g f* the pubis or share bone.
o l s t The femur or thigh bone; *k* the head of the bone, showing some of the articulating portion; *i* the cervix or neck of the bone; *o* the great trochanter; *p* the lesser trochanter; *g r a* rough ridge in the posterior part of the bone; *s* the internal condyle; *t* the external condyle; *u v* portions of the bone covered with cartilage for articulation with the tibia.

x w Interarticular cartilage.

D G Tibia or greater bone of the leg, articulated to the thigh bone, to form the knee joint; G the inner ankle.

E F The fibula or lesser bone of the leg; F the outer ankle.

1 The astragalus.
2 Calcaneum or heel bone.
3 Lesser cuneiform bone.
4 Middle cuneiform bone.
5 Cubic bone.
6 Navicular bone.
7 Metatarsal bone of the great toe.
8 Metatarsal bones of the other toes.
9 Phalanges of the toes.

Back View



Map 6c. of Skeleton. Side View.



SIDE VIEW OF THE SKELETON.

HEAD, TRUNK, AND UPPER EXTREMITY.

- 1 Frontal bone.
- 2 Squamose part of the temporal bone.
- 3 Part of the sphenoid bone.
- 4 Part of the cheek bone, forming part of the sinuosity for the passage of the temporal muscle to the coronoid process of the lower jaw—(22) external part of the cheek bone, forming part of the face.
- 5 Mastoid process of the temporal bone.
- 6 Zygomatic process of the temporal bone.
- 7 8 Coronal suture.
- 7 9 Squamose suture.
- 9 10 Appendage to the squamose suture.
- 10 11 12 Lambdoidal suture.
- 10 5 Appendage to the lambdoidal suture.
- 11 13 Part of the sagittal suture.
- 14 Parietal bone on the left side.
- 15 Parietal bone on the right side.
- 16 Occipital bone.
- 17 18 20 Lower jaw—(17) coronoid process of the lower jaw—(18) condyloid, or articulating process of the lower jaw—(20) angles of the lower jaw.
- 21 Upper jaw.
- 22 Cheek bone.
- 23 24 25 26 27 28 29 Spinose processes of the seven vertebræ of the neck.
- 30 31 Spinous process of the first and second vertebræ of the back.
- 32 Transverse processes of the vertebræ of the neck.
- 33 First true rib.
- 34 Second true rib.
- 35 Part of the clavicle, or collar bone.
- 36 Acromion of the scapula.
- 37 Spine of the scapula.
- 38 Dorsum of the scapula.
- 39 Cervix of the scapula.
- 40 Inferior angle of the scapula.
- 41 Superior angle of the scapula.
- 33 34 42 43 44 45 46 The seven true ribs—(54) the cartilages of the six lower true ribs.
- 47 48 49 50 51 The five false ribs—(52) their cartilages.
- 53 53 Portions of the sternum.
- 55 Vertebræ of the back.
- 56 Vertebræ of the loins.
- 57 57 Bodies of the third and fourth vertebræ of the loins.
- 58 58 Transverse processes of those vertebræ.
- 59 60 61 62 The arm bone—(59) the head of the bone articulated with the scapula; the dotted lines showing a portion of the articulating surface—(60) a superficial spiral channel passing from behind forwards, in which the muscular nerve passes—(62) a ridge above the external condyle—(61) the external condyle.
- 63 64 65 The radius, or lesser bone of the fore arm—(63) head of the radius—(64) tubercle of the radius—(65) greater or lower end of the radius, with a pointed termination on the outer side, called by some styloid process.
- 66 Olecranon, or great end of the ulna—(67) lower or lesser end of the ulna.

- 68 69 70 Three bones of the first carpal row—(68) navicular bone—(69) pisiform bone—(70) lunar bone.
- 71 72 73 74 Second row of carpal bones—(71) trapezoid bone—(72) trapezoid bone—(73) great bone—(74) unciform bone.
- 75 76 77 Thumb—(75) metacarpal, or first bone of the thumb—(76) second bone of the thumb—(77) third bone of the thumb.
- 81 Metacarpal bones of the fingers.
- 78 First row, or phalanx of finger bones.
- 79 Second phalanx of finger bones.
- 80 Third phalanx of finger bones.
- 82 Cuneiform bone of the wrist.
- 83 Sesamoid bones of the thumb.

PELVIS AND LOWER EXTREMITY.

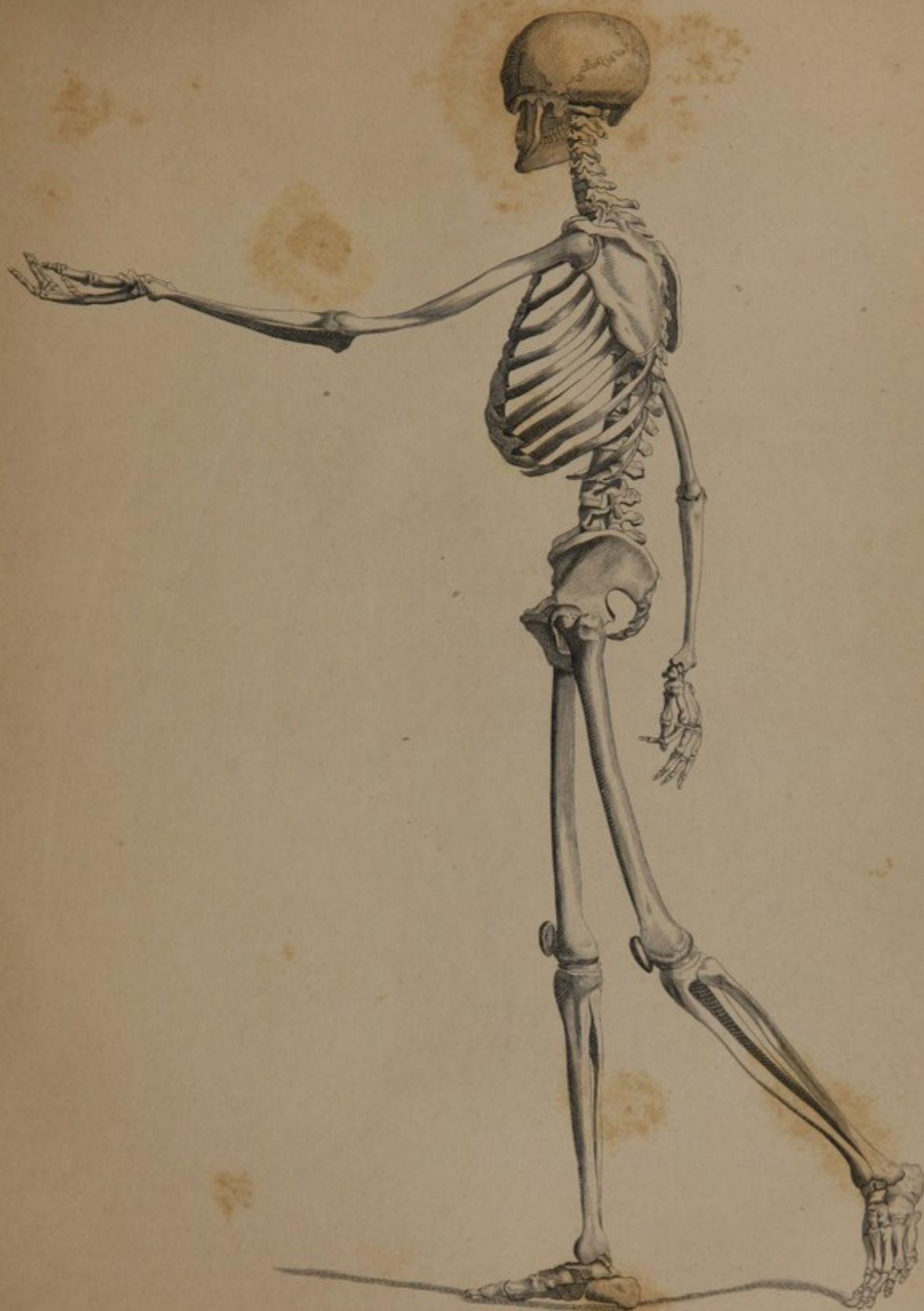
- 1 2 3 4 7 6 The hip bone, or os ilium—(1 2 3) the spine of the ilium—(1) superior anterior spinous process—(6) inferior anterior spinous process—(3) posterior superior spinous process—(4) posterior inferior spinous process—(4 5) sacro ischiatic notch.
- 7 5 10 9 Os ischium—(5) spinous process of the ischium—(10) tuberosity of the ischium—(9) junction of the ischium and pubis.
- 9 8 6 Os pubis, or share bone—(8) Symphysis, or junction of the two pubes.
- 11 The sacrum.
- 12 The first bone of the coccyx.
- 13 The second and third bones of the coccyx.
- 14 Thyroid hole.
- 15 16 18 19 Thigh bone, or femur—(16) great head of articulation, with the pelvis—(15) great trochanter—(17) cervix, or neck of the bone—(18) the external condyle of the left thigh; the internal condyle of the right thigh.
- 19 19 Portion of the bone covered with cartilage for articulation.
- 20 Patella, or knee pan.
- 21 21 Interarticular cartilages.
- 22 23 24 25 Tibia, or great bone of the leg—(22) head of the tibia—(23) tuberosity for the insertion of the strong ligament of the patella—(24) part of the bone called the shin—(25) lower extremity of the bone articulated with the foot—(26) the inner ankle.
- 27 28 The fibula, or lesser bone of the leg—(27) head of the bone—(28) outer ankle.
- 29 Astragalus, the bone by which the foot is articulated with the leg.
- 30 The os calcis, or heel bone.
- 31 Cubical bones of the foot.
- 32 Navicular bones.
- 33 Middle cuneiform bones.
- 34 Lesser cuneiform bones.
- 35 Greater cuneiform bone.
- 36 Metatarsal bones of the toes.
- 37 First phalanx, or row of toe bones.
- 38 Second phalanx, or row of toe bones.
- 39 Third phalanx, consisting of four bones only; the great toe having no third bone.
- 40 Sesamoid bones of the great toe.

BACK VIEW OF THE SKELETON

HEAD, TRUNK AND UPPER EXTREMITY

1. Occipital bone
2. Parietal bone
3. Frontal bone
4. Temporal bone
5. Sphenoid bone
6. Ethmoid bone
7. Maxilla
8. Mandible
9. Hyoid bone
10. Thyroid cartilage
11. Cricoid cartilage
12. Tracheal cartilage
13. Sternum
14. Ribs
15. Scapula
16. Clavicle
17. Humerus
18. Radius
19. Ulna
20. Carpals
21. Metacarpals
22. Phalanges
23. Sacrum
24. Coccyx
25. Lumbar vertebrae
26. Thoracic vertebrae
27. Cervical vertebrae
28. Atlas
29. Axis
30. Hyoid bone
31. Thyroid cartilage
32. Cricoid cartilage
33. Tracheal cartilage
34. Sternum
35. Ribs
36. Scapula
37. Clavicle
38. Humerus
39. Radius
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784. Atlas
785. Axis
786. Hyoid bone
787. Thyroid cartilage
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902. Carpals
903. Metacarpals
904. Phalanges
905. Sacrum
906. Coccyx
907. Lumbar vertebrae
908. Thoracic vertebrae
909. Cervical vertebrae
910. Atlas
911. Axis
912. Hyoid bone
913. Thyroid cartilage
914. Cricoid cartilage
915. Tracheal cartilage
916. Sternum
917. Ribs
918. Scapula
919. Clavicle
920. Humerus
921. Radius
922. Ulna
923. Carpals
924. Metacarpals
925. Phalanges
926. Sacrum
927. Coccyx
928. Lumbar vertebrae
929. Thoracic vertebrae
930. Cervical vertebrae
931. Atlas
932. Axis
933. Hyoid bone
934. Thyroid cartilage
935. Cricoid cartilage
936. Tracheal cartilage
937. Sternum
938. Ribs
939. Scapula
940. Clavicle
941. Humerus
942. Radius
- 94

Side View



Ligaments of the Neck, the Trunk, & the upper Extremity.

Fig. I.



Fig. II.

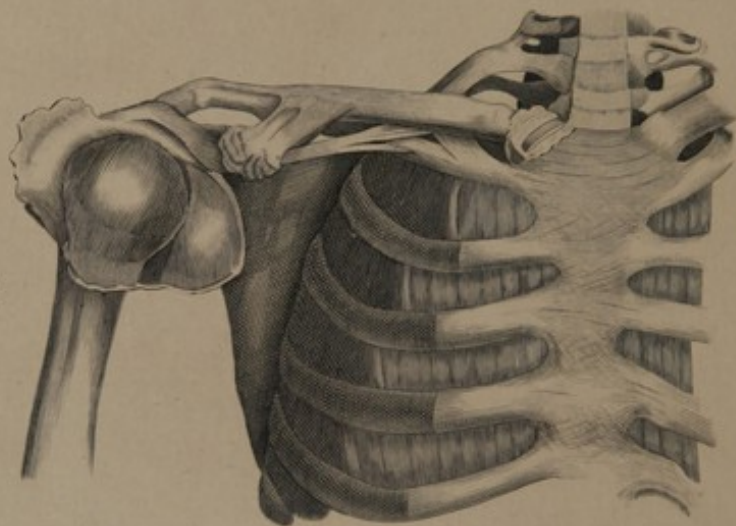
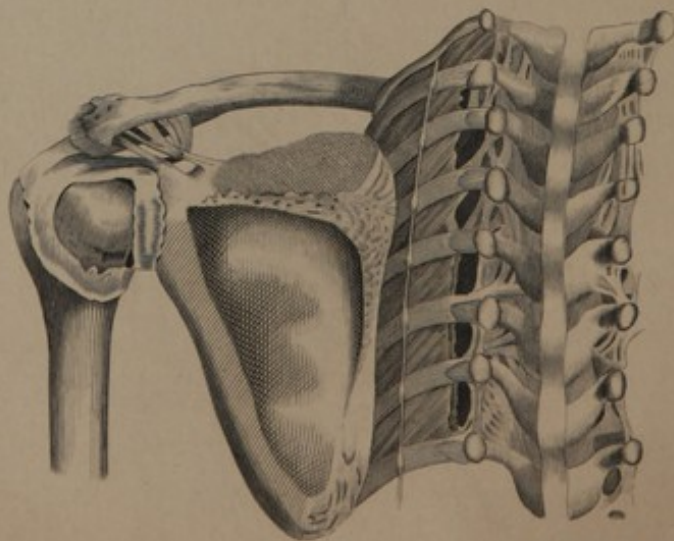


Fig. III.



LIGAMENTS OF THE NECK AND THE UPPER EXTREMITY.

FIG. 1.

The basis of the posterior part of the skull, with the atlas and epistropheum, seen from behind.

- A The basilar part of the occipital bone.
- B B The apophyses petrosæ of the temporal bones.
- C C and D D The mastoid and styloid processes, seen from behind.
- E E The holes through which the facial and acoustic nerves pass.
- F F The fissure for the passage of the jugular vein and par vagum.
- G G The sides of the first vertebra.
- H H The part, from whence the posterior arch of the first vertebra has been cut.
- I I The transverse processes of the vertebra.
- K The inferior and posterior surface of the second vertebra.
- L A portion of the posterior arches of the vertebra, which meet in the spinous process.
- m m Where the arches themselves are cut off, together with the spinous process.
- n n The anterior margin of the foramen occipitale.
- o o The articular ligaments, which surround the articulation of the condyles of the occiput, with the superior synus, both on the right and left of the atlas.
- P P Ligaments between the oblique or articular processes of the vertebra.
- Q The transverse ligament of the atlas, rising on the right side from a small tubercle of the atlas, itself (which lies under and within the articular sinus of the same side), then running across, behind the tooth of the second vertebra, surrounds its neck, and passes to a similar tubercle on the left side, where it is strongly inserted.
- R The superior appendix of the transverse ligament, which arising from the superior margin of that ligament, passes over the tooth, and is firmly fixed to the anterior and internal edge of the occipital foramen.
- S Its inferior appendix, which descends from the inferior margin of the transverse ligament, and is fixed to the posterior superficies of the body of the epistropheum, in which it terminates by slightly converging fibres. Mauchart calls the whole transverse ligament, with its appendices, the cruciform ligament.
- t t The bands which pass from the posterior and superior margin of the body of the epistropheum to the inferior and posterior margin of the anterior arch of the atlas.

FIG. 2.

- Z The transverse process of the seventh vertebra.
- z The ligament, which descending from the transverse process of the seventh vertebra of the neck, a little outward, is inserted into the neck of the first rib.
- z The ligament of the little head of the first rib, by which the rib itself is connected to the first vertebra adjacent.
- u The first vertebra of the back covered with the anterior longitudinal fascia of the vertebra.
- y The first rib.
- z The tubercle of the rib.
- Γ The second rib.
- Δ Δ &c. The other ribs in their order.
- * The ligaments of the cartilages of the ribs, which not only connect the cartilages of the superior ribs with the sternum, but are dispersed in radii over the sternum itself.
- χ The second vertebra of the back.
- † 1 2 3 The interior capsular membrane of the articulation of the sternum and clavicle dissected and separated to show † the ligament arising from the extremity of the clavicle α. 1 A portion of the ligament inserted in the sternum.—2 The margin of the glenoid cavity of the joint hollowed from the sternum where it receives the clavicle.—3 The border of the interarticular cartilage.
- ξ The clavicle.
- 4 The rhomboid ligament, which extends at no great distance from the neck of the clavicle, and, proceeding obliquely from above and behind to the lower and anterior parts, adheres to the cartilage of the first rib. The fibres which run from the cartilage and sternum are united with the ligaments which proceed from the little head of the clavicle.
- 5 and 6 The subclavian muscle and its tendon.
- 7 8 9 The ligamentum bicornis, which, arising within from the coracoid process of the scapula, is obliquely unfolded from the external and inferior parts to the superior, and divided into two bands. The superior cornu is inserted into the lower surface of the clavicle, near the rhomboid ligament. The inferior cornu passes to the rib, immediately below, under the tendon of the subclavian muscle, which is confined and strengthened by these bands. Some fibres from the superior cornu mix with the rhomboid ligament.
- 10 11 Two ligaments fixed on the tuber of the coracoid process of the scapula, between which is a bursa mucosa. They pass

obliquely to the superior parts, and are inserted into the external surface of the clavicle.

- 12 Very strong tendinous fibres which surround the union of the acromion with the end of the clavicle, and are fixed from this process into the clavicle.
- 13 The proper anterior scapular ligament, which arises from the external margin of the coracoid process, and terminates in the anterior face of the acromion. This strong ligament covers the two processes like a bridge. At the acromion it is narrow, but gradually dilates.
- α The acromion of the scapula.
- π Its coracoid process.
- 7 The head of the right humerus.
- υ Its neck.
- 22 The capsular ligament dissected, to show the head of the humerus covered with its cartilage.
- 23 The termination of the ligament on the neck of the humerus.
- 24 Mucous glands.
- 25 The os humeri.
- γ The external intercostals.
- ζ A thin but strong ligamentous membrane passing between the cartilages of the rib and covering the intercostal muscles.
- χ External ligamentous bands, which cover and strengthen the union of the clavicle with the sternum.
- φ The interclavicular ligament, which runs between the clavicles on the sternum.

FIG. 3.

- A A back view of the scapula.
- B Its external margin.
- C Its base.
- D Its superior margin or costa.
- E The division in this margin hollowed out for the reception of the vessels and nerves.
- F The inferior angle of the scapula.
- G Its superior and internal angle.
- H The beginning of the spine.
- K The spine cut off.
- m The root of the coracoid process.
- N The clavicle.
- O Its extremity.
- P Q R The os humeri, its head and neck.
- s The posterior proper ligament of the scapula, running from the acute and internal angle of the division E obliquely, and externally to the superior parts, is fixed to the external angle of the same division, or to the posterior protuberances of the root of the coracoid process. It is sometimes double, subtending and inclosing the division.
- t t t The common conoid ligament of the scapula, partly from the back of the proper ligament s, partly from the root of the coracoid process m: near the division it is united by thick strong fibres to the posterior end of the clavicle.
- X Y The capsular ligament connected with the shoulder, separated to show the head of the bone and cavity of the joint. It proceeds from the neck of the scapula and covers the whole joint.

FIG. 4.

- 1—8 Vertebra.
- † The superior margin of the posterior arch in each vertebra.
- ξ The inferior margin of the same arch.
- * The little head of the transverse process of each vertebra.
- β The ribs.
- * * * The yellowish ligaments, which from the upper margin of the lower vertebra pass to the lower margin of the upper.
- λ λ λ The ligamentous cord which connects the spinous processes of the vertebra.
- μ μ μ The ligaments of the transverse processes.
- 25 The external intercostal muscles.
- σ Fragments of the tendons of the longissimus dorsi.
- 26 The transversal external ligaments of the ribs. A singular short ligament arises from the posterior and external margin of the transverse process of each vertebra, terminated in the rough tubercle of the adjoining rib.
- τ The ligaments between the neck of the ribs and the transverse processes of the vertebra. Weitbrecht calls these ligaments transversaria interna. From the neck of the third left rib, the fifth, sixth, seventh, and ninth rib on the right side, a ligament ascends outwardly, terminating in the inferior and extreme surface of the transverse process of the vertebra above.
- φ The external ligaments of the neck of the ribs. Each of them rising from the superior margin of the neck of the rib, ascends obliquely to the internal parts behind the internal transverse ligament, and is fixed to the inferior edge of the oblique process of the vertebra immediately above; its figure is often triangular.

Fig. I.

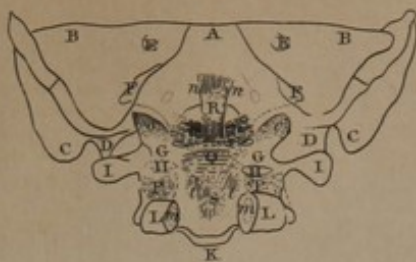


Fig. II.

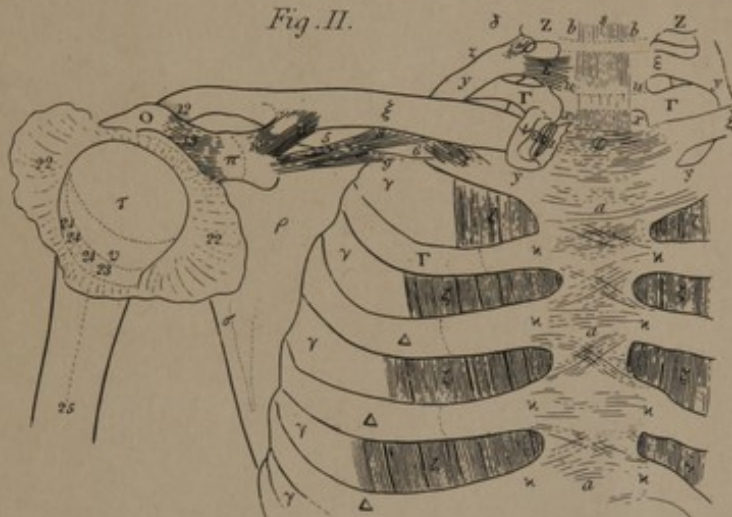
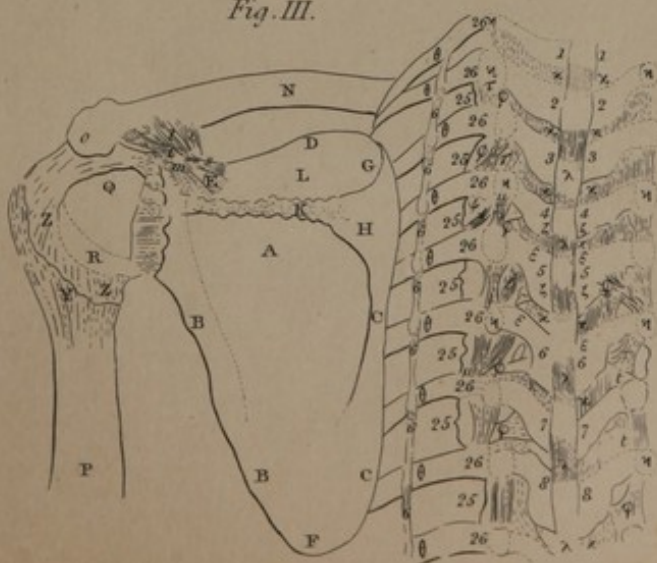
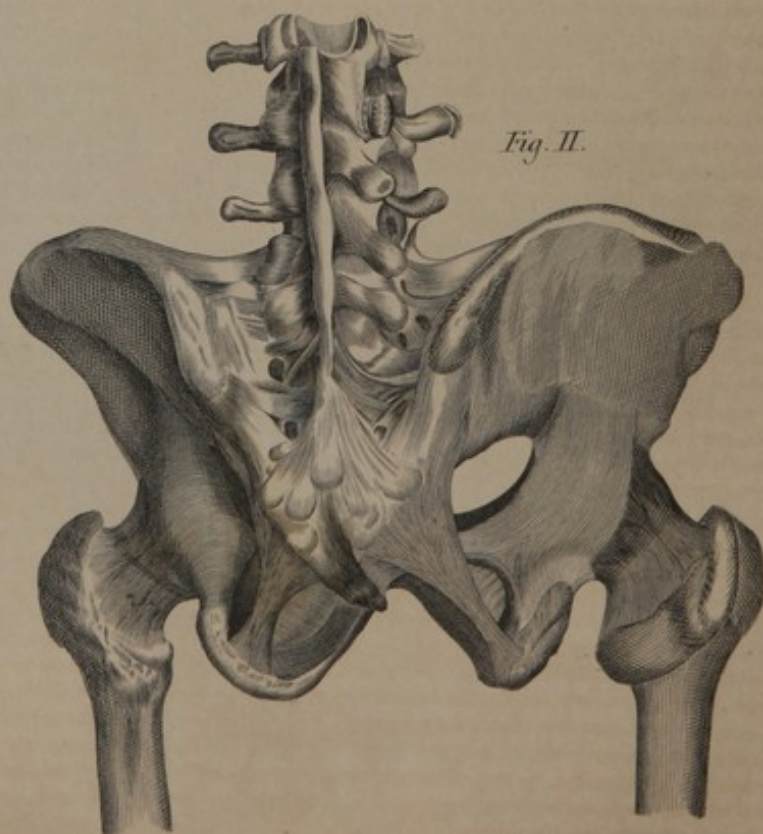
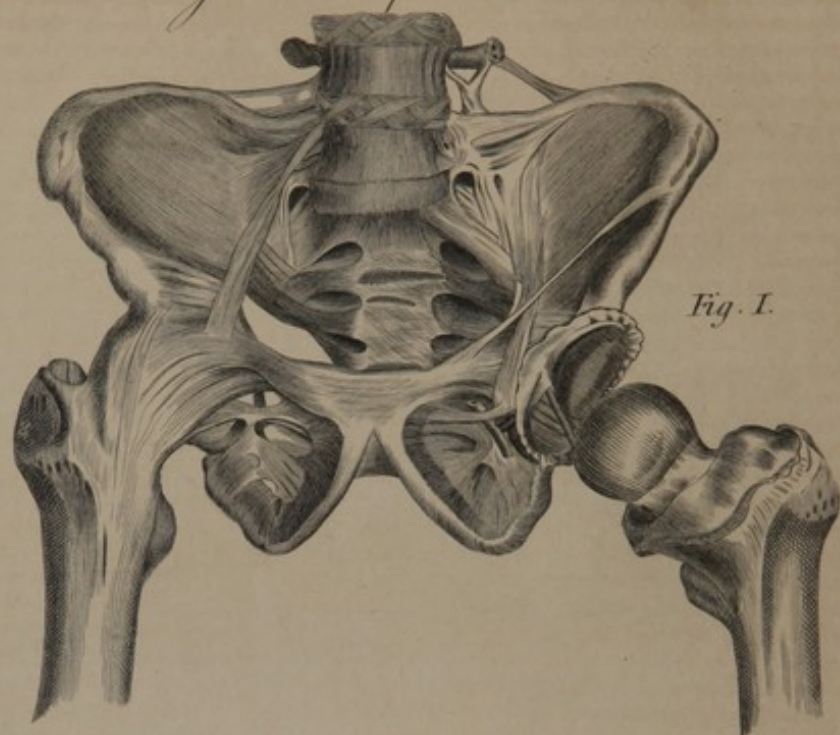


Fig. III.



Ligaments of the Pelvis.



LIGAMENTS OF THE PELVIS.

FIG. 1.
A front view.

- P P The os sacrum on its fore part.
Q Q The anterior foramina of the os sacrum.
R R The crests of the ilia.
S S The superior surfaces of the ilia.
T T The anterior and inferior apophyses of the ilia.
U U The anterior and inferior apophyses.
X X The brims of the pelvis.
Y Y The inferior crus of each pubes.
Z Z The descending leg, or the tubercles of each ischium.
41 The acetabulum, or the ischiadic cavity.
42 The head of the left thigh bone covered with its cartilage.
43 The neck.
44 44 The great trochanter.
45 45 The less trochanter.
46 The body of the bone.
47 The line of insertion of the ligament containing the joint.
 $\alpha \alpha$ Where the anterior longitudinal fascia of the vertebræ is dissected off.
 $\beta \gamma \delta$ The cartilaginous intervertebral ligaments.
 $\beta \beta$ The external fascicula of the intervertebral ligaments, which pass obliquely from the right to the left, and proceed from the inferior margin of the lower vertebra to be inserted into the lower edge of the superincumbent vertebra.
 $\gamma \gamma$ The interior fibres, which lie under the exterior, and run in an opposite direction.
 $\delta \delta$ The minute fasciculi of the whole which are disposed nearly transversely.
 $\epsilon \epsilon$ The tendinous bands between the transverse processes of the fourth vertebra of the loins, and the crest of each os ilium.
 $\zeta \zeta$ Very strong ligaments by which the ossa innominata are connected to the transverse processes of the fifth vertebra of the loins. A ligament of this kind proceeds from the crest of the ilium on each side, and surrounds the before-mentioned process. Weitbrecht promised to describe these ligamentous bands, but has unaccountably omitted them.
 $\eta \eta \eta$ Ligamentous bands, proceeding from the same process, and expanded over the os ilium, leaving in their interstices a passage for the lumbar nerves.
 $\theta \theta$ A ligamentous membrane covering the interior edge of the pelvis.
 $\iota \iota \iota$ A ligamentous membrane, formed of fibres, crossing each other, occupying that part of the sacrum which in the fœtus was filled by the cartilaginous ligaments $\beta \gamma \delta$.
 $\kappa \kappa$ The ligaments which connect the sacrum with the ilia.
 $\lambda \lambda$ Those which surround the anterior foramina of the sacrum.
 $\mu \mu \mu$ The ligament of Vesalius, Fallopius, or Poupart, which, from the anterior and superior apophysis, in which the anterior crest of the os ilium is terminated, passes to the synchondrosis of the pubis.
 ν Some ligamentous fibres which fill the space between the superior and inferior apophysis of the os ilium in front.
 $\zeta \zeta$ The ligaments by which the synchondrosis of the pubis is confined and strengthened.
 π The lower ligament of the pubes.
 $\rho \rho$ Two strong round ligaments which rise from the internal margin of the inferior leg of the os pubis to the synchondrosis.

- $\sigma \sigma \sigma$ The membrane which closes the foramen ovale, sometimes called obturatorium.
 τ A hole for the passage of the arteria obturatoria and its accompanying nerve.
 $\phi \phi \phi$ Lesser holes for the smaller branches of this artery and nerve to pass, from within, outwardly.
 χ The capsular ligament, containing the joint of the right thigh bone, with the sciatic cavity.
 ψ Branches which pass from under the anterior and inferior apophysis of the os ilium to the ligament χ .
 ω Other branches from the os pubis.
 $a b$ The left capsular ligament dissected. a The portion which arises from the edge of the acetabulum. b The inferior portion obliterated under the neck of the thigh bone.
 c The cartilaginous cilium of the cavity, which enlarges the acetabulum. The margin is styled its lip, or mouth.
 d The ligamentum teres, which arises from the sinus at the bottom of the cotyloid cavity, and descends to the head of the thigh bone.
 e Its thinner and membranous portion.
 f A portion of the ligament which arises internally on the outside of the sciatic cavity, and surrounds the neck of the cavity, so far as where its bony cilium is interrupted. At that place under the lip, or under the cartilaginous ligament, it passes to the acetabulum.
 $g h$ The arteries. g A branch of the obturatoria. h Two little arteries, which, with the ligament f , penetrate the styloid cavity, to mix with the round ligament.
 i The retinacula of the capsular ligament.

FIG. 2.

A back view of the ligaments of the pelvis.

- A B C D The posterior arch of the lumbar vertebræ, viz. 2d, 3d, 4th, and 5th.
E E E The transverse processes of the same vertebræ in the same order.
F F The superior oblique processes of the second vertebra.
G G G The yellowish ligaments. See Fig. 3, Pl. 1.
H H The ligaments which surround the articulation of the oblique processes.
I K A ligament which strengthens the articulation of the oblique processes of the vertebræ separated, that the oblique apophysis of the vertebra may be seen.
L L See $\lambda \lambda$, Fig. 3, Pl. 1.
M M The crest of the ilium.
N N Its posterior tuber.
O The sciatic division.
P P Q Q R R The descending leg, spine, and tuber of the ischium.
S S A back view of the ossa pubes.
T The left transverse process of the third vertebra of the sacrum.
U Transverse processes of the fourth vertebra.
X X Tubercles of the same vertebra, with which the cornua of the first bones of the coccyx are articulated.
Y Y The tubercles of the fifth vertebra of the sacrum.
Z The superior and posterior foramina of the same bone.
 $a a$ The second pair of foramina.
 b The second vertebra of the coccyx.
 $c c$ The neck of the thigh bone.
 $d d e e$ The greater and less trochanters.
 $f f$ The body of each thigh bone.

Fig. 1.

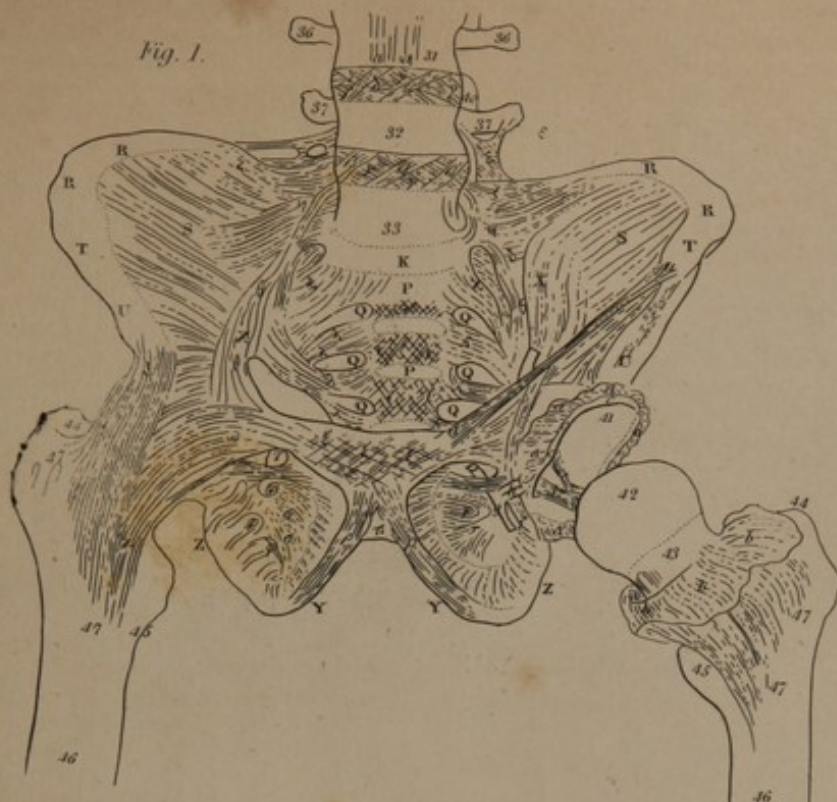
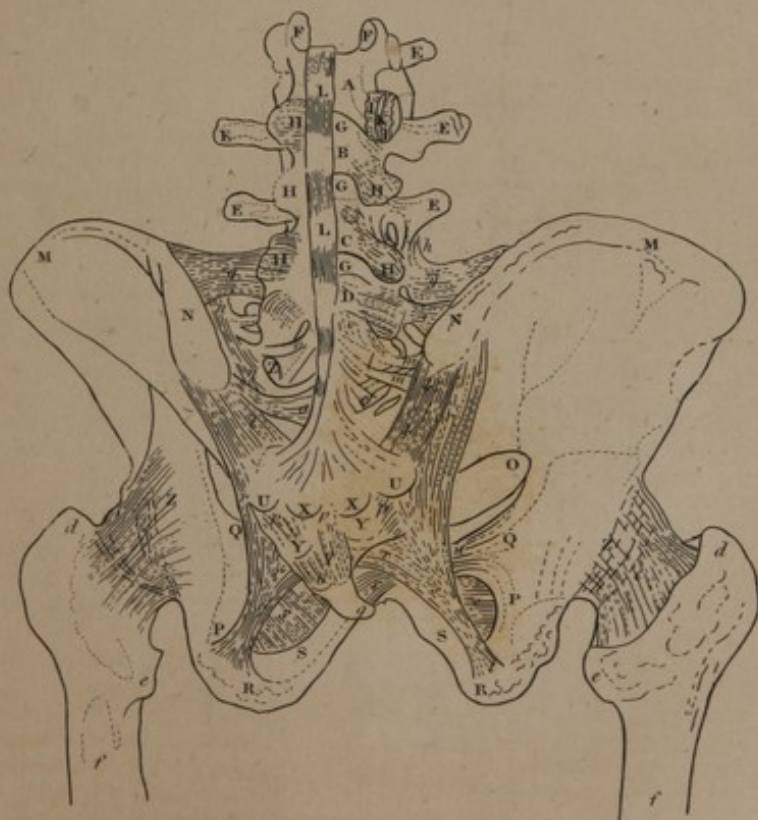


Fig. II.



Ligaments of the Wrist & Elbow

Fig. I.

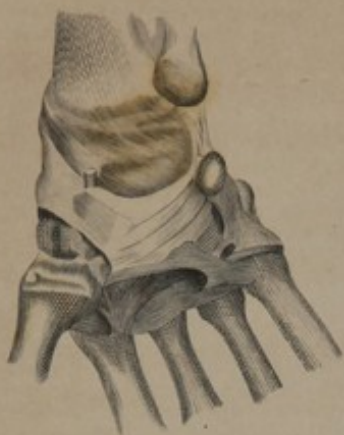


Fig. II.



Fig. V.



Fig. III.



Fig. IV.



LIGAMENTS OF THE WRIST AND ELBOW.

FIG. 1.

Superficial anterior ligaments of the right hand.

- N O The inferior extremities of the ulna and radius.
 P Q The greater multangular and triangular bones.
 R The processus unciniformis of the os hamatum.
 S The pisiform bone.
 T U Bones of the thumb and fingers.
 a a a The capsular membrane which embraces loosely the joint of the wrist.
 b b c The proper internal membrane of the carpus, which, proceeding from R and S, is inserted like a bridge into the greater multangular bone P, and the os naviculare, which it covers at c.
 d The tendon of the internal radial muscle.
 e The ligament going from the metacarpal bone of the thumb to the internal proper ligament of the wrist.
 f Another accessory ligament, which embraces the extremity of the fifth metacarpal bone, by which it is articulated to the wrist.
 g Ligamentous fibres descending from the styloid process of the ulna to the pisiform bone.
 h Fibres extending from the inferior margin of the ulna to the pisiform bone itself.
 i The strait external ligament between the fifth metacarpal and the pisiform bone.
 k The ligament which connects the external margin of the triangular bone with the fifth metacarpal.
 l A similar ligament between the os hamatum and the same metacarpal.
 m m The ligament of the palm, resembling a narrow ribband, which, arising from the base of the fifth metacarpal, is spread over the other bones of the metacarpus.
 n A bundle of fibres confining at its insertion the tendon of the radial internus, and connecting the second with the first metacarpal.
 o The capsular membrane confining the joint of the navicular and greater multangular bones.
 p A similar membrane between the greater multangular bone and the metacarpus of the thumb.

FIG. 2.

Ligaments under the superficial coverings in the left hand.

- S The lower extremity of the radius.
 T The lower head of the ulna covered with its cartilage.
 U The capsular membrane, which connected the ulna with the carpus, cut off and turned back.
 X The same membrane inclosing the joint of the carpus.
 Y Z I Δ Θ Λ The navicular, the lunated, the triangular, the orbicular, the capitated, and the hooked bones respectively.
 Ξ The unciform process of the hooked bone.
 Π The larger multangular bone.
 Σ Σ, &c. The bones of the metacarpus.
 a The ligamentous fibres from the styloid process of the ulna to the orbicular bone.
 b b b The fibres which proceed from the margin of the glenoid cavity of the radius to the orbicular and lunated bones.
 c c The fibres from the navicular (Y) and greater multangular (Π) bones to the capitated bones.
 d e f g h The various bands between the small bones of the carpus.
 i The ligament which connects the external margin of the triangular bone with the fifth metacarpal.
 k The ligament between the hooked bone and the base of the fifth metacarpal.
 l l The capsular membrane which confines the joint of the greater multangular bone with the base of the first metacarpal.
 m The margin of the great multangular bone covered with its cartilage, where it joins with the first metacarpal.
 n The base of the first metacarpal bone covered with cartilage, where it answers the greater multangular bone.
 o The internal lateral accessory ligament of the capsular membrane (U).
 p q The tendon of the internal radial muscle running under the little ligamentous canal (q), where it is fixed to the base of the second metacarpal.
 r s The ligamentum sublimis majus and minus of the third metacarpal.
 t The volar ligament between the base of the second and third metacarpal.
 u u The ligament between the os capitatum and the base of the third and fourth metacarpal.

- x x x The volar ligament arising from the fifth metacarpal bone, adhering to the fourth, and terminating in the third.

FIG. 3.

Ligaments of the carpus and hand.

- D and G The ulna and radius.
 O The interosseous membrane.
 P The passage for the vessels.
 q q The tendons of the extensor digitorum communis.
 r The tendon of the indicator muscle.
 s Tendon of the extensor minimi digiti proprius.
 S The tendon of the obductor longus pollicis.
 W X The first and second bone of the metacarpus.
 Y Y The common dorsal tendon of the carpus, descending obliquely from the radius to the ulna, sometimes called transversal or armillary. It confines the extensors of the fingers and the hand, and forms peculiar sheaths for the passage of some tendons, particularly the obductor longus pollicis vel extensor.
 z z z The tendons of the extensor communis running on the metacarpus.

FIG. 4.

Ligaments under the tendons and under the armillary ligament.

- U U U Openings for the passage of the vessels.
 X X X Hollows formed in the inferior extremity of the radius covered with the strong ligamentous coat, through which the tendons of some of the muscles run.
 Y The membranous ligament which unites the extremity of the ulna to the radius.
 Z The ligamentum rhomboides of Weitbrecht, or stronger fibres passing from the edge of the cavity of the radius to the os triquetrum.
 β Fibres from the styloid process to the greater multangular bone.
 γ The ligamentous membrane which unites the bones of the carpus externally.
 δ—s The ligamentous fibres which unite the bones of the carpus to each other.
 θ The ligament which covers the os multangulum majus and its connection with the metacarpus of the thumb.
 x λ μ The fibres from the os capitatum to the second, third, and fourth bones of the metacarpus.
 ξ The dorsal ligament which runs from the base of the first metacarpal to the base of the second.
 π ρ Dorsal ligaments which lie between the second and third, and the third and fourth metacarpal.
 σ Dorsal ligaments which lie between the basis of the fourth and fifth metacarpal.

FIG. 5.

An external view of the inferior part of the right humerus, with the superior part of the fore arm.

- A The lower portion of the humerus seen externally.
 B Its external condyle, whose extremity is covered with a thin cartilage.
 C The ulna.
 D Its posterior and superior process, styled the olecranon.
 E The radius.
 F The round head of the radius covered with a cartilaginous lamina.
 f The glenoid cavity hollowed on the top of its head, with which the lower and gibbous superficies of the condyle (B) is articulated.
 G The capsular ligaments dissected. It arises from the os humeri, and is inserted into the olecranon of the ulna.
 H The orbicular ligament of the radius.
 I The part where this ligament arises, viz. from the posterior margin of the sinus lateralis, which is hollowed in the ulna for the reception of the radius.
 K The extreme lateral ligament, which arising from the external condyle of the humerus, descends, is firmly fixed in the orbicular ligament (H), and disappears in the annular ligament.
 L The membrane which loosely surrounds the radius, and binds the ulna, dissected and turned back.
 M The opening for the external interosseous artery.
 N The interosseous membrane.
 O The posterior transversal cord of the fore arm, which, proceeding from the exterior margin of the ulna, descends obliquely, and is connected to the inner side of the radius. It runs in a direction so as to decussate the fibres of the interosseous membrane. This is called the posterior transverse cord, because some authors have described an anterior one; but the latter is very often wanting.

Ligaments of the Knee in Front.

Fig. 1.



Fig. II.



LIGAMENTS OF THE KNEE IN FRONT.

FIG. 1.

The right knee, the capsular membrane dissected from above, and the patella turned back.

- A The thigh bone.
- B The internal condyle covered with a thin cartilage.
- C The external condyle.
- D The posterior surface of the patella covered with a thin cartilage.
- E F The tibia and fibula.
- G Fat.
- H The tendon of the musculus rectus cruris turned back, over which there is a thin membrane, which is properly the capsular membrane.
- I I The interior surface of the same capsular membrane very smooth.
- K The mucous ligament of the knee.
- L M The greater and less ligamentum alare.

FIG. 2.

The same, but the patella removed, and the thigh turned a little backward.

- A B C As in fig. 1.
- D D The articular surface of the condyles.
- E F G As in fig. 1.
- H H The glenoid cavities hollowed in the upper surface of the tibia, answering to the condyles. A cartilaginous lamina is spread over the hollows.
- I The internal semilunar cartilage.

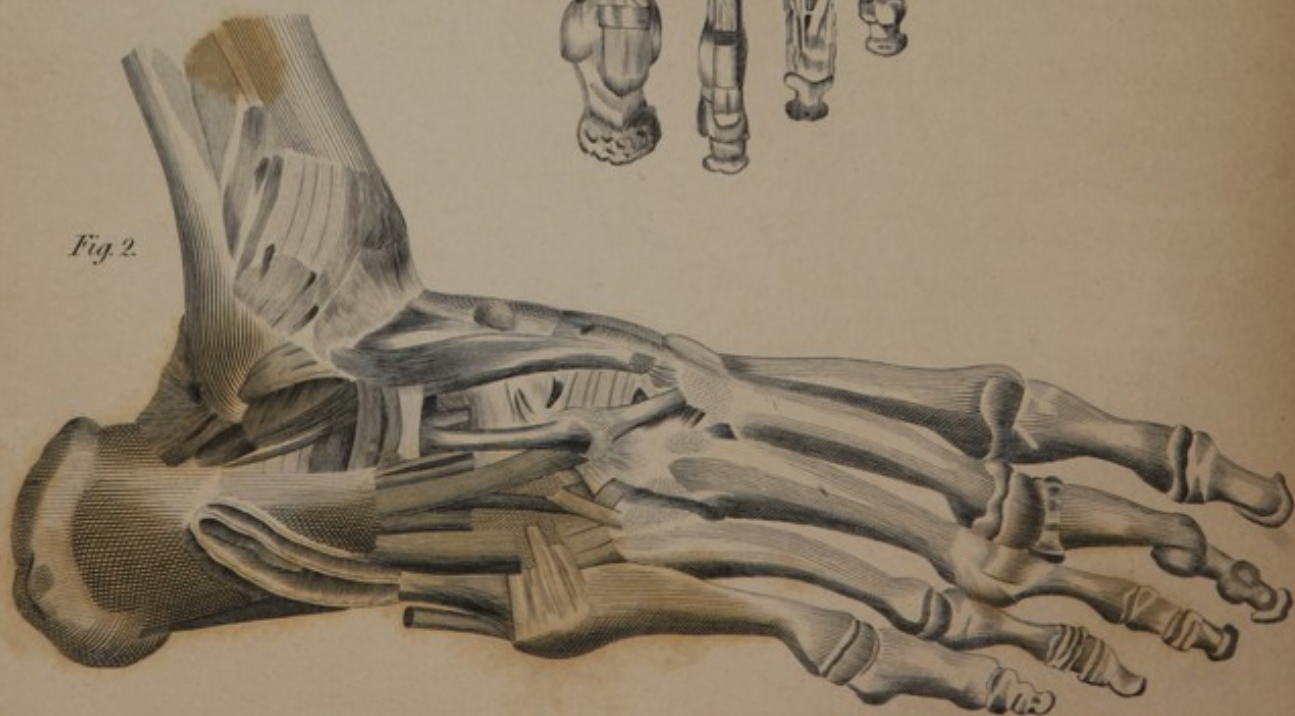
- k Its external margin a little thicker.
- l Its internal margin falcated and thin.
- M The anterior horn of the same cartilage.
- N The external semilunar cartilage.
- o p Its internal and external margin.
- q The anterior horn of this cartilage.
- R R The membrane which descends from the external margin of the semilunar cartilages, and is lost in the border of each glenoid cavity.
- r The common transverse ligaments, which proceed from the external border of the semilunar cartilage N, beyond the anterior seat of the tibia, and terminates in the anterior horn of the cartilage I.
- S The ligament by which the anterior horn of the external semilunar cartilage adheres to the anterior crucial ligament. Weitbrecht calls it the first adhesion of the external cartilage.
- T U The anterior crucial ligament, descending from the sinus, which divides the condyles, and particularly from the interior side of the external condyle: running obliquely, it is fixed to the internal margin of the interior glenoid cavity.
- X The upper part of the posterior crucial arising from the external side of the internal condyle.
- x The fibres which strengthen the transverse ligament r, and are mixed with the ligament proceeding from the anterior horn of the external cartilage, and with the anterior crucial ligament.
- Z The internal lateral ligament cut off.

Ligaments of the Foot

Fig. 1.



Fig. 2.



LIGAMENTS OF THE FOOT.

FIG. 1.

The sole of the foot with its ligaments.

- A A Calcaneus.
- B Os tali.
- C Os cuboideum.
- D D D Metatarsal bones.
- E The tendon of the tibialis posticus.
- F The ligamentous sheath for the passage of the tendon.
- G The furrow through which the tendon runs.
- H The portion of the sheath which belongs to the flexor longus of the great toe.
- I I The ligamentum plantare proceeding from the anterior face of the tuber in the heel bone, and straight to the os cuboideum.
- K K and L The oblique ligament between the calcaneum and cuboideum, and between the former and the os naviculare.
- M The round ligament between the calcaneum and naviculare.
- N The transverse ligament from the os naviculare to the cuboideum.
- n The band carried straight from the posterior portion of the cuboid to the third os cuneiforme.
- o The *plantar ligament* between the naviculare and second cuneiform bones.
- p The *plantar transverse* ligament between the first and third cuneiform.
- P The ligamentous capsular ligament connecting the os naviculare with the first cuneiform.
- Q A similar membrane between the first cuneiform and the metatarsus of the great toe.
- r The ligament between the first cuneiform bone and the third metatarsal bone.
- s s The ligament between the third cuneiform and the fourth metatarsal.
- t t The capsular membrane between the fifth metatarsal and the cuboid bone.
- u The band which passes transversely from the fifth metatarsal to the third cuneiform.
- x The transversal ligament of the fifth metatarsal.
- z The common *plantar* ligament of the metatarsal bones.
- β γ δ The *plantar* ligaments between the different metatarsal bones.
- ε The tendon of the flexor proprius of the great toe.
- ζ ζ The tendons of the flexor communis in the second and fourth toe.
- η η The tendon of the *perforans* in the third toe.
- θ θ The tendon of the *perforatus* of the same toe.
- κ κ κ Ligamentous bands of the tendons.
- λ The sheaths which confine the tendons of the flexors.
- μ μ μ The *crucial* ligaments.
- ν The opened sheath, which contained the tendons of the flexors.
- π π Capsular membranes connecting the bones of the toes with the metatarsal bones.
- ρ The ligamentous membrane between the heads of the first and second metatarsal; the same in the other toes.

FIG. 3.

An external view of the back of the foot with the ligaments.

- A Tibia.
- B Fibula.
- C The interosseous membrane of the leg.
- D Calcaneus.
- E Talus.
- F Os naviculare.
- G H I The first, second, and third cuneiform bones.
- K Os cuboideum.
- L L L Metatarsal bones.
- M M M O O O The first and second bones of the toes.
- N The second bone of the great toe.
- P P P The extreme bones of the toes.
- Q R The superior and inferior, anterior, ligament of the external malleolus.
- S The middle perpendicular ligament of the fibula.
- T The capsular ligament connecting the joint of the leg with the tarsus.
- U The anterior ligament between the fibula and the talus.
- X The internal lateral ligamentous band between the talus and calcaneus.
- Y Y A strong ligamentous membrane between the calcaneus and the talus.
- Z A ligamentous fascia carried from the talus to the os naviculare F and cuneiforme H.
- a b c d Ligaments between the talus and cuboid; the naviculare and third cuneiform; the talus and naviculare; the naviculare and first cuneiform.
- e f Ligamentous fibres between the cuneiform bones.
- g g Anterior and lateral perpendicular ligaments descending from the talus to the calcaneus, in a sinuous cavity.
- h The ligament between the calcaneus and the third cuneiform.
- i i Ligaments between the calcaneus and os cuboides.
- l Capsular ligament strengthening the connection between the first metatarsal and the cuneiform.
- m—q Ligaments between the different cuneiform and the metatarsal bones.
- r s Ligaments between the os cuboides and the fourth and fifth metatarsals.
- t Fibres passing directly from the cuboid bone to the fourth metatarsal.
- u u u Dorsal ligaments of the base of the metatarsal bones.
- x y z Lateral ligaments between the different metatarsal bones.
- β γ Tendons of the peronæus longus and brevis.
- δ δ The channels through which the tendons of the peronæi run.
- ε ε ε The capsular ligament which confines the toes to each other.
- ζ ζ ζ The lateral ligaments.
- η The joint opened.
- θ The capsular ligament turned back.

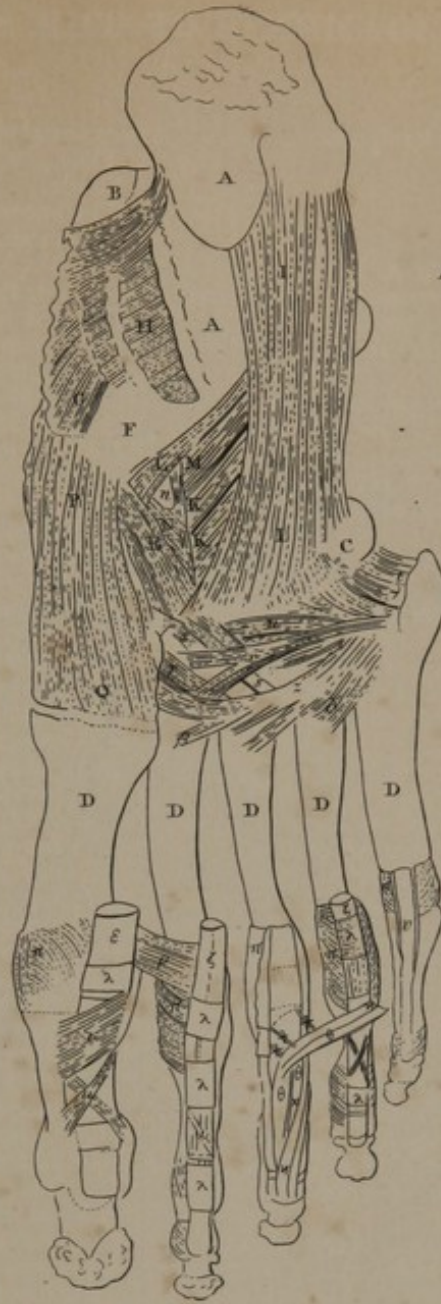
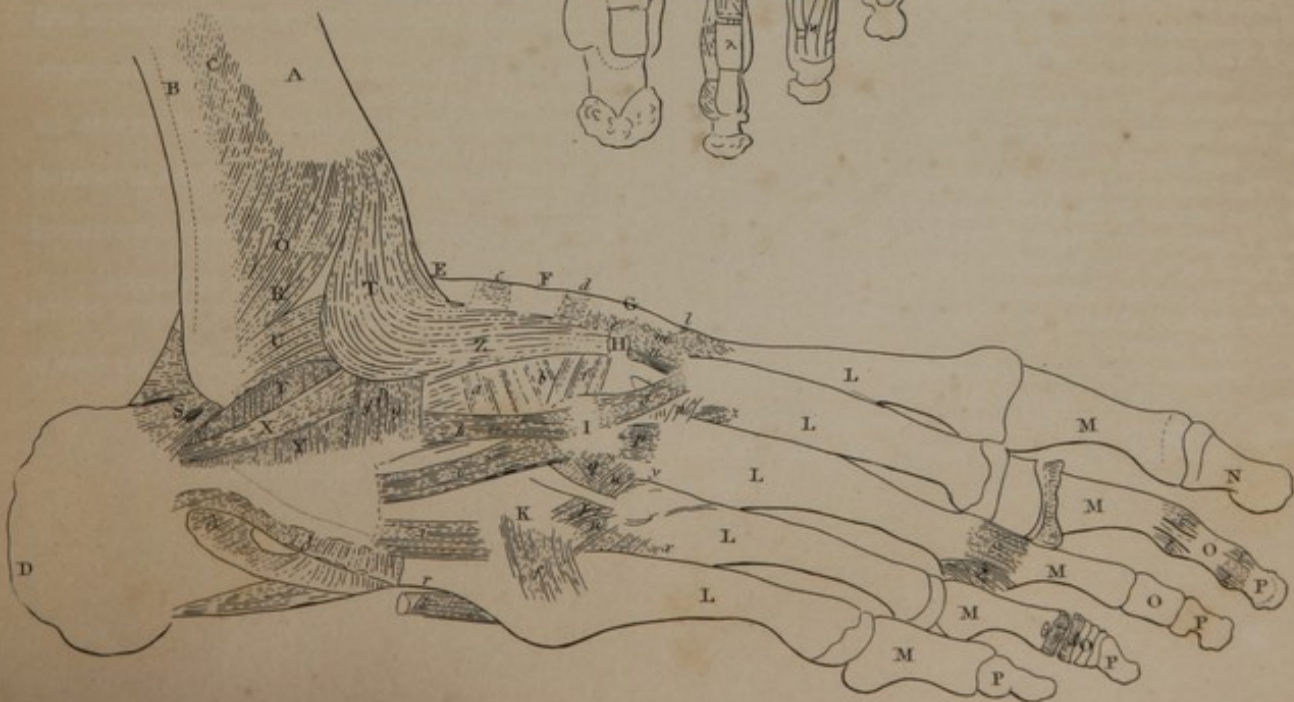


Fig. I.

Fig. II.



*Views of the Joint of the Knee from behind the Semilunar Cartilages
& the Ligaments of the Foot.*

Fig. I.



Fig. II.

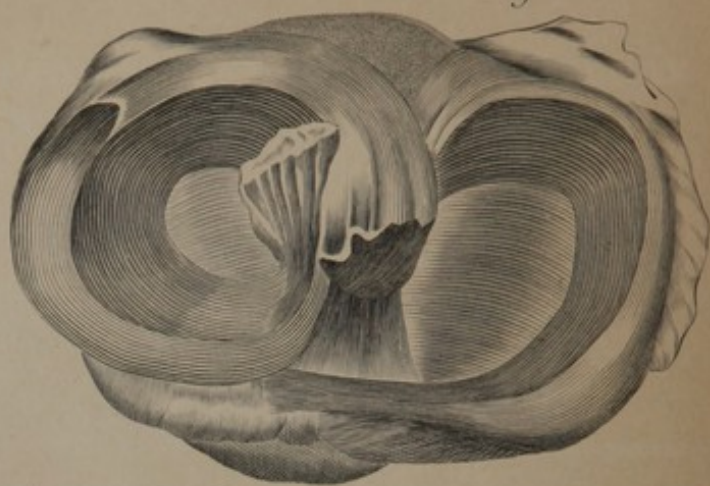
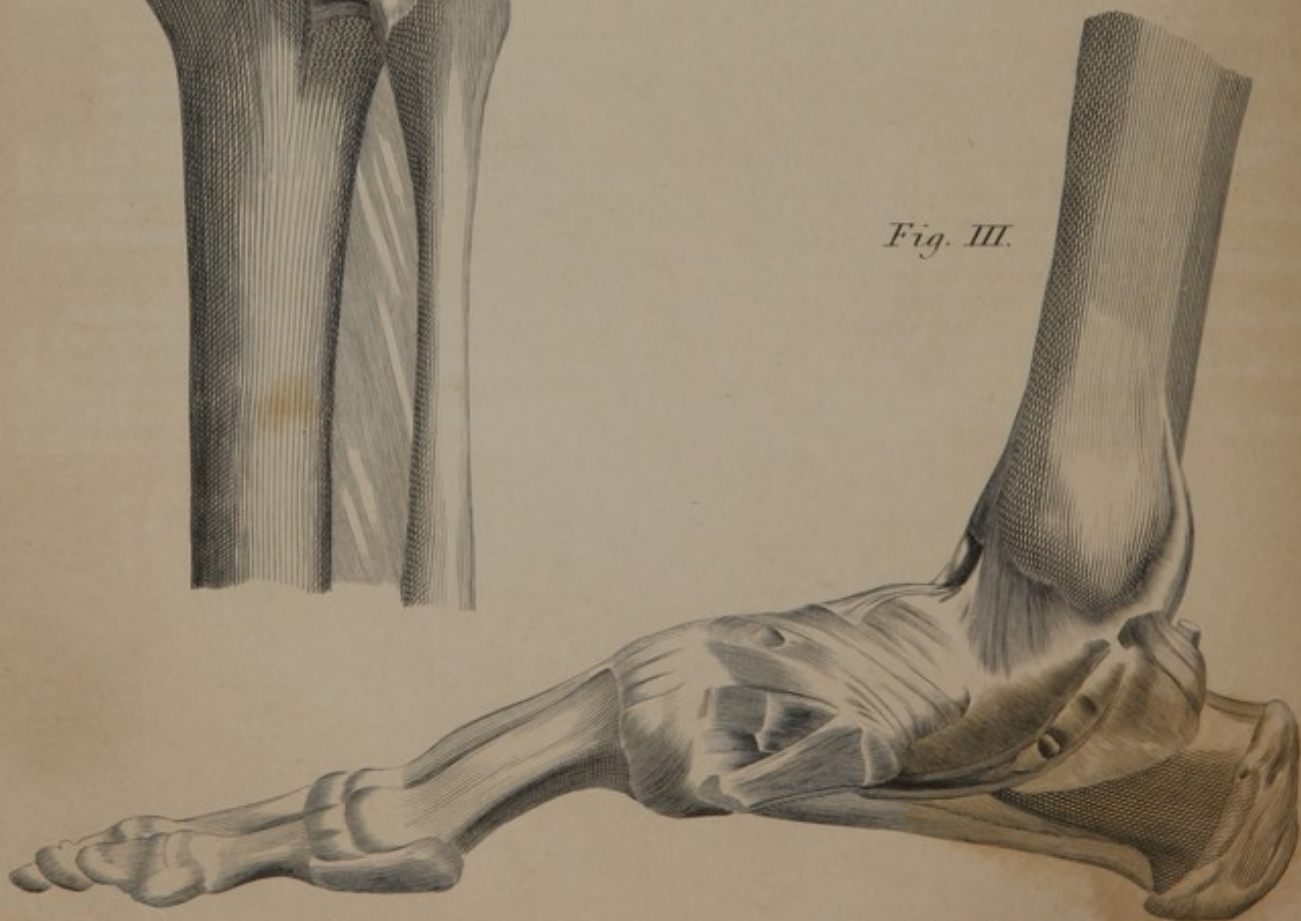


Fig. III.



VIEWS OF THE KNEE JOINT FROM BEHIND; OF THE SEMILUNAR CARTILAGES AND OF THE LIGAMENTS OF THE FOOT.

FIG. 1.

The deeper seated ligaments of the knee on the posterior part.

- A A back view of the femur.
- B The internal condyle incrustated with a cartilaginous lamella.
- C The external condyle.
- D E The tibia and fibula.
- F F F The capsular membrane cut off.
- G The sinus in the external side of the head of the tibia, with which the fibula is articulated.
- H The internal semilunar cartilage.
- I The ligamentous membrane by which the cartilage is connected with the tibia.
- K The external semilunar cartilage.
- L The capsular membrane which strengthens the head of the fibula, and which, in its ascent, unites with the border of the external semilunar cartilage.
- M The rope, or a very strong ligamentous fascia, rising from the sinus of the femur, dividing the condyles behind, which, running under the capsular membrane, turns downward and adheres to the head of the tibia. This cord has been overlooked by former syndesmologists.
- N A part of the external lateral ligament cut off.
- O The fibres which connect the tibia with the fibula behind.
- P The interosseous membrane.

FIG. 2.

Semilunar cartilages, with the head of the tibia.

- A The anterior tuber of the tibia.
- B The internal glenoid cavity incrustated with cartilage.
- C The external glenoid cavity.
- D The internal semilunar or falcated cartilage.
- E The external semilunar or falcated cartilage.

F F The thickness of the cartilages.

ff The thinner border.

G The anterior horn of the internal cartilage.

H The posterior horn of the internal cartilage.

h The transverse common ligament.

I The anterior horn of the external cartilage.

K The posterior horn of the external cartilage.

L L and M The anterior and posterior crucial ligaments.

FIG. 3.

An internal view of the back of the foot, with the ligaments.

- A The tibia.
- B A hollow behind the malleolus internus.
- C Os calcanei.
- D Os naviculare.
- E The first cuneiform bone.
- F G The first and second metatarsal.
- H I The first and second bone of the great toe.
- K The capsular membrane of the joint of the tarsus.
- L The deltoid ligament.
- M Oblique fibres between the talus and calcaneus internally.
- N The sheath through which the tendon of the tibialis posticus (O) runs.
- P The aponeurosis plantaris.
- Q The ligamentous apparatus between the naviculare, and the first and second cuneiform bone.
- R The dorsal ligament between the os naviculare and the first cuneiform bone.
- T The capsular membrane of the first cuneiform and the metatarsal bone of the great toe.
- U U A similar membrane connecting the bones of the great toe with each other.
- X X The oblique and lateral ligaments of the same joints.

Fig. I.



Fig. II.

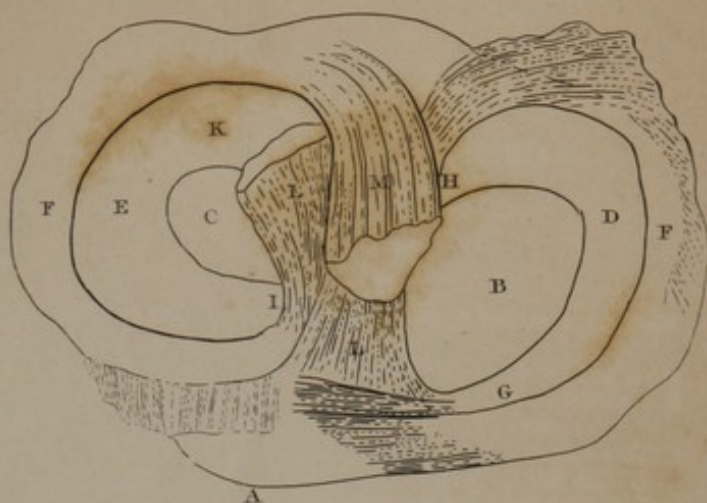
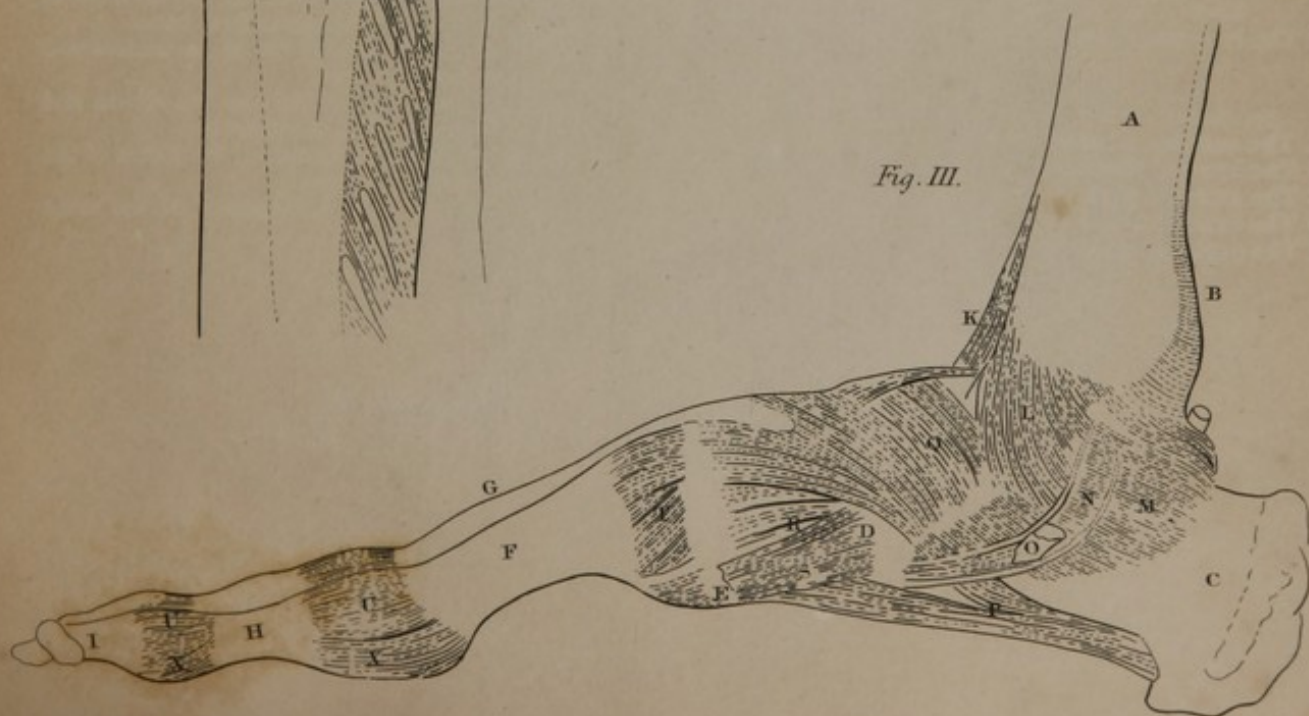


Fig. III.



Map. &c. of the Arteries on the front Part.



DESCRIPTION OF THE MAP, &c. OF THE ARTERIES ON THE FRONT PART.

FIRST REGION.

THE HEART.

- A The heart in its situation, but a little drawn down, from its weight, so that the roots of the great vessels are situated on the third rib, which should have been on the second. The coronary arteries are shown lying on it.
- B C The right and left ventricles full.
- D Trunk of the pulmonary artery.
- E Ductus arteriosus.
- F The left branch of the coronary artery.
- G H The aorta and its arch.
- L The common carotid, right subclavian and carotid which are shown lying off above to the arm and head.
- O P The left carotid and subclavian.
- 1 to 9 The intercostal spaces on the left side. Those on the right are opposite.
- A Aorta descendens.

SECOND REGION.

THE NECK.

- A Aspera arteria.
- B C The thyroid gland and its cartilage.
- d Maxillary glands.
- e The trapezi muscles turned back.
- f The left cerebral carotid.
- g The left external carotid.
- r r Left and right superior thyroid artery.
- y The submental artery.
- z The labial artery.
- a The temporal artery.
- b The left vertebral artery.
- c The greater inferior thyroid artery.
- d The jugular vein.
- e The occipital artery.

THIRD REGION.

THE FACE.

- A Triangularis muscle.
- B Masseter.
- C Parotid gland.
- E F Zygomaticus, inferior and superior.
- G Levator labiorum communis.
- H Levator of the upper lip.
- I Orbicularis palpebræ.
- K Temporal muscle.
- L M Frontalis and procerus.
- N Nasalis labii superioris.
- O P Orbicularis oris.
- Q Quadratus menti.
- S T The naked jaw and cheek bone.
- X Ciliaris muscle.

Vessels.

- a and m The coronary artery of the upper lip, and the nasalis arising from it.
- n and o The interior and exterior anastomoses of the labial with the interior ophthalmic.
- p The temporal artery passing through the parotid.
- q The sincipital branches.
- r The superior branch of the ophthalmic artery.
- s and t The superior and inferior arch in the forehead.
- B to G Auricular arteries.
- O The external superciliary joined with s.
- P The frontal artery joined with s.

FOURTH REGION.

THE RIGHT ARM.

- A Clavicle broken off.
- B The coracoid process of the scapula.

- C Serratus minor.
- D Part of the deltoid moved from its situation.
- E Teres major.
- F Its conjunction with the latissimus dorsi.
- H The deltoid in its proper situation.
- I and K The extensor longus and brevis cubiti.
- L Brachialis externus.
- M and N Biceps and brachialis internus.
- O Coraco brachialis.
- P The flexor condyle of the humerus.
- Q Flexor carpi ulnaris.
- R Flexor digitorum sublimis.
- S Palmaris.
- T Flexor carpi radialis.
- X Teres pronator.
- Y Supinator longus.
- Z Flexor digitorum profundus.
- 5 Annular ligament of the wrist.

Vessels.

- a Subclavian artery.
- c Acromialis.
- d Branches to the ribs.
- g Arteria scapularis.
- o The deep branch of the humerus.
- d The trunk going to the back of the humerus.
- e The first anastomotic branch—anastomoticus major.
- f Anastomotic branch, with the recurrent ulnar.
- µ and d The truncus radialis and ulnaris.
- u A branch from the radial artery, making the superficial palmar arch.
- r The ulnar artery emerging from under the flexors.
- d A branch from the ulnar artery perfecting the palmar arch, from whence the arteries of the fingers are derived.
- N B. The branches from the palmar arch to the different parts of the finger may be seen by inspection. The plate would be confused by fingers.

FIFTH REGION.

VESSELS AND DEEP MUSCLES OF THE LEFT ARM.

- C The head of the humerus.
- D Infrascapularis.
- G G The two heads of the biceps.
- M The short extensor of the cubitus.
- O Extensor longus moved from its situation.
- P Brachialis externus removed on the other side.
- Q The tendon of the biceps.
- R Supinator.
- T The ulnar flexor of the carpus.
- V The naked ulnar.
- X The interosseous ligament.
- r Pronator quadratus.
- d Supinator longus.
- e The little bones of the carpus and fingers.

Vessels.

- 1 The acromial artery cut back.
- 2 Internal scapular.
- 3 The trunk turned towards the back.
- 4 Anterior circumflexa.
- 5 The continuation of the circumflexa.
- 6 Profunda humeri.
- 7 Posterior circumflexa.
- 8 The first anastomotic artery.
- 9 The recurrent radial.
- A The radial artery.
- C The dorsal branch of the hand.
- D The recurrent ulnar.
- E The interosseal artery.

- F The ulnar branch of the interosseal artery anastomosing with a branch of the cubital artery.
- G The ulnar artery going to the hand.

SIXTH REGION.

ADDOMEN AND PELVIS.

- A and B The right and left kidney.
- C and D The right and left renal capsule.
- E E Each transverse muscle of the abdomen.
- F Internal oblique.
- F G The right and left quadratus.
- H The left psoas.
- Δ A Right and left ureter.
- I Intestinum rectum.
- L Vesica urinaria turned back.
- L M The right and left internal iliac muscle.
- P The part of the os pubis to which the ligament of the penis is affixed.
- Q The skin of the scrotum partly denuded.

Vessels.

- 1 Abdominal aorta.
- 2 Trunk of the coeliac.
- 3 and 4 The hepatic and splenic arteries.
- 5 The coronary artery of the stomach.
- 6 The superior mesenteric.
- 7 The left renal artery.
- 8 The posterior renalis.
- 9 and 10 The right and left spermatic.
- 11 The inferior mesenteric.
- 12 A branch of the intestinum rectum.
- 13 The middle sacral artery.
- 14 A branch of the middle sacral to the rectum.
- 15 and 16 The right and left iliac arteries.
- 17 Right ilio lumbalis.
- 18 Obturatoria.
- 19 Posterior iliac.
- 20 Hæmorrhoidæ and ischiadica.
- 21 Umbilicalis.
- 22 The two vesical arteries.
- 23 The right abdominal.
- 24 The right epigastric artery.
- 25 The artery of the penis.
- 26 The left abdominal.

SEVENTH REGION.

RIGHT THIGH.

Muscles to the Knee.

- A Glutæus medius.
- B Fascia lata.
- C Sartorius.
- D Rectus.
- E Vastus externus.
- F Vastus internus.
- G Pectineus.
- H Biceps anterior.
- I K Triceps medius and longus.
- L Gracilis.
- M Semimembranosus.
- N Patella.
- O Internal condyle of the femur.

Vessels.

- a Femoral artery.
- b The branch to the iliacus and pectineus.
- c Another to the inguinal gland and vastus muscle.
- d Another to the pectineus and ileum, anastomosing with b.
- e Superior external pudenda.
- f Branches to the scrotum.
- i A branch to the penis inserted into its artery.
- k The external circumflex.
- m The second external pudenda.

- n a Great branch to the vastus externus. The direction of the other branches are obvious from inspection.

EIGHTH REGION.

THE LEFT THIGH.

- B Sartorius cut off.
- C Rectus superior.
- D Triceps magnus.
- E Semimembranosus.
- F and G Vastus internus and inferior part of the rectus.
- K Fascia lata.
- L Glutæus medius.

Vessels.

- a Femoral artery cut off.
- b Profunda femoris.
- c Circumflexa externa.
- d The upper trunk of the circumflexa.
- e The pudenda cut off.
- f Circumflexa interna.
- g Nutritia femoris.
- h The trunk of the femoral artery cut off.

NINTH REGION.

THE RIGHT THIGH ON THE INTERNAL SIDE WITH THE FOOT.

- C Part of the sartorius.
- D The gastrocnemii.
- E Tendo achillis.
- F Pollicis flexor longus.
- G Flexor longus digitorum pedis.
- I Tendo flexoris longi.
- P Tibialis anticus.
- Q and R The extensors of the toes.

Vessels.

- 1 A branch of the inferior internal circumflexa.
- 2 A branch from the posterior tibialis.
- 3 A long anastomosis, with the subcutaneous branch of the popliteal artery.
- 4 The posterior tibial artery.
- 5 The anterior tibial artery.
- 6 A branch communicating with the inferior plantaris.
- 7 Continuation of the trunk of the tibial artery.
- 8 Trunk of the peronea antica.

TENTH REGION.

THE LEFT LEG AND FOOT; THE SUPERIOR MUSCLES REMOVED.

Muscles.

- A The ligament of the patella.
- B Extensor longus pollicis.
- C The common extensor of the toes cut off.
- D Interosseous ligament.
- E Tibialis anticus.

Vessels.

- 1 Tibialis antica.
- 2 The lower internal circumflex of the knee.
- 3 An artery of the external malleolus.
- 4 A circumflex branch meeting the peronea.
- 5 Branches to the malleolus internus.
- 6 The arch at the termination of the metatarsus.
- 7 The metatarsal arch.
- 8 The three perforating arteries.
- 9 The accompanying artery of the sartorius, going to the internal condyle and the ligament of the patella.

Arteries & principal Muscles on the front Part.



Map &c. of the Arteries on the back Part



DESCRIPTION OF THE MAP, &c. OF THE ARTERIES ON THE BACK PART.

FIRST REGION.

THE NECK, FROM THE HEAD TO THE SCAPULE.*
Muscles about the Head and Neck.

- 1 Splenius capitis.
- 2 Sternocleidomastoideus.
- 3 4 Posterior cervical muscles.
- 5 Rectus capitis posterior.
- 6 Rectus capitis posterior.
- 7 Complexus.
- 8 Obliquus superior.
- 9 Obliquus inferior.
- 10 Trachelomastoid.
- 11 Splenius colli.
- 12 Levator scapulae.
- 13 Parotid gland.

§ 1. The Branches of the Neck on the Left Side.
a a Occipital artery.
b Branch of the posterior artery.
c Auricular branch.
f Branch of the cervical artery.
g Arteria dorsalis suprema.

§ 2. The Branches of the Neck on the Right Side.
a Occipital artery.
b The ascending thyroid artery.
c The deep cervical artery from the subclavian.
d A branch of the thyroid artery to the neck.
e The dorsal artery of the scapula.

SECOND REGION.

THE BACK AND SCAPULA.
Muscles.

- A Supraspinatus.
- B The origin of the trapezius turned back from the spine of the scapula.
- C The rhomboideus muscle removed.
- D Infra spinatus.
- E Teres major.
- F Serratus anticus major.
- G Longissimus dorsi.
- H Sacrolumbalis.
- K and L The ascending and descending oblique.
- A The seat of the kidneys.
- N The levators of the ribs.
- O Spinalis colli.
- R Multifidus spinæ.
- S Quadratus lumborum.
- T T The oblique ligament of the ribs.
- V Perpendicular ligament of the ribs.
- X The clavicle.
- Y Glandulae alares.

Vessels.

Left side. 1 1 The higher dorsal.
Right side. 1 2 3 4, &c. Intercostals.

* The left side has most of the muscles under the skin, except the nates, from which the glutæus major is removed.
The right side has the deeper muscles, and occasionally the naked bones.

REGION THIRD.

LEFT ARM.

- A Deltoid.
- C Brevis extensor humeri.
- D Extensor longus.
- E Brachialis internus.
- F Supinator longus.
- I Bicipitis.
- M The seat of the interosseous ligament.
- N Extensor communis digitorum.
- S Extensor minimi digiti.
- X Ulnaris extensor.
- Y Ulnaris flexor.
- Z Abductor pollicis longus.
- a Indicator.
- b Abductor pollicis.
- c Abductor minimi digiti.
- d Anconæus remotus.

Vessels.

- 1 Trunk of the axillary artery.
- 2 Inferior scapular artery.
- 3 The posterior circumflex.
- 4 Trunk of the humeral artery.
- 5 Profunda humeri.
- 6 The posterior superior interosseal artery.
- 7 The ulnar, or the large branch of the interosseal, going to the carpus.
- 8 Part of the radial artery.
- 9 The carpal arch.
- 10 The radial branch, passing to the palm.

FOURTH REGION.

THE RIGHT ARM CHIEFLY DEPRIVED OF ITS MUSCLES.

- A Anconæus removed.
- B Supinator brevis.
- C Ulnar flexor of the carpus.
- D Interosseous ligament.
- E Abductor pollicis longus cut off from its origin.
- F The other abductor of the thumb cut from its insertion.
- G Indicator.
- H Abductor pollicis.
- I Semi-interosseus of the fore finger.

Vessels.

- 1 The superior dorsal artery of the scapula rising from the thyroid.
- 2 Nutritia scapulae arising from it.
- 3 The branch of the scapular artery following the lower rib of the scapulae.
- 4 Trunk of the axillary artery.
- 5 The posterior circumflex.
- 6 Anastomosis with the profunda humeri.
- 7 Profunda humeri.

- 8 The superior nutritia of the humerus.
- 9 Anastomosing branch of the cubital.
- 10 The great dorsal interosseal artery.
- 11 The lowest interosseal of the fore arm.
- 12 The middle branch of the lowest interosseal.
- 13 The radial branch.
- 14 The carpal arch.
- 15 The radial artery.
- 16 The perforating branches.

FIFTH REGION.

THE NATES AND THE FOOT OF THE LEFT SIDE.

Muscles.

- A The glutæus major cut off at its origin.
- B Glutæus medius.
- G The pyramidal muscle.
- I Ischiadic nerve.
- M Obturator internus.
- N Quadratus.
- P Termination of the great glutæus.
- R The common head of the semimembranosus and biceps.
- S Semimembranosus.
- T Semimembranosus a little drawn aside, to show the parts below.
- V The biceps longus drawn aside.
- X Biceps brevis.
- Y and Z Vastus externus and internus.
- r Triceps magnus.
- Δ and ⊙ Gastrocnemius internus and externus.
- A Tendo achillis.
- Σ Flexor longus pollicis pedis.
- Π and Ξ Peronæus longus and brevis.
- ⊕ Extensor communis digitorum.

Vessels.

- 1 Posterior iliac.
- 2 Ischiadic artery.
- 3 Anastomosis with a branch of the obturatoria.
- 4 Hæmorrhoidæ interna.
- 5 Circumflexa interna.
- 6 Arteria perforans prima.
- 7 Its descending trunk.
- 8 Perforans secunda.
- 9 Nutritia femoris.
- 10 Trunk of the crural artery laid bare.
- 11 and 12 The internal and external superior articular artery.
- 13 Anastomosis with the branch of the anterior tibial.
- 14 The place where the popliteal artery hides itself.
- 15 Peronea anterior.
- 16 Part of the tarsal artery.

SIXTH REGION.

THE RIGHT THIGH AND FOOT.

All the former Muscles removed, that the deeper Vessels may be seen. The Tricipites are also removed.

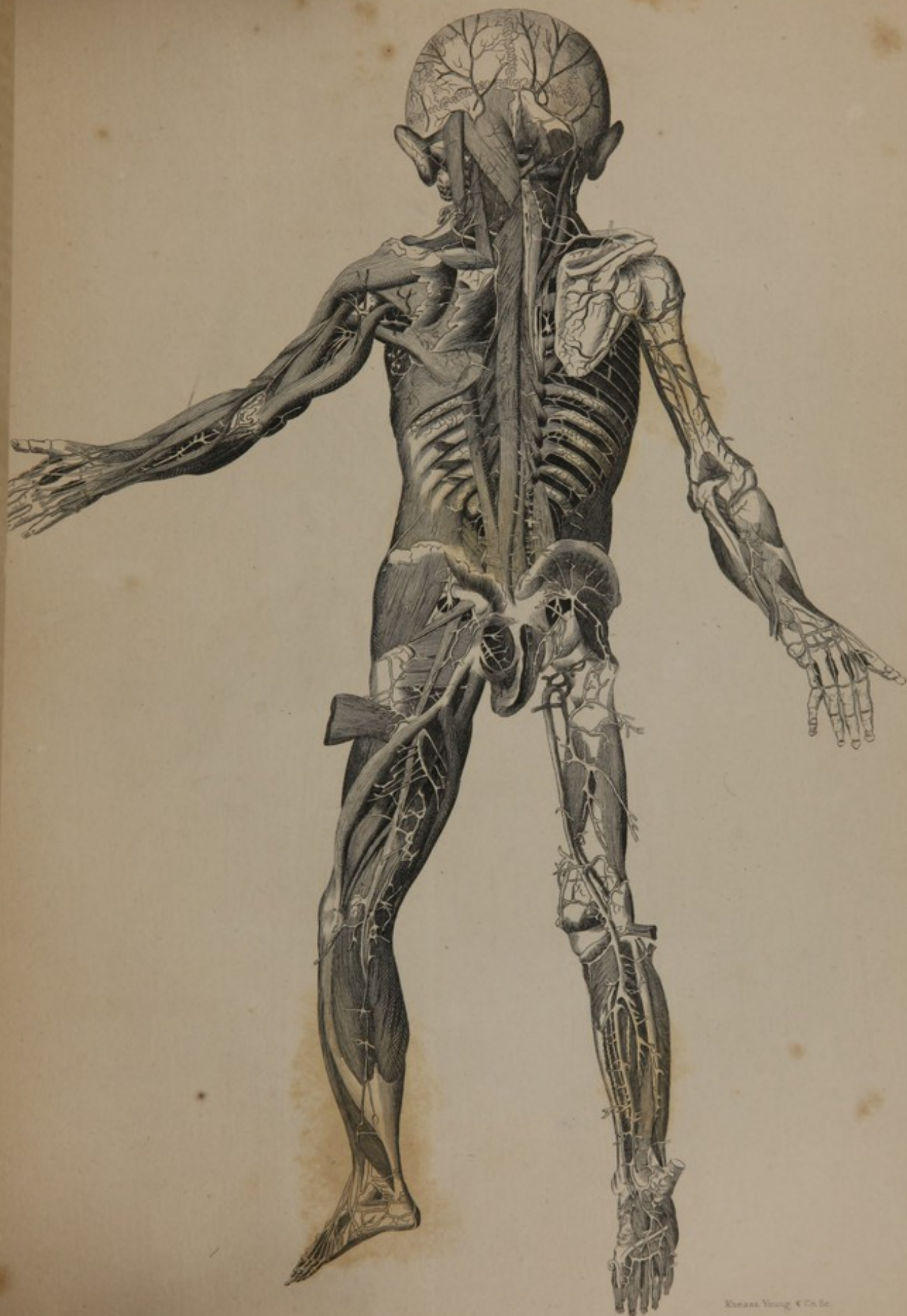
Muscles.

- A Glutæus minimus.
- B Sacro sciatic ligament.
- C and D Part of the rectum and sigmoidæ.
- E and F Vastus externus and internus.
- G Part of the external gastrocnemius.
- H Capsule of the articulation of the knee.
- I Popliteus.
- K The tendon of the biceps.
- L and M Peronæus longus and brevis.
- N Flexor pollicis longus.
- O Tibialis posterior.
- P Flexor of the toes.
- Q Tendo achillis.
- R The ligament from the head of the third metatarsal bone.
- S The great square ligament of the foot.
- T Tendon of the peronæus longus.
- V The ligament from the os navicularis to the third metatarsal bone.
- X Tendon of the flexor of the great toe.

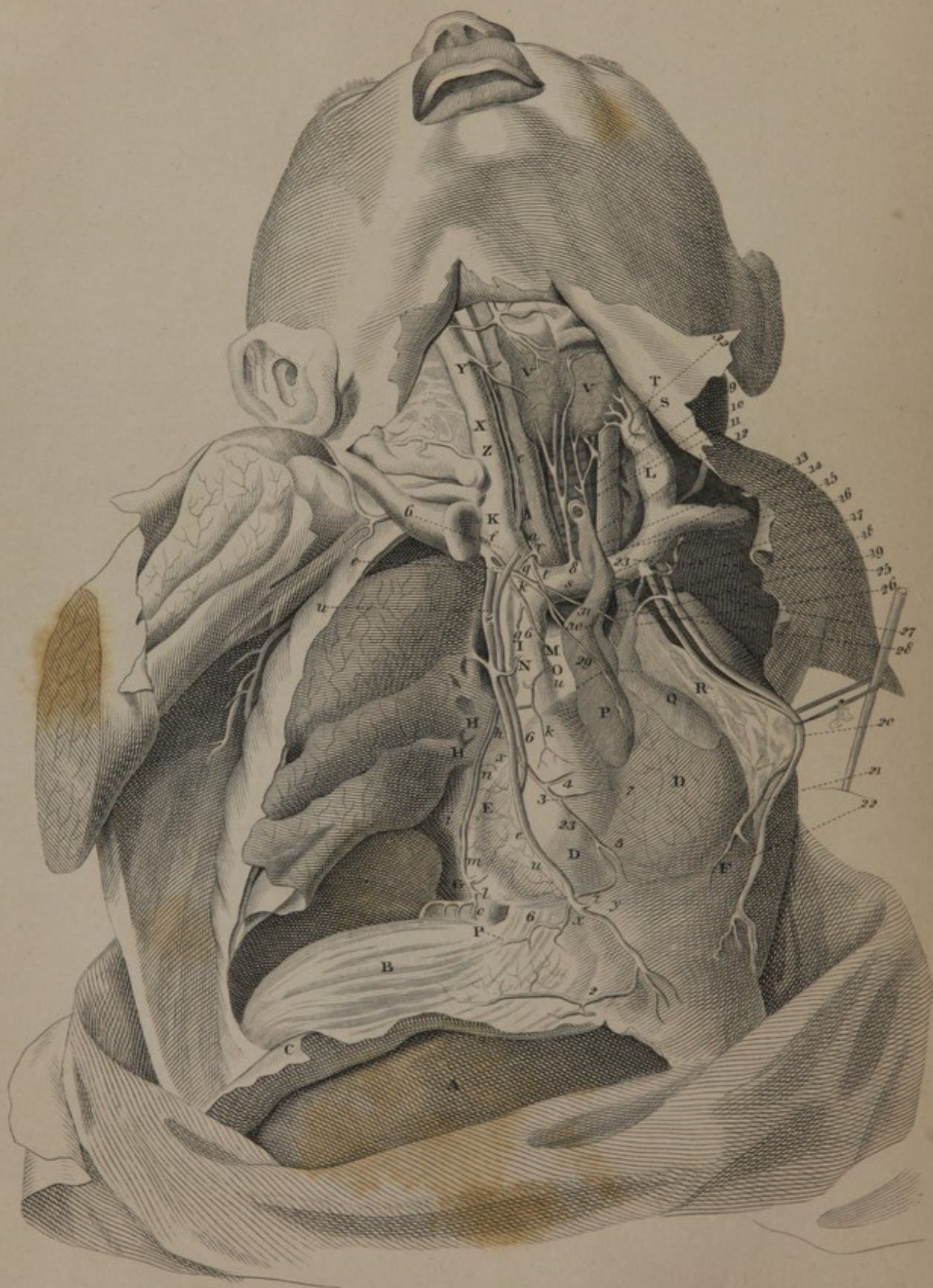
Vessels.

- 1 Posterior iliac artery.
- 2 The branch anastomosing with the internal circumflex.
- 3 Superficial branch of the hæmorrhoidæ.
- 4 An artery from the internal mesenteric to the rectum.
- 5 The trunk of the femoral artery.
- 6 A deep branch.
- 7 Circumflexa interna.
- 8 Anastomosis with a branch of the profunda and posterior iliac.
- 9 Arteria profunda femoris.
- 10 and 11 The first and second perforans.
- 12 Trunk of the profunda.
- 13 Nutritia.
- 14 Trunk of the femoral artery.
- 15 Articular superior externa.
- 16 The internal superior articular artery of the knee.
- 17 The arcos of the articulation of the knee.
- 18 and 19 The internal and external inferior articular artery of the knee.
- 20 Tibialis anterior.
- 21 Nutritia tibiae.
- 22 Peronea postica.
- 23 Nutritia fibulae.
- 24 Posterior tibial.
- 25 The internal plantaris.
- 26 The trunk of the internal plantaris.
- 27 The external plantaris.
- 28 The plantar arch.
- 29 The trunk of the anterior tibialis.
- 30 The anastomosis of the internal and external arteria hallucis.
- 31 The first superior arteria perforans.

Arteries and principal Muscles, on the back part.



Anterior Arteries of the Breast.



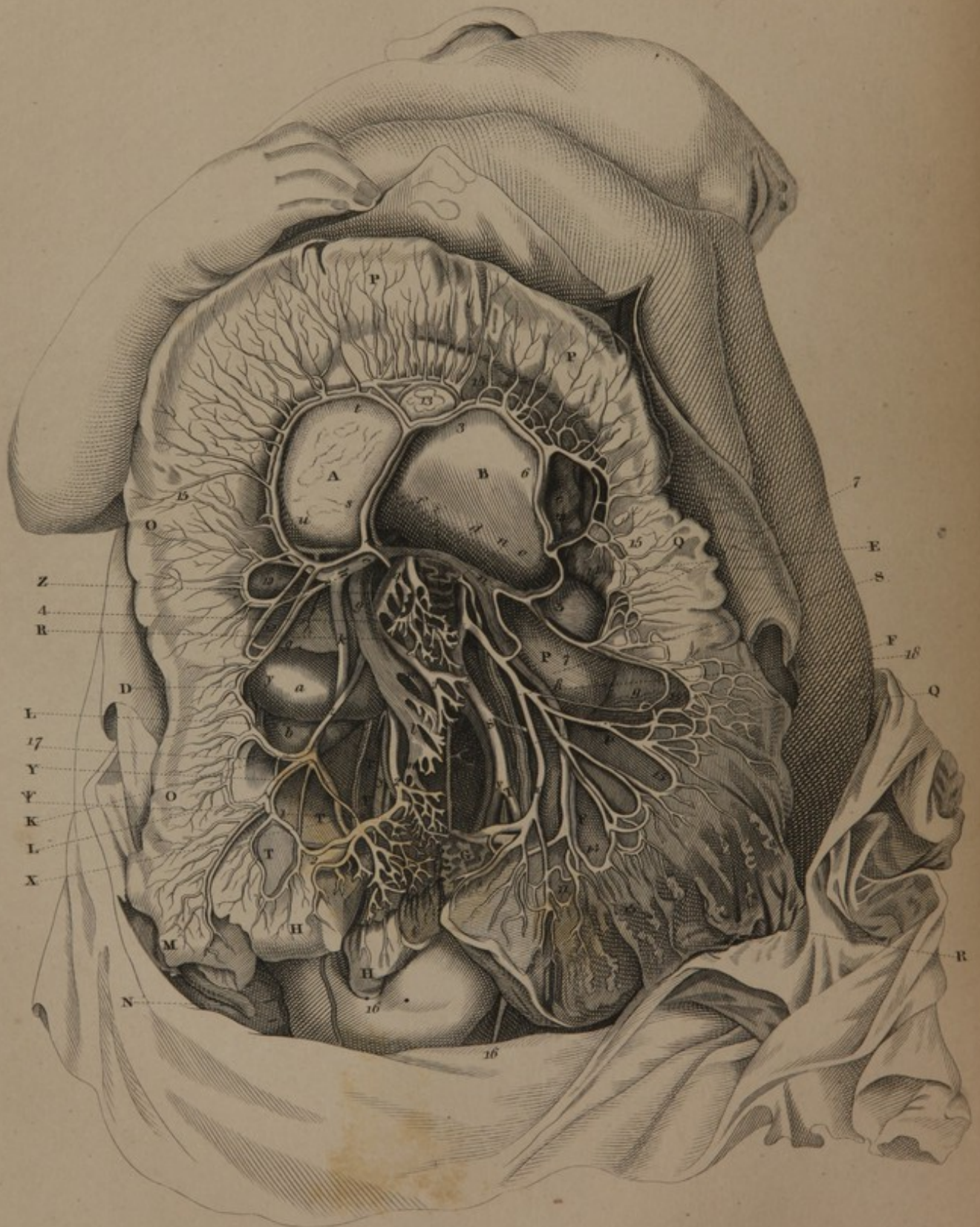
TABLE

OF

ANTERIOR ARTERIES OF THE BREAST.

- A The liver.
- B Right side of the diaphragm.
- C Some part of the muscles of the abdomen.
- D The pericardium, through which the heart is occasionally seen.
- E The right auricle, expressed by dots.
- F The apex of the heart.
- G The vena cava inferior.
- H The right pulmonary veins.
- I The vena cava superior.
- K Its continuation in the right jugular.
- L The left jugular vein.
- M Part of the aorta.
- N The line terminating the pericardium in the vena cava.
- O The line at which it adheres to the aorta.
- P and Q The right and left sides of the thymus.
- R The left lamina of the mediastinum joined to the pericardium.
- S Aspera arteria.
- T Œsophagus.
- V Thyroid gland.
- X The internal jugular vein.
- Y The superior thyroid vein.
- Z The right nerve of the eighth pair.
- a* The common trunk of the right subclavian and carotid.
- b* The right subclavian.
- c* The right carotid.
- d* and *e* The right mammary vein and artery.
- f* The pericardiaco-diaphragmatic branch of the mammary artery.
- g* The branches that go to the pericardium, and the glands that lie on the vena cava.
- h* The branch that accompanies the diaphragmatic nerve.
- i k* The superficial branches that go to the lungs and pericardium.
- l* The branch of the right phrenic artery.
- m* The ascending branch, with the diaphragmatic nerve.
- n* The anastomosis of each artery accompanying the nerve.
- o* The branches of the right phrenic artery to the diaphragm.
- p* Anastomosis of the phrenic, with the mammary, artery.
- q* The right thymic artery.
- y. z* The external or epigastric branch, with the smaller branches to the external teguments of the breast.
- 1. 2 The interior and exterior abdominal branches; viz. epigastricus interior, and musculo phrenica.
- 3 The internal branch of the mammary, or the phrenico-pericardiacus.
- 4. 5 Branches to the mediastinum and pericardium.
- 6 Trunk going out to the diaphragm.
- 7 The anterior coronary arteries.
- 8. 9 and 10 The inferior, right, and left thyroid veins, with the branches to the trachea.
- 11 and 12 Branches to the œsophagus, and right horn of the thymus.
- 13 and 14 Left carotid and subclavian.
- 15 Two branches of the inferior thyroid artery.
- 16 and 17 Left vertebral and mammary arteries.
- 18 The mediastine branch of the mammary which accompanies the phrenic nerve.
- 19 The left thymic branch.
- 20 Division of the left mammary.
- 21 The left phrenico-pericardiac branch.
- 22 The epigastric branch.
- 23 The left subclavian vein.
- 24 The left jugular vein.
- 25 The left mammary artery.
- 26 The left thymic branch.
- 27 A superficial branch.
- 28 The left bronchial vein.
- 29 The thymic branch.
- 30 The mediastine branch.
- 31 The bronchial branch.
- 32 The middle thyroid vein on the left.

Mesenteric Arteries.



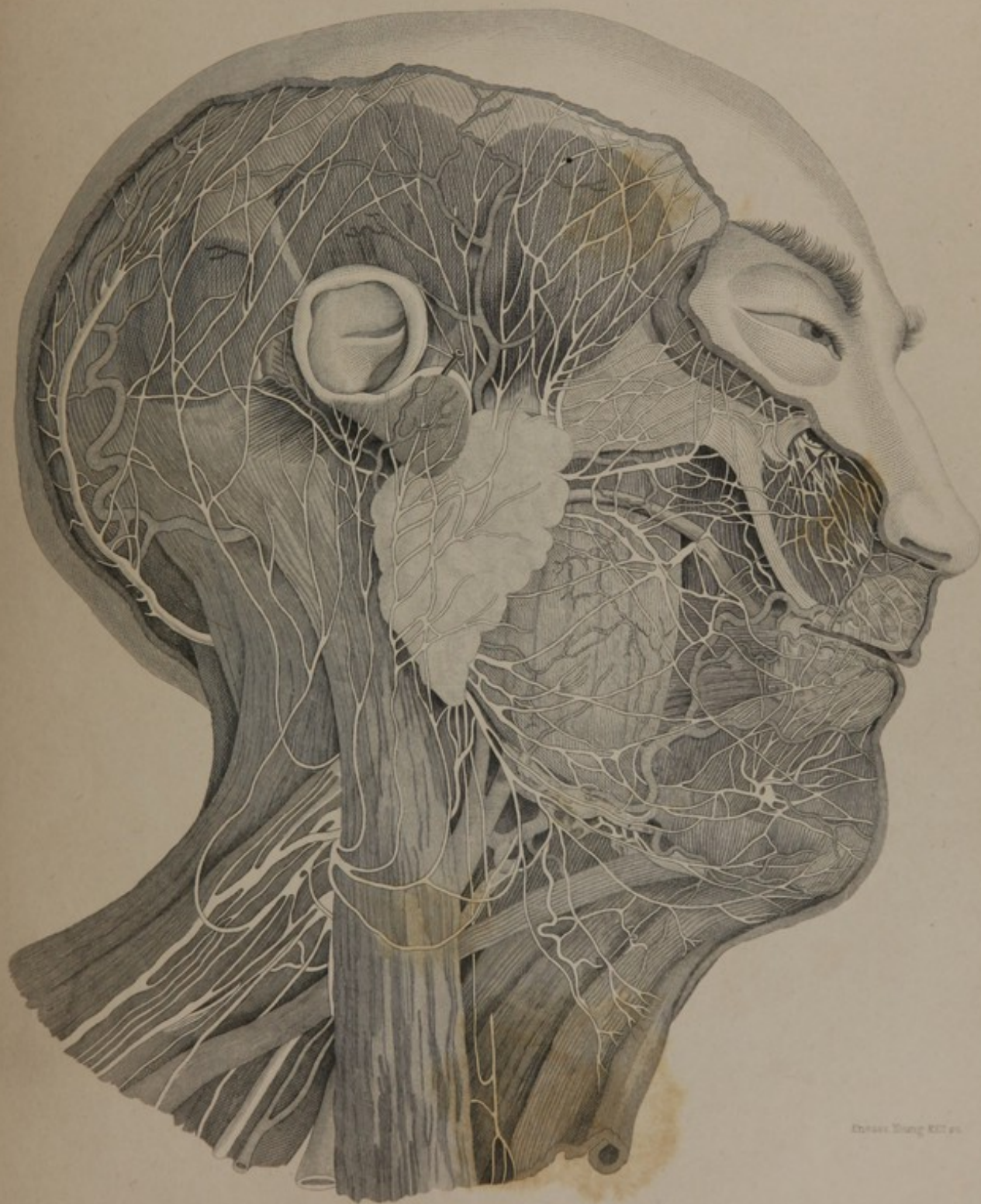
TABLE

OF THE

MESENTERIC ARTERIES.

- A B C The mesocolon entire, bent back to show its root.
- A B C D The situation answering to the liver, stomach, and spleen, respectively.
- D The left side of the mesocolon.
- E Part of the left mesocolon between the spleen and the kidney.
- F The left flexus iliacus of the mesocolon: the membranes between the trunks are destroyed, to show the viscera which it covers.
- G That part of it which descends to the rectum.
- H Part of the ileum.
- I The termination of the mesentery, where it is continued, with the right mesocolon.
- K K The right part of the mesentery; the under vessels between the large ones exposed, that their connection may be understood.
- LL The right mesocolon, treated in the same way.
- M and N The cæcum and appendicula.
- O P Q The right, the transverse, and the left colon.
- R The left flexus iliacus of the colon.
- S The left kidney.
- Θ and Λ The vasa spermatica and vasa adiposa from them.
- R and S *bis*, on the upper part of the plate. The trunk of the aorta, and the iliaca arteria communis.
- T The iliaca arteria externa.
- Φ The last cartilage of the loins.
- V The internal iliac.
- X The vena socia.
- Y Arteria sacra.
- Z The first part of the jejunum, which emerges from under the transverse mesocolon.
- a* The inferior transverse part of the duodenum.
- b* Part of the right kidney.
- c* The right portion, or the head of the pancreas.
- d* The transverse part of the pancreas, lying behind the transverse mesocolon.
- e* The trunk of the vena portæ.
- f* The left coronary vein.
- g* The mesenteric vein.
- h, i* and *k* The gastrocolic, the right colic, and the ileo colic veins, respectively.
- l* The mesenteric vein, arched.
- m* The mesenteric branches cut off.
- n* The internal hæmorrhoidal vein, or the left colic vein.
- o* and *p* The ascending and descending branches.
- q* The superior mesenteric artery.
- r* The middle colic.
- s* The branch which passes into the middle of the transverse mesocolon.
- t* Its right branch which unites with the right colic.
- u* The right colic, making an arch with the former.
- x* and *y* The ileo colic artery, and the arch which it makes with the right colic.
- z* The ramus cæcalis.
- 1 Its arch and anastomosis, with the mesenteric artery.
- 2 The branches of the superior mesenteric artery, and the small intestines.
- 3 The left branch of the middle colic.
- 4 The left colic, or inferior mesenteric artery, with (5) its ascending branch.
- 6 Its union with the middle colic, or the great mesenteric arch.
- 7 Its branches to the left colon.
- 8 The middle trunk of the left colic artery.
- 9 The arch with the ascending branch of the mesocolic.
- 10 The lower branch of the left colic, or the hæmorrhoidalis interna, with the arch (11) which it forms with the former.
- 12, 13 and 14 The secondary or double arches with the right, the middle, and the left, colic arteries.
- 15 Strait branches passing to the intestines from the secondary arches.
- 16 Epigastric arteries.
- 17 and 18 Spermatic vessels and psoas muscle.

View of the Glands, their Ducts, Blood Vessels & Nerves.



*The different parts are here so clearly distinguished by the Engraver that any
 "disturb the plate and scarcely assist the Anatomist."*

LATERAL VIEW OF THE THORACIC, ABDOMINAL, AND PELVIC VISCERA.—PLATE I.

a a b c d e e e e Common integuments.

f f Sternum.

g Right os pubis.

h h h Transverse processes of the dorsal vertebræ.

i i Transverse processes of the lumbar vertebræ.

k k Spinose processes of the dorsal vertebræ.

l l Spinose processes of the lumbar vertebræ.

m n o p Os sacrum.

q Os coccygis.

s s The left lung.

t The lower and anterior part of the pericardium.

u v w x y z a β γ δ ε The diaphragm.

ζ ζ ζ Small intestines.

η η η Colon.

θ Rectum.

ι Left kidney.

λ Prostate gland.

μ Vesicula seminalis.

ν Corpus cavernosum penis.

ξ Vena subclavia.

ο Arteria subclavia.

π π Arteria iliaca sinistra.

ρ ρ Vena iliaca sinistra.

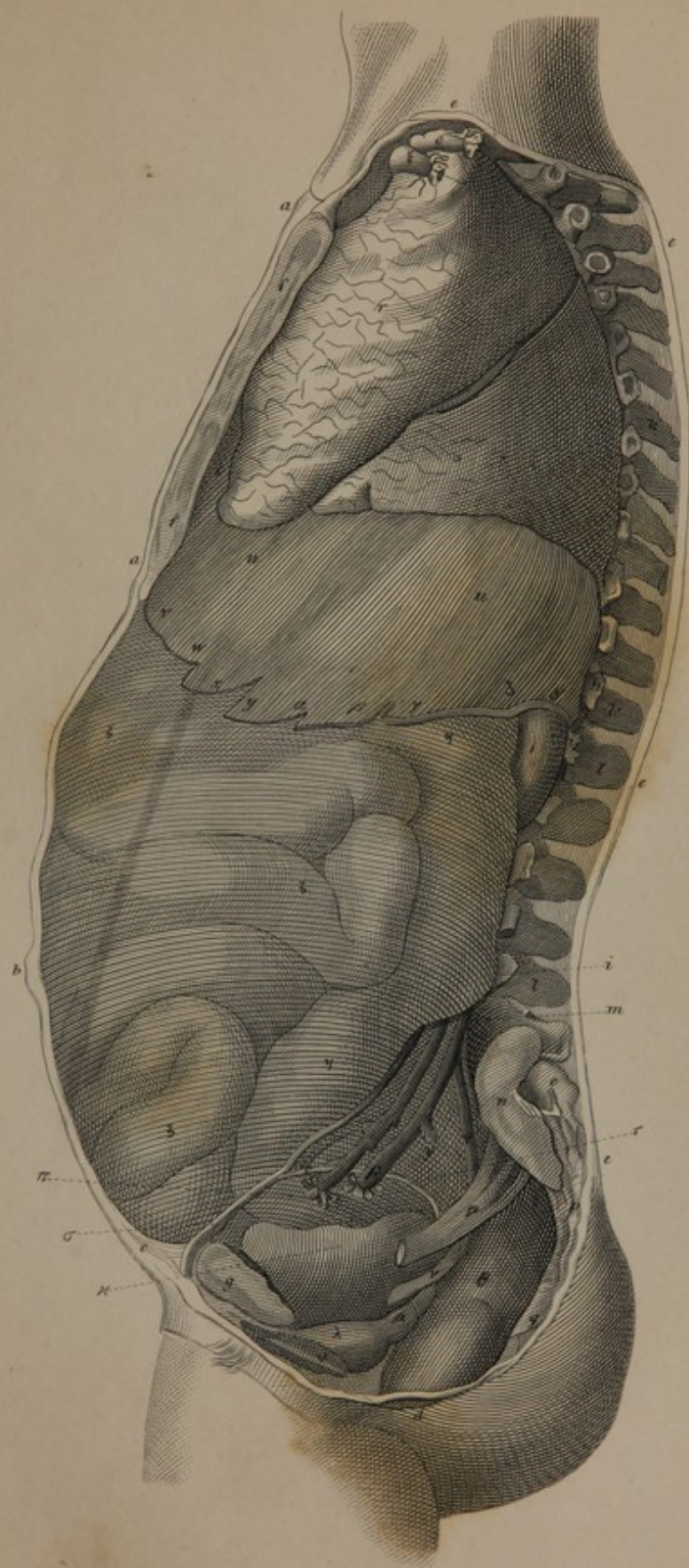
σ σ Vasa spermatica.

τ τ Vas deferens.

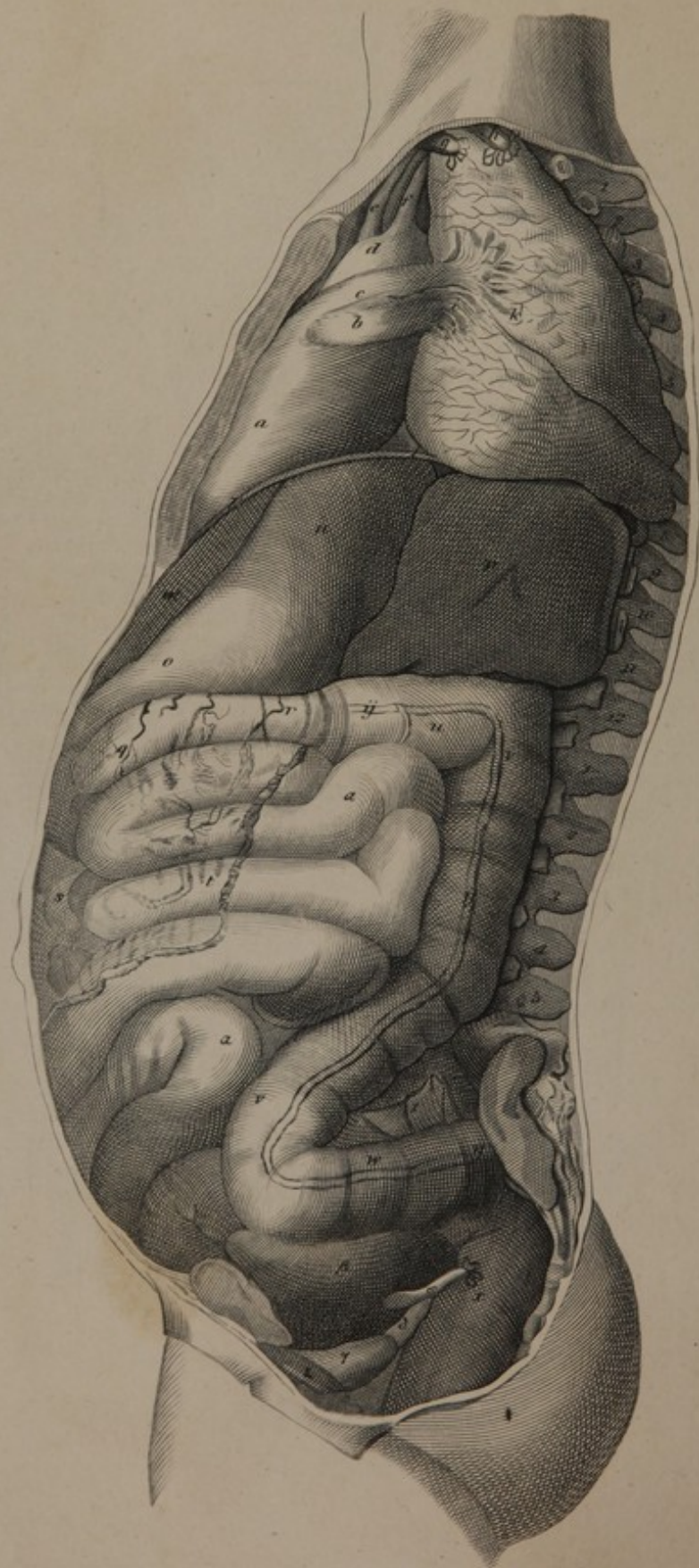
υ υ Ureter.

φ Ischiatic nerve.

Lateral View of the Thoracic, Abdominal and Pelvic Viscera.



Lateral View of the Thoracic Abdominal and Pelvic Viscera



LATERAL VIEW OF THE THORACIC, ABDOMINAL, AND PELVIC
VISCERA.—PLATE II.

a b c Pericardium.
d Arch of the aorta.
e Common trunk of the right carotid and subclavian.
f Left carotid.
g h Subclavian artery and vein.
i One of the pulmonary veins.
k Left lung.
l l Diaphragm.
m Liver on the left side.
n o Stomach.
p Spleen.

q r s t Great omentum.
q r u v v w x Great intestine.
y y y y One of the ligamenta lata.
z Part of the mesocolon.
s t a a Small intestines.
β Bladder.
γ Prostate gland.
δ Vesicula seminalis.
ε Ureter.
ζ Corpus cavernosum.

VIEW OF THE ABDOMINAL VISCERA.

A A B B The omentum.

C C The bottom of the stomach.

D D The liver.

E The suspensory ligament of the liver.

F The fissure made by the umbilical ligament.

G G The colon near its beginning.

H H I I I I The small intestines.

K K The cartilaginous ends of the false ribs cut from their bony parts and turned upwards.

L Inferior coronary vessels of the stomach.

M M Vessels running over the surface of the omentum derived from the inferior coronary vessels of the stomach.

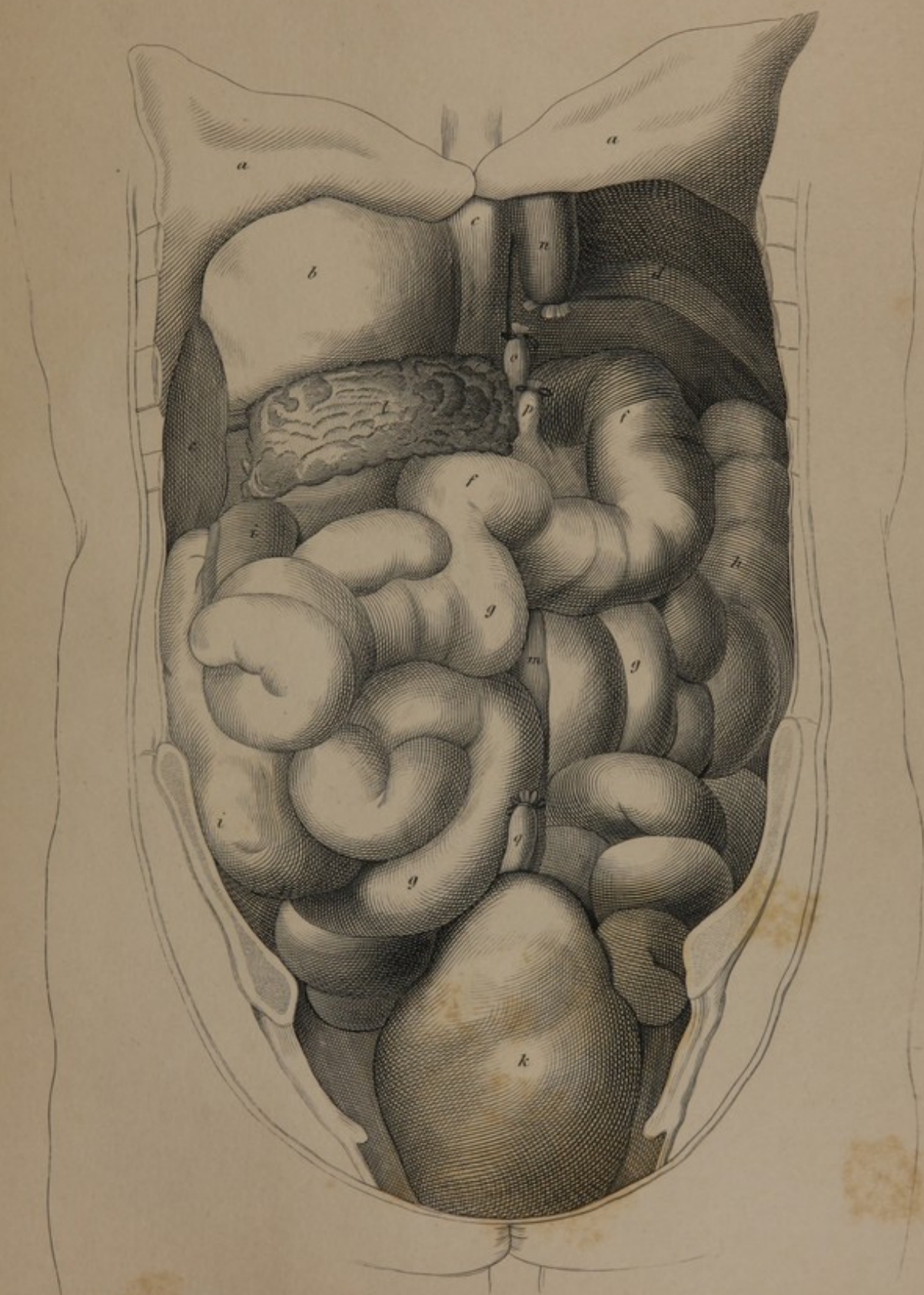
View of the Abdominal Viscera.



POSTERIOR VIEW OF THE ABDOMINAL VISCERA.

- | | |
|--|--|
| <i>a a</i> Posterior part of the diaphragm reflected upward. | <i>h i i k</i> Large intestines. |
| <i>b</i> Œsophagus. | <i>l</i> Pancreas. |
| <i>c c</i> Stomach. | <i>m</i> Part of the mesentery. |
| <i>d</i> Liver. | <i>n</i> Vena cava inferior. |
| <i>e</i> Spleen. | <i>o</i> Arteria cœliaca. |
| <i>f f</i> Duodenum. | <i>p</i> Arteria mesenteria superior. |
| <i>g g g</i> Small intestines. | <i>q</i> Branch of the inferior mesenteric artery. |

Posterior View of the Abdominal Viscera.



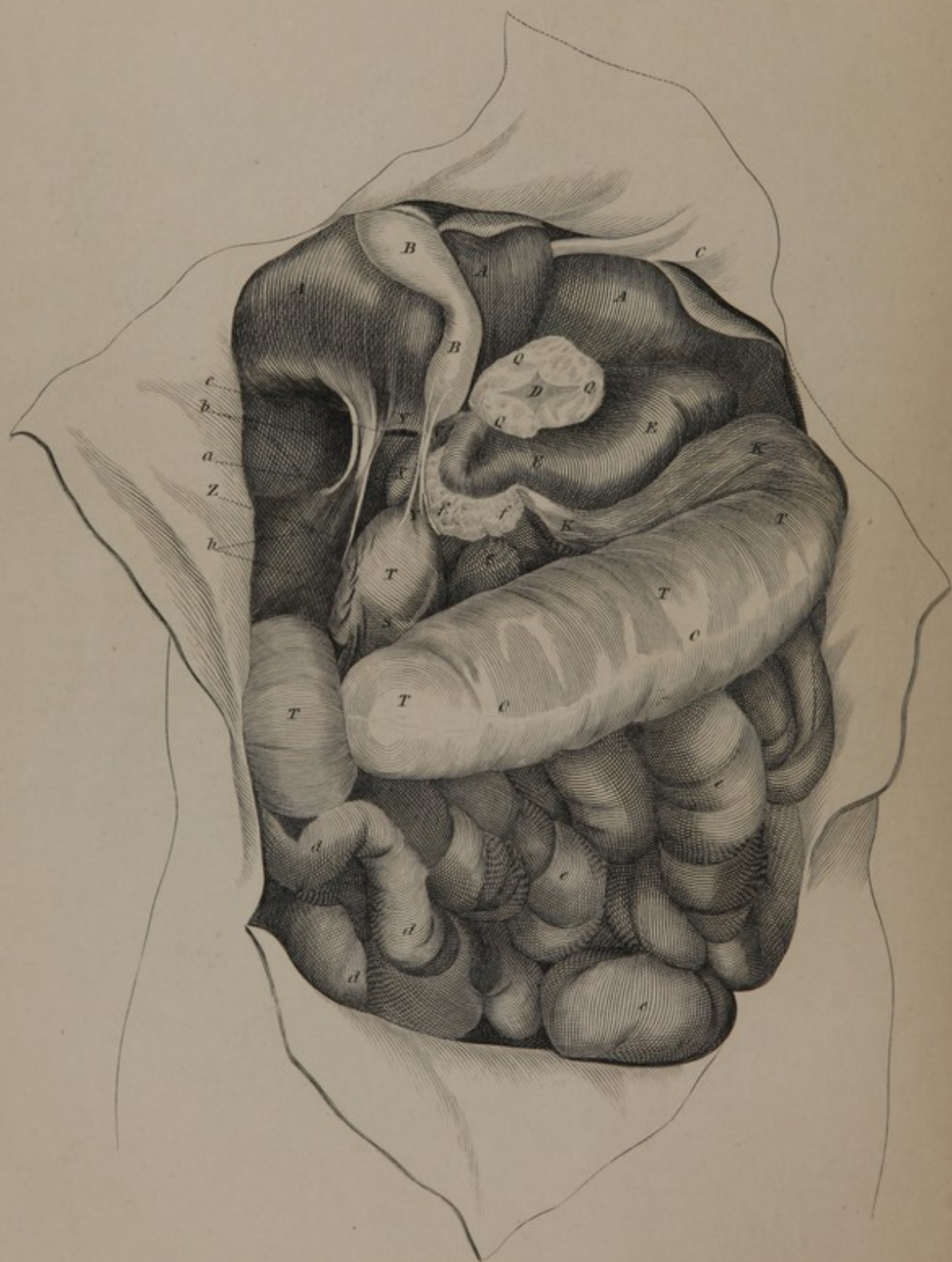
View of the Omentum & the Intestines in their natural State.



A VIEW OF THE OMENTUM AND THE INTESTINES IN THEIR NATURAL STATE.

- A A The hollow part of the liver turned back, so that the inferior part is now the anterior; and the anterior margin the superior.
- B The gall bladder shorter than the liver, as in boys.
- C The umbilical vein and fossa
- D The lobule of Spigelius, whose projection is visible through the omentum.
- E The anterior curvature of the stomach seen through the vesicles of the inflated omentum.
- F The right gastro epiploic artery and vein.
- G The situation of the annulus of the pylorus.
- H The top of the spleen, projecting forward in the cavity of the omentum situated between the stomach and the colon.
- I The ligament which supports the spleen, different from that usually described, not closely attached to the spleen, but moving freely; generally at the upper part of the left, or rather of the transverse, mesocolon; connected with the peritonæum between the tenth and twelfth rib. The omentum is lost in this ligament.
- K The OMENTUM MAJUS or GASTROCOLICUM, terminated anteriorly, and above by the whole curvature of the stomach; posteriorly and below by the greater portion of the transverse colon. In boys it descends only the umbilicus; in adults lower, and in fat persons sometimes to the pubes. It is terminated on the left by the middle of the spleen, which receives the vessels, and by the ligament I; on the right at the line L.
- L The line of separation of the omentum from the mesocolon.
- M The origin of the omentum gastrocolicum from the anterior curvature of the stomach, from which the anterior lamina proceeds.
- N The conglobate glands adjacent to the origin of the omentum.
- O The posterior lamina, or the origin of the great omentum from the colon.
- P The blind termination of the omentum on the right side.
- Q Q Q Q The OMENTUM MINUS of Winslow.
- R OMENTUM COLICUM, a constant appendix of the omentum magnum, which, from the termination of the line L to the termination of the transverse mesocolon, and sometimes farther, proceeds in a double line from the colon only without touching the stomach. It resembles the omentum magnum, equally floating on the intestines, and elegantly terminated by a small lobule.
- S Part of the mesocolon between the right termination of the omentum magnum and the connection of the colon with the duodenum.

Omentum *N^o 2*



OMENTUM.—No. 2.

General appearances as in N^o 1.; but each omentum collapsed, and the colon drawn down, so that the celebrated passage of the omentum is conspicuous.

A A The hollow part of the liver turned back, so that the anterior parts are now above.

B B The gall bladder.

C The umbilical vein.

D The lobule of Spigelius, seen through the omentum minus.

E E The stomach, almost empty, whose lesser curvature the lobulus of Spigelius enters. Its anterior plane surface covers the left lobe of the liver.

G The pylorus, from which the first flexure of the duodenum rises, turning a little backward.

K K The gastro-colic omentum.

O O The line in the colon, from whence the gastro-colicum and colicum proceed.

Q Q Q The lesser omentum.

S S Parts of the mesocolon. At the left (S) part of the second transverse duodenum shines through.

T T T Different parts of the colon.

V The second flexure of the duodenum almost trans-

verse, on which the gall bladder rests.

X The third flexure, or the descending portion, which receives the ductus choledochus.

Y The ligament, or membranes, which pass to the colon, beyond the duodenum, and which serve for its external membrane, adhering to it in some parts.

Z a The hepatic renal ligament, or the duplicature of the peritonæum ascending from the kidney to the liver.

Z Its left termination.

a Its right.

b b The right kidney, covered by the peritonæum.

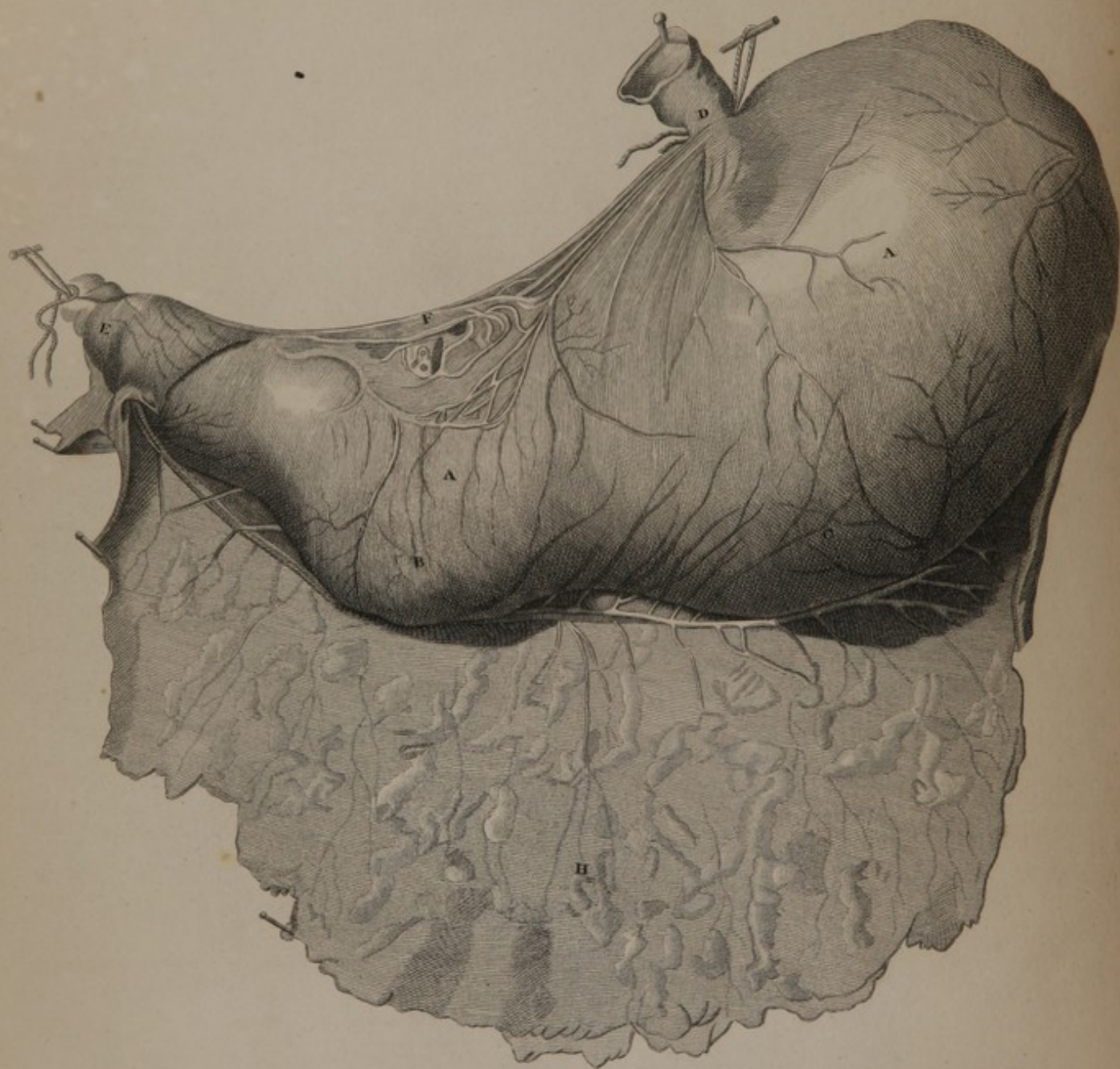
c The celebrated passage of Winslow, between the hepato-colic and the hepato-renal ligaments, then between the lobe of the liver, and the nearest side of the duodenum. The pancreas, drawn aside, renders it lunated, and gives it the appearance of being bent round the liver.

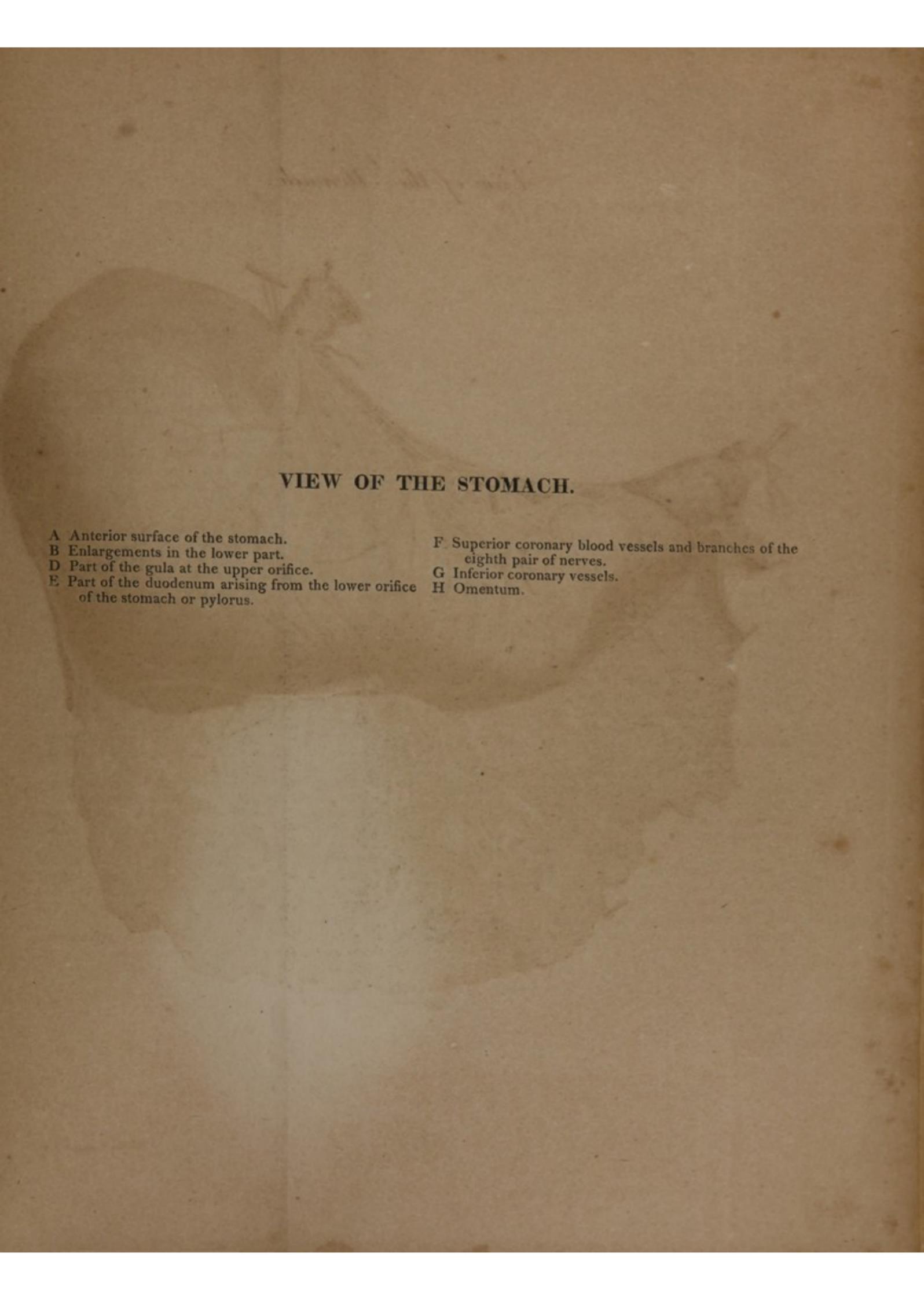
d d The colon with its fatty appendices.

e e The small intestines.

f f Part of the pancreas, which insinuates itself between the flexure of the duodenum.

View of the Stomach.





VIEW OF THE STOMACH.

- | | |
|---|---|
| A Anterior surface of the stomach. | F Superior coronary blood vessels and branches of the |
| B Enlargements in the lower part. | eighth pair of nerves. |
| D Part of the gula at the upper orifice. | G Inferior coronary vessels. |
| E Part of the duodenum arising from the lower orifice | H Omentum. |
| of the stomach or pylorus. | |

LYMPHATICS OF THE LOWER EXTREMITIES.

FIG. 1.

Exhibits the more superficial Lymphatic Vessels of the lower Extremity.

- A The spine of the *os ilium*.
- B The *os pubis*.
- C The iliac artery.
- D The knee.
- E.E.F Branches of the crural artery.
- G The *musculus gastrocnemius*.
- H The *tibia*.
- I The tendon of the *musculus tibialis anticus*.

On the Outlines.

- a A lymphatic vessel belonging to the top of the foot.
- b Its first division into branches.
- c.c.c Other divisions of the same lymphatic vessel.
- d A small lymphatic gland.
- e The lymphatic vessels which lie between the skin and the muscles of the thigh.
- f.f Two lymphatic glands at the upper part of the thigh below the groin.
- g.g Other glands.
- h A lymphatic vessel which passes by the side of those glands without communicating with them; and, bending towards the inside of the groin at (i), opens into the lymphatic gland (k).
- l Lymphatic glands in the groin, which are common to the lymphatic vessels of the genitals and those of the lower extremity.
- m.n A plexus of lymphatic vessels passing on the inside of the iliac artery.

N. B. The lymphatic vessels appear in these plates more regularly cylindrical than they are represented by *Nuck*, *Ruysch*, and others, in whose plates such vessels are painted more like chains of vesicles than I have ever seen them.

FIG. 2.

Exhibits a back View of the Lower Extremity, dissected so as to show the deeper seated Lymphatic Vessels which accompany the Arteries.

N. B. This extremity was dried before the plate was made from it, and the muscles are therefore much shrunk.

- A The *os pubis*.

- B The tuberosity of the *ischium*.
- C That part of the *os ilium* which was articulated with the *os sacrum*.
- D The extremity of the iliac artery appearing above the groin.
- E The knee.
- F.F The two cut surfaces of the *triceps* muscle, which was divided to show the lymphatic vessels that pass through its perforation along with the crural artery.
- G The edge of the *musculus gracilis*.
- H The *gastrocnemius* and *soleus*, much shrunk by being dried, and by the *soleus* being separated from the *tibia* to expose the vessels.
- I The heel.
- K The sole of the foot.
- L The superficial lymphatic vessels passing over the knee, to get to the thigh.

On the Outlines.

- M The posterior tibial artery.
- a A lymphatic vessel accompanying the posterior tibial artery.
- b The same vessel crossing the artery.
- c A small lymphatic gland, through which this deep seated lymphatic vessel passes.
- d The lymphatic vessel passing under a small part of the *soleus* which is left attached to the bone, the rest being removed.
- e The lymphatic vessel crossing the popliteal artery.
- f.g.h Lymphatic glands in the ham, through which the lymphatic vessel passes.
- i The lymphatic vessel passing with the crural artery through the perforation of the *triceps* muscle.
- k The lymphatic vessel, after it has passed the perforation of the *triceps*, dividing into branches which embrace the artery (l).
- m A lymphatic gland belonging to the deep seated lymphatic vessel. At this place those vessels pass to the fore part of the groin, where they communicate with the superficial lymphatic vessels.
- n A part of the superficial lymphatic vessels appearing on the brim of the *pelvis*.

Lymphatics of the Lower Extremities

Fig. I.

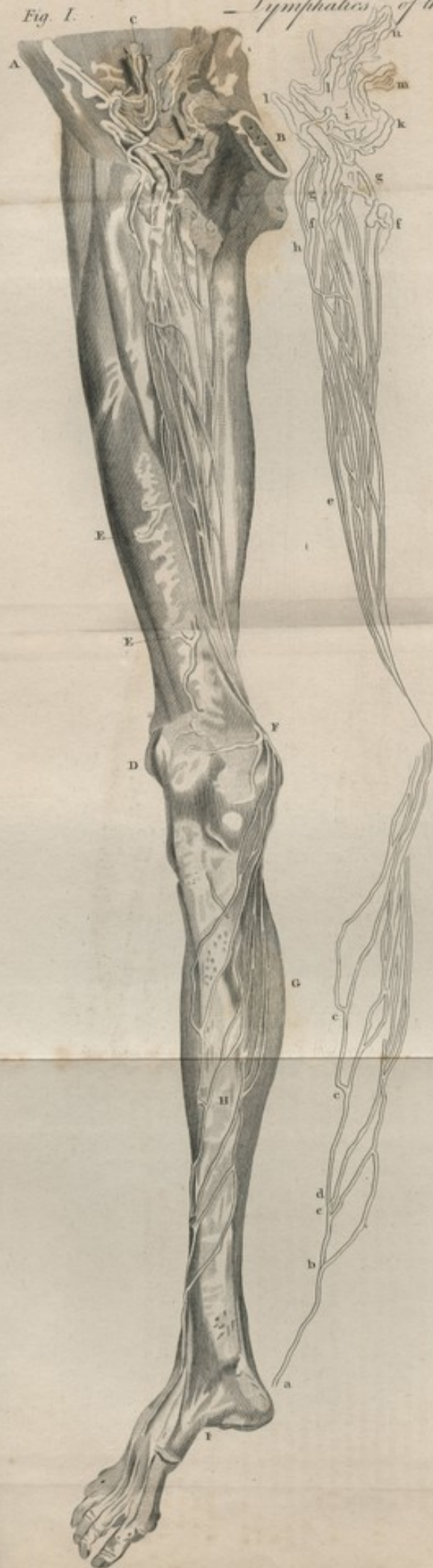


Fig. II.

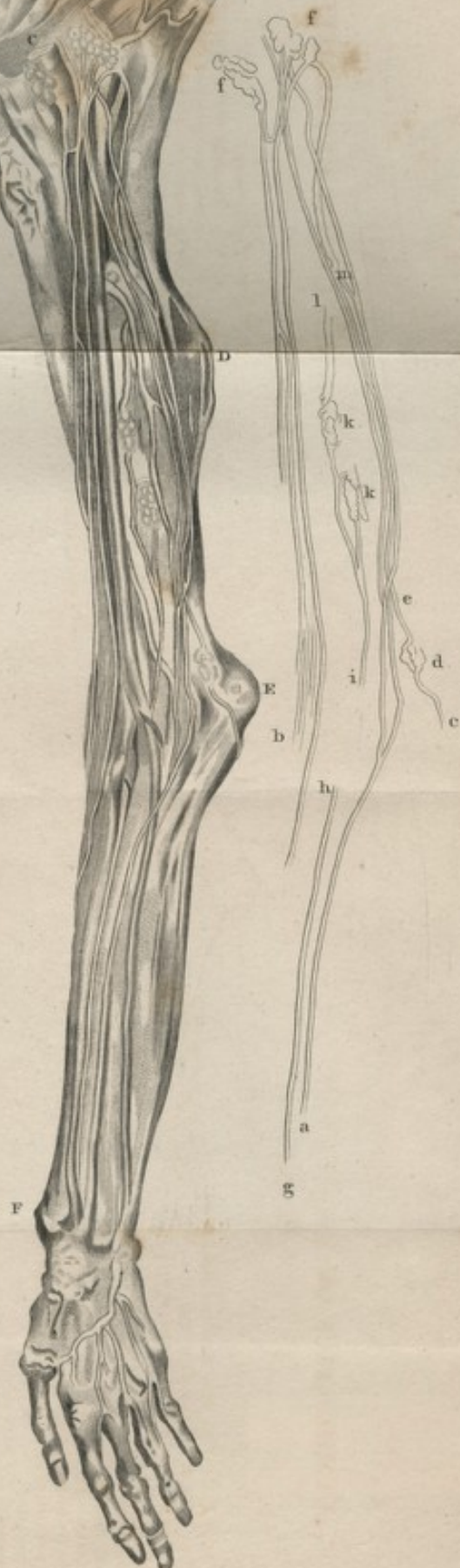


Lymphatics of the upper Extremities

Fig. I.



Fig. II.



LYMPHATICS OF THE UPPER EXTREMITIES.

FIG. 1.

Exhibits a back View of the fore Arm and Hand. The Preparation from which this View was taken having been previously dried, the Muscles appear very slender.

- A The hand.
- B The lower extremity of the *radius*.
- C The lower extremity of the *ulna*.
- D The muscles on the back of the fore arm turned aside to exhibit a deep seated lymphatic vessel, which perforates the interosseous ligament to get to the fore part.
- E The *olecranon*.

On the Outlines.

- a.a.a Lymphatics appearing on the back of the fore arm immediately under the skin.
- b Some of the lymphatics bending over the upper extremity of the *radius* to get to the fore part of the arm.
- c A lymphatic passing over the *ulna*, immediately under the *olecranon*, and under the inner condyle of the *os humeri*, to get to the fore part of the arm.
- d A lymphatic which has penetrated the muscles, perforates the interosseous ligament, and passes to the fore part of the arm near the radial artery.

FIG. 2.

Exhibits a fore View of the Upper Extremity. This Plate was likewise made from a dried Preparation, and the muscles therefore appear very small. It has a Peculiarity in the ulnar Artery running over the Muscles instead of under them.

- A The *scapula*.

- B The clavicle.
- C The extremity of the brachial artery.
- D The muscles lying on the inside of the arm.
- E The inner condyle of the *os humeri*.
- F The lower extremity of the *radius*.

On the Outlines.

- a A lymphatic vessel which lies in the cellular membrane immediately under the skin, and passes up on the inside of the arm to the axillary glands.
- b Superficial lymphatic vessels passing over the muscles from the back of the fore arm, and likewise over the *biceps* to the glands in the *axilla*.
- c A superficial lymphatic from the back of the fore arm.
- d A gland through which it passes.
- e The lymphatics from the anterior and the posterior part of the fore arm uniting.
- f.f Lymphatic glands in the *axilla*.
- g A deeper seated lymphatic vessel lying close to the radial artery which it accompanies all the way to (h).
- h The deep seated lymphatic vessel passing under the interosseous and ulnar arteries, and appearing again on the arm at (i).
- i The deep seated lymphatic vessel lying close to the brachial artery.
- k.k Two small lymphatic glands through which it passes.
- l The same vessels now become much larger, and passing under a branch of the artery and some cellular membrane, appearing at (m).
- m The trunk of the deep seated lymphatic vessels passing upwards to the *axilla*, where it enters the glands, f.f.
- f.f Three axillary glands, which are common both to the superficial and the deep seated lymphatic vessels.

ABSORBENTS.

PLATE I.

FIG. 1.

A portion of skin where it is covered with hair. The sanguineous vessels surrounding each hair, where it passes out of the skin, and forming, as it were, a little elevated circle.

FIG. 2.

Large lymphatic vessel laid open longitudinally to show its valves.

FIG. 3.

Magnified view of the internal surface of the jejunum after a successful injection.

FIG. 4.

External view of a lymphatic gland.
a A lymphatic vessel entering the gland.
b Two lymphatic vessels passing out.

FIG. 5.

Portion of jejunum, with its mesentery, from a person who died shortly after eating, and whose lacteals were filled with chyle.

a a Portion of jejunum.

b b Mesentery.

c Trunk of the superior mesenteric artery.

d Trunk of the mesenteric vein.

e e e Three mesenteric glands.

FIG. 6.

Internal appearance of a lymphatic gland.

FIG. 7.

Internal surface of the colon magnified.

FIG. 8.

The external appearance of a lymphatic trunk.

FIG. 9.

Part of the peritoneum of a man into whose abdominal cavity a black liquid had been injected, when the peritoneum appeared to be every where covered with black spots, from which vessels of rather a large size proceeded, forming a net-work; the black spots themselves, viewed in a microscope, plainly consisted of the smallest vessels filled with a black injection.

Fig. 1.

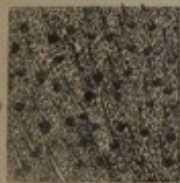


Fig. 2.



Fig. 3.



Fig. 4.



Fig. 6.



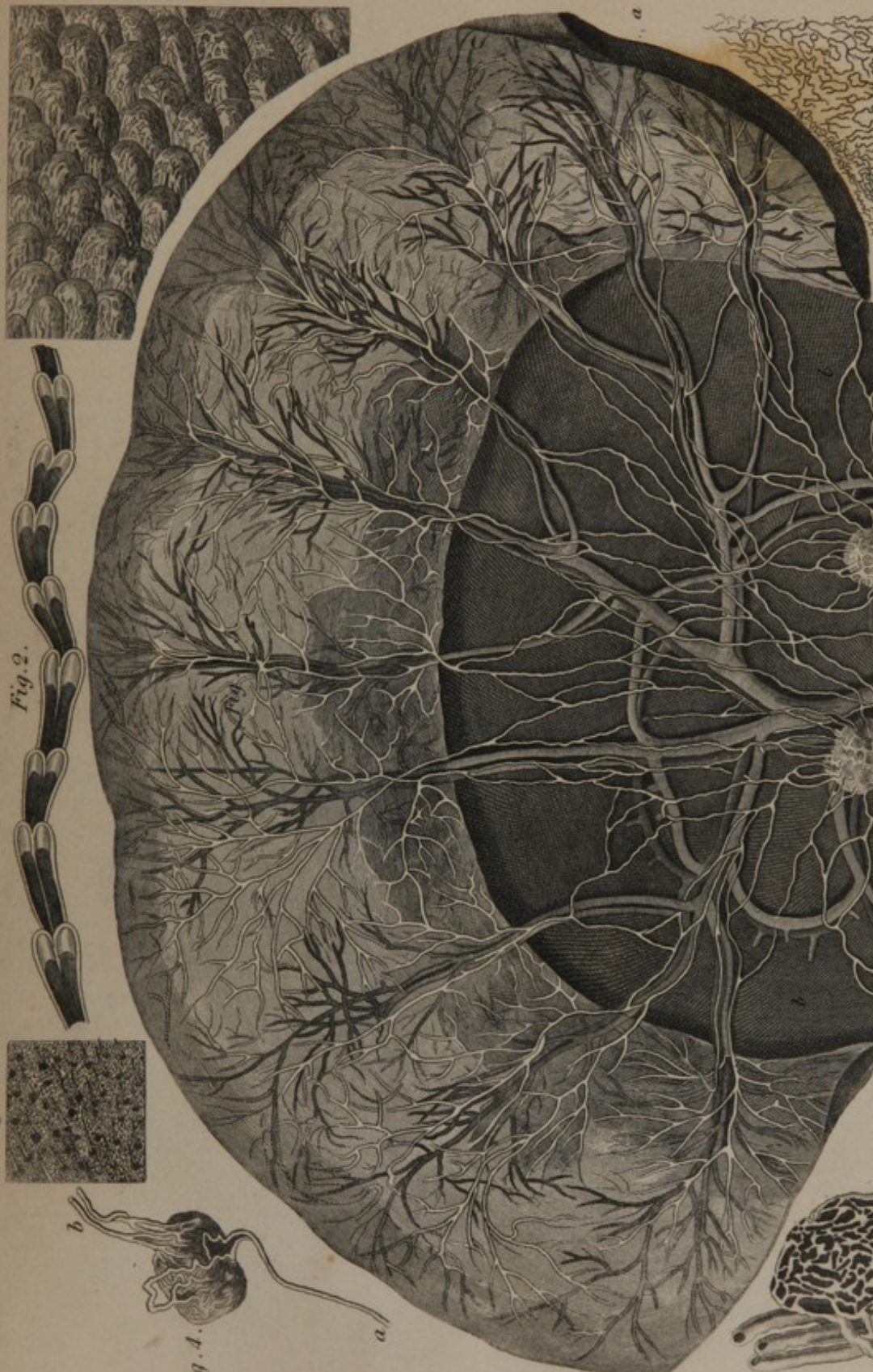
Fig. 7.



Fig. 8.



Fig. 9.



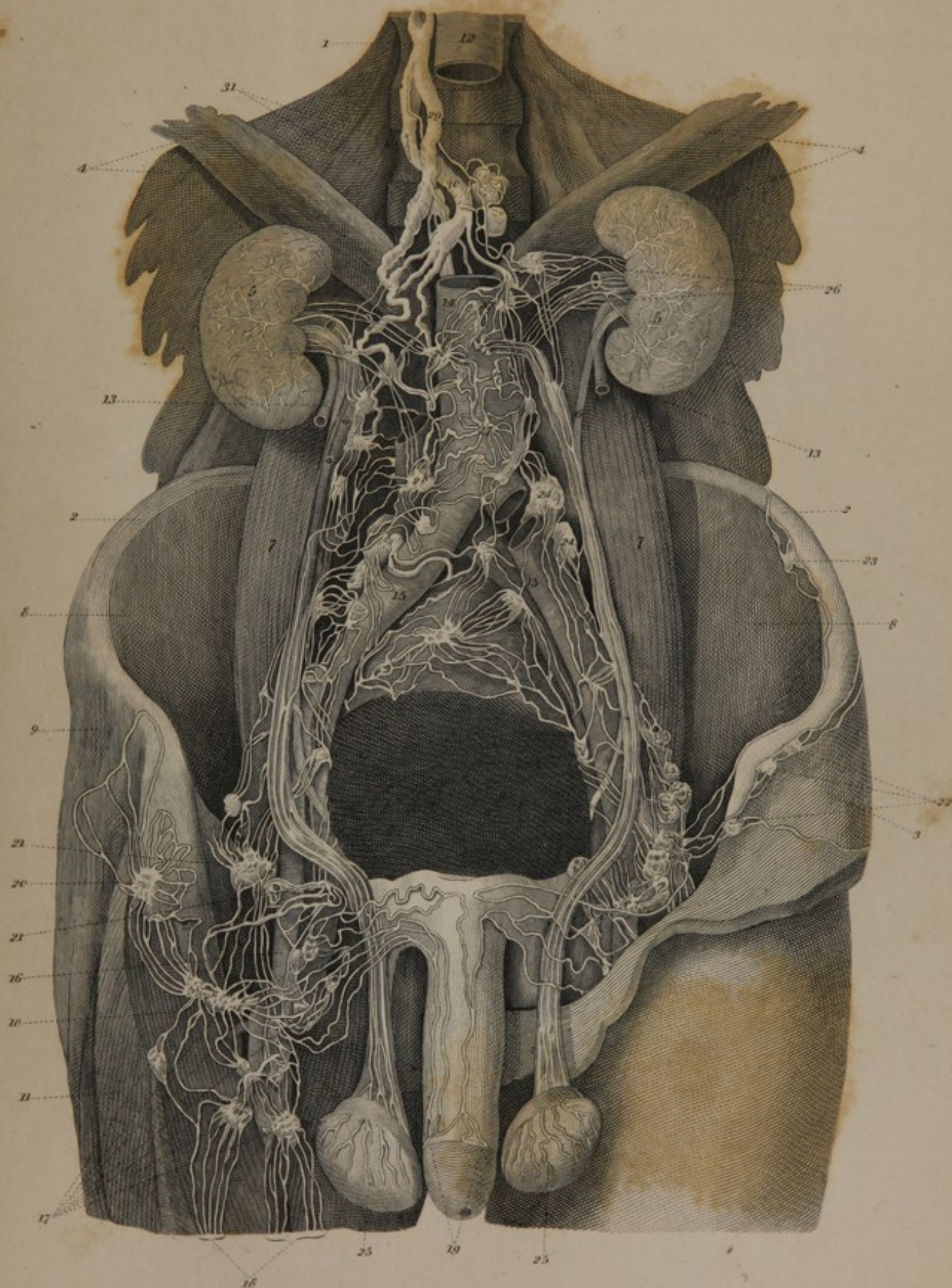
ABSORBENTS.

DEEP SEATED LYMPHATICS OF THE ABDOMEN.

PLATE II.

- 1 Last vertebra of the back.
- 2 2 Crista of the ilium.
- 3 Integuments and abdominal muscles turned back.
- 4 4 Diaphragm turned back.
- 5 5 Kidneys.
- 6 Ureters.
- 7 Psoas muscle on each side.
- 8 Internal iliac muscles.
- 9 Tensor vaginæ femoris.
- 10 Sartorius.
- 11 Rectus cruris.
- 12 Aorta cut off.
- 13 Emulgent arteries.
- 14 Lower portion of the aorta.
- 15 Common iliac trunks.
- 16 External iliac.
- 17 Inguinal glands.
- 18 Superficial lymphatic trunks from the lower limb, terminating in the inferior inguinal glands.
- 19 Branches on the dorsum of the penis terminating in the inguinal glands.
- 20 Superior inguinal glands.
- 21 Glands lying under Poupart's ligament.
- 22 Three glands which receive the lymphatics from the peritoneum and abdominal muscles.
- 23 Gland lying upon the crista of the ilium.
- 24 Glands lying between the trunk of the common iliac and the psoas muscle.
- 25 25 The testicles; the lymphatics are seen on their surface, afterwards passing up the spermatic cord, and terminating on the left side chiefly in the glands marked 27, on the right side chiefly in the glands marked 28.
- 26 Glands lying on the outside of the aorta near the left kidney.
- 27 Glands lying upon the aorta.
- 28 Glands lying between the aorta and vena cava.
- 29 A great trunk formed by the junction of several of the larger trunks coming from the glands behind the cava and the glands between the cava and aorta; this trunk uniting with another large trunk above the last vertebra of the back, forms the commencement of the thoracic duct.
- 30 The other great trunk which, uniting with the preceding one, forms the thoracic duct.
- 31 A third great trunk coming from the glands behind the aorta.

Absorbents. View of the deep seated Lymphatics of the Abdomen &c.



LYMPHATIC VESSELS AND GLANDS ON THE PALMAR SIDE OF THE UPPER EXTREMITY.—PLATE III.

FIG. 1.

- 1 Clavicle.
- 2 Deltoid muscle.
- 3 Pectoralis major.
- 4 Latissimus dorsi.
- 5 Teres major.
- 6 Subscapularis.
- 7 Brachial nerve.
- 8 Brachial artery.
- 9 Axillary vein.
- 10 Basilic vein.
- 11 Cephalic vein.
- 12 Radial artery.
- 13 Ulnar artery.
- 14 14 Lymphatic trunks, with their branches proceeding from the fingers.
- 15 15 Lymphatic branches from the external surface of the arm, coming round its radial side.
- 16 Lymphatic branches coming from the external surface of the arm, but passing round on the ulnar side.
- 17 Two glands laying near the bend of the elbow.
- 18 Axillary glands; into which the trunks coming from the fingers and arms enter.

FIG. 2.

Lymphatic Vessels and Glands of the Thorax.

- 1 Integuments.
- 2 Concave surface of the right lung.
- 3 Concave surface of the left lung.
- 4 Right lobe of the liver.
- 5 Portion of the right side of the diaphragm turned back.
- 6 Left side of the diaphragm covered by pleura.
- 7 Thyroid gland.
- 8 Thyroid cartilage.
- 9 Cryoid cartilage.
- 10 Trachea.
- 11 11 Right and left bronchia.
- 12 12 Esophagus.
- 13 13 Pulmonary arteries cut off where they enter the lungs.
- 14 Aorta cut off.
- 15 Right subclavian.
- 16 Right carotid.
- 17 Left carotid.
- 18 Vena cava inferior cut off.
- 19 Right subclavian.

- 20 20 Thoracic duct.
- 21 Sterno-cleido-mastoidei muscles.
- 22 22 Anterior aico-thyroidei muscles.
- 23 23 Hyo-thyroidei muscles.
- 24 24 24 Pulmonary veins.
- 25 Left subclavian.
- 26 Internal jugular vein.
- 27 External jugular vein.

In this plate the lymphatic vessels and their glands are so accurately laid down, and their connections and relative situations so instantly seen on inspection, as to render references to them unnecessary.

FIG. 3.

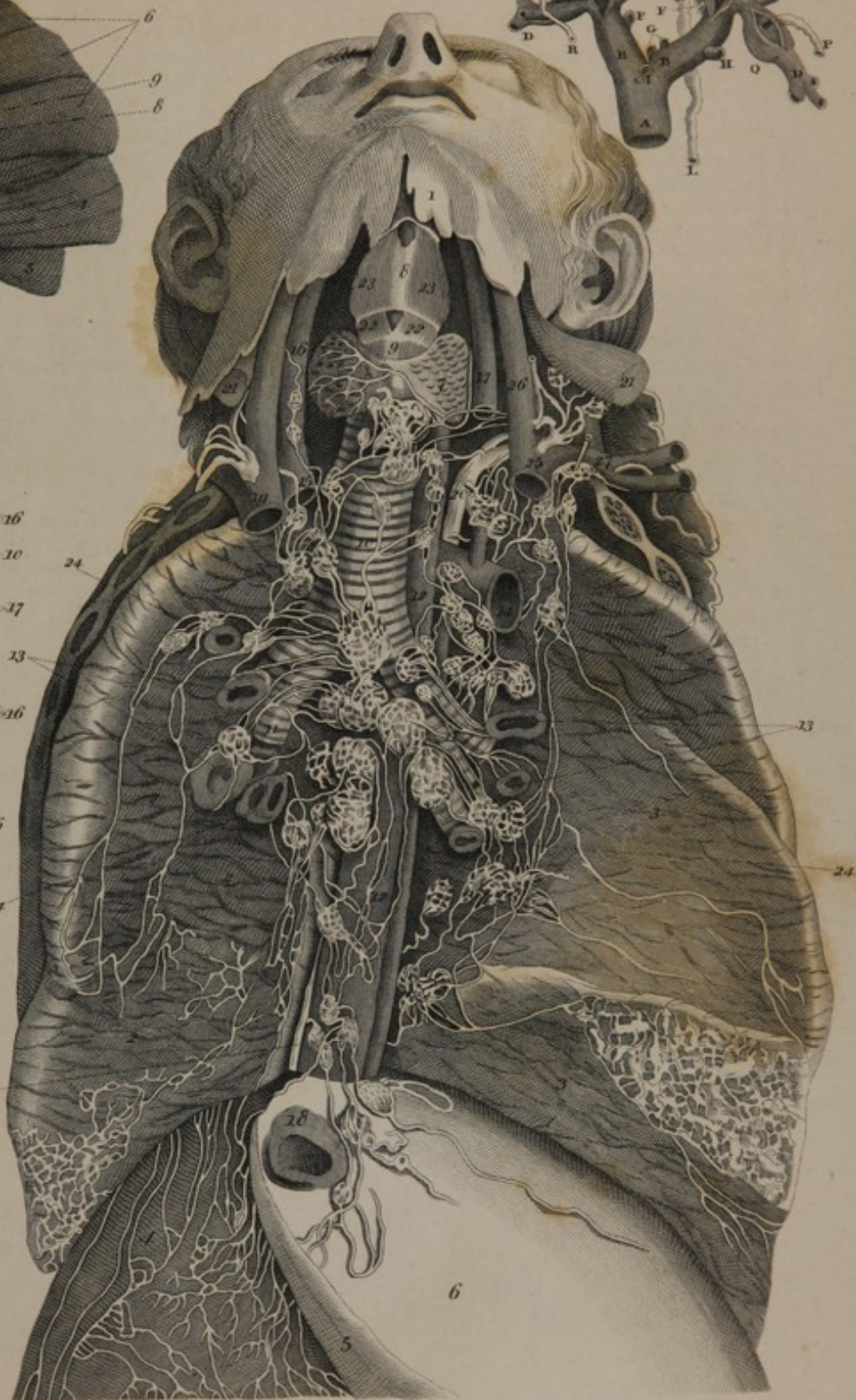
Termination of the Lymphatic System in the great Veins of the Neck.

- A Vena cava superior cut off.
- B B Subclavian veins.
- C C Internal jugular veins.
- D D Axillary veins.
- E E E External jugulars.
- F F Vertebral veins.
- G G Inferior thyroid veins.
- H A trunk common to the left mammary and appendix of the azygos vein.
- I Right mammary vein.
- L L Thoracic duct.
- M Enlargement of the thoracic duct near its termination.
- N Lymphatic trunks which proceed from the inferior gland of the neck cut off.
- O Opening of the thoracic duct furnished with a double valve.
- P A trunk opening into the left subclavian vein, which collects lymphatics from the glands, lying about the axillary vessels of the left side.
- Q The opening of this trunk furnished with a single valve.
- R A trunk formed by a conflux of vessels from the glands, lying about the right axillary vessels, which is joined by the trunk S, coming from the inferior glands of the neck, and after that by another trunk, T, also coming from the inferior glands of the neck; these, forming a common trunk, open into the angle of the right jugular and subclavian veins.
- V The opening of this trunk furnished with one valve.

Fig. 1.



Fig. 2.



Absorbents of the upper part of the Body.



Engraved by Kneass, Young & Co. Philad.

ABSORBENTS OF THE UPPER PART OF THE BODY.

- 1 Integuments dissected and thrown back.
- 2 2 The sternum with the cartilages of the ribs of the left side turned towards the right side.
- 3 3 3 Cartilages of the left ribs attached to the sternum.
- 4 4 The cut surfaces of the cartilages of the left ribs attached to the ribs.
- 5 Coracoid process.
- 6 Zygomatic process.
- 7 The condyle of the lower jaw.
- 8 The left breast dissected from the pectoral muscle, and turned back.
- 9 Pectoralis major.
- 10 Pectoralis minor.
- 11 Deltoides.
- 12 Short head of the biceps.
- 13 Long head of the same muscle.
- 14 Subscapularis.
- 15 Trapezius.
- 16 Masseter.
- 17 Temporal muscle.
- 18 Frontalis.
- 19 Occipitalis.
- 20 Orbicularis palpebrarum.
- 21 Compressor narium.
- 22 Levator labii superioris alæque nasi.
- 23 Zygomaticus major.
- 24 Depressor anguli oris.
- 25 Depressor labii inferioris.
- 26 The ear turned forward.
- 27 Thyroid cartilage.
- 28 Cricoid cartilage.
- 29 Base of the os hyoides.
- 30 Trachea.
- 31 Thyroid gland.
- 32 Œsophagus.
- 33 Submaxillary gland.
- 34 Parotid gland and duct going to the mouth.
- 35 Pericardium.
- 36 Heart.
- 37 Branches of the coronary arteries and veins.
- 38 Right auricle.
- 39 Left auricle.
- 40 Pulmonary artery running behind the aorta.
- 41 Aorta.
- 42 Arch of the aorta.
- 43 Right subclavian artery.
- 44 Left carotid artery.
- 45 Left subclavian artery.
- 46 Occipital artery.
- 47 Temporal artery.
- 48 Part of the vena cava superior contained within the pericardium.
- 49 Division of the superior cava.
- 50 The right subclavian vein.
- 51 The left subclavian vein.
- 52 Inferior thyroid vein.
- 53 Junction of the left subclavian and internal jugular veins.
- 54 Part of the plexus of brachial nerves.
- 55 Thoracic duct.
- 56 Lymphatic glands situated in the lower part of the anterior mediastinum, of which the lowermost receive the lymphatic vessels coming from the diaphragm, from which first glands the vessels are again seen passing to the next glands: one of these glands lies close to the pericardium.
- 57 A lymphatic vessel arising from the forementioned glands, and going to glands lying about the superior cava. This trunk receives branches from the pericardium and mediastinum.
- 59 Trunks coming from the glands, N° 58, which, running along the right subclavian vein, enter the inferior glands of the neck.
- 60 Axillary glands.
- 61 Lymphatic vessels from the superior part of the arm going to the axillary glands.
- 62 Two lymphatic trunks from the superior axillary glands, which empty themselves into the subclavian vein, just before its junction with the internal jugular.
- 63 A large lymphatic trunk, receiving chiefly the trunks from the glands about the superior and posterior part of the neck, and terminating in the thoracic duct just before its entrance into the veins.

View of the Uterus



VIEW OF THE UTERUS.

- | | |
|--|--------------------------------------|
| A Fundus uteri. | G The broad ligaments of the uterus. |
| B Left Fallopian tube with its foliated expansion. | H The round ligaments. |
| C The ovaria. | I The neck of the uterus. |
| D Blood vessels. | K The vagina. |
| E Right Fallopian tube. | L The mouth of the uterus. |
| F Blood vessels of the ovaria. | |

Gravid uterus at the full period.



GRAVID UTERUS AT THE FULL PERIOD.

- a* The great veins of the womb, to which, internally, the placenta was attached.
- b* Other large veins leading to the same part.
- c* Uterine arteries, to the left of which, in the centre of the tumour, is the part opposite the navel of the mother.

The os pubis, on each side, is cut through, near its union with the os ilium, and a small branch of each ischium divided, near its conjunction with

the os pubis. By this means, the whole contents of the pelvis are seen. The meatus urinarius is very conspicuous. Immediately below it is the beginning of the vagina, and below the transverse shaded line is the inner stratum of the sphincter ani. The round ligaments, the ovaria, the Fallopian tubes, and the group of spermatic vessels approaching, on each side, the womb, need not be particularly pointed out.

THE SITUATION OF THE FŒTUS IN UTERO.

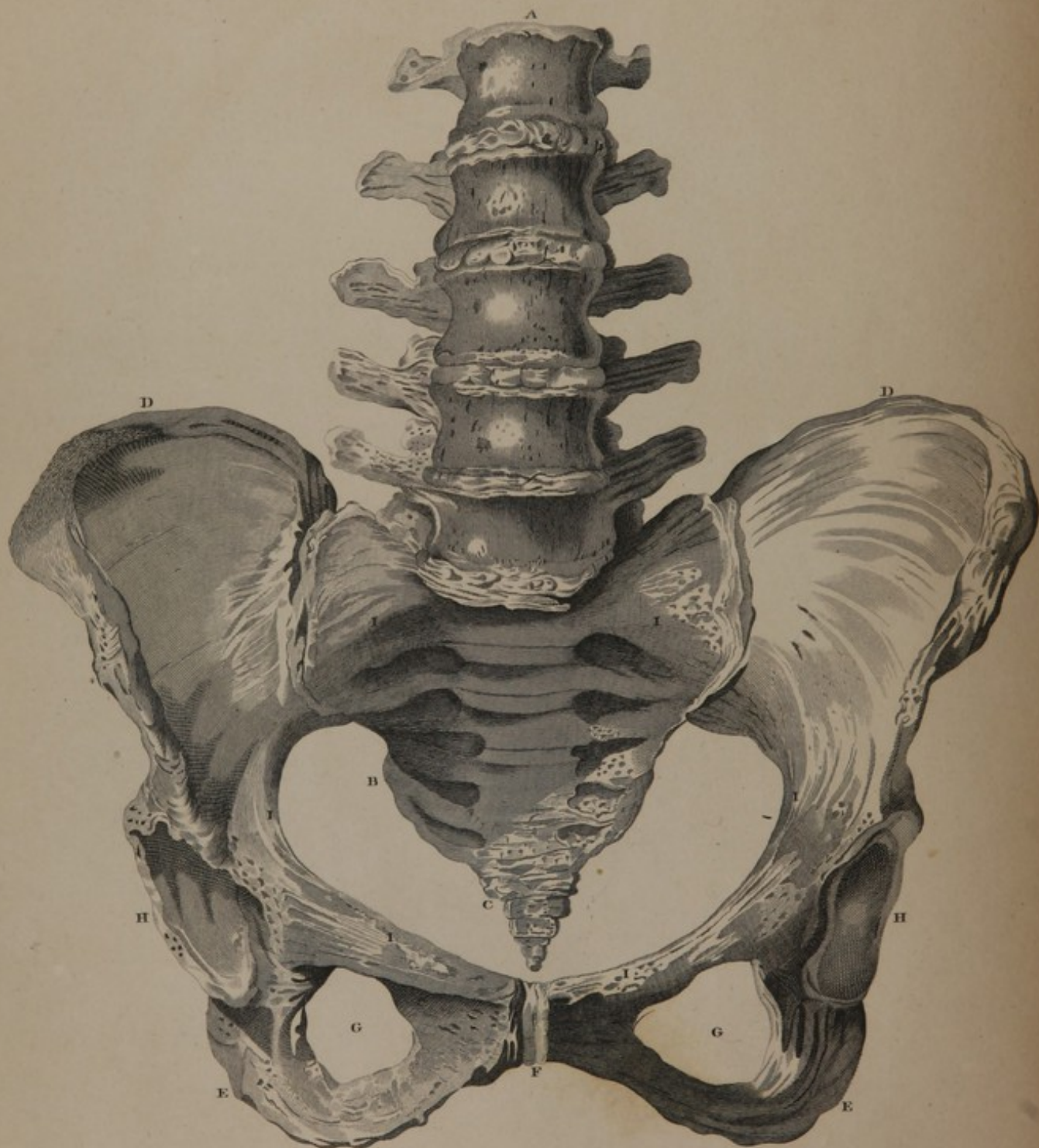
- a* The fundus uteri.
- b* The membranes cut through.
- c* The intestines pushed by the distending uterus, on one side.
- On each side of the uterus, at the greatest distance from it, are the Fallopian tubes. The projecting

body nearest the uterus, on the left side, is the left ovary, and the tumour, on its lower part, the corpus luteum. Between *b* and *d* the lobulated appearance of the placenta may be observed. The letters were omitted to prevent disfiguring the plate.

The Situation of the Fetus in Utero.



Front View of the Bones of a well formed Pelvis.



FRONT VIEW, THE BONES OF A WELL FORMED PELVIS.

- A The five vertebræ of the loins.
- B The os sacrum.
- C The os coccygis.
- D D The ossa ilia.
- E E The ossa ischia.
- F The ossa pubis.
- G The foramina magna.
- H H The acetabula.
- I I I I I The brim of the pelvis, or that circumference of its cavity, which is described at the sides by the inferior part of the ossa ilia, and at the back and fore parts by the superior parts of the ossa pubis and the os sacrum.

In this Table, besides the general structure and figure of the several bones, the dimensions of the brim of the pelvis, and the distance between the under part of the ossa ischia, are particularly to be attended to; from which it will appear that the cavity of the brim is commonly wider from side to side, than from the back to the fore part, but that the sides below are in the contrary proportion. The reader, however, ought not from this to conclude, that every pelvis is similar in figure and dimensions, since even well formed ones differ in some degree from each other. In general, the brim of the pelvis measures about five inches and a quarter from side to side, and four inches and a quarter from the back to the fore part; there being likewise the same distance between the inferior parts of the ossa ischia. All these measures, however, must be understood as taken from the skeleton; for, in the subject, the cavity of the pelvis is considerably diminished by soft parts. Corresponding also to this diminution, the usual dimensions of the head of the full grown fœtus are but three inches and a half from ear to ear, and four inches and a quarter from the fore to the hind head.

AN EXTRAORDINARY THORACIC DUCT,

Introduced in this place to show its situation, and the size discovered in this subject. It differs only from the duct in its usual state by the size, and the serpentine form; an appearance found in the arteries, during the systole of the heart, which it also represents.

It is seen in situ, with the more immediately surrounding parts.

The spine is cleaned by dissection, and dried; in consequence of which the intervertebral substances are shrunk, perhaps to one twelfth of their original thickness.

The aorta, vena azygos, and lower portion of the left internal jugular vein, with that portion of the left subclavian vein which forms a right angle with it, are seen as half distended with coarse injection, and dried. The property of coarse injection is, that it loses little or nothing of its original fluid bulk by becoming solid, or even by drying.

The thoracic duct is seen under the same circumstances as the last mentioned vessels; particularly as little more than half distended with the injection; but we were so long in doubting and examining, that, by the time we began to inject this vessel, it could not bear force, and we were fearful of losing it by bursting it.

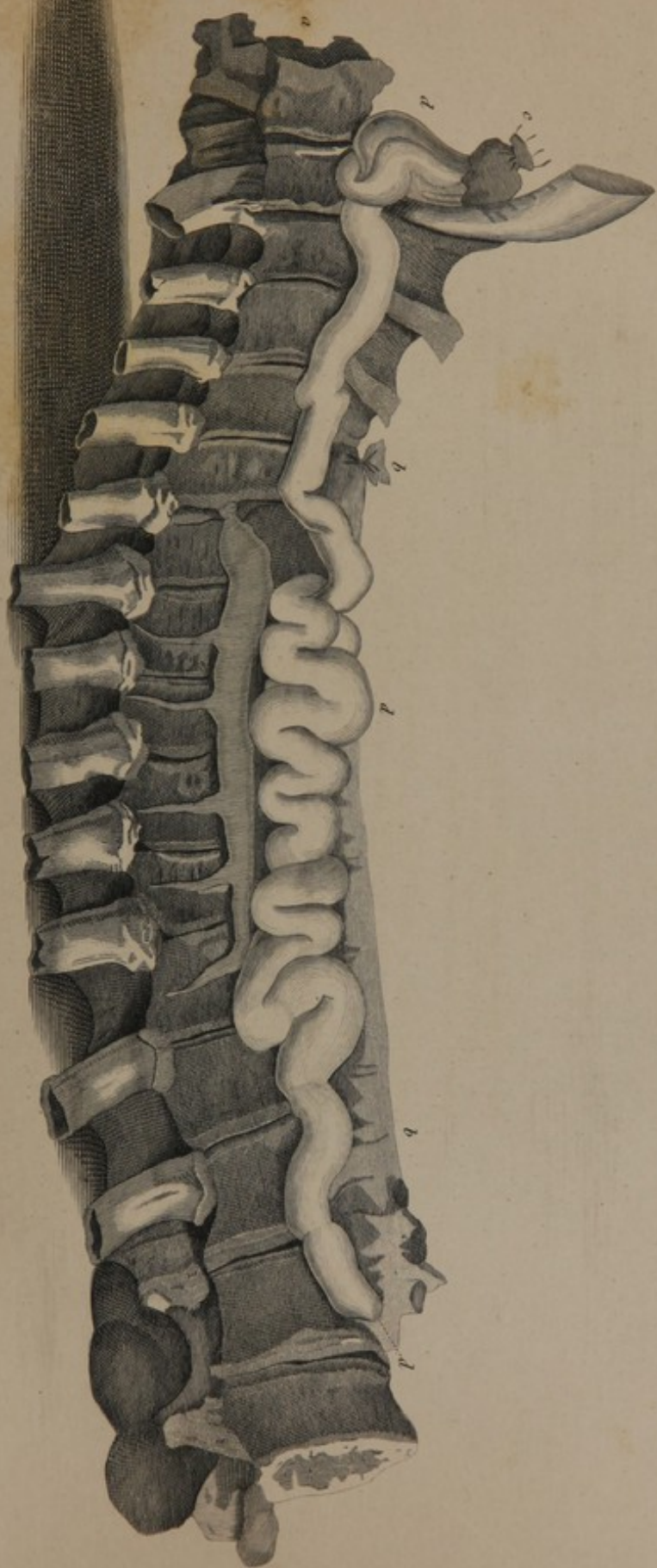
a The spine, as above described.

b.b The aorta, as above described.

c The jugular vein, forming an angle with the subclavian, under the circumstances above described.

d.d.d The thoracic duct, as above described.

An Extraordinary Shower-Drum



VERTICAL SECTION OF THE BRAIN MADE THROUGH ITS MIDDLE.

FIG. 1.

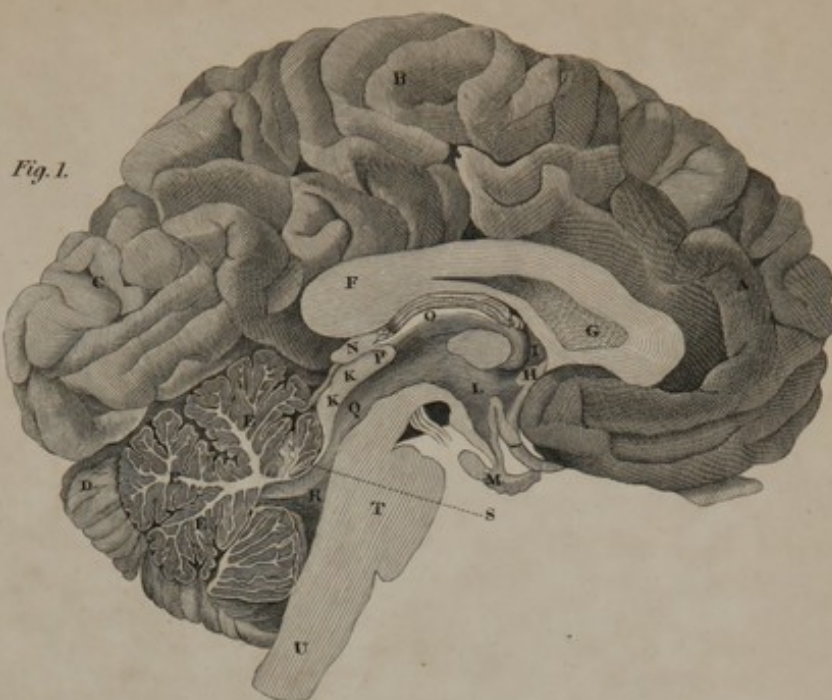
- A Anterior lobe of the cerebrum.
- B Middle lobe.
- C Posterior lobe.
- D Cerebellum.
- E E E An appearance which the medullary part of the cerebellum in this section makes, called cerebri vita.
- F Corpus callosum.
- G Septum lucidum.
- H Anterior commissure.
- I Foramen commune anterius.
- K Tubercula quadrigemina.
- L Iter ad infundibulum.
- M Pituitary gland.
- N Pineal gland.
- O Pedunculi of the pineal gland.
- P Commissura posterior.
- Q Iter ad quartum ventriculum.
- R Quartus ventriculus.
- S Valvula vieussenii.
- T Tuber annulare.
- U Medulla oblongata.

FIG. 2.

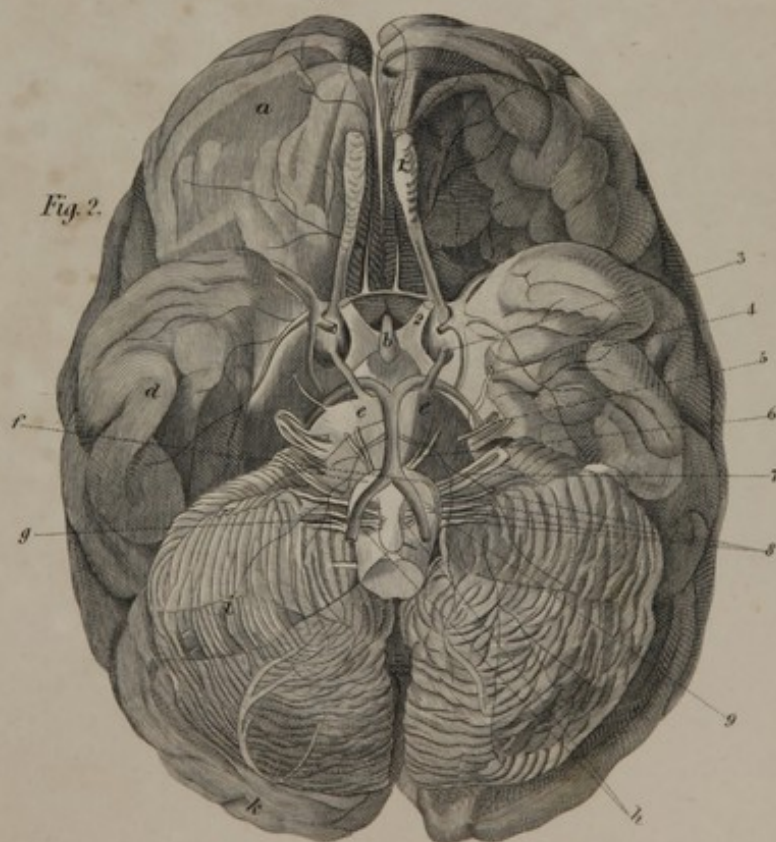
View of the base of the Brain.

- 1 First pair of nerves, or olfactory.
 - 2 Second pair, or optic.
 - 3 Third pair, or motores oculorum.
 - 4 Fourth pair, or trochleares.
 - 5 Fifth pair, or trigemini.
 - 6 Sixth pair of nerves.
 - 7 Seventh pair, or auditory nerves.
 - 8 Eighth pair.
 - 9 Ninth pair, or laryngeal nerve.
 - a Anterior lobe of the brain.
 - b Infundibulum.
 - c Corpora albicantia.
 - d Middle lobe of the brain.
 - e Pons varolii.
 - f Corpora pyramidalia.
 - g Corpora olivaria.
 - h Medulla oblongata.
 - i Cerebellum.
 - k Posterior lobe of the cerebrum.
- The arteries at the base of the brain are obvious on inspection, and only introduced to show their situation and connection.

Vertical Section of the Brain.



Base of the Brain.



Views of the Eye. N^o. 1.

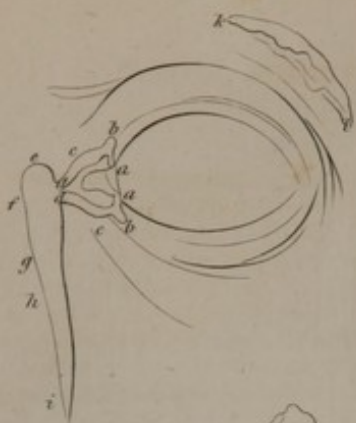


Fig. 1.

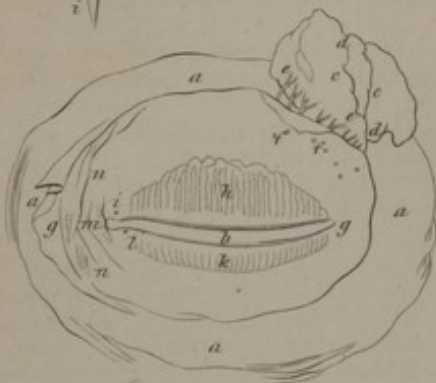
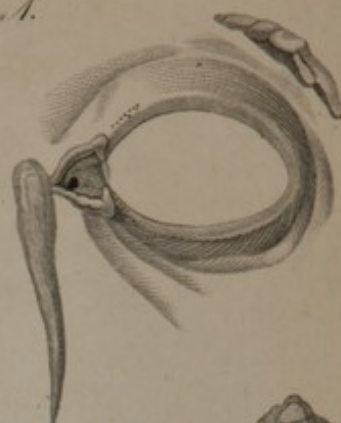


Fig. 2.

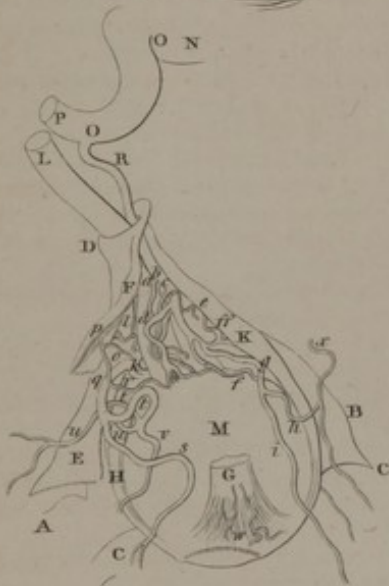


Fig. 3.



Fig. 4.



VIEWS OF THE EYE.—NUMBER I.

FIGURE 1.

- a b c d* The superior and inferior lachrymal canal, or the parts of the lachrymal duct belonging to the eye lids.
a The mouth of this canal, beginning at the punctum lachrymale.
b Its blind portion.
c Continuation of the canal.
d Its termination in the lachrymal sac.
e f g The lachrymal sac.
e The blind portion of the sac.
f Its middle part.
g Its termination.
h i The nasal portion of the lachrymal duct.
i The lower mouth, or termination of the lachrymal duct.

FIG. 2.

- The eye lids of an adult on the right side separated, and their posterior surface exposed to view, also the lachrymal gland, which, being turned a little forwards, has its anterior point covered by the membrana conjunctiva.
 In the natural situation of the parts this is the lower surface of the lachrymal glands.
a Part of the sphincter muscle of the eye lids on the inside, or that side which is turned towards the bone.
b The chink of the eye lids.
c The lachrymal gland from below, so that its small part is covered by the membrana conjunctiva.
d Division of the lachrymal gland into two principal lobes.
e Excretory ducts of the lachrymal gland.
f The little mouths of these ducts in the membrana conjunctiva.
g The membrana conjunctiva which lines the eye lids. That part which is remarkable for its loose and folded appearance is the lap which has been separated from the bulb.
h The sebaceous glands of the upper eye lid shining through the membrana conjunctiva.
i The superior punctum lachrymale, that is, the mouth of the superior lachrymal duct.
k Sebaceous glands of the lower eye lid shining through the membrana conjunctiva.
l The inferior punctum lachrymale, viz. the mouth of the inferior lachrymal duct.
m The caruncle.
n The semilunar fold which was turned back with the membrana conjunctiva separated from the bulb.

FIG. 3.

Shows the distribution of the left ophthalmic artery as it occurs when the muscles, together with the bulb,

- are kept in their places, excepting the levator of the upper eye lid, and the musculus rectus superior.
A B C D The orbit.
A The inside of the left orbit.
B Its outside.
C C Its lower margin.
D The canal of the optic nerve filled with the nerve and cellular membrane.
E The levator palpebræ superioris dissected and laid back.
F G The musculus rectus superior oculi, whose posterior part, *F*, is dissected and laid back; *G* is its anterior part.
H Musculus rectus internus oculi.
K Musculus rectus externus oculi.
L The optic nerve, which is shown in this plate entirely bare.
M The bulb of the eye.
N O P The carotid artery. *N*, The part of this artery contained in the petrous portion of the temporal bone. *N O*, Part of it in the cellular sinus. *P*, Part which properly belongs to the brain.
Q The ophthalmic artery arising from the carotid.
Q R Its curvature, which is always found just after its commencement.
R The place where it goes to the outside of the optic nerve. Its principal branches are,
a The first long ciliary artery.
b Two other ciliary arteries.
c The artery of the lachrymal gland. This is divided into
d The ciliary branch, which goes off from the inside of this artery into
e The muscular branch, more delicate for the musculus rectus externus, and into
f A branch which goes below the bulb to the musculus obliquus inferior.
ff A larger muscular branch for the musculus rectus externus.
g h The division of the little trunk of the artery of the lachrymal gland into the branch (*h*), which anastomoses with a twig of the internal maxillary artery (*x*): also into
i The branch which is distributed over the lachrymal gland and upper eye lid.
k The continuation of the ophthalmic artery, which comes out transversely under the optic nerve.
l The branch which is divided into the twig for the musculus obliquus superior, as appears from the following figure (*m*), and into the branch for the levator palpebræ superioris.
o fi A branch of the same artery, which divides into a twig for the musculus rectus superior, and into
g The ciliary twig.

VIEWS OF THE EYE.—NUMBER 1.

r A double branch for the musculus rectus inferior.

The trunk of the ophthalmic artery while it bends round in a serpentine manner, sends out

s Arteria frontalis.

t t The artery for the musculus rectus internus, which for the most part surrounds its flesh.

u The anterior artery of the nose, or the arteria anterior ethmoidea

v The arteria trochlearis inferior.

w The anterior branch of the artery dissected (*n*), which runs out into the musculus rectus superior.

x A twig of the arteria temporalis profunda, arising from the internal maxillary artery.

FIG. 4.

A continuation of the former figure, so as to expose at one view the whole distribution of the branches of the ophthalmic artery, the bulb of the eye being removed.

A The inner wall of the left orbit.

B Its outer wall.

C C Its lower edge.

D The canal of the optic nerve, round which are found the remains of the levator palpebræ superioris, and of the rectus superior, cut off and bent inwards.

E The musculus obliquus superior oculi, which, with its tendon (F), passes through the trochlea, or pulley (F), and is seen without the orbit, removed a little on one side.

G The musculus rectus oculi inferior.

H The musculus rectus oculi internus.

K The musculus rectus oculi externus.

L L The musculus obliquus oculi inferior.

a b c d e f f f g h i k o r s t u v x The same branches which these letters mark in the former figure, the following remain to be marked.

a b b Are cut off, to preserve perspicuity, after the removal of the optic nerve.

c The arteria lachrymalis is separated a little inwards, that

d The relations of the branch (*d*), which is here seen cut off, and (*e*) may more easily be viewed, since both

e In the first figure were partly covered by the trunk of the lachrymal artery (*c*).

f The branch for the inferior oblique muscle comes entirely into view.

f 2 The branch continued on for the inferior oblique muscle entering the lower lid.

k The trunk of the ophthalmic artery appears here very plain, the optic nerve being removed.

l m A branch going to the superior oblique muscle.

n The branch going on towards the superior oblique muscle.

o Is here cut off, hence *n q* of the last figure are here wanting.

t t The branch scattered through the internal strait muscle; it can be seen much better after the branch (*r*) is removed a little higher up.

x The origin of this branch from the internal maxillary artery (*y*) is here more plainly seen.

y The trunk of the internal maxillary artery.

z The infra-orbital artery, a constant twig of this internal maxillary artery.

Views of the Eye N^o 2.

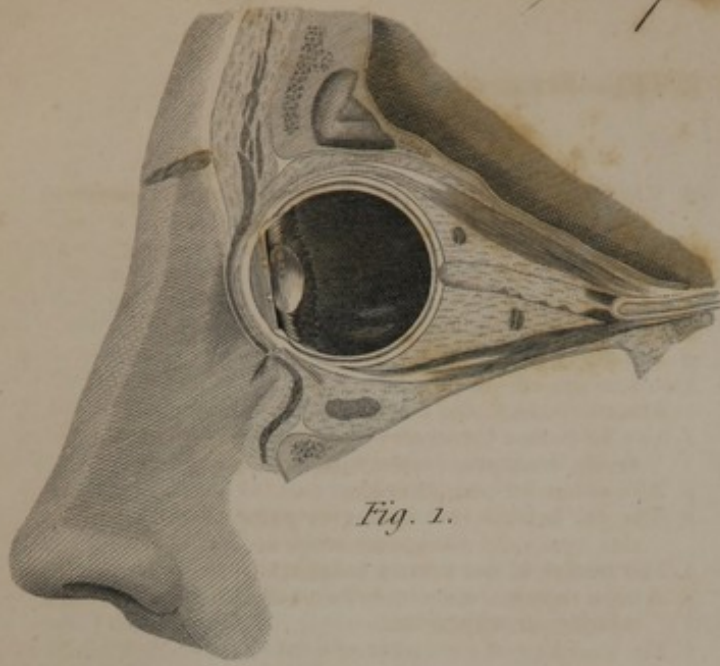


Fig. 1.



Fig. 2.

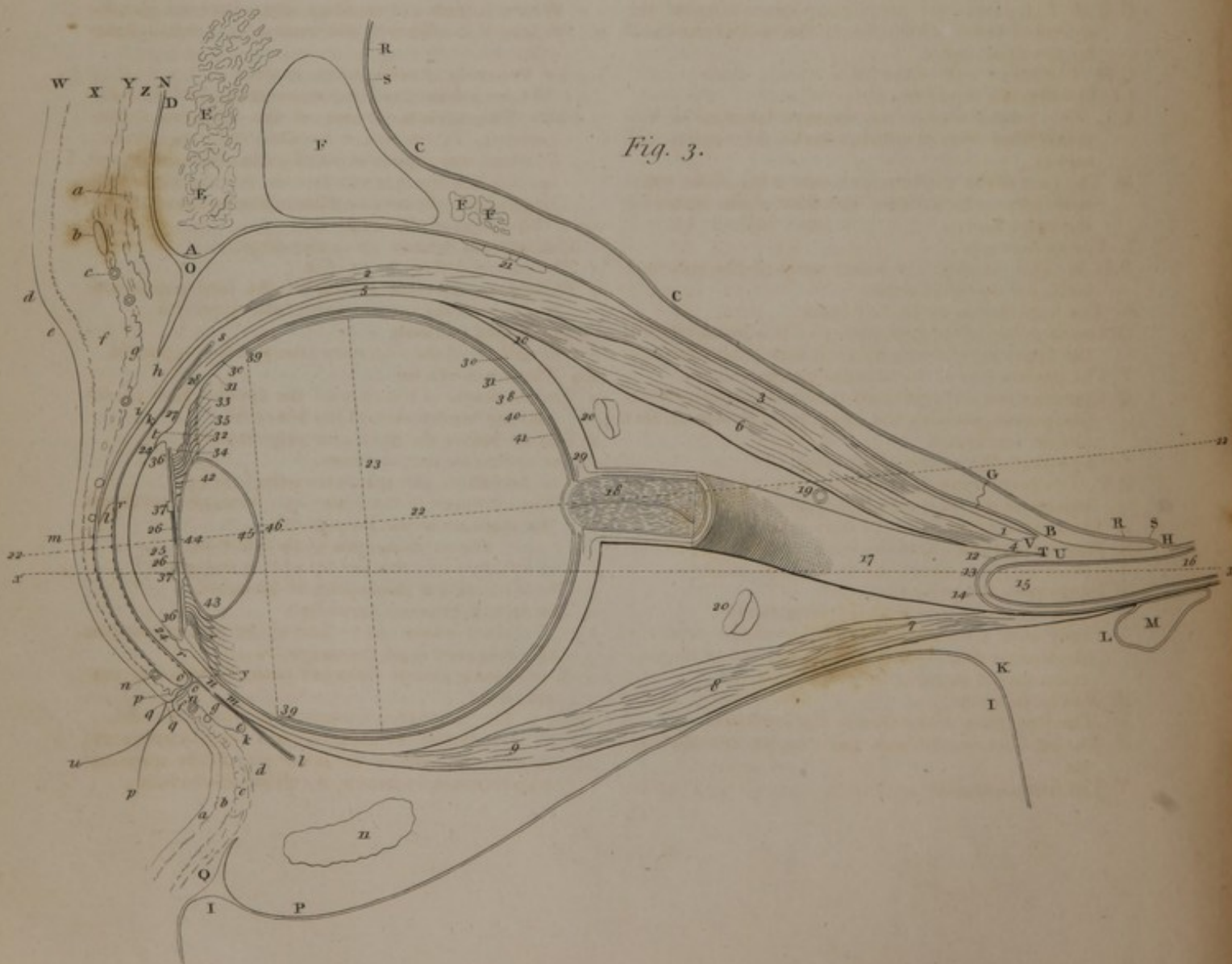


Fig. 3.

VIEWS OF THE EYE.—NUMBER II.

FIG. 3.

The left organ of sight, being a side view taken from a perpendicular section, the eye lids being shut.

- A Q The bony orbit.
- A H The superior wall of the orbit.
- A B The left surface of this wall which looks towards the orbit.
- C C G H The convex surface of it, opposite to the brain, whose depressions and eminences answer to the convolutions of the anterior lobe of the brain lodged upon it.
- A D E F The frontal part of the os frontis.
- C C G The orbital part of the same bone.
- E E Medullary cells of the frontal part.
- F The left frontal sinus.
- F F Medullary cells of the orbital part.
- G The suture between the os frontis, and the greater wing of the sphenoid bone.
- G B H The part of the superior or lesser wing of the sphenoid bone, which forms the roof of the canal for the optic nerve.
- Q M The lower wall of the orbit.
- I I The maxilla superior.
- K L The orbital fissure, or foramen lacerum in basi cranii filled with tendinous fibres, fat, vessels, and nerves.
- M The part of the superior or lesser wing of the sphenoid bone which forms the floor of the canal for the optic nerve.
- L The periosteum.
- B H M The canal in the lesser wing of the sphenoid bone, for the optic nerve.
- N The periosteum of the os frontis.
- O Continuation of the periosteum of this bone, towards the upper eye lid into an arch almost tendinous.
- P The periosteum of the maxillary bone.
- Q Continuation of the periosteum of this superior maxillary bone, towards the lower eye lid, into an arch almost tendinous.
- * * The axis of the cone of the orbit.
- R V The membrana dura of the brain, which lines the insides of the os frontis and sphenoid bone.
- R The external lamina of the dura mater.
- S The internal lamina of the dura mater.
- T U V The place where the dura mater adheres;
- T Partly with the periorbita;
- U Partly with the sheath of the optic nerve;
- V Partly with the cellular membrane of the tendon of the levator palpebræ superioris (1), and of the musculus rectus superior (4).
- W Z The forehead.
- W The thickness of the skin in the forehead.
- X The fat between the skin and occipito-frontalis muscle.
- Y The frontal muscle.

Z The fat between the frontal muscle, and the periosteum.

- a d The eye brow.
- a The corrugator supercilii.
- b The mouth of the frontal vein.
- c The mouth of the frontal artery.
- d The hairs of the eye brow.
- e w The upper eye lid.
- e The thin skin of the forehead.
- f The fat before the sphincter palpebrarum which gradually disappears towards the margin.
- g The sphincter palpebrarum.
- h The fat behind the sphincter palpebrarum, which also gradually disappears towards the margin.
- i The tendon of the levator palpebræ superioris.
- k A thin cellular texture between this tendon and the membrana conjunctiva.
- l The cartilage of the upper eye lid.
- m Vestiges of the sebaceous follicles.
- r r s t The membrana conjunctiva of the upper eye lid,
- r r Where it lines the cartilage and sebaceous glands;
- r s Where it is affixed to the tendon by a thin cellular web;
- r k s t Where it is reflected on itself;
- s s t Where it lines the sclerotic membrane of the bulb.
- y r 24 s The superior bursa of the membrana conjunctiva, (k) the space between its two laminæ, of which one covers the bulb, the other the upper eyelid: this space is represented by a thickish black line, because the laminæ themselves toucheachother.
- o p q The edge of the upper lid.
- o The internal thinner lip of this edge.
- p The external thicker lip of it.
- q The place where the cuticle of the face passes into the membrana conjunctiva of the upper lid.
- u The upper eye lash.
- n The mouth of the coronary artery of the upper lid.
- a q The lower eye lid.
- a The thickness of the skin of the cheek which passes into the tender skin of the lower lid.
- b The fat before the sphincter palpebrarum.
- c The sphincter palpebrarum.
- d The fat behind the sphincter palpebrarum.
- g e The cartilage of the lower lid. A rough line shows the remains of the fatty glands.

The outer margin of the lower lid.

- f The external and thicker lip of this margin.
- g The internal and thinner lip of the same.
- h The furrow between these lips.
- f g The place where the cuticle of the face passes into the conjunctiva of the upper lid.
- y A triangular furrow between each lid and the conjunctiva.
- k l m n The membrana conjunctiva of the lower lid,
- g k Where it lines the cartilage and sebaceous glands;
- k l Where it adheres to the lower part of the sphincter palpebrarum by means of cellular membrane;

VIEWS OF THE EYE.—NUMBER II.

- l* Where it is doubled on itself;
 - nm* Where it invests the membrana sclerotica of the bulb.
 - y l* The inferior bursa of the membrana conjunctiva.
 - (*k*) The space between its two laminæ, of which one covers the bulb, the other the lower eye lid. This space is marked by a thickish black line, because these two laminæ touch each other.
 - h* The lower eye lash.
 - g* A little space of a rhomboid figure between the eye lashes and the edges of the lids.
 - 1 11* Muscles of the eye.
 - 1 2 3* Elevator palpebræ superioris.
 - 1* Its posterior extremity, immoveable and tendinous, which adheres to the periorbita.
 - 2* Its anterior extremity, moveable and tendinous, which is extended over the cartilage of the upper eye lid, and disappears in its edge.
 - 3* Its flesh.
 - 4 5 6* The musculus rectus superior of the bulb.
 - 4* Its posterior extremity, immoveable, tendinous, which adheres to the sheath of the optic nerve.
 - 5* Its anterior extremity, moveable, tendinous, which ends in the sclerotic membrane of the bulb (*28*).
 - 6* Its flesh.
 - 7 8 9* The musculus rectus inferior of the bulb.
 - 7* Its posterior extremity, immoveable, tendinous, which adheres to the sheath of the optic nerve more backwards than the extremity of the rectus superior.
 - 8* The flesh of this muscle.
 - 9* Its anterior extremity moveable, tendinous, which terminates near *m* in the sclerotic membrane of the bulb.
 - 10* The tendon of the musculus obliquus superior of the bulb.
 - 11* The flesh of the musculus obliquus inferior of the bulb.
 - 12 18* The optic nerve bent in the form of an *s*, and partly covered with fat.
 - 12 13* The sheath of the optic nerve, arising from the membrane of the brain. *12* The inner lamina of this sheath; *13* Its external lamina.
 - 14* The choroid membrane of the optic nerve.
 - 15* The fibrous substance of the optic nerve exposed.
 - 16* A part of the optic nerve passing through the bony canal where it appears as if depressed from above to below.
 - 17* The cylindric part of the optic nerve.
 - 18* The extremity of the optic nerve contracted, and lost in the sclerotica.
- The fibrous structure of the optic nerve, the passage of the central artery, and the manner in which the membranes of the optic nerve adhere to the bulb, is also shewn in this figure.
- 19 20* The blood vessels and nerves of the eye.
 - 19* The principal trunk of the ophthalmic artery.
 - 20* The principal trunk of the ophthalmic vein which surrounds the bulb.
 - 21* The first twigs of the branch of the fifth pair of nerves.
 - 22 43* The bulb of the eye.
 - 22 22* The axis of the bulb.
 - 23* The greatest transverse diameter of the bulb.
 - 24 25 26.* The membrana cornea. *24 24* The dissected surface of the cornea which shews its true thickness, convexity, and manner of cohesion with the sclerotica. *25, 26, 26* The space between the cornea and the lens, which is divided into the anterior chamber *25*, and the posterior chamber *26 26*.
 - 24 t* and *24 r* A double groove between the cornea and sclerotica.
 - 27 28 29* The sclerotic membrane of the bulb. *27* The anterior extremity of the sclerotica, which passes into the cornea and has a double groove within, on which the gangliform ring of the choroid coat rests firmly; *28* a very thin portion of the sclerotica covered with the tendons of the recti muscles.
 - 30* The pigmentum nigrum between the choroid and sclerotic coats.
 - 31 37* The choroid membrane. *32 33* The gangliform ring of the choroid membrane, which principally adheres to the sclerotica. *32* The basis, or thick part of the ring, which is terminated towards the cavity of the cornea by a round ending. *33* The top of the ring. *34 35* The corpus ciliare. *34* The anterior or thickish extremity of the fold. *35* The posterior extremity of the same fold, gradually becoming thinner towards its termination.
 - 34 39 39* Part of the choroid membrane not covered by the retina, which shines through the vitreous humour.
 - 39 46 39* A part of the choroid which in adults is generally more shining.
 - 36 37* The iris *36 36*. The margin to which the iris is affixed, and appears like a continuation of the ring and ciliary body.
 - 37 26 26 37* The pupillary margin of the iris, which forms half the pupil of the iris.
 - 38* Pigmentum nigrum between the choroid and retina.
 - 39 40 41* The membrana retina. *39 39* The anterior extremity of the retina expressed by the line *39 46 39 40* The medullary substance of the retina. *41* The choroid, in which the medullary substance is in a manner inlaid.
 - 39 41 23 22 46 39* The internal surface of the retina which shines through the vitreous humour.
 - 42 46* The lens. *43 42* The long diameter of the lens. *44 45* The short diameter. *42 44 43* The anterior convexity. *42 45 43* The posterior. *46 26* The capsule of the lens.
 - 34 42* The distance of the lens from the ciliary body.

Views of the internal Parts of the Ear.

Fig. 2.



Fig. 1.



Fig. 3.



Fig. 4.

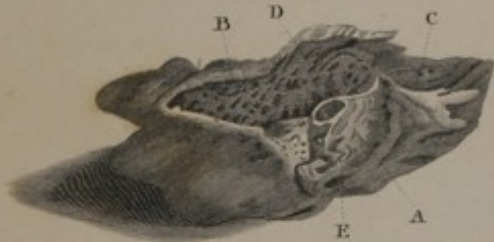


Fig. 5.



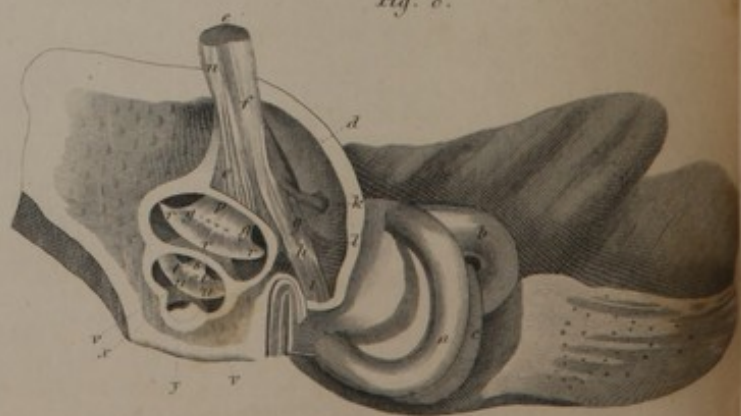
Fig. 6.



Fig. 7.



Fig. 8.



DESCRIPTION OF THE INTERNAL PARTS OF THE EAR.

In this Plate the Anatomy of the Bones of the Human Ear is explained.

FIG. 1.

We have here the bones which form the chain betwixt the membrane of the tympanum and the membrane of the foramen ovale.

- A The malleus.
- B The incus.
- C The stapes.
- D The os orbiculare which forms the articulation betwixt the incus and stapes.

FIG. 2.

In this figure we have a view of the inside of the temporal bone, the petrous portion being broken away: we see the cavity of the tympanum, the membrane of the tympanum, and the chain of bones.

- A The groove for the lodgement of the lateral sinus.
- B The hole in the sphenoid bone for the passage of the artery of the dura mater.
- C The petrous portion of the temporal bone.
- D The irregular cavity of the tympanum laid open, by the breaking off of the petrous part of the temporal bone.
- E The membrane of the tympanum closing the bottom of the meatus auditorius externus.
- F The malleus, the long handle of which is seen to be attached to the membrane of the tympanum E.
- G The incus, united to the great head of the malleus F.
- H The stapes, which is seen to be articulated with the long extremity of the incus through the intervention of the os orbiculare.

FIG. 3 and 4.

Show the division of the temporal bone into the squamous and petrous portions.

FIG. 3.

- A The squamous part of the temporal bone.
- B The circular ring, which forms the meatus auditorius externus in the child.
- C The zygomatic process.
- D Cells, which afterwards enlarge into those of the mastoid process.

FIG. 4.

The petrous portion of the bone, with a view of the tympanum.

- A The cavity of the tympanum.
- B Mastoid cells.
- C Eustachian tube.
- D The foramen ovale, into which the stapes (see fig. 1. C. and fig. 2. H.) is lodged.
- E The more irregular opening of the foramen rotundum.

FIG. 5.

Represents the labyrinth of the human ear, with the solid bone which surrounds it cut away.

- A The foramen ovale.
- B The three semicircular canals.
- C The scala vestibuli.
- D The cochlea.
- E The tube, which conducts the portio dura of the seventh pair through the temporal bone.
- F The anterior part of the petrous portion of the temporal bone.

FIG. 6.

Explains the manner in which the lamina spiralis divides the cochlea into two scalæ, and the opening of the one scala into the common cavity of the vestibule, and the termination of the other in the foramen rotundum.

- A The bone broken, so as to show the cavity of the tympanum.
- B The foramen ovale.

- C Cellular structure of the bone.
- D The foramen rotundum.
- E One of the scalæ of the cochlea, which is seen to terminate in the foramen rotundum.
- F The other scala, which is seen to communicate with the vestibule.

These two figures are taken from the beautiful plates of Professor Scarpa, and illustrate the soft parts contained within the osseous labyrinth, and the distribution of the nerves.

FIG. 7.

There is seen the membranous semicircular canals, their common belly, and the distribution of the acoustic or auditory nerve.

- a The ampulla of the superior membranous semicircular canal.
- b The superior membranous semicircular canal.
- c The ampulla of the external membranous canal.
- d The other extremity of the external canal.
- e The ampulla of the posterior membranous semicircular canal.
- f The posterior semicircular canal.
- g The common canal of the superior and posterior canal.
- h, h The sac common to the membranous semicircular canals, viz. the alveus communis.
- i The body or trunk of the acoustic nerve.
- k The larger branch of the nerve.
- l A filament of the nerve to the sacculus vestibuli.
- m The lesser branch of the acoustic nerve.
- n A filament of the cochlea.
- o, o Filaments of the larger branch of the acoustic nerve to the ampullæ of the superior and exterior semicircular canals.
- p The expansion of the nerve on the common alveus.
- q, q Nervus communicans faciei, or portio dura.
- r The beginning of the spiral lamina of the cochlea.
- s The osseous canal of the nerve, which forms part of the foramen auditorius internus.
- t The cochlea.

FIG. 8.

The distribution of the nerve in the cochlea seen by a section of the internal auditory canal and cochlea.

- a The superior osseous semicircular canal.
- b The posterior osseous semicircular canal.
- c The external osseous semicircular canal.
- d The bottom of the great foramen auditorius internus.
- e The trunk of the great acoustic nerve.
- f The anterior fasciculus of the acoustic nerve.
- g A plexiform twisting in the anterior fasciculus of the nerve.
- h A gangliform swelling of the nerve.
- i The greater branch of the anterior fasciculus.
- k The lesser branch.
- l A filament of the anterior fasciculus to the hemispherical vesicle of the vestibule.
- m A branch to the beginning of the lamina spiralis.
- n The posterior fasciculus of the acoustic nerve.
- o The filaments about to enter the tractus spiralis foraminulosus.
- p These nerves seen upon the modiolus.
- q, q The filaments of the nerve passing forward betwixt the two planes of the lamina spiralis.
- r, r Their termination on the soft part of the lamina spiralis.
- s The nerves expanded on the second gyrus of the modiolus.
- t, t, u, u Their further distribution on the lamina spiralis.
- v, v The infundibulum.
- x, y The last turn and termination of the lamina spiralis in the infundibulum.

SURGICAL INSTRUMENTS.—PLATE 1.

Fig. 1. The tourniquet, originally invented by Petit, and improved by Freake. It has wholly superseded the use of the old instrument, which requires constantly the hand of an assistant. The pressure, in this, is secured by the screw, and it is made of brass.

a The cushion which presses on the artery.

2. Savigny's field tourniquet.

a A small spiral spring, fixed to one extremity of the handle, connected, at the other, to the catch, which it keeps constantly on a circular ratch, on the top of a flat piece of brass, to be applied immediately on the limb, retaining the bandage to any given stricture.

b The compress, which is made of cork covered with leather. This instrument differs only from the old one in the ratch, which supplies the necessity of an assistant.

3. The upper part separate.

Fig. 4. *Rymer's* sea tourniquet.

a A dented wheel, attached to the roller, receiving motion from the endless screw *b*.

c The roller, to which the bandage is attached by passing through an opening in its centre, and by whose motion the stricture on the limb is increased as the bandage passes round it.

d d The frame of the instrument, with a strong bottom cast together in brass.

e A small roller, between which and the bottom of the frame the bandage passes. There is another on the opposite side, and these add to the power of the instrument by acting as pulleys.

f g Two strong checks, fixed to the inside of the frame, to receive the two ends of the screw.

h A piece of leather sewed on the bandage, under the buckle, to prevent laceration.

*Surgical Instruments
Tourniquet.*

Fig. 2.



Fig. 1.

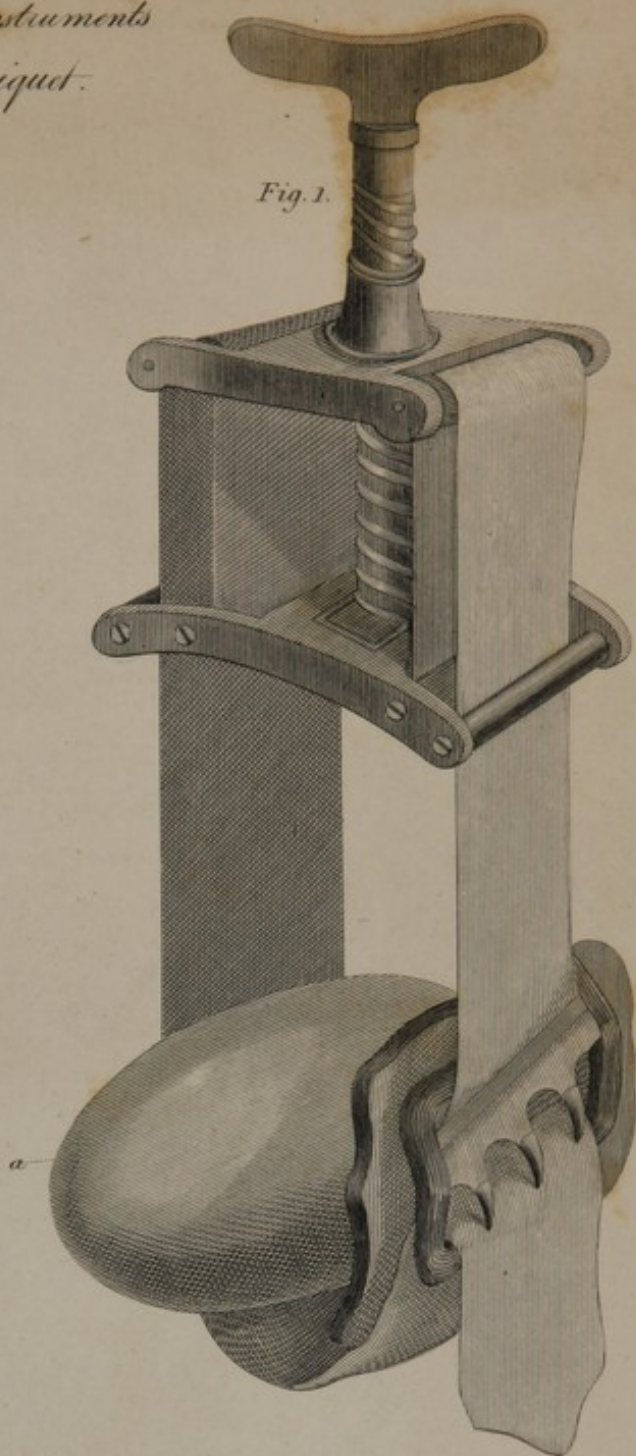


Fig. 4.

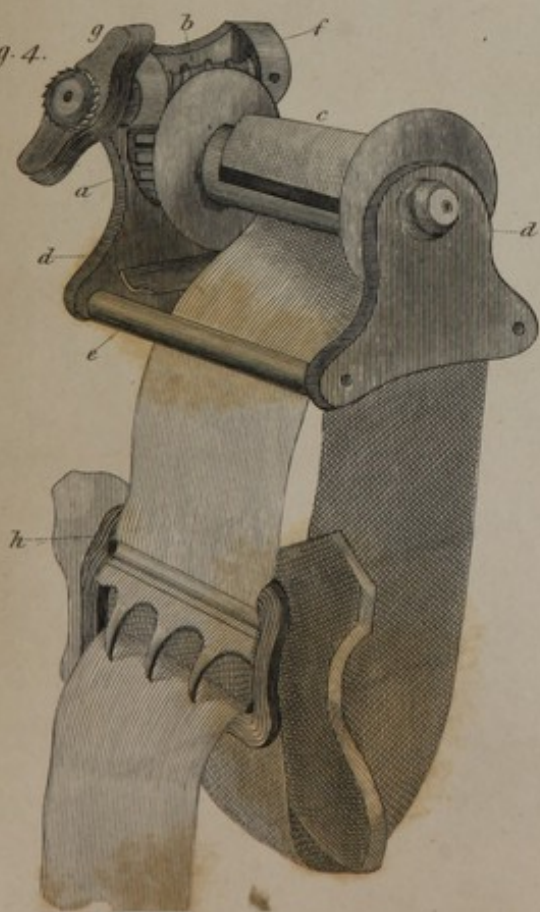
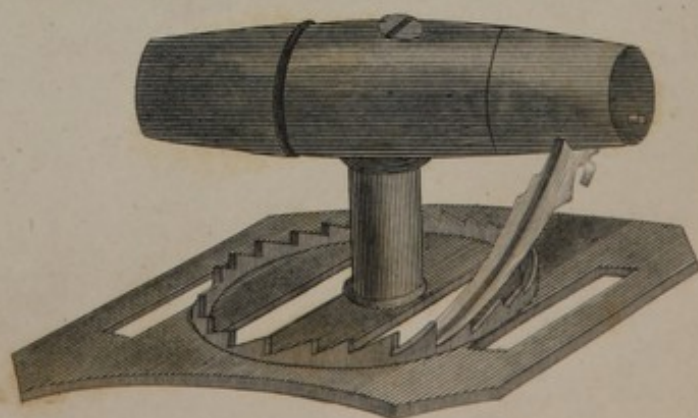
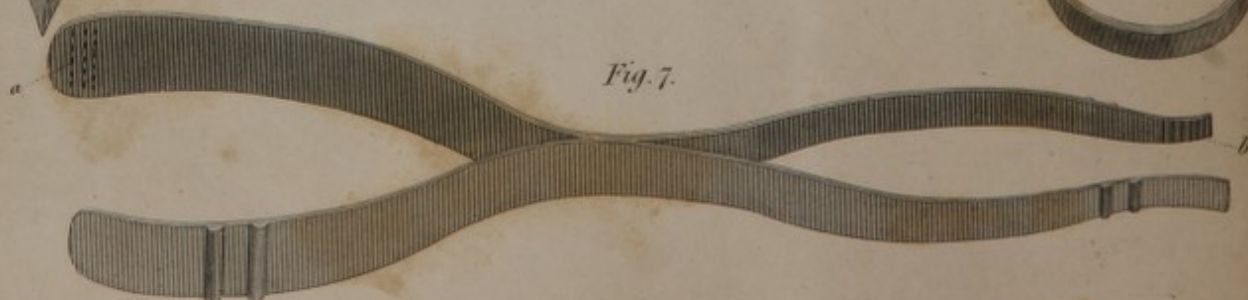
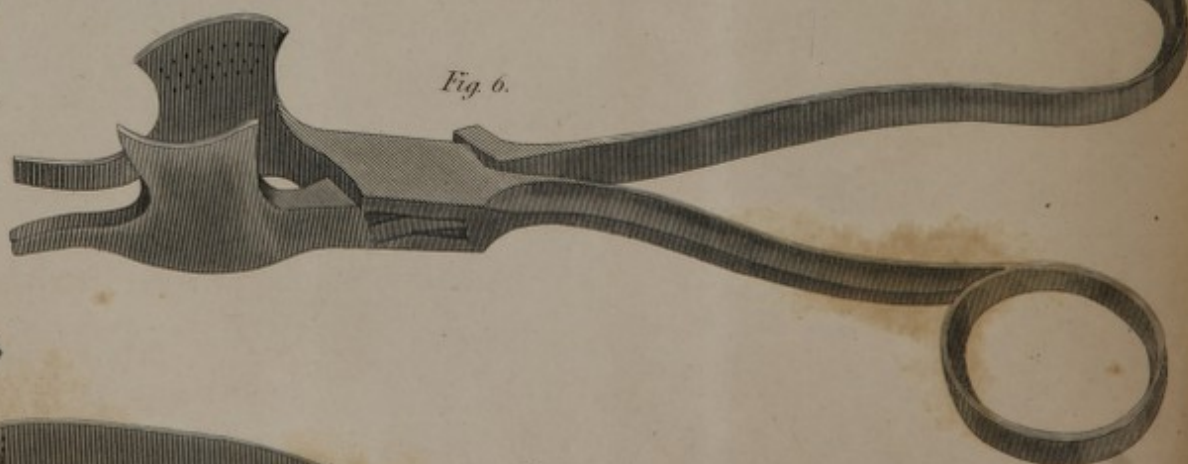
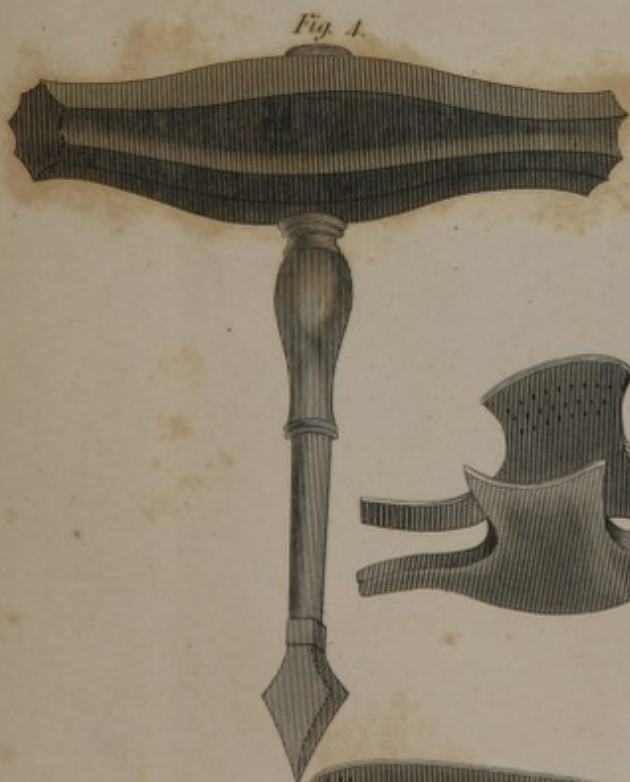
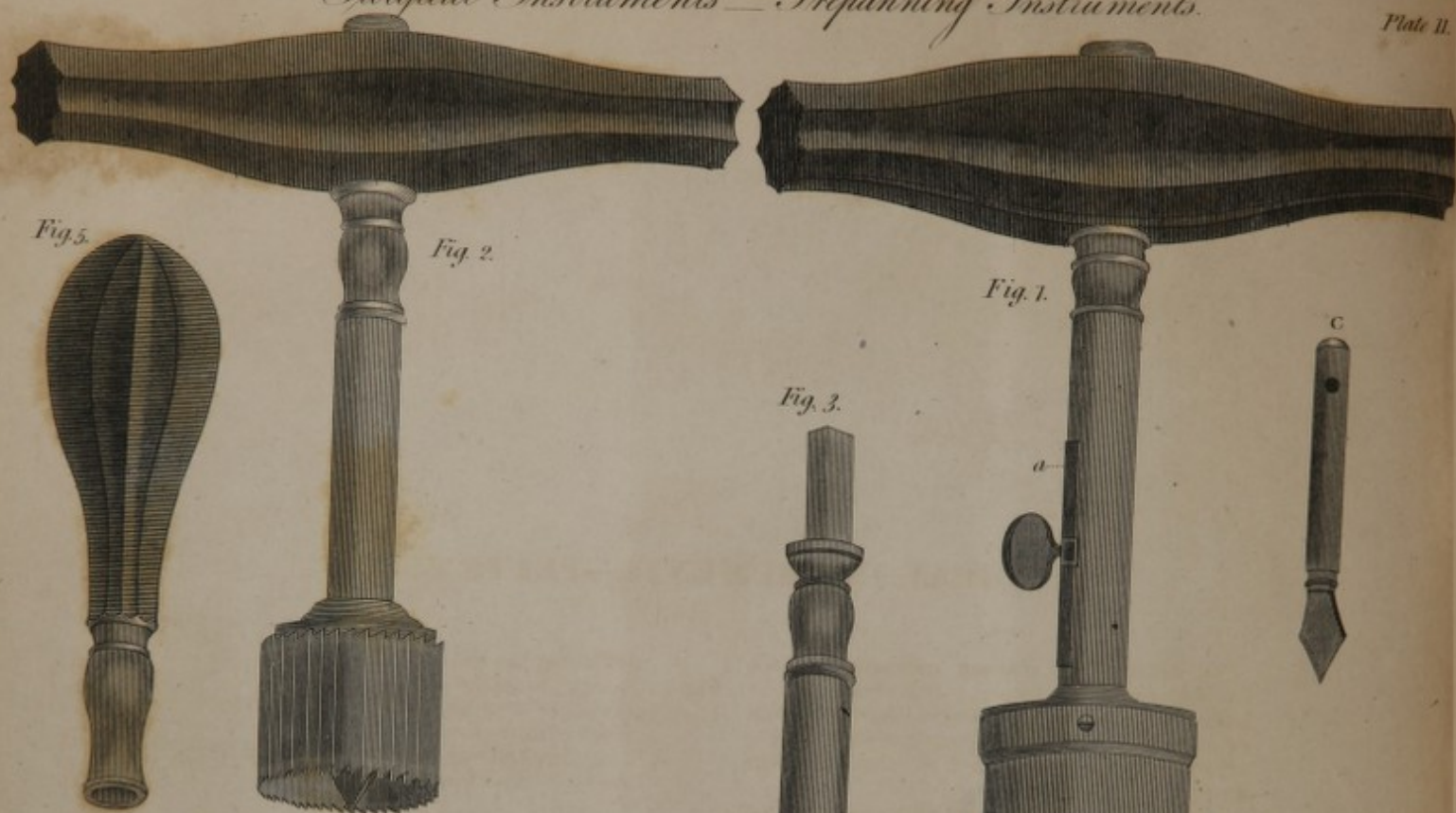


Fig. 3.





SURGICAL INSTRUMENTS.—PLATE II.

Fig. 1. The trephine, the modern instrument, which has superseded the trepan. It is divested of its lateral teeth, by which it works more easily and expeditiously; and from the perpendicular situation of the teeth, they act whether it moves forward or backward.

a A spring plate of steel confining or regulating the centre pin, which may be removed when the instrument is fixed.

b The point of the centre pin, at its extreme projection.

c The centre pin separate, the form of its point

precluding the use of a perforator.

Fig. 2. A trephine of the old construction.

3. A smaller trephine, with the lateral teeth differently formed.

4. The perforator, necessary in the old trephine, which is sometimes preferred.

5. The key.

6. Forceps for extracting the circular piece of bone or any ragged edges.

7. Spring forceps for the same purpose.

a The larger extremity.

b The smaller extremity.

*Surgical Instruments. — Trepanning cont.
Hawkins Cutting Gorget.*

Fig. 3.



Fig. 5.



Fig. 6.



Fig. 4.



Fig. 7.



Fig. 2.



Fig. 1.



b

a

SURGICAL INSTRUMENTS.—PLATE III.

Fig. 1. The LENTICULAR, to remove the ragged edges left by the trephine.

a The edge.

b The shallow cup, intended to receive the scrapings.

2. The RASPATORY, used for the same purpose, and sometimes employed to promote exfoliation.

3. A front view of the head of the same instrument.

Fig. 4. An elevator.

5. A stand for the ELEVATOR, which acts as the fulcrum of a lever.

6. An improved elevator, whose circular groove enables the operator to vary the power.

7. HAWKINS' CUTTING GORGET. The concavity of this instrument is diminished, its right and cutting side broader and flatter, to render the incision more lateral.

SURGICAL INSTRUMENTS.—PLATE IV.

Fig. 1. M. CLINE'S CUTTING GORGET, very generally used.

a The beak, forming an elliptical arch to prevent the necessity of the operator lowering his hand.

b The cutting edge forming an angle with the beak.

Fig. 2. *Curved forceps.*

3. *Strait forceps.*

4. Mr. John Hunter's *scalpel.*

Fig. 3.

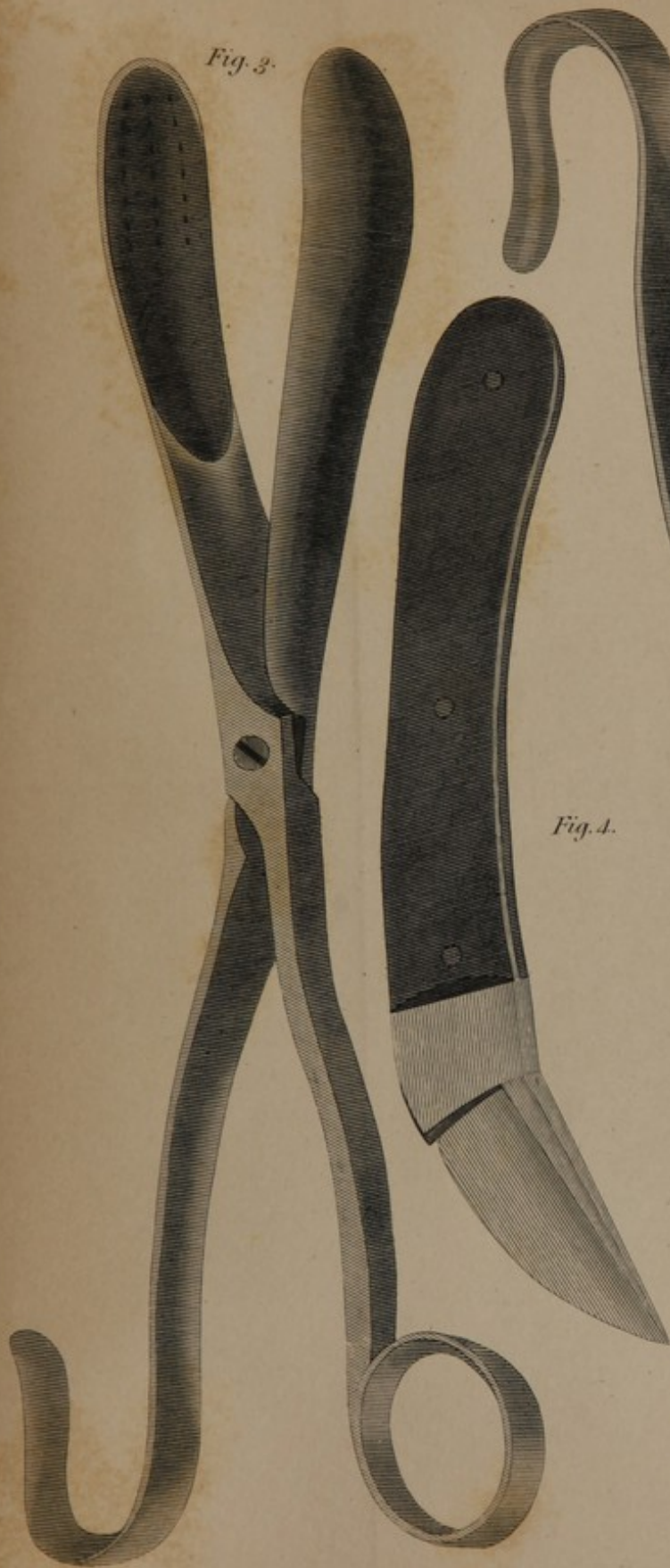


Fig. 2.



Fig. 4.



Fig. 1.



PLATE V.—(*The number omitted on the Plate.*)

SURGICAL INSTRUMENTS.—BELLOWS, &c.

FIG. 1. The bellows, with the flexible tube annexed, for throwing up the smoke of tobacco into the rectum, chiefly employed in resuscitation, but which may be useful in cases of hernia.

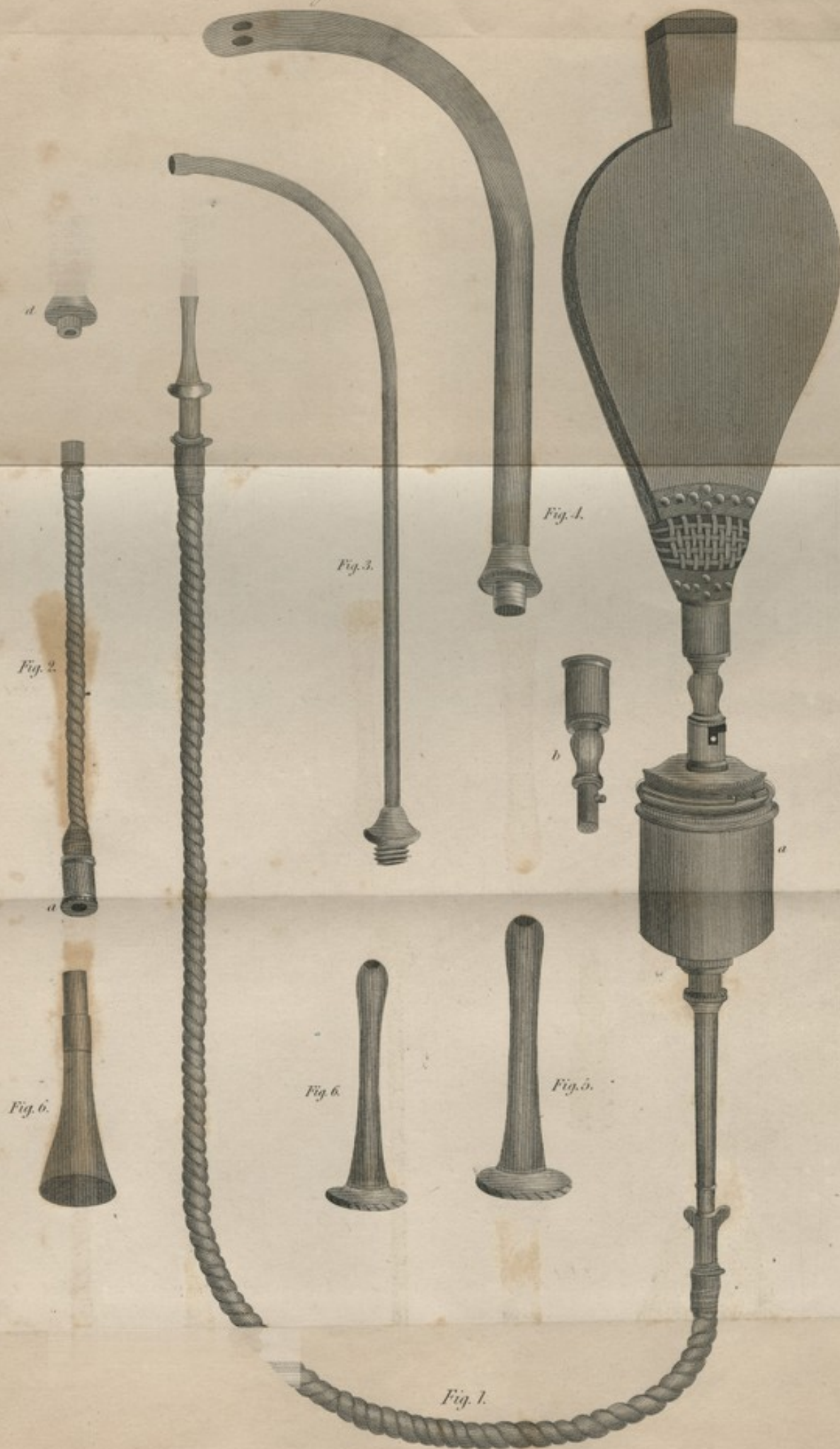
- a* The brass box containing the lighted tobacco, the smoke of which is impelled by the bellows.
- b* The nozzle of the bellows, with a grating to prevent the sparks from passing into the rectum.
- 2. An instrument for inflating the lungs.
- a* The extremity, to receive the wooden mouth-

piece (*b*), if the breath of a healthy person be employed. To the other extremity (*c*) may be applied the pipe (*d*), which fills up one nostril, or the extremity (*a*) of the silver tube (Fig. 3.), which passes beyond the glottis.

Fig. 4. A larger tube for the same purpose, supposed to be more convenient.

5. and 6. Two ivory pipes for the rectum, to be attached to the extremity of Fig. 1.

Surgical Instruments.



Surgical Instruments.

Fig. 1.

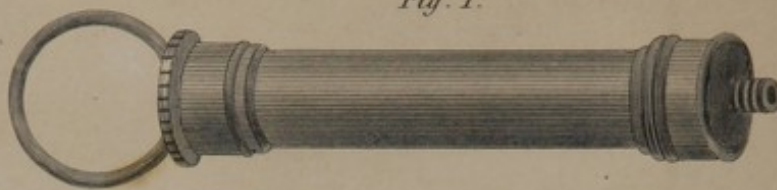
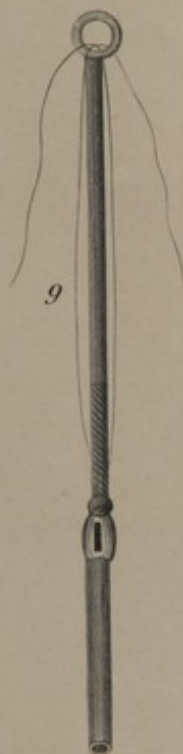
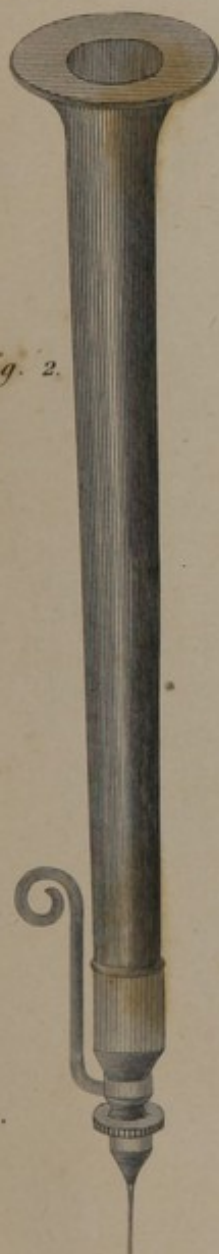


Fig. 2.



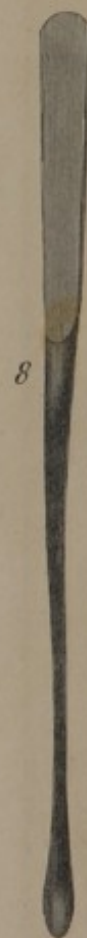
9



6



7



8



10



11



3



4



5

PLATE VI.—(*The number omitted on the Plate.*)

SURGICAL INSTRUMENTS.—CUTTING GORGETS, &c.

- Fig. 1. Canula for males.
2. Canula for females.
3. Mr. Hunter's instrument for introducing caustic into the urethra.
4. and 5. The cutting gorgets on the old and new

construction. In the former, it appears that the flat side is opposed to the part to be divided rather than its edge, and the wound is very often a lacerated one.

Surgical Instruments.

Fig. 1.



Fig. 3.



Fig. 2.



Fig. 4.

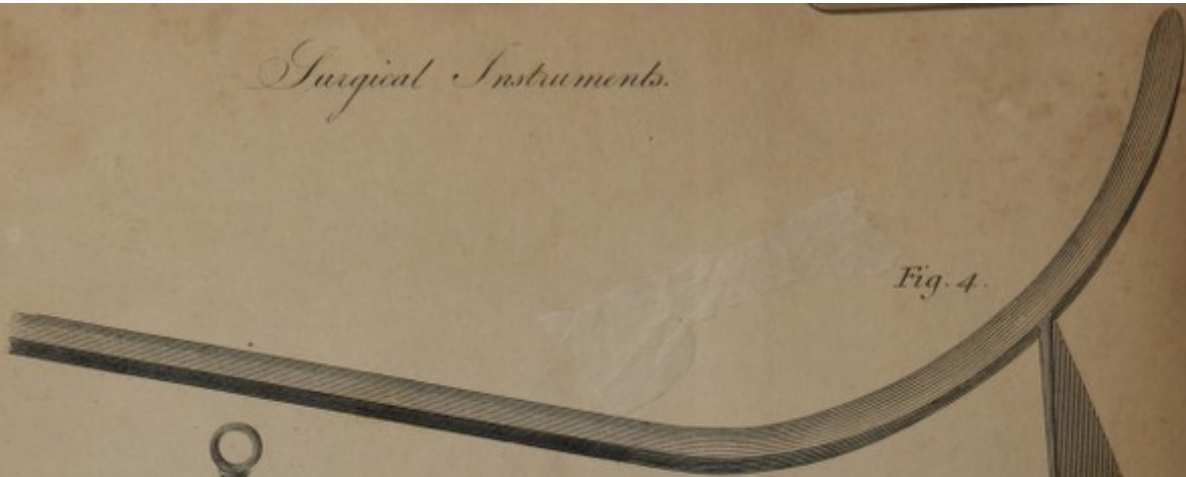


Fig. 5.

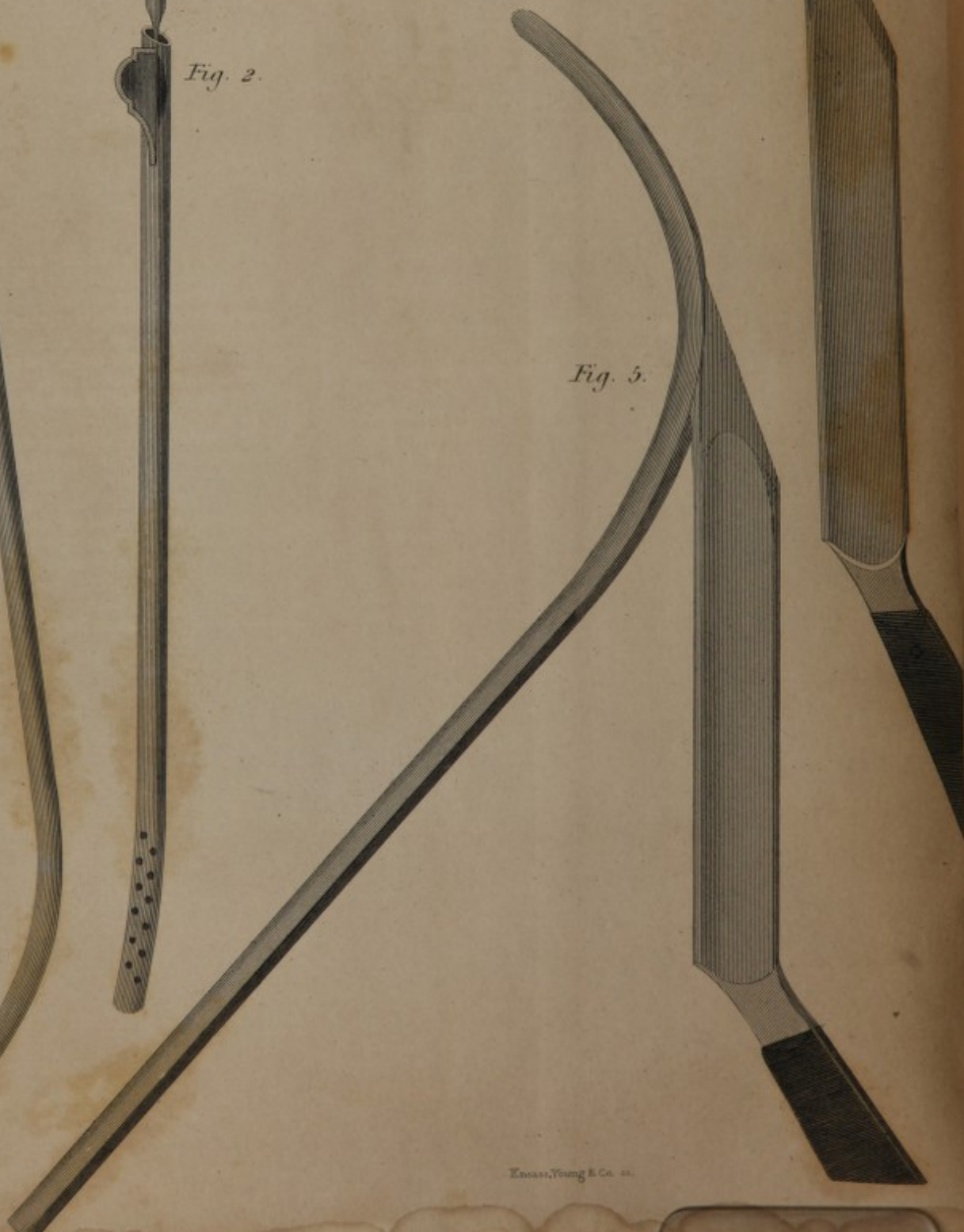


PLATE VII.—(*The number omitted on the Plate.*)

SURGICAL INSTRUMENTS.—SYRINGE, &c.

Instruments for the Fistula, Lachrymali, &c.

Fig. 1. A silver syringe (Anell's) for injecting fluids through the puncta into the sac.

a A very fine strait gold tube screwed to the inferior extremity.

b A curved tube, which is often more convenient.

c A conical end to be fixed to the syringe, for the injection of pure water through the lead tubes after their introduction into the duct, to ascertain the propriety of their situation.

2. A glass tube with a stop cock and a very fine steel pipe for injecting quicksilver.

3. 4. 5. The lead tubes of Mr. Wathen, introduced to form an artificial channel for the tears. They have a longitudinal opening on one side of their thickest extremity, and on the opposite (fig. 4.) a small hole through which the thread passes, which fixes them to the styles.

The superior extremity of the head should be concave, somewhat like a funnel.

6. 7. 8. Three silver probes, whose bulbous ends are of the same diameter as the heads of the respective tubes, so that by introducing one of these into the duct, the proper size of the tube may be determined.

9. The screw style with one of the tubes attached to it.

10. The style separated from the tube, to show its construction. The portion, formed as a screw, is furnished with a nut, which adjusts its length exactly to that of the tube, and which, resting on the head of the tube, resists its introduction. When this is accomplished, the style and tube are separated, by cutting the thread, withdrawing the style, and leaving the tube in its place.

11. A small blunt hook for extracting the tube.

Surgical Instruments.

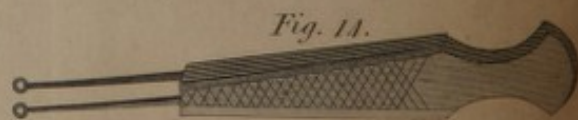
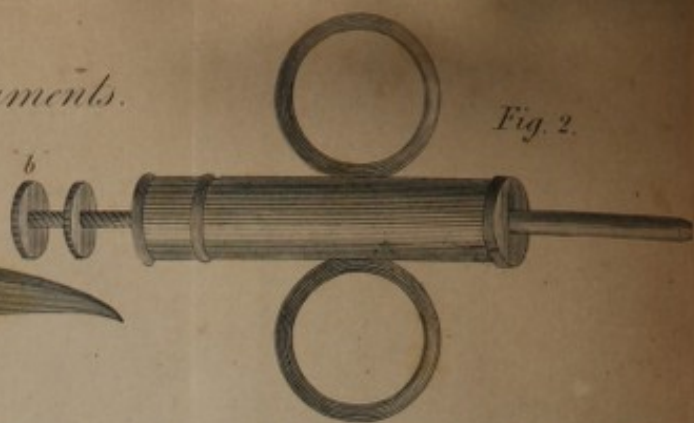


PLATE VIII.—(*The number omitted on the Plate.*)

SURGICAL INSTRUMENTS.—SCISSARS, &c.

- Fig. 1. A pair of thin scissars with short blades, rounded points, curved slightly on their flat surfaces for enlarging the section of the cornea, &c.
2. The cystotome of La Fayette, for wounding the capsule, which is very convenient, since, from its concealment, it cannot injure the adjacent parts. The lancet *a* is pressed forward by pressing the button *b*, and retracted by means of a spiral spring.
3. A small fine steel hook for assisting the extraction of the capsule.
4. Mr. Cline's instrument for scratching the capsule.
5. A small curved needle for scratching the capsule, and at the other end the silver curette for extracting the small remains of the crystalline.
6. Mr. Pearson's needle.
7. Mr. Earl's needle for depressing the cataract, convex on one surface and flat on the other; on the latter it has a small longitudinal roughish groove.
8. 9. Two small curved knives with blunt points for occasionally enlarging the section of the cornea.
10. 11. Baron Wenzel and professor Richter's knives. The marks show the extent of the cutting edges.
12. 13. Mr. Wathen and Mr. Phipp's knives for the section of the cornea in the extraction of the cataract.
14. Mr. Wathen's forceps for extracting the capsule of the lens. The rings are convex externally and concave within: the internal edges of the circles should unite in the most perfect contact.
15. Baron Wenzel's forceps.
16. The full pointed bistoury with a double edge, answering the purpose of a knife and abscess lancet.
17. A curved bistoury with a probe point, invented by Pott, for the operation of the fistula, but used for opening sinuses.
18. The strait bistoury.

Instruments used in Midwifery.

Fig. III. The Perforator



Fig. II. The Forceps

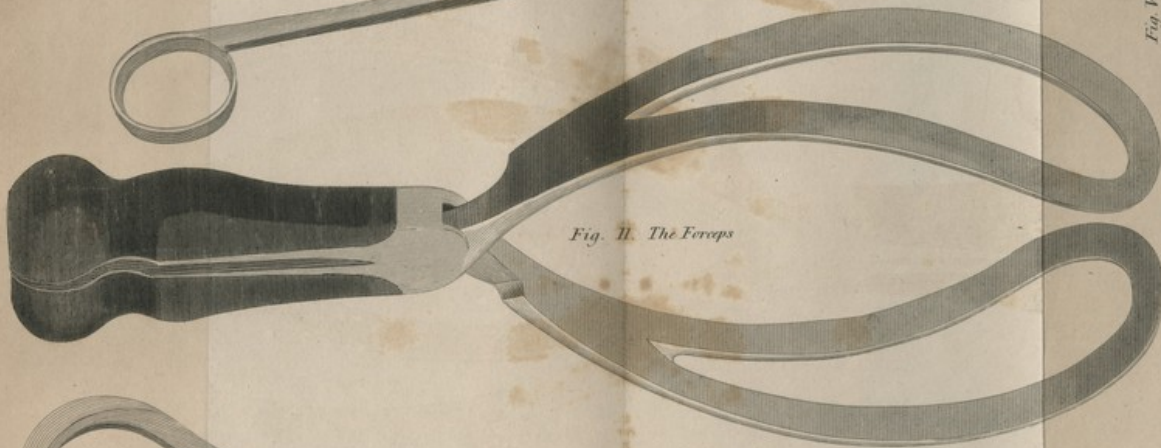


Fig. I. The Vectis



Fig. V. Handle of the Craniotome



Fig. IV. The Craniotome



Med. Hist.

WZ

270

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1819

v. 2

c. 2

