Encyclopaedia Londinensis; or an universal dictionary of arts, sciences, and literature ... / Compiled ... by John Wilkes [v. 1-22 edited by J. Jones, v. 23-4 edited by G. Jones].

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Publication/Creation

London : [publisher not identified], 1797-1829.

Persistent URL

https://wellcomecollection.org/works/q38gycq3

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Execution 28.192.

ENCYCLOPÆDIA LONDINENSIS;

OR, AN

UNIVERSAL DICTIONARY

OF

ARTS, SCIENCES, and LITERATURE.

LONDON & MEDICAL SOCIETY

PATHOLOGY.

PATHOL'OGY, *ſ.* [from the Gr. παθος, ſuffering, and λογος, a diſcourſe.] The ſcience or doctrine of diſeaſes.—This tree may naturally be conceived to have been under ſome diſeaſe indiſpoſing it to ſuch fructification. And this, in the *pathology* of plants, may be the diſeaſe of ſuperfoliation mentioned by Theophraſtus. *Sir T. Browne's Miſcell.*—That part of medicine which relates to diſtempers, with their differences, cauſes, and effects incident to the human body.

As PHYSIOLOGY teaches the nature of the functions of the living body in a ſtate of health; ſo PATHOLOGY relates to the various derangements of theſe functions which conſtitute diſeaſe. Its objects, therefore, are to aſcertain the various ſymptoms which characteriſe the different diſorders of each organ of the body, and eſpecially the *diagnoſtic* and *pathognomonic* ſymptoms, which afford the means of diſcrimination between diſeaſes that reſemble each other; to determine the cauſes, both prediſpoſing and exciting, by which diſeaſes are induced; to point out the *prognoſis*, or the tendency and probable event of each diſeaſe, from the changes and combination of the ſymptoms; and laſtly, to teach the *indications of cure*, and the nature and operation of the remedies adapted to the various circumſtances and periods of diſeaſe.

The ſtudy of pathology preſuppoſes an intimate acquaintance with anatomy and phyſiology; or, in other words, with the ſtructure, laws, and operations, of the animal body in a ſtate of health. An obſervance of the ſigns or ſymptoms which denote a deviation from this ſtate, conſtitutes the firſt branch of medicine, or *ſymptomatology*: an acquaintance with the uſual concatenations obſerved by thoſe ſigns, *diagnoſis*. *Noſology* regards the arrangement of theſe ſigns or ſymptoms; and *ætiology* applies to the cognizance of their cauſes, whether external or internal. The application of the properties of inanimate matter to the removal of theſe cauſes, or ſigns, is denominated *therapeutics*. The ſubſtances uſed for this latter purpoſe are termed *materia medica*.

Before entering into any further examination of theſe ſubjects, it will be neceſſary to give a ſhort ſketch of the hiſtory of this art; in the courſe of which it will be ſeen, that its profeſſors have been employed for the moſt part in endeavouring to explain the phenomena of diſeaſe and the operation of remedies according to the principles of ſome favourite or faſhionable ſtudy. Thus mechanics, chemiſtry, and metaphyſics, have each in their turn formed the baſis of celebrated medical theories: theories long ſince exploded, but of which the recollection may ſerve as beacons to warn us from the like errors. It is not, however, for this purpoſe only that the writings of the ancients merit our regard. The peruſal of them enlarges the field of our experience: we often find in them, remarks which ſerve to explain anomalies in diſeaſe, and deſcriptions which their beautiful and forcible language renders more intereſting, and imprints more firmly on our minds. They likewiſe furniſh hints for the further proſecution of inquiry, by ſhowing the various lights in which the ſame circumſtances have been viewed by different men; and the long chain of facts they diſplay to our view enables us in ſome meaſure to appreciate the effects of climate, diet, and even manners, on the conſtitution of our ſpecies. It may be remarked moreover, that ſcarcely any ſyſtem of medicine has been framed, however abſurd, which has not contributed, by the ſpirit of inveſtigation it excited, and by the new ſtock of facts its eſtabliſhment neceſſarily developed, to advance the progreſs of the art.

RISE AND PROGRESS OF MEDICINE.

THE origin of the medical art is involved in great obſcurity: yet, its antiquity is undoubtedly great, ſince, from its intimate relation with the life of man, the diſcovery of it muſt have been coeval with that of the moſt ſimple mechanical arts.

The little we know of the earlieſt hiſtory of our race, leads to the ſuppoſition, that ſurgery was the firſt branch of medicine cultivated. While mankind ſubſiſted principally by hunting or fiſhing, they muſt, of neceſſity, have been ſubjected to a variety of accidents; fractures, luxations, &c. muſt have been frequent among them, and to cure or alleviate thoſe obvious maladies muſt have been their firſt care. It is impoſſible to conjecture what means were purſued for the attainment of this end, yet, it is natural to ſuppoſe, they were, for a long period, very inefficient, and that the knowledge acquired in this ſtate of ſociety was very confined. It is probable, however, that anatomy was not wholly neglected in this barbarous age. The frequent ſlaughter of wild beaſts, and the various purpoſes of food, raiment, &c. to which their different parts were appropriated, muſt have led to a curſory acquaintance with the ſtructure of thoſe animals; and thus laid the foundation of comparative anatomy, an acquiſition by no means uſeleſs in chirurgical operations. Engaged, too, in perpetual hoſtility, the ſavage probably regarded the examination of human bodies with little or none of that horror which has proved ſo inimical to the ſtudy of anatomy in more civilized times; and indeed, (if we may judge from the accounts handed to us by the ancients,) he ſeems to have felt a brutal pleaſure in mangling and deforming the perſons of his deceaſed enemies. Thus Homer relates of the Greeks over the body of Hector, that, Ουδ' αρα οι τις ανουτητι γε παρίστη.

It was in times when more refined habits of life obtained, and in ſituations where gentler purſuits occupied

the attention of mankind, that the application of remedies to the cure of internal maladies took its riſe. The tending of flocks and herds, which then became a very general employment, muſt have induced habits of leiſure and contemplation extremely favourable to the acquiſition of experimental knowledge: we may ſuppoſe that the paſtors obſerved the effects of certain plants on their flocks; and by a natural and eaſy tranſition were induced to adminiſter the ſame ſubſtances in ailments of their own bodies: a ſuppoſition which the facts related by Herodotus and others ſeem to confirm. The above-mentioned author obſerves, that Melampus diſcovered the *melampodium*, or black hellebore, to be poſſeſſed of a purgative property from having obſerved its effect on goats which had brouſed in paſtures where this herb was indigenous and frequent. Again, we are informed, that the firſt uſe of enemas was taught mankind by the Ibis, a bird which is reported to have the power of introducing its bill into the anus, and injecting thereby a quantity of water up the inteſtines. Pliny likewiſe mentions a circumſtance to which he attributed the introduction of phlebotomy; viz. that the Hippopotamus has a cuſtom, whenever it becomes large and unwieldy, of opening a vein in its leg by means of a ſharp reed which grows on the banks of the Nile. The accuracy of the two latter relations may be queſtioned; yet probably they had their origin in facts, though tradition and the lapſe of time had altered or exaggerated them. However this may be, there can be little doubt, but that in this branch of medicine, as in anatomy, the phenomena diſplayed in the brute creation furniſhed man with uſeful hints, and contributed, in a few inſtances, to introduce medical herbs to his notice. The conſideration of the more or leſs ſalubrious qualities of his own food led to the introduction of certain regimen, or ſyſtem of diet, which in theſe times, with the occaſional uſe of a few ſimple cathartics, was probably ſufficient for the cure of moſt internal complaints; and theſe obſervations, naturally communicated from father to ſon, from one generation to another, and eſtabliſhed by long and multiplied experiments, at length laid the baſis of materia medica and therapeutics. This empirical practice, however, being often found to fail in affording the expected relief, a minute attention was paid to the concomitant circumſtances under which previous cures had been effected, and they were imitated accordingly. Thus one plant was directed to be gathered in the night, another when the moon was on the wane, &c. accompanied with abſurd and ſuperſtitious incantations.

With reſpect to the *modus operandi* of theſe remedies, their firſt employers muſt have been totally uninformed, in conſequence of their ignorance of natural philoſophy; to divine agency therefore they referred the effects of medicinal herbs, rather than to any innate virtue in the ſubſtances themſelves. To this agency likewiſe they aſcribed the occurrence of diſeaſe, or the reſtoration of health; an idea which appears in ſome meaſure connected with that branch of heathen mythology which attributed to every member of the body its guardian genius.

Up to this period every man was more or leſs a phyſician, and contributed his individual ſtock of experience to the general good; but, when the increaſing wants and number of the human race compelled them to adopt the forms of political government, and they eſtabliſhed the military ruler or chieftain on the one hand, and the prieſt, druid, or brahmin, on the other, the practice of medicine fell excluſively into the hands of thoſe who executed the ſacerdotal function. They ſeized with avidity the exerciſe of an art, the unknown or uncertain origin of which favoured the illuſion that it was derived immediately from the gods: an art which, clothed in ſuperſtition, and venerable from its antiquity, lent them increaſed influence over the vulgar, and was indeed hardly leſs uſeful for that purpoſe than the ſacred or legiſlatorial offices which they likewiſe aſſumed. They taught that peſtilence or diſeaſe was inflicted by the angel of the enraged gods, and eaſily found means to perſuade the ſufferers that ſuch dire viſitations were only to be removed through the medium of prieſtly interceſſion, joined with ſacrifices and offerings.

From that paſſage in Geneſis in which it is ſaid, that "Joſeph commanded *his ſervants* the phyſicians to embalm his father," (Gen. l. 2.) the writer of the article MEDICINE in the Encyclopædia Britannica concludes that the firſt phyſicians of the *Egyptians* were not prieſts; becauſe, in that age, the Egyptian prieſts were in ſuch high favour, that they retained their liberty, when, through a public calamity, all the reſt of the people were made ſlaves to the prince. This, however, we do not think a valid objection; for we cannot doubt that every rank of perſons, prieſts as well as others, might, under an abſolute monarchy, be very properly ſtyled *ſervants* of the prince, and alſo of his prime miniſter.

The ſame writer ſeems more founded in his conjecture that the phyſicians of the *Jews* were originally diſtinct from their prieſts; for we read that, when king Aſa was diſeaſed in his feet, "he ſought not to the Lord, but to the phyſicians." (2 Chron. xvi. 12.) Now, ſeeking to the prieſts, had they been the phyſicians, would have been the ſame thing as ſeeking to the Lord; and hence it is ſuppoſed, that among the Jews the medical art was looked upon as a mere human invention; and it was thought that the Deity never cured diſeaſes by making people acquainted with the virtues of this or that herb, but only by his miraculous power. That the ſame opinion prevailed among the nations who were neighbours to the Jews, is alſo probable from what we read of Ahaziah king of Judah, who, having ſent meſſengers to inquire of Baalzebub, god of Ekron, concerning his diſeaſe, did not deſire any remedy from him or his prieſts, but ſimply to know whether he ſhould recover or not. (2 Kings i. 2.)

We ſhall now quote a few verſes from a book of Scripture (Apocrypha), written "in the latter times, after the people had been led away captive, and called home again, and almoſt after all the prophets." In this book phyſicians are ſpoken of with a much greater degree of reſpect, but not as if they were prieſts. "My ſon, in thy ſickneſs be not negligent: but pray unto the Lord, and he will make thee whole. Leave off from ſin, and order thine hands aright, and cleanſe thy heart from all wickedneſs. Give a ſweet ſavour, and a memorial of fine flour; and make a fat offering. *Then* give place to the phyſician, for the Lord hath created him: let him not go from thee, for thou haſt need of him. *There is a time when in their hands there is good ſucceſs.* For they ſhall alſo pray unto the Lord, that he would proſper that which they give for eaſe and remedy to prolong life. *He that ſinneth before his Maker, let him fall into the hand of the phyſician.* Eccleſiaſticus xxxviii. 15.

"What ſeems moſt probable on this ſubject therefore is, that religion and medicine came to be mixed together only in conſequence of that degeneracy into ignorance and ſuperſtition which took place among all nations. The Egyptians, we know, came at laſt to be ſunk in the moſt ridiculous and abſurd ſuperſtition; and then, indeed, it is not wonderful that we ſhould find their prieſts commencing phyſicians, and mingling charms, incantations, &c. with their remedies. That this was the caſe, long after the days of Joſeph, we are very certain; and indeed it ſeems as natural for ignorance and barbariſm to combine religion with phyſic, as it is for a civilized and enlightened people to keep them ſeparate. Hence we ſee, that among all *modern* barbarians their prieſts or conjurors are their only phyſicians." Ency. Brit. vol. xiii.

However this may be, the union of medicine and religion continued for many centuries; but, whatever diſcoveries may have been made, the myſtery attendant on moſt ſacred inſtitutions has prevented communication of them to poſterity. Nevertheleſs this union was not perhaps ſo prejudical to the intereſts of ſcience as many have ſuppoſed.

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poſed. Conſtant ſacrifice and the frequent habit of inſpecting the "*ſpirantia exta*" of the victims, muſt have materially advanced the progreſs of comparative anatomy; and the written records firſt adopted by the prieſts at leaſt prevented eſtabliſhed facts from falling into oblivion, even if further experience in the cure of diſeaſe was but ſlowly attained.

The *Egyptians* aſcribed the invention of medicine to Thoth, (the Hermes Triſmegiſtus of the Greeks,) to whom divine honours were paid; and they reported that he was the founder of all uſeful knowledge. But there is ſome confuſion in this account; for, on ſome occaſions, this diſcovery was attributed to Iſis or Oſiris, while at other times Apis and Serapis laid claim to the merit of it. It ſhould be recollected, however, that theſe deities were not like Thoth, mortals who had divine honours paid to them after their deceaſe, but embodied or perſonified agents, by means of which the philoſophers of the time endeavoured to explain all the laws and operations of matter. They were not likely therefore to be commemorated as the inventors of medicine, although they were undoubtedly invoked as preſiding over health. Athotis, one of the Egyptian kings, left writings on anatomy, a ſcience in which the nation could hardly have been deficient, on account of the frequent opportunities they enjoyed of acquiring it while engaged in embalming the bodies of the dead. But the other branches of medicine remained a long time ſtationary, fettered by abſurd regulations. In the firſt place, the chief-prieſts confined themſelves entirely to the exerciſe of magic rites and propheſies, which they conſidered the higher branch of the art, and left the exhibition of remedies to the *paſtophori*, or image-bearers. Secondly, the prieſts of every denomination were compelled to follow implicitly the medical precepts of the ſacred records contained in the ſix hermetical books; for, if they deviated from theſe eſtabliſhed rules, or introduced new modes of practice, their temerity was puniſhed with death, whether their meaſures were ſucceſsful or not; thus precluding all idea of improvement. We know very little of the details of their practice, as they concealed them with myſtic ceremonies; but that they did not interfere much with the operations of nature may be inferred from a circumſtance mentioned by Ariſtotle, viz. that they did not adopt active treatment till after the fourth day of the diſeaſe. They had, however, a comprehenſive ſyſtem of diet; for they excluded fiſh, pork, and ſuch other aliments as they conſidered injurious to health. They were alſo acquainted with a few valuable remedies, among which may be enumerated ſquills, which they adminiſtered to dropſical patients, and iron, which they uſed as a tonic in cachectic diſeaſes; but they were lamentably deficient in ſurgery, ſince they were unable to cure a common luxation of the foot, which Darius the ſon of Hyſtaſpes met with in hunting.

We paſs briefly over the hiſtory of this ſcience among the *Jews*, becauſe we find little recorded on the ſubject except miraculous cures, which cannot properly be ſaid to apply to natural medicine. Indeed the Jews ſeem to have been wholly ignorant of the art of phyſic until their introduction into Egypt, when they found its principles eſtabliſhed.

The alleviation of human infirmity, as recorded in Scripture, forms a ſubject rather to exerciſe the faith of the theologian than to engage the attention of the pathologiſt. It is true, Moſes has arranged a code of medicinal and dietetic maxims, and has deſcribed ſeveral varieties of leproſy with the minuteneſs of a practical phyſician; but it does not appear that he attributed much to the virtue of medicines in thoſe complaints. Indeed the adminiſtration of remedies could hardly ſeem neceſſary to a people who were informed by a direct revelation from the Lord, that, if they would diligently hearken unto his voice, and do that which was right in his ſight, he would put none of thoſe diſeaſes on them with which he had afflicted the Egyptians. To the tribe of Levi was appropriated the adminiſtration of the ſacred remedies. Solomon was celebrated for his knowledge of plants and animals; and he compoſed a treatiſe on the cure of diſeaſes which was deſtroyed by Ezekias, leſt it ſhould cauſe the ſacred remedies, rendered more efficacious by the ſacrifices of the prieſts, to fall into diſuſe. Iſaiah the prophet was likewiſe famed for medical knowledge: he reſtored Ezekias to life by applying to his wounds cataplaſms of figs. Soon after this period the Jews were diſperſed in Media and Aſſyria, and ſubmitted to the yoke of Babylon.

It is ſuppoſed that medicine was cultivated at a very early period among the *Hindoos*. Of this there can be little doubt. Whether this people were originally derived from the Egyptians, or the Egyptians from them, the ſimilitude in arts, manners, and religion, clearly indicates that the one nation aroſe from the other. Accordingly we find the art ſtood in former times nearly on the ſame footing in Hindooſtan as it ſtood in Egypt. The brahmins held the two offices of prieſts and phyſicians; and, as among the Egyptians, allotted a few diſeaſes only to the notice of each individual among themſelves.

In *China*, the progreſs of this art ſeems to have followed a retrograde courſe. For this we are at a loſs to account: certain it is, however, that the authority of the Chineſe on medical ſubjects was formerly held in much greater eſtimation than it is at preſent. The Jeſuits have informed us, that the kings of China paid particular attention to the encouragement of medicine; and that Europeans were wont to put greater confidence in the phyſicians of this country than in thoſe of any other. Moreover this ſcience was taught in their public ſchools, in conjunction with aſtronomy. Theſe ſchools no longer exiſt: the Chineſe phyſicians implicitly follow the directions of the medical code of Hoang-Ti, written, as they aſſert, 4000 years ago; and their knowledge is ſo ſmall and inaccurate, that the emperor Cam-hi commanded Parenhi to tranſlate the anatomical treatiſe of Dionis into the Tartarian language.

In GREECE, medicine was proſecuted with greater ardour, and its collateral ſcience anatomy was inveſtigated more fully, than had been the caſe in any country before. The Greeks, like the Egyptians, aſcribed the introduction of this art to divine revelation: their Apollo and Minerva anſwered to the Iſis and Oſiris of the latter nation; and Orpheus, the prieſt, poet, and phyſician, uſurped the place of Thoth; and the fable of his bringing his wife Eurydice from Hell probably applies to his ſkill in diſeaſes. But the priority has been given by ſome to Melampus, who was a phyſician of great celebrity at Pylos. He cured the daughters of Prætos king of Argos, who were afflicted with leproſy and madneſs; and he removed likewiſe the impotence of Iphiclus, by which cure he alſo ſaved his own life.

The next on record is the centaur Chiron, who was preceptor to moſt of the warriors and great men of his age, but with the greateſt ſucceſs to Æſculapius, or Aſclepias, a king of Theſſaly (and reputed ſon of Apollo), who made ſo great proficiency, that the fable ſays Jupiter was obliged to remove him from the earth to preſerve his brother Pluto's kingdom from depopulation. His ſons, Podalirius and Machaon, received from their father the art of healing, which they exerciſed with ſucceſs at the ſiege of Troy, and tranſmitted to their deſcendants the Aſclepiades. At firſt, the Aſclepiades promulgated their doctrines as prieſts in the temples of the god of health; but, as ſchiſms aroſe among the different ſects, each temple became in time a diſtinct medical ſchool. Thus the ſchool of Ceredos and Cos were founded, in which for ſome time the deſcendants of Æſculapius alone were permitted to practiſe: but it was afterwards judged neceſſary to admit a limited number of pupils from other families, who bound themſelves by oath to obſerve the rules

rules of the Aſclepiades. From the ſchool of Cos aroſe Hippocrates, the fourteenth in deſcent from Æſculapius.

But the ſtudy of medicine was not confined to this family; it formed part of the education of kings and heroes. Hercules received from Chiron, in earlier times, the rudiments of medicine. Ariſtæus, king of Arcadia, was likewiſe a ſcholar of the centaurs: to him we owe the introduction of the herb *ſylphium*, ſuppoſed by ſome to be aſſafœtida. Jaſon, Telamon, Theſeus and Peleus, Ulyſſes, Diomed, Hippolytus, and Achilles, were proficients in this art. Achilles is ſaid indeed to have firſt uſed verdigris for the purpoſe of cleaning foul ulcers. But all of them were inferior to the accompliſhed, the injured, Palamedes; by the excellent rules of diet and exerciſe to which he ſubmitted the ſoldiers, he prevented the plague from entering the Grecian camp after it had carried its ravages over moſt of the cities of the Helleſpont and even Troy itſelf.

Æſculapius flouriſhed about 50 years before the Trojan war; and we have ſeen that his two ſons diſtinguiſhed themſelves in that war both by their valour and by their ſkill *in curing wounds*. This indeed is the whole of the medical ſkill attributed to them by Homer; for, in the plague which broke out in the Grecian camp, he does not mention their being at all conſulted. Nay, what is ſtill more ſtrange, though he ſometimes mentions his heroes having their bones broken, he never takes notice of their being reduced or cured by any other than ſupernatural means; as in the caſe of Æneas, whoſe thigh-bone was broken by a ſtone caſt at him by Diomed. The methods which theſe two famous ſurgeons uſed in curing the wounds of their fellow-ſoldiers, ſeems to have been the extracting or cutting out the darts which inflicted them, and applying emollient fomentations or ſtyptics to them when neceſſary: and to theſe they undoubtedly attributed much more virtue than they could poſſibly poſſeſs; as appears from the following lines, where Homer deſcribes Eurypylus as wounded and under the hands of Patroclus, who would certainly practiſe according to the directions of the ſurgeons of that time:

Patroclus cut the forky ſteel away;
Then in his hand a bitter root he bruis'd,
The wound he waſh'd, the ſtyptic juice infus'd.
The cloſing fleſh *that inſtant* ceas'd to glow;
The wound to torture, and the blood to flow. *Iliad* xi.

The philoſophers of Greece, by adapting their ſpeculations to the elucidation of this ſcience, lent it material aid. Pythagoras viſited Egypt and India, collected the therapeutic and dietetic maxims of thoſe nations, and introduced them into his own country: unfortunately, in ſo doing, he forgot the difference of climate and habits, and endeavoured to apply the vegetable regimen too ſtrictly. He attended diligently to the ſtudy of the animal economy; and he founded the ſchool of Crotona, whence aroſe Alcmæon, an anatomiſt of great repute. With reſpect to the knowledge this latter perſonage poſſeſſed of the human ſtructure, it admits of doubt; but his ſkill in comparative anatomy is well atteſted by Ariſtotle, Diogenes, and Plutarch: with him too originated the firſt theory of ſleep: he ſuppoſed, that, when the blood flows in the larger veſſels only, ſleep is induced; but, when it returns in the ſmaller ones, waking occurs. Empedocles, the diſtinguiſhed philoſopher, was another ornament of the Pythagorean ſect.

Beſides theſe philoſophers, and the Aſclepiades, there were, at this period, other perſons who devoted themſelves to the profeſſion of phyſic, and who occaſionally were remunerated by a fixed ſalary. Thus Democetes of Crotona was retained at the court of the Samian tyrant Polycrates, with an allowance of two talents yearly: being afterwards taken priſoner, and carried as a ſlave into Perſia, he acquired great repute by curing Darius of a ſprained foot, after the Egyptian phyſicians had failed; and alſo by his ſucceſsful treatment of a tumour of the breaſt, under which Atoſſa, the daughter of Cyrus, and wife of Darius, had laboured for a conſiderable time. (Herodot. iii. 133.) Such practitioners, from their wandering lives, were ſometimes deſignated by the name of περιοδευται. Of this claſs, one of the moſt conſpicuous was Acron of Agrigentum, the contemporary and rival of Empedocles, reſpecting whom Pliny has fallen into a ſtrange error, in deſcribing him as the founder of the empiric ſect "under the ſanction of Empedocles." According to Diogenes, he was the author of ſome books on medicine and dietetics, written in the Doric dialect; and he ſignalized himſelf at Athens, in the time of the great plague, by introducing the practice of fumigations, and thus affording relief to many. (Plut. de Iſid. et Oſir.) The *gymnaſia* of ancient Greece ſeem alſo to have contributed to the improvement of the art. It belonged to the gymnaſiarch, or *palæſtrophylax*, to regulate the diet of the youths who were trained in theſe ſeminaries; the γυμνασται were preſumed to be converſant with diſeaſes; and it was the buſineſs of the αλειπται to perform veneſection, to dreſs wounds, fractures, &c. They were ſometimes called phyſicians. It was in theſe ſeminaries that the gymnaſtic ſyſtem of medicine originated, under the auſpices of Iccus of Tarentum, and Herodicus of Selymbria.

About this time, and contemporary with Hippocrates, flouriſhed Democritus of Abdera, who made the firſt public diſſection on record: he applied himſelf to this taſk for the purpoſe of aſcertaining the nature and courſe of the bile; and diſſected with ſo much aſſiduity, that the Abderites ſuſpected him of inſanity, and accordingly ſent for Hippocrates (as it is reported) to cure him: but the latter, ſo far from finding him mad, diſcovered that he was extremely wiſe, as he expreſſes himſelf in a letter to his friend Damagetus.

As we are now arrived at an era in which the hiſtory of pathology will aſſume, as it were, a tangible ſhape, we ſhall divide our large field of information into three ſections; the firſt reaching to the decline of the art during the dark ages; the ſecond from that time to the end of the ſixteenth century; and the third, to the preſent time.

I. From the Time of Hippocrates to the Dark Ages.

Hippocrates has juſtly been ſtyled the Father of Medicine, ſince his writings are the moſt ancient expreſsly on this ſubject which have been preſerved. His tranſcendent merit alone would, however, ſecure to him that title. He has left behind him uſeful hints on almoſt every branch of medicine; and has inveſtigated ſome of them with an exactneſs which has left us little to deſire. On anatomy, though probably he did not himſelf make diſſections, he has compiled all the information extant in his time; and his theory of medicine, though long ſince exploded, merits, in compariſon with the hypothetical and extravagant notions that had preceded it, much encomium. It was certainly more comprehenſible, and more explanatory of known facts, than the doctrine of Pythagoras, which accounted for every thing by the ſcience of numbers; or than that of Empedocles, which referred all phenomena to the agency of an ethereal ſpirit. It is, however, the *practical* part of medicine that Hippocrates has ſo much elucidated. We diſcard his theory of Nature, his concoctions and inſpiſſations; but in his account of diſeaſes, in the accurate hiſtories he has afforded us of ſigns or ſymptoms, their relations and effects, he ſtands unrivalled. His *prognoſtics*, too, have comparatively been little improved in the preſent day: indeed he carried them to ſo great a degree of perfection, that he and his pupils were regarded by the vulgar as prophets. It ſhould be likewiſe recorded of him, that he endeavoured to diveſt the art he profeſſed of all that myſtery and ſuperſtition in which he found it enveloped, and that he gave the firſt outline of a ſubject of great importance, *medical ethics*. His authority has been revered for ages, and his maxims have been received as dogmas, not only in the ſchools, but in the courts of law. We need

Pindar affirms that Aesculapius cured those who were affected with ulcers of spontaneous origin; those who were wounded by the polished brass, or the far-thrown stone; and those who suffered ~~from~~ by the summer's heat, or the winter's cold; curing some by incantations, and others by medicines; restoring some to health, or straitness, by remedies bound round the diseased members, and others by incisions.

Ἦ μὲν ἀν ὀδὸς ἰητρὸν αὐτοφυτον
ἑλκέων ξυναόρες, ἢ πολέω

not therefore be ſurpriſed that many men of inferior celebrity ſhould have endeavoured to render their works popular by aſcribing them to this famous phyſician. Accordingly we find many writings extant bearing his name, which are evidently ſpurious. It ſhould be remarked however, that theſe writings are nearly of the ſame date as his genuine compoſitions, and contain the prevalent doctrines of his time.

The pathology of Hippocrates was founded on the aſſumption, that a principle exiſts in the animal, tending to the preſervation of health, and the removal of diſeaſe. To this principle, which he denominates *Nature*, he appears to have attributed ſome degree of intelligence, and even in one place applies to it the epithet of *juſt*. "The manner in which Nature acts, or commands her ſubſervient power to act, is by attracting what is good and agreeable to each ſpecies, and by retaining, preparing, and changing, it; and on the other ſide in rejecting whatever is ſuperfluous or hurtful, after ſhe has ſeparated it from the good." This is the foundation of the doctrine of depuration, concoction, and criſis, in fevers, ſo much inſiſted upon by Hippocrates and many other phyſicians. He ſuppoſes alſo, that every thing has an inclination to be joined to what agrees with it, and to remove from every thing contrary to it; and likewiſe that there is an affinity between the ſeveral parts of the body, by which they mutually ſympathiſe with each other.

Hippocrates referred the production of moſt diſeaſes to diet and air; to the former of which he attached ſo much importance, that he compoſed ſeveral books concerning it: yet in another part of his works he gives the judicious maxim, that while in health we ſhould by no means attach ourſelves to nice and delicate habits of living, or live with too much regularity; becauſe thoſe who have once begun to live by rule, become diſordered if they depart in the leaſt from it. In the choice of ſituation with regard to the purity of air, he was particularly careful; and noted eſpecially the winds, the times of the ſolſtices and equinoxes, &c. He likewiſe took into conſideration the effects produced by ſleep, watching, exerciſe, &c. and attached great importance to certain humours, particularly blood and bile. His claſſification of diſeaſes was arranged according to the circumſtances of their danger, duration, or locality: thus ſome diſeaſes were mortal, dangerous, or curable; others acute or chronic; and again others were divided into endemical, epidemical, and ſporadic. Hereditary diſeaſes he likewiſe noticed.

We are obliged to Hippocrates for the remark, that there are certain *ſtages* in every diſtemper; a point of great practical importance. He generally noticed four; the beginning, the augmentation, the height, and the decline. In mortal diſeaſes, death took place inſtead of the decline; on which account this latter was reckoned by Hippocrates to be worthy of particular inveſtigation. He conceived that during this ſtage a *criſis* took place; i. e. that the mortified matter which produced the diſeaſe was by ſome means ſeparated from the body; but this ſeparation never occurred until the humour was ſufficiently *concocted*; that is to ſay, brought into a fit ſtate for expulſion from the body, by the efforts of Nature. Moreover, this author ſuppoſed, that, as every fruit has a limited time to ripen in, ſo *concoction* could not be accompliſhed unleſs within a certain period. He took much pains to eſtabliſh *critical days*, or the times when theſe concoctions and criſes ſhould take place; and he deemed them moſt favourable when they occurred on odd days.

In noting the ſigns and characters of diſeaſe, Hippocrates was extremely minute, and that chiefly with a view to foretelling the event of the malady. He obſerved the altered appearance of every feature of the face, the complexion; the dim, fierce, ſparkling, or other expreſſion, of the eyes. He paid attention to the poſture and attitude of the ſufferer: he remarked the debility which generally attends the continued ſupine poſition; and he noticed the picking of the bed-clothes, the uneaſy and tremulous motions, and likewiſe the *ſubſultus tendinum*, which denote death in patients affected with fevers.

Hippocrates paid particular attention to the reſpiration, the different ſtates of which aſſiſted him in forming his prognoſis. He examined the urine with great care; but, as his remarks on it chiefly regarded his *humoral* hypotheſis, they are now of little intereſt. He noticed, however, that the criſis of fever was often brought about when the urine became very abundant, and the thick appearance of it denoted diſeaſe of the bladder; he was in the habit of comparing the appearance of this evacuation with that of the tongue. The fæces too were inveſtigated, in relation to their odour, conſiſtence, and colour, by this author. But he has recorded more important facts concerning the expectoration which ariſes in pulmonary complaints: he ſays that, when it is mixed with blood (in chronic caſes), when it is entirely wanting, or when it is ſo copious as to cauſe rattling in the throat, it denotes extreme danger; but that, when it is mixed with purulent matter, it indicates conſumption, and terminates in death. Concerning perſpiration, Hippocrates has recorded the beneficial effects derived from its occurrence in fevers; when it is general, it often produces the criſis: but he has well remarked the danger of cold and partial ſweats.

It has been doubted whether this celebrated phyſician underſtood any thing about the pulſe. It has been ſuppoſed that the paſſages found in his works apply only to the pulſation which is felt in an inflamed part. But his knowledge muſt have extended further than this on the ſubject; becauſe he talks of ſlow and tremulous pulſes; and in his *Coacæ Prænotiones* he remarks, that the ſenſible pulſation of the artery in the elbow indicates delirium, or the preſence of violent anger.

Exerciſe was not neglected by Hippocrates; but he juſtly blames his preceptor Herodicus for recommending it to thoſe afflicted with fevers or inflammatory affections. Indeed the latter phyſician was ſo fond of gymnaſtics, that he made his patients walk from Athens to Megara, a diſtance of twenty-five miles, and return as ſoon as they had touched the walls of the city. Yet Hippocrates juſtly appreciated the advantage of exerciſe in chronic diſeaſes; and even tells us that "we muſt ſometimes puſh the timorous out of bed, and rouſe up the lazy."

Hippocrates gave many general rules of importance in regard to the eſtabliſhment of health, among which are the important ones of keeping up, in moſt caſes, a regular diſcharge; to deplete the plethoric by low living, and to avoid ſudden expoſure to increaſed or diminiſhed temperature.

The therapeutical maxims of Hippocrates were few and ſimple, and all founded on his theory of Nature curing diſeaſes; inſomuch that all that could be done was to remove ſuch things as were injurious to the agency of that principle, or to aſſiſt it in its operations when it was deficient. He aſſerted, in the firſt place, "That contraries, or oppoſites, are the remedies for each other;" and this maxim he explains by an aphoriſm; in which he ſays, that evacuations cure thoſe diſtempers which come from repletion, and repletion thoſe that are cauſed by evacuation: ſo heat is deſtroyed by cold, and cold by heat, &c. In the ſecond place, he aſſerted that phyſic is an addition of what is wanting, and a ſubtraction or retrenchment of what is ſuperfluous: an axiom which is thus explained, that there are ſome juices or humours, which in particular caſes ought to be evacuated, or driven out of the body, or dried up; and ſome others which ought to be reſtored to the body, or cauſed to be produced there again. As to the method to be taken for this addition or retrenchment, he gives this general caution, "That you ought to be careful how you fill up, or evacuate, all at once, or too quickly, or too much; and that it is equally dangerous to heat or cool again on a ſudden; or, rather, you ought not to do it: every thing that runs to an exceſs being an enemy to nature." In the fourth place, he allowed that we ought ſometimes to

dilate, and ſometimes to lock up; to dilate, or open the paſſages by which the humours are voided naturally, when they are not ſufficiently opened, or when they are cloſed; and, on the contrary, to lock up or ſtraiten the paſſages that are relaxed, when the juices that paſs there ought not to paſs, or when they paſs in too great quantity. He adds, that we ought ſometimes to ſmooth, and ſometimes to make rough; ſometimes to harden, and ſometimes to ſoften again; ſometimes to make more fine or ſupple; ſometimes to thicken; ſometimes to rouſe up, and at other times to ſtupify or take away the ſenſe; all in relation to the ſolid parts of the body, or to the humours. He gives alſo this farther leſſon, That we ought to have regard to the courſe the humours take, from whence they come and whither they go; and in conſequence of that, when they go where they ought not, that we make them take a turn-about, or carry them another way, almoſt like the turning the courſe of a river; or, upon other occaſions, that we endeavour, if poſſible, to recal, or make the ſame humours return back again; drawing upward ſuch as have a tendency downward, and drawing downward ſuch as tend upward. We ought alſo to carry off, by convenient ways, that which is neceſſary to be carried off; and not let the humours once evacuated, enter into the veſſels again. Hippocrates gives alſo the following inſtruction; "That, when we do any thing according to reaſon, though the ſucceſs be not anſwerable, we ought not eaſily, or too haſtily, to alter the manner of acting, as long as the reaſons for it are yet good." But, as this maxim might ſometimes prove deceitful, he gives the following as a corrector to it: "We ought (ſays he) to mind with a great deal of attention what gives eaſe, and what creates pain; what is eaſily ſupported, and what cannot be endured. We ought not to do any thing raſhly; but ought often to pauſe, or wait, without doing any thing: by this way, if you do the patient no good, you will at leaſt do him no hurt."

Theſe are the principal and moſt general maxims of the practice of Hippocrates, and which proceed upon the ſuppoſition laid down at the beginning, viz. that Nature cures diſeaſes. We next proceed to conſider particularly the remedies employed by him, which will ſerve to give us further inſtructions concerning his practice.

Diet was the firſt, the principal, and often the only, remedy made uſe of by this great phyſician to anſwer moſt of the intentions above mentioned; by means of it he oppoſed the moiſt to dry, hot to cold, &c. and what he looked upon to be the moſt conſiderable point was, that thus he ſupported Nature, and aſſiſted her to overcome the malady. The dietetic part of medicine was ſo much the invention of Hippocrates himſelf, that he was very deſirous to be accounted the author of it; and, the better to make it appear that it was a new remedy in his days, he ſays expreſsly, that the ancients had written almoſt nothing concerning the diet of the ſick, having omitted this point, though it was one of the moſt eſſential parts of the art.

There were many diſeaſes for which he judged the *bath* was a proper remedy; and he takes notice of all the circumſtances that are neceſſary in order to cauſe the patient to receive benefit from it, among which the following are the principal. The patient that bathes himſelf muſt remain ſtill and quiet in his place, without ſpeaking, while the aſſiſtants throw water over his head or are wiping him dry; for which laſt purpoſe he deſired them to keep ſponges, inſtead of that inſtrument called by the ancients *ſtrigil*, which ſerved to rub off from the ſkin the dirt and naſtineſs left upon it by the unguents and oils with which they anointed themſelves. He muſt alſo take care not to catch cold; and muſt not bathe immediately after eating or drinking, nor eat or drink immediately after coming out of the bath. Regard muſt alſo be had whether the patient has been accuſtomed to bathe while in health, and whether he has been benefited or hurt by it. Laſtly, he muſt abſtain from the bath when the body is too open, or too coſtive, or when he is too weak; or if he has an inclination to vomit, a great loſs of appetite, or bleeds at the noſe.

When he found that diet, exerciſe, and bathing, were not ſufficient to eaſe nature of a burden of corrupted humours, he was obliged to make uſe of other means; of which vomiting, bleeding, and purging, were the chief.

Vomits were a favourite remedy with Hippocrates. He preſcribed them to people in health, by way of preventatives, directing them to be taken once or twice a-month in the winter and the ſpring. The moſt ſimple of theſe was a decoction of hyſſop, with the addition of a little vinegar and ſalt. With regard to the ſick, he ſometimes adviſed them to the ſame, when his intentions were only to cleanſe the ſtomach. But, when he had a mind to recal the humours, as he termed it, from the inmoſt receſſes of the body, he made uſe of briſker remedies. Among theſe was white hellebore; and this indeed he moſt frequently uſed to excite vomiting. He gave this root particularly to melancholy and mad people; and from the great uſe made of it in theſe caſes by Hippocrates and other ancient phyſicians, the phraſe, *to have need of hellebore*, became a proverbial expreſſion for being out of one's ſenſes. He gave it alſo in defluxions, which come, according to him, from the brain, and throw themſelves on the noſtrils or ears, or fill the mouth with ſaliva, or that cauſe ſtubborn pains in the head, and a wearineſs or an extraordinary heavineſs, or a weakneſs of the knees, or a ſwelling all over the body. He gave it to conſumptive perſons in broth of lentils, to ſuch as were afflicted with the dropſy called *leucophlegmatia*, and in other chronical diſorders. But we do not find that he made uſe of it in acute diſtempers, except in the cholera morbus, where he ſays he preſcribed it with benefit. Some took this medicine faſting; but moſt took it after ſupper, as was commonly practiſed with regard to vomits taken by way of prevention. The reaſon why he gave this medicine moſt commonly after eating was, that by mixing with the aliment, its acrimony might be ſomewhat abated, and it might operate with leſs violence on the membranes of the ſtomach.

In the diſtemper called *empyema* (or a collection of matter in the breaſt), he made uſe of a very rough medicine. He commanded the patient to draw in his tongue as much as he was able; and, when that was done, he endeavoured to put into the hollow of the lungs a liquor that irritated the part, which, raiſing a violent cough, forced the lungs to diſcharge the purulent matter contained in them. The materials that he uſed for this purpoſe were of different ſorts; ſometimes he took the root of arum, which he ordered to be boiled with a little ſalt in a ſufficient quantity of water and oil; diſſolving a little honey in it. At other times, when he intended to purge more ſtrongly, he took the flowers of copper and hellebore; after that he ſhook the patient violently by the ſhoulders, the better to looſen the pus. This remedy, according to Galen, he received from the Cnidian phyſicians; and it has never been uſed by ſucceeding ones, probably becauſe the patients could not ſuffer it.

Blood-letting was another method of evacuation pretty much uſed by Hippocrates; and in inflammatory affections he practiſed it in a large and decided manner; for he ſometimes opened the veins of both arms, and kept them running till the patient fainted. The principal maladies in which he had recourſe to bleeding were inflammations of the liver, ſpleen, lungs, or other viſcera; quinſy, pleuriſy, and pain in the head; but in ſome inſtances of chronic diſeaſe, as dropſy and jaundice, he likewiſe performed this operation. In fevers he diſapproved of veneſection, becauſe he conceived thoſe diſeaſes were produced by certain humours which could not be expelled by that means: it muſt, however, be underſtood, that he did not extend this rule to ſymptomatic fevers, but rather to thoſe which were not preceded by ſigns of

local

local inflammation. Indeed, in his writings, the term *fever* is only applied to that claſs which we call *idiopathic*; and there ſeems good reaſon to ſuppoſe, that, in the commencement of a fever ariſing out of viſceral inflammation, he bled very copiouſly. He likewiſe performed cupping with ſcarificators; and occaſionally uſed the ſemicupium, which he ſuppoſed would draw the humours from the affected part by means of *attraction*.

As moſt of the purgatives in uſe in the time of Hippocrates were very violent in their operation, often producing ſickneſs, he preſcribed them with great caution. He did not give them to pregnant women, old people, or children; nor during the dog-days. He uſed them more frequently in chronic than acute diſeaſes, and chiefly with a view to the expulſion of ſome particular humour; to each of theſe humours he applied a ſeparate kind of purgative; hence the diſtinction of thoſe ſubſtances into hydragogues, cholagogues, &c. now juſtly exploded. Hippocrates likewiſe uſed errhines, which he ſaid relieved pain in the head by drawing the phlegm from the brain; ſudorifics and diuretics, which were likewiſe for the purpoſe of evacuating ſome peccant humour, and narcotics, or, as he called them, hypnotics, to produce ſleep. But of theſe laſt he was very ſparing. To medicines which experience had proved to be efficacious, but of which the operation was inexplicable by this humoral pathology, he applied the term *ſpecifics*. He uſed fomentations, in which different herbs were boiled, either by direct application or in the form of vapour. Nor did he neglect cataplaſms, ointments, cauſtics, and collyria; all of which he prepared himſelf, or cauſed to be made by his ſervants under his own immediate inſpection. The pharmaceutical diſtinctions of medicines into mixtures, powders, and pills, were obſerved in this time, and likewiſe ſomething analogous to our lozenge was uſed; it was called a *lambative*, was of a ſoft conſiſtence, and was retained in the patient's mouth until ſlowly diſſolved. The practice of Hippocrates was beneficial to himſelf; for it is generally underſtood that he reached the age of a hundred years, and died about 360 years before the birth of Chriſt.

Soon after the death of Hippocrates, the profeſſors of medicine became divided into two ſects; the Dogmatiſts and the Empirics.

The ſect of the DOGMATISTS was founded by Theſſalus and Draco the ſons, and Polybus the ſon-in-law, of Hippocrates. Their leading tenets are recorded in the book "On the Nature of Man," which has falſely been attributed to Hippocrates. Ariſtotle conjectures that it was written by Polybus. The Dogmatiſts were ſometimes called *logici*, or logicians, from their uſing the rules of logic and reaſon in the ſubjects of their profeſſion. They ſet out with the rule, that, "when experience fails, reaſon may ſuffice." Unfortunately, however, they took little pains to conſult experience, but were perpetually occupied with endeavouring to trace diſeaſe to its ſecret and remote cauſes.

The ſyſtem of the EMPIRICS, as the term imports, was founded altogether upon *experience*: and thoſe who belonged to this ſect have remarked, that there are three modes by which we learn, from experience, to diſtinguiſh what is advantageous and what is prejudicial, in regard to our health. 1. The firſt of theſe, and the moſt ſimple, ariſes from *accident*. A perſon, for example, having a violent pain in the head, happens to fall, and divides a veſſel in the forehead; and it is obſerved that, having loſt blood, his pain is relieved. Under the ſame mode, they include the experience which is acquired by obſerving the ſpontaneous operations of the conſtitution, where no remedy has been applied, as in the following caſe: a perſon labouring under a fever, finds his diſeaſe mitigated, after a hemorrhagy from the noſe, a profuſe perſpiration, or a diarrhœa. 2. The ſecond mode of gaining experience is, that in which ſomething is done by *deſign*, with a view to aſcertain what will be the ſucceſs of it; as, for inſtance, when a perſon, having been bitten by a ſerpent, or other venomous creature, applies to the bite the firſt herb that he finds; or when a man attempts to alleviate the ſymptoms of an acute and burning fever, by drinking as copiouſly as he is able of cold water; or when a perſon tries a remedy, ſuggeſted to him by a dream, as was frequently done in heatheniſh times. 3. The third mode of experimenting is, that which the empirics termed *imitative*; which is purſued in caſes, when, after having remarked the effects reſulting from *accident*, or the ſpontaneous actions of the ſyſtem, on the one hand, or from *deſign* on the other, we make an attempt to accompliſh a ſimilar reſult by imitating that which was done on thoſe occaſions.

This laſt ſort of experience, they contend, is that which peculiarly conſtitutes the art of medicine, when it has been frequently repeated. They call that *obſervation* (τηρησις,) or *autopſia*, (αυτοψια,) which each individual ſees himſelf; and uſe the term *hiſtory* or *record*, (ιστορια,) for ſuch obſervation, when committed to writing; that is, the *autopſia*, or perſonal experience, conſiſts of the obſervations which each perſon has made, by his attention to the progreſs of a diſeaſe, whether in regard to its ſymptoms and changes, or to the remedies employed; while the *record* is a ſort of narration or regiſter of all that was obſerved by thoſe individuals; which regiſter being completed, (i. e. including all the diſeaſes incident to mankind, and the remedies adminiſtered for their alleviation,) the art of medicine would be eſtabliſhed with a conſiderable degree of certainty. But, as new diſeaſes ſometimes occur, in regard to which neither our perſonal experience, nor the obſervations of others, can furniſh us with any aſſiſtance; and we meet with diſorders in particular ſituations, where the means of relief, ſanctioned by experience elſewhere, are not within our reach; we muſt neceſſarily have recourſe to ſome other expedient in order to alleviate the ſufferings of the patient. The empirics were provided againſt this particular difficulty, in what they termed a *ſubſtitution* of ſimilar means, (*tranſitus ad ſimile*, as the Latins have tranſlated it.) This was a new experiment, which they inſtituted, after having compared one diſeaſe with another; or one part of the body with another, of ſimilar ſtructure; or, laſtly, one remedy, the nature of which was aſcertained by experiment, with another which reſembled it. "They tried, for example, in *herpetic* eruptions the remedies which had relieved *eryſipelas*: and, in the diſeaſes of the *arms*, they employed the expedients which had been practiſed in thoſe of the *legs*; &c. &c." *Obſervation*, then, *record*, and the *ſubſtitution* of ſimilar means, were the three fundamental reſources of the art of medicine, according to the empirics: and theſe were denominated, by Glaucias and others, "the tripod of medicine."

There is obviouſly a great deal of good ſenſe and ſound philoſophy in this doctrine of empiricism. It points out the true mode of inveſtigating the phenomena of nature by unwearied experiment; the mode which Bacon laboured to inculcate, which Newton ſucceſsfully purſued, and which has led the philoſophers of later times to the development of that fund of natural knowledge in the ſciences of electricity, chemiſtry, mechanical, and every branch of natural, philoſophy, by which modern inquiry is diſtinguiſhed. Compared with this ſpecies of inveſtigation, how futile are the ſpeculations, miſnamed philoſophy in the ſchools, relative to elements and eſſences, which had no exiſtence except in the imagination of the diſputants.

At firſt much rancour and animoſity ſubſiſted between theſe two parties; but, in proceſs of time, their practice was found to coincide in many material points; for, though the dogmatiſts were much addicted to hypotheſis, they could not fail to make clinical obſervations when engaged in practice; and the empirics did not entirely confine themſelves to their profeſſed mode of acquiring knowledge, but occaſionally indulged in that paſſion for theory and generalization which is ſo common in a philoſophic

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phic age. It is evident, then, that both the dogmatic and empiric phyſicians appealed to experience, and that neither excluded altogether the dictates of reaſon and reflection. The principal difference in their tenets appears to have conſiſted in this: that the empirics reaſoned only from the facts aſcertained by obſervation, without attempting to explain their eſſential and inſcrutable nature by hypotheſes; and that the latter ſpeculated upon the mode and nature of every phenomenon in the animal body, and took theſe ſpeculations as the baſis of their reaſoning: an error in the inveſtigation of nature, which, as we have before ſaid, was ſo well expoſed by lord Bacon in modern times; and which was practically illuſtrated in the triumph of Newton's *empirical* doctrines, over the *dogmatical* hypotheſes of Des Cartes.

The empirical ſect had not enjoyed great influence or diſſemination till Serapion of Alexandria, in the year before Chriſt 280, took up and defended their doctrines with great ſpirit: hence ſome have called him the founder of the ſect. His works are loſt; but what has been tranſmitted of his opinion by other authors, tends to prove that he followed the practice of Hippocrates with great fidelity, though he ſeverely criticiſed his reaſonings.

It is chiefly to the induſtry of the ancient empirics that we are indebted for the introduction, or rather for the full knowledge, of ſedative and narcotic remedies; on the liberal uſe of which probably depended the ſuperior reputation acquired by ſome of them over their more cautious antagoniſts. Of this ſuperiority, a ſingular inſtance occurs in the many exiſting teſtimonies to the fame of Heraclides of Tarentum. Celſus Aurelianus calls him "Empiricorum Princeps;" and Galen ſpeaks of him in very high terms. He ſo far deviated from the practice of the ſtrict empirics, that he ſearched after the cauſes of diſeaſe with almoſt as much pertinacity as the dogmatiſts; by no means however neglecting the practical obſervations which were taught in the empirical ſchool. This union of theory and practice led him to many uſeful reſults, more particularly in reſpect to acute and dangerous diſeaſes, his treatment of which appears to have been extremely judicious. He ſeems to have made a more liberal uſe of active medicaments, eſpecially of the narcotic claſs, than his predeceſſors, having been the firſt to introduce opium into uſe as a medicine; and was very induſtrious in his inveſtigation of animal, vegetable, and mineral, ſubſtances, with a view to enrich the catalogue of the materia medica. To the books which he wrote upon this ſubject, he gave the name of the individuals to whom he dedicated them, according to Galen; entitling one "Aſtydamas," and another "Antiochis." He likewiſe wrote on the ſubject of diet, and the regimen to be obſerved in diſeaſes, in which abſtinence ſeems to have been puſhed to a great extent.

It is eaſy to ſee, however, that the direction of medical inquiry, given by the empirical phyſicians, to the diſcovery of the qualities of medicinal ſubſtances, or drugs, would in all probability lead to many abuſes and evils. Experiment of this ſort being much eaſier, at leaſt when careleſsly made, than that unremitting and accurate obſervation of the phenomena of diſeaſes which alone can conſtitute the ſcientific phyſician, the ignorant and idle would content themſelves with pharmaceutic experiments, and neglect the taſk of pathological inveſtigation; and ſelfiſh craft and diſhoneſty would ſoon learn to impoſe on the credulity of the people, in the adminiſtration of ſecret remedies, when the uſe of a particular drug, and not the general treatment of a diſeaſe, was ſuppoſed to be the eſſence of medicine. Hence it actually happened, even in the early ages of phyſic, that theſe ignorant and illiberal pretenders to *panaceas*, and infallible remedies, who did not know one diſeaſe from another by its ſymptoms, appeared in Egypt, Greece, and Arabia, and were much complained of by their more rational contemporaries. In all ſucceeding ages, the race of theſe illiterate pretenders has been multiplied, under the abuſed name of *empirics*, by which we now underſtand thoſe perſons who ſell or adminiſter a particular drug, or compound, as a remedy for a given diſorder, without any conſideration as to the variations of that diſorder, in its different ſtages, or degrees of violence, or as it occurs in different conſtitutions, climates, or ſeaſons, or in perſons of different age, ſex, ſtrength, &c. Such a practice implies a total ignorance of the nature of the human conſtitution, both in health and diſeaſe; and therefore is generally found to be the reſort of the illiterate and ſelfiſh, not to ſay diſhoneſt, part of mankind.

After the death of Heraclides, the ſtudy of the materia medica took a new direction, in conſequence of the attention that was paid to the ſubject of *poiſons* and their *antidotes*, by the kings of Pergamus and Pontus. The antidote which was invented by the latter is well known, though its efficacy has never been proved. Even Serenus, who is in general ſufficiently credulous, ſeems to have had no very high opinion of its virtues:

> Antidotus vero multis Mithridatica fertur
> Conſociata modis, ſed Magnus ſcrinia regis
> Cum caperet victor, vilem deprehendit in illis
> Syntheſin, et vulgata ſatis medicamina riſit.

Nicander of Colophon, who was the contemporary of Attalus king of Pergamus, acquired great fame as a grammarian, a poet, and a phyſician. He endeavoured with the worſt ſucceſs to clothe medicine in flowing numbers. His only pieces extant are the Alexipharmica and Theriaca, which contain obſervations concerning poiſon and their antidotes, which (as we have ſaid) became a very favourite purſuit about his time. See NICANDER, vol. xvii. p. 45.

At the time that the ſons of Hippocrates founded the dogmatic ſect; Eudoxus of Cnidos framed a ſyſtem of medicine founded on the philoſophy of Pythagoras, and the practice of the Egyptians. It was therefore principally directed to the dietetic part of medicine. He was followed by his pupil Chryſippus, of whoſe practice we have nothing memorable to relate, but that he regarded cabbage as a very important remedy, and was very averſe to the operation of bleeding or the exhibition of purgatives. He was the preceptor of the renowned Eraſiſtratus. Diocles of Caryſtus was about this period a practitioner of repute; though placed by the Biographia Literaria as low as A.D. 500. an error of 800 years! He applied himſelf to comparative anatomy with ſome ſucceſs, and invented an inſtrument, which was called after him *Diocleus graphiſcus*, for the extraction of arrow-heads. His contemporary Praxagoras rendered important ſervices to medicine; he firſt diſcovered the difference between arteries and veins, deſcribed the cotyledons of the human uterus, and explained the phenomenon of the pulſe, a ſubject which had been very imperfectly underſtood by Hippocrates himſelf. It is remarked, however, by Galen, that his information was not ſo correct, but that he involved himſelf in many diſputes and contradictions. This phyſician was very fond of emetics: he adminiſtered them in the iliac paſſion, and in doſes ſo large and ſo frequently repeated, that the ſtools were ejected by the mouth. His ſurgical treatment of the ſame diſeaſe ſhows him to have been a bold and ſkilful operator: Aurelian ſays, that he directs an inciſion to be made through the belly and inteſtines, the indurated fæces to be removed, and the bowels then ſowed up.

The progreſs of this art now became advanced by the labours of men not exactly intereſted in its practice. Ariſtotle, who, from the unbounded liberality of his patron Alexander, poſſeſſed opportunities of diſſecting animals on a moſt extended ſcale, acquired a maſs of information which we read with inſtruction and admiration even in the preſent age. Nor were his metaphyſical doctrines without their influence on the philoſophy of medicine; they continued to influence it (ſometimes unfavourably)

favourably) for ages. The beautiful ſyſtem of ethics, likewiſe, to which Zeno and Epicurus gave birth, were not developed without a ſubſequent change in this ſcience. The tenets of Epicurus and Pyrrho were adopted by the empirical ſect, while the dogmatiſts attached themſelves to the ſtoical ſyſtem, particularly the dietetic method. For, we muſt remark, that, foreign as theſe ſubjects may appear to the practice of phyſic, yet its higher branches cannot be ſucceſsfully ſtudied without occaſional reference to every branch of philoſophy, whether moral or phyſical.

The eſtabliſhment of the *Alexandrian School* forms an important epoch in the hiſtory of medicine. But we have to regret that the deſtruction of its ſplendid library, by the hands of barbarous conquerors, has left us little to relate concerning its doctrines or its practice. We have little heſitation, however, in ſaying, that the advancement of medicine muſt have been very great in a ſituation where it derived aſſiſtance from long cultivation of its principles in Greece, Egypt, and India, a ſituation too where ſcience in general was patroniſed with ſo much earneſtneſs by illuſtrious kings. Moreover this city of Alexandria, on account of the connexion it held with all the world as a commercial emporium, muſt have been frequently viſited by foreigners whoſe diet, clothing, habits of life, not to mention a free communication of their own medical rules, muſt have illuſtrated the ſpeculations of the Alexandrian phyſicians in a very luminous manner. The long ſeries of facts collected by the Egyptian prieſts was here treaſured up; the obſervations of the Hebrews, who, long diſperſed over the plains of Aſſyria and Media, had united their own medical doctrines with the tenets of Zoroaſter and Ham, were examined; while the Greeks, uniting the uſeful part of this deſultory and obſcure information with the ſound practice of their anceſtor Hippocrates, with the anatomical knowledge they were rapidly acquiring, and with their own profound philoſophy, advanced the progreſs of the healing art in an unexampled manner.

Eraſiſtratus and Herophilus were the firſt phyſicians of note in this ſchool. The former flouriſhed about the time of Seleucus, B. C. 270. His attention was directed for the moſt part to ſurgery and anatomy; but, that his medical tact was of no mean deſcription, we have ample proof in the ſtory told of his diſcovering the love of Antiochus for Stratonice, whom Seleucus his father had then lately married. He made this diſcovery from obſerving, that the colour of the prince changed, and his pulſe quickened, when Stratonice entered the room, and that no ſuch effects followed the preſence of any other woman. Eraſiſtratus was likewiſe confirmed in this opinion, becauſe he was unable to trace elſewhere the cauſe of the prince's extreme illneſs; for it ſhould be remarked, that Eraſiſtratus held the ſame opinion as the dogmatiſts, that a diſeaſe could not be cured without a knowledge of its cauſe. The ſame incident likewiſe ſhows the high rank which the phyſicians held in thoſe days; ſince, by the influence of Eraſiſtratus, Seleucus was perſuaded not only to give up his wife, but alſo part of his kingdom, to Antiochus.

Eraſiſtratus ſuppoſed that inflammation was produced by the coagulation of blood in the ſmall arterial veſſels. In his practice he was fond of ſimple remedies, more eſpecially of *ſuccory*; and he even deſcended to deſcribe the beſt mode of boiling it. He taught that medicines did not operate on the bowels by attraction, as had been ſuppoſed; and that the humours which they diſcharged were not the ſame in the body as they appeared after their evacuation, but were altered by the action of thoſe remedies. To purging, however, he had an objection, and ſupplied the want of it by clyſters. Emetics were frequently preſcribed by him; and he recommended abſtinence in a great degree. Veneſection he diſapproved of for ſome very fooliſh reaſons; among which, it may be ſufficient to mention, 1ſt. That we cannot ſee the vein; 2dly. That we may cut the artery; 3dly. That we do not know how much to take. His attachment to his theory of inflammation was the principal theory, however, why he objected to bleeding, becauſe it did not appear to him, that the abſtraction of blood was likely to relieve the coagulation of that fluid in its veſſels.

Some very barbarous acts are related of this phyſician; for inſtance, that he ſometimes cut open the bodies of patients afflicted with complaints of the liver, and applied remedies immediately to the ſubſtance of that organ. Yet he objected to the operation of *paracenteſis*, or tapping, becauſe he conceived that, the water being evacuated, the ſurrounding viſcera would preſs upon the liver, and produce fatal conſequences. He had a notion, that death changed the ſtructure of the body, as well as the relation of its parts. In this opinion he was ſtrongly ſupported by Herophilus; and we turn with horror from the contemplation of 600 victims whom theſe barbarians are reported to have diſſected alive, and bluſh that ſuch a record ſhould be found in the annals of medicine. Yet the refined Celſus, after enumerating the advantages which accrued from this atrocious deed, excuſes the cruelty of it by obſerving, that "It cannot be juſtly deemed cruel to put a few guilty individuals to torture, with a view to aſcertain means of relief for all the innocent among mankind in all ſucceeding ages."

Herophilus added, to the anatomical reſearches in which he aſſiſted his contemporary, an intimate acquaintance with pharmacy. He made uſe of a great number of medicines, both ſimple and compound. In his works, we find the firſt mention of a diſeaſe which he calls *palſy of the heart*; it produced ſudden death, and it has been ſuppoſed that this muſt anſwer to what we now call *angina pectoris*.

About this period, according to Celſus, the practitioners of medicine were formed into three diviſions: 1. Thoſe who attended to diet, regimen, and domeſtic management, who were particularly careful to diſtinguiſh the cauſes and ſymptoms of diſeaſes, and were of the firſt rank. 2dly. Thoſe who adminiſtered remedies, in the preparation of which they affected to be particularly careful. And, laſtly, thoſe who performed the operations of ſurgery. Anterior to this time, the preparation of medicine among the Greek phyſicians was entruſted to their Δημιουργοι, or ſtudents, as well as the chirurgical department, though the latter was often executed by the phyſicians themſelves. The combination of the three branches continued, however, for ages, in a few inſtances, among the Greeks, the Romans, and the Arabians.

The ROMANS, as Pliny aſſures us, had continued without phyſicians, if not without phyſic, during a period of 600 years. The few manual operations which were found indiſpenſably neceſſary were performed by their ſlaves or freedmen; and inſtances are not wanting, in which their ſkill was rewarded by the honour of citizenſhip. On the occaſion of a deſtructive epidemic, in the year 463 A.U.C. however, they ſent a deputation to the temple of Æſculapius at Epidaurus. Inſtead of an oracle, they received one of the ſacred ſerpents; and, following the indication of its ſpringing from the ſhip upon the iſland of the Tiber, they there founded a temple to the god of medicine, and eſtabliſhed his worſhip on the ſame footing as at Epidaurus. Shortly afterwards, a temple was dedicated to the Grecian Hygeia, and the worſhip of Iſis and Serapis was borrowed from the Egyptians: but, beſides theſe, the Romans afterwards erected fanes in honour of medical deities peculiar to themſelves. A prevalent dread of certain maladies cauſed them to offer up prayers to the deities who were ſuppoſed to inflict them. Hence they worſhipped *Febris* on the Palatine Mount, and *Mephitis* at Cremona. They had likewiſe a goddeſs *Oſſipaga*, who preſided over the growth of bones, and *Carna*, who took care of the viſcera, and to whom they offered bacon and bean-broth, as being nutritious articles of diet. The firſt perſon who practiſed medicine at Rome in a regular man-

ner, was one Archagathus, a Greek, B. C. 219. The Roman ſenate at firſt ſeemed to give him much encouragement, and even bought a ſhop for him, and preſented him with the freedom of the city. But his frequent uſe of the knife, and of the actual cautery, ſoon brought him into diſrepute. The populace were loud in their clamours againſt his cruelty, attached to him the name of *Carnifex*, Butcher, and eventually baniſhed him from Rome.

Aſclepiades, of Pruſa in Bythynia, was the next phyſician of note who appeared at Rome after Archagathus, but ſeparated from him "longo intervallo." He had ſtudied at Alexandria and Athens, and came to Rome, in the 654th year A.U.C. or 100 years before the Chriſtian era, as a teacher of rhetoric: but, not finding that profeſſion ſufficiently lucrative, he ſuddenly turned phyſician; and, by his conſummate addreſs, in a ſhort time brought himſelf into great notice. The prototype of all ſucceeding quacks, Aſclepiades affected to contemn every thing that had been done before him—"omnia abdicavit; totamque medicinam, ad cauſam revocando, conjecturam fecit." He ridiculed Hippocrates for his patient obſervation of nature, and called his ſyſtem "a meditation on death." His fame, however, would have been incomplete, if he had not introduced a ſyſtem of his own. Accordingly, taking for the baſis of it the philoſophy of Epicurus and Heraclides of Pontus, he attempted to explain all the functions of the human body, and all the operations of health and diſeaſe, by means of *corpuſcles* and *pores*. He aſſerted, that matter conſidered in itſelf was of an unchangeable nature; and that all perceptible bodies were compoſed of a number of ſmaller ones, between which there were interſperſed an infinity of ſmall ſpaces totally void of all matter. He thought that the ſoul itſelf was compoſed of theſe ſmall bodies. He laughed at the principle called *Nature* by Hippocrates, and alſo at the imaginary faculties ſaid by him to be ſubſervient to her; and ſtill more at what he called *Attraction*. This laſt principle Aſclepiades denied in every inſtance, even in that of the loadſtone and ſteel, imagining that this phenomenon proceeded from a concourſe of corpuſcles, and a particular diſpoſition or modification of their pores. He alſo maintained, that nothing happened or was produced without ſome cauſe; and that what was called *nature* was in reality no more than *matter* and *motion*. From this laſt principle he inferred that Hippocrates knew not what he ſaid when he ſpoke of Nature as an intelligent being, and aſcribed qualities of different kinds to her. For the ſame reaſon he ridiculed the doctrine of Hippocrates with regard to criſes; and aſſerted that the termination of diſeaſes might be as well accounted for from mere matter and motion. He maintained, that we were deceived if we imagined that Nature always did good; ſince it was evident that ſhe often did a great deal of harm. As for the days particularly fixed upon by Hippocrates for criſes, or thoſe on which we uſually obſerve a change either for the better or the worſe, Aſclepiades denied that ſuch alterations happened on thoſe days rather than on others. Nay, he aſſerted that the criſis did not happen at any time of its own accord, or by the particular determination of nature for the cure of the diſorder, but that it depended rather on the addreſs and dexterity of the phyſician; that we ought never to wait till a diſtemper terminates of its own accord, but that the phyſician by his care and medicines muſt haſten on and advance the cure. He accuſed Hippocrates and other ancient phyſicians of "attending their patients rather with a view to obſerve in what manner they died than in order to cure them;" and this under pretence that Nature ought to do all herſelf, without any aſſiſtance.

The practice of Aſclepiades was principally geſtation, friction, and the uſe of wine. By various exerciſes he propoſed to render the pores more open, and to make the juices and ſmall bodies, which cauſe diſeaſes by their retention, paſs more freely; and, while the former phyſicians had not recourſe to geſtation till towards the end of long-continued diſorders, and when the patients, though entirely free from fever, were yet too weak to take ſufficient exerciſe by walking, Aſclepiades uſed geſtation from the very beginning of the moſt burning fevers. He laid it down as a maxim, that one fever was to be cured by another; that the ſtrength of the patient was to be exhauſted by making him watch and endure thirſt to ſuch a degree, that, for the two firſt days of the diſorder, he would not allow them to cool their mouths with a drop of water. Celſus alſo obſerves, that, though Aſclepiades treated his patients like a butcher during the firſt days of the diſorder, he indulged them ſo far afterwards as even to give directions for making their beds in the ſofteſt manner. On ſeveral occaſions Aſclepiades uſed frictions to open the pores. The dropſy was one of the diſtempers in which this remedy was uſed; but the moſt ſingular attempt was, by this means, to lull phrenetic patients aſleep. Though he enjoined exerciſe ſo much to the ſick, he denied it to thoſe in health; a conduct not a little ſurpriſing and extraordinary. He allowed wine freely to patients in fevers, provided the violence of the diſtemper was ſomewhat abated. Nor did he forbid it to thoſe who were afflicted with a phrenſy: nay, he ordered them to drink it till they were intoxicated, pretending by that means to make them ſleep; becauſe, he ſaid, wine had a narcotic quality and procured ſleep, which he thought abſolutely neceſſary for thoſe who laboured under that diſorder. To lethargic patients he uſed it on purpoſe to excite them, and rouſe their ſenſes: he alſo forced them to ſmell ſtrong-ſcented ſubſtances, ſuch as vinegar, caſtor, and rue, in order to make them ſneeze; and applied to their heads cataplaſms of muſtard made up with vinegar.

Beſides theſe remedies, Aſclepiades enjoined his patients abſtinence to an extreme degree. For the firſt three days, according to Celſus, he allowed them no aliment whatever; but on the fourth began to give them victuals. According to Cælius Aurelianus, however, he began to nouriſh his patients as ſoon as the acceſſion of the diſeaſe was diminiſhed, not waiting till an entire remiſſion; giving to ſome aliments on the firſt, to ſome on the ſecond, to ſome on the third, and ſo on to the ſeventh, day. It ſeems almoſt incredible to us, that people ſhould be able to faſt till this laſt-mentioned term; but Celſus aſſures us, that abſtinence till the ſeventh day was enjoined even by the predeceſſors of Aſclepiades.

The diviſion of diſeaſes into acute and chronic appears to have originated with him. The remedies which he employed (as we have ſeen) were chiefly dietetical; but he was no enemy to phlebotomy, though he diſcouraged vomiting and purgation: inſtead of the latter he recommended clyſters. He was a great advocate for the uſe of cold water externally as well as internally; though he probably ingratiated himſelf with the Romans more by his free adminiſtration of *wine* in diſorders where it had not formerly been allowed. Sprengel ſuppoſes him to have been the inventor of the *balnea penſilis*, or ſhower-bath.

That Aſclepiades, notwithſtanding his arrogance, was a man of obſervation and diſcernment, is evident from his deſcription of diſeaſes; and from the fact, that he always continued to enjoy great reputation among the Roman people, and that his lectures, which, according to Pliny, embraced the three branches of pathology, midwifery, and pharmacy, were very numerouſly attended. Galen accuſes him of humouring the caprices of his patients at the expence of his own better reaſon and judgment. The principles of this author's pathology gave the firſt outline of the *methodic* practice of phyſic, which was more fully developed by Themiſon and Theſſalus, and afterwards by Soranus.

The METHODICS, or METHODISTS, endeavoured to ſteer a courſe unconnected with the Dogmatiſts or the Empirics. They objected to the former ſect, on account of their hypothetical principles; and to the latter, on account of the tedious manner in which they acquired their knowledge. In conſequence of this, they began to claſſify and generalize; and obſerved, as they conceived,

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two ſtates or conditions of body which attended all ſorts of complaints. To one of theſe ſtates they gave the name of *ſtrictum*, which implied a general conſtriction of the whole body; to the latter, the epithet of *laxum*, by which they meant a correſponding relaxation. Caſes, however aroſe, that were not referrible to either of theſe claſſes: conſequently, the Methodiſts were obliged to invent a third, which partook of the properties of both the others. Hence they admitted the contradiction of a ſtate of *relaxed contraction*, an expreſſion of which no conception can be formed.

It has been ſuppoſed, however, by M. Cabanis, that this mixed ſtate of *laxum* and *ſtrictum* meant an irregular diſtribution of vital power, or irregularity of tone. If his idea be correct, this claſs would comprehend all diſeaſes, without the aſſiſtance of the other two; for we know of no diſeaſe that is not marked at times by an unequal diſtribution of vital energies. As to the *practice* of the methodiſts, it may be obſerved, that they wholly overlooked the healing powers of the ſyſtem, and, without regard to the peculiar circumſtances of the caſe, or the nature of the part affected, were ſolely intent on fulfilling thoſe general indications that were conformable to their theory. It is true, that they paid particular attention to days; not, however, as connected with the doctrine of criſes, for which the founders of this ſect entertained a marked contempt; but only as affording them a meaſure of the duration of the diſorder, and a guide for the method of treatment. In the firſt days, they followed the ſtarving ſyſtem; afterwards they purſued the ſuppoſed general indications of conſtricting, or of relaxing: during the exacerbation of the diſeaſe, they endeavoured to moderate the violence of it; during its decline, they ſupported the powers of the ſyſtem by nutritive diet. This was their mode of proceeding in all acute diſeaſes: but, in chronic complaints, to which it was leſs applicable, they had recourſe to what they termed the μετασυγκρισις, or *re-incorporation*, of which the profeſſed object was to reſtore the proper relations between the atoms and pores, and for which they prepared the patient by the αναλημψις, or *reſumptive circle*. It was, in fact, little elſe than their practice in acute diſeaſes reverſed: they firſt ſought to ſtrengthen the patient by a generous diet, and then they adminiſtered a ſucceſſion of violent remedies, to ſubdue the original malady.

Among the diſciples of Themiſon, one Theſſalus of Trallis, a man of low birth and coarſe manners, made himſelf conſpicuous by the ſhameleſs audacity with which he ſought to diſparage the labours of others, arrogating to himſelf the title of Ιατρονικης, or Conqueror of Phyſicians, and that, it would appear, without the ſlighteſt pretenſions to either learning or talents. (Plin. xxix. 1.) He held forth, that he could qualify any one for a phyſician in the ſpace of ſix months, and actually ſucceeded in obtaining a great number of pupils; but they were from among the loweſt order of artiſans, ſuch as rope-makers, weavers, cooks, butchers, fullers, and ſuch like. Theſe he took with him to viſit his patients for the ſtipulated time; and then he conferred upon them the privilege of practiſing for themſelves. From his time it became the cuſtom for the Roman phyſicians to viſit their patients attended by all their pupils; in alluſion to which, we have the epigram of Martial:

Languebam; ſed tu comitatus protinus ad me
Veniſti, centum, Symmache, diſcipulis.
Centum me tetigere manus aquilone gelatæ:
Non habui febrem, Symmache: nunc habeo!

I'm ill. I ſend for Symmachus; he's here,
An hundred pupils following in his rear.
All feel my pulſe with hands as cold as ſnow:
I had no fever then; I have it now.

The methodic ſchool acquired much greater repute from the labours of Soranus and Cælius Aurelianus. The former a native of Epheſus, who had ſtudied at Alexandria, and came to Rome during the reign of Trajan; the latter an African by birth. Free from the prejudices which had diſgraced his predeceſſors, Soranus cultivated the ſtudy of anatomy, and wrote a book on the female organs of generation, which is ſtill extant, and diſplays conſiderable acquaintance with the ſubject. Many of his obſervations ſhow that he was poſſeſſed of great ſagacity and ſtrength of judgment. To Cælius Aurelianus, on the other hand, we are indebted for an account of his doctrines and practice, and for one of the beſt works on medicine which have come to us from ancient times; written it is true, in a barbarous ſtyle, but highly deſerving of peruſal, on account of the accurate deſcription of diſeaſes, and the different methods of treatment, which it contains.

Anatomy and the other auxiliary ſciences, though they had been ſo much neglected by the Methodiſts, were now receiving important additions from other quarters. Rufus of Epheſus, who lived in the time of the emperor Trajan, applied himſelf zealouſly to the diſſection of animals, particularly of apes, and deſcribed from analogy the different organs of the human body. He traced the nerves from their origin in the brain, and divided them into thoſe of ſenſation and thoſe of voluntary motion. The heart he believed to be the ſeat of life, of animal heat, and the cauſe of pulſation; and he ſhowed the difference of ſtructure and capacity between the right and the left ventricle. The ſpleen he held to be an uſeleſs organ. Marinus, whom Galen calls the reſtorer of anatomy, and to whoſe labours he was himſelf probably indebted for much of his knowledge on the ſubject, rendered ſtill greater ſervices to the ſcience. He inveſtigated the abſorbent ſyſtem with great care, and diſcovered the meſenteric glands; he diſtributed the nerves into ſeven pairs: the N. palatinus (then called the fourth pair) was firſt deſcribed by him; and he is ſaid to have been the diſcoverer alſo of the *par vagum*, which he termed the ſixth pair. His numerous writings have all periſhed.

The ſtudy of the materia medica, and of the other branches of natural hiſtory, was proſecuted with no leſs vigour; and we owe to the firſt century of the Chriſtian era the invention of many remedies which are ſtill retained in our pharmaceutical ſyſtems. The elder Pliny, ſecond only to Ariſtotle in the univerſality of his genius, but ſurpaſſing even that great man in his inſatiable thirſt for knowledge, had collected in his Hiſtoria Mundi all that the ancients knew of natural ſcience. Dioſcorides of Anazarba, devoting himſelf to botany and materia medica, produced a work which ſerved for a guide in theſe ſciences till a very late period. His deſcriptions of ſome of the more valuable drugs, ſuch as myrrh, laudanum, aſſafœtida, ammoniac, opium, ſquills, and their different preparations, are entitled to great praiſe. The efficacy of ſeveral remedies, which he recommends, has been admirably confirmed by later experience, ſuch as of the elm-bark in cutaneous diſeaſes, of potaſh as a cauſtic, of the male fern againſt worms, &c. &c. Some of the contemporaries of Dioſcorides, as Scribonius Largus, Xenocrates, and Andromachus, cultivated the materia medica, but with leſs ſucceſs. To Menecrates, who lived in the reign of Tiberius, and who, according to an inſcription in Montfaucon, appears to have been the author of 155 books, we are indebted for the invention of the diachylon-plaſter; and Damocrates is well known as the author of ſeveral complicated remedies which bear his name. Herennius Philo, of Tarſus, is mentioned by Galen as the inventor of an anodyne compoſition, called, after him, Philonium, and which conſiſted of opium, euphorbium, and different aromatics; and Aſclepiades Pharmacion was the introducer of numerous remedies from the animal kingdom, which, though long honoured with a place in our pharmacopœias, have now deſervedly fallen into diſrepute.

Before quitting this period of medical hiſtory, it will be neceſſary to ſay a few words reſpecting two other ſects,

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which aroſe ſoon after the eſtabliſhment of the Methodic ſchool: we mean the Eclectic and Pneumatic ſects. The founder of the latter, Ariſtæus of Cilicia, flouriſhed as a phyſician at Rome about the middle of the firſt century, and diſtinguiſhed himſelf by his oppoſition to the tenets of Aſclepiades, and his attachment to the Stoical ſyſtem: he extended the theory of pre-exiſtent germs; treated the doctrine of the pulſe with dialectic ſubtlety, referring its varieties to the exhalation of the πνευμα from the heart and arteries; and cultivated ſeveral branches of pathology; but was more ſucceſsful in his dietetic reſearches, particularly with reſpect to the influence of the atmoſphere.

His pupil Agathinus, endeavouring to reconcile his principles with thoſe of the Methodic and Empiric ſects, acquired the name of Epiſynthetic or Eclectic; and thus eſtabliſhed the Eclectic ſyſtem, on which, however, he does not appear to have conferred much repute by his own labours. That merit was reſerved for Archigenes and Aretæus, who, adopting the leading tenets of the Pneumatic theory, gave it a more ſcientific form, and enriched it by many valuable obſervations. The former attempted to reform the language of medicine, but without much effect; for even Galen has occaſion to complain of the obſcurity of his phraſeology; he was, beſides, too fond of ſubtleties: but many of his practical obſervations, which Galen has recorded, are excellent. The merits of Aretæus, as a ſkilful and attentive obſerver, and as an elegant deſcriber of diſeaſe, are familiar to every one. To Caſſius the Iatroſophiſt, another Eclectic, we are indebted for many valuable pathological remarks concerning the diſeaſes of aſſociation, and the ſympathies of the nervous ſyſtem.

On the ſubject of Aretæus and Archigenes, Dr. Huxham has the following note. "It is pretty ſurpriſing that none ſhould take notice of Aretæus Cappadox before Aetius Amidenus, in the fifth century; (he is indeed named in the Euporiſta attributed to Dioſcorides, but few think that piece to be the genuine work of that author.) Neither Galen, Cælius Aurelianus, nor Oribaſius, mention him; though ſo particular in enumerating all the phyſicians of note, antecedent to, or cotemporary with them. And yet Aretæus ſeems to have been a very conſiderable practitioner, and a man of great learning and judgment: he affects a very ſingular ſtyle, uſing many obſolete words, Homeric and Hippocratic phraſes, and the Ionic dialect; which, at the time he wrote in, was almoſt entirely diſuſed: for, notwithſtanding the conceit of Voſſius, he undoubtedly did not write till after the time of Nero. All this one would think ſhould have made him remarkable; eſpecially if he practiſed in or near Rome; which is not improbable, as he adviſes Roman wines to the ſick; particularly the Falernian, Surrentine, Signine, and thoſe of Fundi. But Galen and Aetius quote from Archigenes ſeveral paſſages, which are exactly the ſame, as to ſenſe, doctrine, method of cure, and manner of expreſſion, with what we find in Aretæus; only the latter gives them the Ionic turn. They both coincide in recommending ſome particular medicines, which are ſcarce to be met with in any others, particularly the external uſe of cantharides; which I think is not to be found in any preceding author, except Celſus. Did Archigenes then borrow from Aretæus, or the latter from the former? It is certain, Archigenes practiſed at Rome with a very great reputation, was a very celebrated phyſician and author, and as ſuch is referred to by Juvenal, Galen, Cælius, Oribaſius, Aetius, &c. He is ſtrictly criticiſed by Galen, ſometimes cenſured, ſometimes commended, but never reckoned a mere compiler. Aretæus, on the contrary, is mentioned by none but Aetius and Paulus Ægineta; nay, which is not a little to be wondered at, he is not ſo much as found in Photius's Bibliotheca. This is really ſtrange, and not eaſily accounted for, and would incline one to think that Aretæus borrowed from Archigenes; or rather tranſcribed and new-modelled him, giving him the Hippocratic diction and Ionic dialect. Poſſibly Aretæus might do by Archigenes ſomething like what Cælius Aurelian, not long after, did by Soranus: but, if ſo, he hath vaſtly much better græciſed Archigenes than Cælius hath latinized (as he calls it) Soranus. Upon this ſuppoſition, we need not wonder at finding the Roman wines recommended in Aretæus, though he might practiſe and write in Cappadocia, or any where elſe, at the greateſt diſtance from Rome. Be the matter as it will, in Aretæus we have a moſt valuable work, a moſt accurate deſcription of diſeaſes, and in general a very proper and judicious method of cure; and it is greatly to be lamented, that the work comes ſo maimed to us." Huxham on Fevers, Pref.

During this period, ſurgery received conſiderable improvement; particularly from the labours of Heliodorus and of Antyllus. Of the former, who was an eminent ſurgeon at Rome in the time of Trajan, Nicetas has preſerved ſeveral practical obſervations on injuries of the head and diſeaſes of the bones, which evince no mean proficiency in his art. The latter is perhaps ſtill more deſerving of notice, as being the firſt who gives any account of the extraction of the cataract: he recommends this operation to be performed while the cataract is ſmall, being of opinion, that, when enlarged, it cannot be extracted without bringing the humours of the eye along with it. His directions concerning the preparation of plaſters and ointments, and concerning the choice of veins in phlebotomy, are very minute. In dangerous caſes of *cynanche*, he adviſes bronchotomy; and in *hernia humoralis* he operated by inciſion. Philagrius, who lived about the time of Valens, appears to have been the firſt who attempted to extract a ſtone from the bladder by the high operation. Aetius has alſo tranſmitted to us an account of the ſurgical practice of one Leonides of Alexandria, whoſe obſervations on hernia, ſcrofula, and glandular ſwellings, on hydrocele, and on inflammation of the ſcrotum, ſhow conſiderable diſcernment. In cancerous affections of the breaſt, he reſorted to amputation, and the actual cautery; in fiſtula, his method of operation differed but little from that recommended by Pott.

Having diſpatched ſeveral names of ſmaller eminence, we now come to the illuſtrious *Celſus*, who lived at Rome, as ſome think, about the reign of Tiberius. His native place is unknown; and many writers have ſuppoſed that he was never in practice. Yet his minute deſcriptions of many pharmaceutical preparations could hardly have been acquired unleſs he had compounded them with his own hands; nor could his excellent directions in ſurgery have been penned without ſome knowledge of the manual operations. In many parts of his works, he follows the Father of Medicine ſo cloſely, that he has been called the Latin Hippocrates; though that name is equally applicable to him on account of the purity of his language. (See CELSUS, vol. iv.)

In his work on ſurgery, all the improvements from Hippocrates to his own days are collected; the moſt minute and trifling diſeaſes are not omitted. An eminent ſurgeon of the moderns emphatically exhorts every perſon in that profeſſion "to keep Celſus in his hands by day and by night." He follows Hippocrates, but with much improvement in his chirurgical directions; eſpecially in the mode of trepanning, in applying ſplints, bandages, &c. in the manner of extending and fixing fractured limbs and likewiſe in the medical treatment of the patient. In luxations of the ſhoulder, he mentions ſeveral methods of giving force to the extenſion, and of replacing the diſlocated bone. One method ſimilar to that of Hippocrates was, to ſuſpend the patient by the arm; the fore part of the ſhoulder, at the ſame time, reſting upon the top of a door, or any other ſuch firm fulcrum. Another method was to lay the patient ſupine, ſome aſſiſtants retaining the body in a fixed poſition, and others extending the arm in the contrary direction; the ſurgeon,

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in the mean time, attempting, by his hands, forcibly to reduce the bone into its former place.

He made the diſtinction into ſimple and compound fractures, as it exiſts in the preſent day; and his directions in the cure of fractured ribs are extremely judicious. The different ſpecies of herniæ are well deſcribed by him; and he ſeems to have uſed a bandage and compreſs after the reduction of the bowels, on the ſame principle as we now uſe a truſs. In ſome caſes, after the return of inteſtinal ruptures, he diminiſhed the quantity of looſe ſkin, and formed a cicatrix, ſo as to contract over the part, to render it more rigid and capable of reſiſting. He deſcribes various diſeaſes of the genital parts, the hydrocele or dropſy of the ſcrotum, a difficulty of urine, and the manner of drawing off the water by a catheter; the ſigns of ſtone in the bladder, and the method of ſounding or feeling for that ſtone. Lithotomy was at that time performed by introducing two fingers into the anus; the ſtone was then preſſed forward to the perinæum, and a cut made into the bladder; and by the finger or by a ſcoop the ſtone was extracted. He deſcribes the manner of performing this operation on both the ſexes, of treating the patient, and the ſigns of recovery and of danger.

Celſus gives excellent inſtructions with regard to inflammation in general; and mentions ſome uſeful topical applications in ophthalmia. The operations for the cataract (which conſiſted in depreſſing the cryſtalline lens), and for fiſtula, are likewiſe deſcribed by him; as alſo the mode of performing the operation of paracenteſis. The external application of arſenic as a cure for cancer originated with Celſus. In external gangrene, he cut into the ſound fleſh; and, when the diſeaſe, in ſpite of every effort, ſpread, he adviſed amputation of the member. After cutting to the bone, the fleſh was then ſeparated from it, and *drawn back*, in order to ſave as much fleſh as poſſible to cover the extremity of the bone. He deſcribes the ſymptoms of that dangerous inflammation the *carbuncle*, and directs immediately to burn or corrode the gangrened part. To promote the ſuppuration of abſceſſes, he orders poultices of barley-meal, or of marſhmallows, or the ſeeds of linſeed and fenugreek. He alſo mentions the compoſitions of ſeveral repellent cataplaſms. In the *eryſipelas*, he applies ceruſe, mixed with the juice of Solanum, or nightſhade. He is very diffuſe in thoſe parts of his works which relate to pharmacy, giving formula for a great many external and internal remedies now deſervedly aboliſhed.

Though Celſus followed the practice of Hippocrates in many reſpects, yet he very much differed from him in others. He particularly ridiculed his doctrine of critical days, which he attributed to an abſurd application of the Pythagorean doctrine of numbers; and he differed from that phyſician in regard alſo to bleeding; for he held it dangerous to take much blood from patients at once, and rather preferred the abſtraction of it at repeated intervals. In regard to abſtinence, he ſeems to have followed Aſclepiades, enjoining the ſick to endure hunger and thirſt during the firſt days of their illneſs, and afterwards allowing them plenty of food. He entirely diſregarded the indications of the pulſe, from having obſerved that it was accelerated or depreſſed by many adventitious circumſtances, as well as from having found it very different in complaints of a ſimilar nature.

The moſt conſiderable of the Roman pathologiſts, and the laſt of any great eminence, was GALEN, who flouriſhed about a hundred and thirty years after Celſus, and was phyſician to the emperor Marcus Aurelius. This great man was conſidered for many centuries afterwards the moſt infallible authority in all matters relating to pathology. Impreſſed at an early age with the important truths contained in the writings of Hippocrates, he viewed with contempt and diſguſt the jargon and obſcurity which enveloped them in the ſchools of medicine. Accordingly he became himſelf the expoſitor of Hippocrates. He repeated and extended his obſervations, preſented his opinions in new lights, and ſupported his doctrines with all the aids which were derivable from ſpeculative reaſoning or the compariſon of facts. Yet Galen in ſome meaſure fell into the ſame error of which he accuſed his predeceſſors and contemporaries. He obſerved the naked facts and ſimple truths related almoſt without comment by the coarſe ſage. He applied himſelf too much to explain, arrange, and ſyſtematize, a very ſmall ſtock of information; and, by endeavouring to illuſtrate a very uncertain ſcience by means of others not more exact, he permitted his imagination to frame hypotheſes in the higheſt degree gratuitous and aſſumptive. Theſe obſervations are fully exemplified by the following ſketch of his ſyſtem.

He firſt begins with eſtabliſhing four qualities in the animal body; heat, cold, moiſture, and dryneſs. The peculiar combinations which theſe qualities undergo, or in other words the changes which may be rung on them, produce eight conſtitutions, or temperaments; i. e. hot, cold, moiſt, and dry; hot and moiſt, cold and moiſt, hot and dry, and cold and dry. (See GALEN, vol. viii.) *Idioſyncracy* is that temperament which cannot be referred to any of theſe qualities, and is therefore ſuppoſed to ariſe from occult cauſes. With Hippocrates, Galen admitted the operation of Nature; but to this agent he added three other faculties, or, as we ſhould call them, vital properties. The firſt and moſt important, he calls the *animal faculty*; it has its ſeat in the brain, performs the operations of mind, and by means of the nerves diſtributes the properties of motion and ſenſation to all parts of the body. The ſecond is called the *natural faculty*; it has its ſeat in the liver, and is the principal agent in growth, generation, and nutrition. The third, denominated the *vital faculty*, is lodged in the heart, and from thence, by means of the arteries, diſſeminates heat and vitality through the whole ſyſtem. Theſe three faculties were acted upon by Nature as a *primum mobile*. Their production was ſuppoſed to be owing to the agency of certain *ſpirits*, or *ſubtle vapours*, which he likewiſe divided into three kinds, bearing the names of vital, natural, and animal. Galen admits the exiſtence of the four humours of blood, phlegm, yellow, and black bile, firſt inſiſted on by Hippocrates. With that phyſician he likewiſe divides the body into three component parts; ſpirits, humours, and parts, or, as we call them, *ſolids*. The laſt-mentioned ſubſtances he divides into organical and ſimilar.

It were uſeleſs to enter into a detail of the minute diſtinctions of diſeaſes and their cauſes in which Galen has indulged. Suffice it to ſay, that the increaſe, deficiency, or irregular diſtribution, of the different humours, qualities, &c. which we have enumerated, was regarded by him as the eſſential cauſe of diſeaſe; conſequently the abſtraction of redundant, the reproduction of deficient, or the correction of peccant, humours, formed the principal indications in his pathology. In anatomy and phyſiology, Galen diſcovered or arranged many important facts. His aſſiduous diſſections of animals furniſhed him with many uſeful obſervations: he likewiſe preſerved in his writings much of the anatomical knowledge of the Alexandrian ſchool; and has indeed corrected by experiment the errors into which that ſchool had fallen, particularly in regard to the circulation of the blood. Hippocrates had aſſerted, that all the veſſels communicated with each other, and that the blood underwent a kind of flux and reflux to and from the heart, like the ebbing and flowing of the ſea; and he mentions the throbbing of the temporal arteries, as an evidence of this fact. The anatomiſts at Alexandria had adopted a different opinion; as they found the arteries empty, and the veins containing blood, in their diſſections, they imagined that the former were tubes for the diſtribution of *air*, (and gave them that name which they have borne ever ſince;) and that the veins were the only channels for the blood. The heart of man conſiſting of two ſets of cavities not communicating with each other, and its connexion with the lungs, were to them deluſive circumſtances, and ſeemed to favour their opi-

nions. It is true they ſometimes found blood in the arteries, and in the left cavities of the heart; but then they believed that the air or ſpirit had eſcaped, and that the blood had oozed through the ſides of theſe air-veſſels, and ſupplied its place. Galen refuted this opinion by experiment. He laid bare one of theſe veſſels in a living animal, and by tying it in two places, and opening it between the ligatures, he aſcertained that it contained blood and nothing elſe. He therefore concluded, that both veins and arteries ſerved the ſame purpoſe, that of diſtributing blood for the ſupply of the body, but that the florid arterial blood contained more air than the purple blood of the veins. We need hardly remark, that Galen did not underſtand the natural courſe of the blood, though he had thus made known its containing veſſels.

Galen did not apply himſelf much to the ſurgical department of the art: however, he occaſionally performed the operation of arteriotomy, and opened the jugular veins; and he deſcribed with accuracy the different kinds of hernia.

In a hiſtory of this kind it ſeems right to mention the effect of anatomical ſtudies on the mind of Galen. After contemplating the ſtructure of the bones of a ſkeleton, and their adaptation to their different functions, he breaks out into an apoſtrophe, which has been much admired, and in which he is ſaid to have exceeded any ancient in pointing out the nature, attributes, and proper worſhip, of the Deity. "In explaining theſe things," he ſays, "I eſteem myſelf as compoſing a ſolemn hymn to the author of our bodily frame; and in this I think there is more true piety than in ſacrificing to him hecatombs of oxen, or burnt-offerings of the moſt coſtly perfumes: for I firſt endeavour to know him myſelf, and afterwards to ſhow him to others, to inform them how great is his wiſdom, his virtue, his goodneſs."

Medicine improved very ſlowly after the time of Galen; his ſucceſſors were more employed in compiling and commenting on the works of their predeceſſors, than in endeavouring to extend the bounds of ſcience by original obſervation. Among the moſt diſtinguiſhed of theſe we may record the names of Oribaſius, Aetius, Alexander Trallian, and Paulus Ægineta.

Oribaſius flouriſhed about the year 360, and was phyſician to the emperor Julian. Though commonly reckoned a Sardian, he was born at Pergamus, and bred up, together with Magnus and Ionicus, in the ſchool of Zeno the Cyprian, who taught then at Sardis, though afterwards he removed to Alexandria, where he became a famous profeſſor. Eunapius repreſents Oribaſius as the greateſt ſcholar and phyſician of his time, and a very engaging and agreeable man in converſation. He deſcribes him as no leſs conſiderable in his intereſt than in his learning: according to his account, he contributed very much to the advancement of Julian to the empire, who in return made him quæſtor of Conſtantinople, and who, as appears by one of his letters, had an entire confidence in him. In the ſucceeding emperor's time, through the envy of his enemies, he fell into diſgrace, had all his eſtates confiſcated, was baniſhed, and delivered into the hands of barbarians; amongſt whom, in a little time, by his courage and ſkill, he gained ſo much love and reverence, that they, ſeeing what great cures he performed, adored him as a god. At laſt he was recalled by the Roman emperor, and flouriſhed in reputation and riches at the very time when Eunapius wrote this account, which muſt be near the year 400.

Oribaſius wrote ſeventy (according to Photius) or (according to Suidas) ſeventy-two books of collections, which he compiled not only from Galen, but from all the preceding phyſicians, and his own experience, at the deſire of Julian; the fifteen firſt of which are only remaining, and two others treating of anatomy. Afterwards he made an epitome of this great work, and reduced it into nine books for the uſe of his ſon, Euſtathius. Paulus mentions this epitome; but it is now loſt, as are ſome other tracts which Suidas takes notice of. Theſe works, though chiefly compilations, are by no means without their uſe to the medical ſtudent; for both Oribaſius and Aetius have preſerved ſome fragments of antiquity, and thoſe of ſome value, which are no-where elſe to be met with; that is, they compiled from the now-loſt works of Galen and others, and added much original matter of their own. We will give only one inſtance of what is either omitted by Galen, or is loſt together with ſome other of Galen's works; namely, the firſt deſcription of the ſalivary glands, which is this: "On each ſide of the tongue, lie the orifices of the veſſels, which diſcharge the ſpittle, and *into which you may put a probe.* Theſe veſſels take their riſe from the root of the tongue, where the glands are ſituated. They riſe from theſe glands, in much ſuch a manner as arteries uſually do, and convey the ſalivary liquor, which moiſtens the tongue, and all the adjacent parts of the mouth." Oribaſius, lib. xxiv. c. 8.

Oribaſius, either from Apollonius or himſelf, ſpeaks very fully of the good effects of bleeding by way of ſcarification, a thing little taken notice of by former writers: and aſſures us, from his own experience, how ſucceſsful he had found it in a ſuppreſſion of the menſes, defluxions of the eyes, headache, ſtraitneſs of breathing, even when the perſon was extremely old. He tells his own caſe particularly, when the plague raged in Aſia, and he himſelf was taken ill, that the ſecond day he ſcarified his leg, and took away two pounds of blood; by which method he entirely recovered, as did ſeveral others who uſed it. Here we may obſerve, that this was a different method of ſcarifying from that performed by the help of cupping. The Arabian phyſicians ſeem to have had a notion only of the latter practice: but, from this place, as well as from ſome paſſages of Galen, it is plain, that the ancients made deep inciſions into the ſkin by the knife; and therefore thought, by the large quantity of blood they could draw off, that this method was equivalent to opening a vein. The Egyptians make uſe of it to this very day; and Proſper Alpinus deſcribes at large the apparatus: they make firſt a ſtrait ligature under the ham, then rub the leg, and put it into warm water, and beat it with reeds to make it ſwell, and ſo ſcarify. A proceſs in every particular differing from cupping; and therefore, in the cure of giddineſs, Oribaſius himſelf ſpeaks of them as two diſtinct operations.

We find in this author the firſt account of a ſtrange and ſurpriſing diſtemper Λυκανθρωπια, a ſpecies of melancholy and madneſs, which he deſcribes thus: "The perſons affected go out of their houſes in the night-time, and in every thing imitate wolves, and wander among the ſepulchres of the dead till day-break. You may know them by theſe ſymptoms: their looks are pale; their eyes heavy, hollow, dry, without the leaſt moiſture of a tear: their tongue exceedingly parched and dry: no ſpittle in the mouth, extreme thirſt; their legs, from the falls and bruiſes they receive, full of incurable ſores and ulcers." Aetius gives the very ſame deſcription, with ſome little variation; only calls it Κυναανθρωπια as well as Λυκανθρωπια, and obſerves it prevails moſt in February. Aetius takes this paſſage, as he ſays, that is, makes a paraphraſe of it, from Marcellus Sidetes, an author who lived under Adrian and M. Antoninus; and who wrote forty-two books concerning diſtempers, in heroic verſe. Paulus has tranſcribed the ſame account of this diſeaſe word for word. The Greek term uſed to denote this diſeaſe expreſſes the nature of it very juſtly; and yet Vanderlinden is ſo careleſs a writer, that he makes it a ſynonymous term for the madneſs of the *wolves* themſelves. We conceive the diſeaſe to have been a ſpecies of mania, in which the aſſociation of the mind with deceaſed relatives produced an inclination to wander among the tombs.

Of the epilepſy, Oribaſius deſcribes the cure both in the acute and the chronical ſort; that is, in the fit as well as out of it. When the fit is over, he orders bleeding; and,

and, after four or five days, when the body is a little recruited, purging; three days after, cupping and ſcarifying. He repeats theſe evacuations, and ſometimes finapiſms, at convenient diſtances, and in the intervals gives proper nouriſhment, and uſes warm medicines, ſuch as caſtor, mint, rue, and the cyrenaic juice. Whether this be taken out of Poſidonius, as, by reading Aetius upon the ſame head, there may be ſome reaſon to ſuſpect, we cannot tell; but the method is certainly right, and agreeable to a rational practice. The epitome of what Galen had ſaid upon the ſame argument, in the next chapter, is by no means ſo full and circumſtantial. Theſe few inſtances will be ſufficient to ſhow, that even this author, though he be chiefly a collector, may furniſh us with ſome new and uſeful reflections in phyſic; and he who reads him with this view, may find ſome other paſſages of the ſame kind, not to be met with in the more ancient writers.

Aetius lived very near the end of the fifth or the beginning of the ſixth century. He was a native of Amida in Meſopotamia, ſtudied at Alexandria, and was probably a Chriſtian, which perhaps may be the reaſon why many have confounded him with another of that name, a famous Arian of Antioch, who lived in the time of Julian. In ſome manuſcripts he has the ſtyle of Κομης Οψικιϑ, *Comes Obſequii;* i. e. the chief officer of thoſe who uſed to go before the emperor, as his attendants and harbingers. We find in him ſeveral particularities relating to the Egyptian pharmacy. He has collected a great multitude of receipts, particularly thoſe which had been much celebrated, or uſed as noſtrums by their inventors. Some of theſe he ſeems to mention with no other deſign than to expoſe them, and to let us ſee the extravagant rate people were induced to pay for them: for inſtance, the collyrium of Danaus, which was ſold in Conſtantinople for one hundred and twenty numiſmata, and with great difficulty obtained from him; the colical antidote of Nicoſtratus, called very preſumptuouſly Iſotheos, bought for two talents. He ſeems alſo to be the firſt Greek writer among the Chriſtians who gives us any ſpecimen of medicinal ſpells and charms, ſo much in vogue with the old Egyptians; ſuch as that of St. Blaſius, in removing a bone which ſticks in the throat; and another in relation to two fiſtulæ.

The following ſample of a remedy for the gout is remarked by Dr. Freind as being the firſt of its kind in the hiſtory of phyſic. It is an external medicine: he calls it the *grand dryer*: the patient is to uſe it for a whole year, and obſerve the following diet beſides in each month. He calls the months by the Alexandrian or Egyptian names, but in Engliſh, the direction runs thus: "In September to eat and drink milk: in October to eat garlick: in November to abſtain from bathing: in December not to eat cabbage: in January to take a glaſs of pure wine in the morning: in February to eat no bete: in March to mix ſweet things both in eatables and drinkables: in April not to eat horſe-radiſh: nor in May the fiſh called polypus: in June to drink cold water in a morning: in July to avoid venery: and laſtly, in Auguſt to eat no mallows." This may give us ſome idea of the quackery of thoſe times.

In the works of Aetius we find many obſervations omitted by Celſus and Galen, particularly on ſurgical operations and on difficult parturition. He firſt took notice of the Dracunculus, or Guinea worm, not known to Galen. It is curious to remark the exceſſive extent to which the actual and potential cauteries were carried in the time of this practitioner. In a palſy, he ſays, that he ſhould not at all heſitate to make an eſchar either way, and this in ſeveral places; one in the nape, where the ſpinal marrow takes its riſe, two on each ſide of it; three or four on the top of the head, one juſt in the middle, and three others round it: he adds, that, in this caſe, if the ulcers continue running a conſiderable time, he ſhould not doubt of a perfect recovery. He is ſtill more particular when he comes to order this application for an inveterate aſthma, after all other remedies have been tried in vain. One, he ſays, ſhould be made on each ſide, near the middle of the joining of the clavicle, taking care not to touch the wind-pipe: two other little ones are then to be made near the carotids under the chin, one on each ſide, ſo that the cauſtic may penetrate no further than the ſkin; two others under the breaſts, between the third and fourth ribs; and again, two more backwards towards the fifth and ſixth ribs. Beſides theſe, there ought to be one in the middle of the thorax, near the beginning of the xiphoid cartilage, over the orifice of the ſtomach; one on each ſide between the eighth and ninth ribs; and three others in the back, one in the middle, and the two others juſt below it, on each ſide of the vertebræ. Thoſe below the neck ought to be pretty large, not very ſuperficial, not very deep: and all theſe ulcers ſhould be kept open for a very long time.

Alexander, who flouriſhed in the reign of Juſtinian, is a more original author than either of the two former. He was ſurnamed Trallianus, being born at Tralles, a famous city of Lydia, where the Greek language was ſpoken in great perfection: he lived in the ſixth century, ſome time after Aetius. He was a man of very extenſive practice and of great fame, whence he was emphatically called Alexander the *phyſician*. His therapeutical directions are very full and explicit, and were chiefly the reſults of experiments made by himſelf. His practice was remarkable for the judicious introduction of aperient medicines in caſes of fever, and the uſe of bleeding in ſyncope, a diſeaſe which, according to his deſcription, ſeems to apply to the epilepſy of our own times. But the moſt valuable part of Alexander's writings was his book on gout, for the cure of which he recommends purging, and particularly with the herb *hermodactylus*, which is ſuppoſed to be the *colchicum* lately brought up again and acquiring great reputation in the cure of the ſame complaint. He is the firſt author who recommended the uſe of rhubarb, which he had recourſe to in weakneſs of the liver and in dyſentery. Alexander is recommended by Dr. Freind as one of the beſt practical writers among the ancients, and well worthy the peruſal of any modern.

Paulus, the fourth and laſt of the old Greek writers, was born in the iſland Ægina, and lived in the ſeventh century, though placed by Mr. le Clerc as high as the fourth. He was a great traveller, and had opportunities of ſeeing an extenſive practice in different countries. He tranſcribes a great deal from Alexander and other phyſicians. His deſcriptions are ſhort and accurate. He treats particularly of women's diſorders; and ſeems to be the firſt inſtance upon record of a profeſſed *man-midwife*, for ſo he was called by the Arabians: and accordingly he begins his work with the diſorders incident to pregnant women. He treats alſo very fully of ſurgery, and gives ſome directions, according to Dr. Freind, not to be found in the more ancient writers. He directs the manner of extracting darts, and of operating for hernia; he deſcribes one ſpecies of aneuriſm; treats of the mode of opening the jugular veins, and alſo the arteries behind the ear. He likewiſe deſcribed the operation of bronchotomy, and ſhowed the propriety of performing it in caſes of ſuffocation. This operation had been derided by Aurelianus, and ſome ſevere objections were ſtarted againſt it by Aretæus. It was firſt performed by Antyllus, from whom Paulus copied it.

With Paulus cloſes the period of the Greek *claſſical phyſicians:* ſo we venture to call them; becauſe, if we compare any of the Greek writers on pathology, from the very firſt of them, Hippocrates, to the time we are now ſpeaking of, with the very beſt of their contemporaries in any art or profeſſion whatever, they will be found not at all inferior to them either in the diſpoſition of their matter, the clearneſs of their reaſoning, or the propriety of their language. Some of them have even written above the ſtandard of the age they lived in; an inconteſtible inſtance of which is Aretæus. Galen, alſo, was not

not the only beſt phyſician, but the beſt ſcholar and critic, of his time. So great an honour have theſe authors done to their profeſſion, by being verſed in other arts and ſciences as well as their own. And the great St. Baſil, whom his own continual illneſs made a phyſician, and who has a great many alluſions and ſimiles taken from that art, was (to uſe the words of Photius) for the neatneſs, the propriety, the perſpicuity, and fluency, of his ſtyle, one of the beſt writers among the fathers; as St. Luke's Greek comes nearer to the ancient ſtandard than that of the other evangeliſts.

We cannot omit ſaying ſomething of one author more, whom we may reckon one of the *ancients*, though not properly a writer in phyſic; Nemeſius, biſhop of Emiſſa, who wrote a treatiſe concerning the nature of man, near the end of the fourth century: becauſe his Oxford editor aſcribes two diſcoveries to him, one of which was the moſt conſiderable that ever was made in phyſic. The firſt is concerning the bile, "which is conſtituted (as Nemeſius ſays) not only for itſelf, but for other purpoſes; for it helps digeſtion, and contributes to the expulſion of the excrements; and therefore it is in a manner one of the nouriſhing powers: beſides, as a vital faculty, it imparts a ſort of heat to the body. And for theſe reaſons it ſeems to be made for itſelf; but, becauſe it purges the blood, it ſeems to be formed for the ſake of the blood." Here, ſays the editor, the ſyſtem of the bile is plainly and accurately delivered; that very ſyſtem which Sylvius de le Boe with ſo much vanity boaſted he had invented himſelf in 1658. And indeed ſo far is true, that here is the intire foundation of Sylvius's reaſoning: and, if this theory be of any uſe in phyſic, Nemeſius has a very good title to the diſcovery. But there follows a much more material point; and the ſame editor contends, that the circulation of the blood, an invention which the 17th century ſo much boaſts of, was known to Nemeſius, and deſcribed in very plain and ſignificant terms, which are theſe: "The motion of the pulſe takes its riſe from the heart, and chiefly from the left ventricle of it: the artery is with great vehemence dilated and contracted, by a ſort of conſtant harmony and order. While it is dilated, it draws the thinner part of the blood from the next veins, the exhalation or vapour of which blood is made the aliment for the vital ſpirit. But, while it is contracted, it exhales whatever fumes it has through the whole body, and by ſecret paſſages. So that the heart throws out whatever is fuliginous through the mouth and the noſe by expiration." Upon this ſingle ſlender proof does he attribute this great diſcovery of the circulation to Nemeſius; and thoſe who have inſiſted that it was known both to Hippocrates and Galen, have full as good arguments on their ſide. But it is evident enough, from this very deſcription, and from what the ſame author ſays of the liver in the ſame chapter, that it miniſters nouriſhment to the body by the veins, that Nemeſius had no idea of the manner in which the circulation of the blood is really performed.

To reſume the thread of our hiſtory, we muſt come now to ſome other Greek writers of a lower rank and a later date: but, as the greateſt part of theſe contain little that is new, we ſhall give a very ſhort account of their works, and only be as particular as we can in adjuſting their ſeveral ages; concerning which all our authors have left us in great confuſion; though indeed this is the leſs to be wondered at, conſidering that from the time of Agathias, that is, from the year 560, to the reign of Iſaac Comnenus in 1060, there is a chaſm of five hundred years in the Grecian hiſtory; ſo that we know very little of all that interval, except what ſome ſlender account of the reigns of a few emperors, chiefly Mauritius and Heraclius, furniſhes us with.

Palladius, called Sophiſt or Iatraſophiſt, was bred, as he himſelf ſeems to hint, at Alexandria. We place him firſt among the more modern Greeks, but cannot agree with the Bibliotheca literaria, which computes that he flouriſhed about the year 126. Albinus better places him after Galen, i. e. after the year 200. In fact, he quotes Galen very often, and it may be proved, that he lived not only after Galen, but after Aetius and Alexander too, whoſe words he frequently makes uſe of. His Commentaries upon Fractures are imperfect; however, what of them remains is enough to let us ſee that we have no great loſs by it. In thoſe upon the Epidemics, he with great perſpicuity and exactneſs, illuſtrates not only Hippocrates, but ſeveral paſſages of Galen; and obſerves particularly, that the ſtone increaſed much in his time, and was leſs curable; and he imputes this to the luxury of the age, to much eating, and want of exerciſe. He is the firſt author now extant who has treated profeſſedly of urine: and he has very well explained the cauſes of its colour and conſiſtence; what diſtempers theſe reſpectively indicate, and what prognoſtics may be drawn from them. There are ſeveral paſſages expreſſed in the ſame words, as we may read in a book upon the like ſubject, falſely aſcribed to Galen. He has written in much the ſame manner concerning the fæces.

Stephen, the Athenian or Alexandrian, called ſometimes the one and ſometimes the other, from the place either of his birth or his reſidence, wrote a commentary upon Galen's Firſt Book to Glauco; a book that does not ſeem to want any comment to make it more intelligible. But there is reaſon to think, that the chief phyſical learning of his time conſiſted in reading upon Galen; and Abi Oſbeia, the Arabian biographer, tells us of ſeven Alexandrian phyſicians, among which Stephanus is one, who digeſted the works of Galen into ſixteen books; which again, according to the different matter, they divided into ſeven claſſes: that theſe were the only books they ſtudied, and that in their turn they made it their whole buſineſs to comment upon them and explain them to their auditors. And therefore it is not at all probable that he lived in the third century, as Mr. le Clerc, without any authority, ſuppoſes; and, indeed, it is plain, from this very comment of Stephen, that he was much more modern, for he himſelf mentions very ancient expoſitors of this particular book of Galen; and, in ſection 140, concerning a quartan, he ſeems to allude to a wrong interpretation which Alexander had made of Galen's ſenſe in this place. If this writer be the ſame with Stephen the chymiſt (as he is called), his age is eaſily known, for that author dedicates his work, de Chryſopœia, to Heraclius, and this will make his age conſiſtent with what has already been obſerved. We read of a Stephen too, and an Alexandrian likewiſe, in this very emperor's reign, who was a famous aſtrologer, and foretold the great power to which the Saracens ſhould arrive, as they did in ſome years after. Vanderlinden calls Stephen the laſt of the old Greek authors, though, if this account of his age be true, it will appear that ſeveral others wrote in Greek after that time.

Of theſe Nonus ſeems to be in order next, who compoſed a ſort of phyſic-manual, in which is contained ſome ſhort account of moſt diſtempers and their cure. He inſcribes it to Conſtantine Porphyrogenitus; who, according to Lambecius, was the ſeventh emperor of that name, the ſon of Leo, and died in the year 959, and who, as he had ſome tincture of learning himſelf, was a great patron of it. But Jer. Martius, who publiſhed an edition of this author in Greek and Latin, thinks the Conſtantine here meant (a Porphyrogenitus as well as the other) was the ſon of Conſtantine Ducas, who died in 1067; for this reaſon, that Ducas, though unlearned enough himſelf, was an admirer and encourager of letters, and had this ſaying often in his mouth, "That he had rather be ennobled by learning than by ſovereignty." To which of theſe Conſtantines Nonus inſcribed his work, is not very material; I ſhall only take notice, that we may collect from Anna Comnena's hiſtory, that in the interval between theſe two emperors, learning was extremely declining, if not quite extinct.

This epitome is little elſe than a tranſcript from Aetius, Alexander, and Paulus. And he is ſo free with the labours of his predeceſſors, that he even aſſumes their experience to himſelf. He gives a particular deſcription of melancholy, and, with the air of a great practitioner, is full of the good effects he had ſeen himſelf from the Armenian ſtone, and therefore prefers it to white hellebore: he talks very ſenſibly about the bite of a mad dog, and remarks, that when once a hydrophobia comes on, he never, in all his experience, knew one recover; and yet every word in the firſt caſe is tranſcribed from Alexander, and in the latter from Paulus.

Michael Pſellus lived not long after Nonus, and inſcribed the book which he put together, Concerning the Qualities and Virtues of Aliments, to Conſtantine the emperor. Lambecius thinks this Conſtantine is he who is called Monomachus, and who reigned from 1043 to 1055; but if, according to his account, Pſellus died in 1078, it is at leaſt as probable it might be Conſtantine Ducas: and what adds to the probability is, that it appears from Zonaras, he was preceptor to Michael Ducas, that emperor's ſon. The ſame Zonaras gives this writer the character of a perſon wholly unfit to have the tuition of a prince, as being not at all qualified in any ſort of letters; but Anna Comnena, who lived a few years after him, on the contrary, extols him as one who was a perfect maſter of philoſophy, one of great natural parts, and of profound learning both in Greek and Chaldaic. The ſame encomiums are beſtowed upon him by Leo Allatius, who (by his diſſertation de Pſellis) ſeems to be fond of this very name, and deſcribes him as one of the firſt rank of writers. However there is nothing to be found in his treatiſe which can do any author much credit; for it is only a collection from the elder Greek phyſicians, who themſelves collected this part of knowledge chiefly from Galen, as he had done before from Dioſcorides. He was perſecuted and ſtripped of every thing by Nicephorus Botoniates, turned monk, and ſoon after died, very old. There are many other tracts writ by this author, an account of which we may read at large in Leo Allatius.

And yet, though Pſellus was ſuch a compiler as has been mentioned, Simeon of Antioch, writing upon the ſame ſubject, but indeed in a very impure ſtyle, copied moſtly from him, which is the more extraordinary, ſince the book he tranſcribed from was then freſh in every one's memory: for Simeon muſt have been his contemporary, though no doubt younger, becauſe he dedicated this treatiſe to Michael Ducas called Paripanaceus, who reſigned the empire in 1078, the very year in which Pſellus, as we are informed, died. There are many other works of this Simeon, particularly we owe to him the tranſlation (out of Arabic into Greek) of a very fantaſtical book, Concerning the Wiſdom of the Indians, which Perzoes, a phyſician, collected at the deſire of Choſroes, king of Perſia.

Actuarius, the ſon of Zachary, ſo called without doubt from the employment he held as chief phyſician to the emperor, is an author of a better character than thoſe we have juſt mentioned. He wrote ſeveral treatiſes, in which occur many things worth our reading. He practiſed at Conſtantinople, and, as it appears, with ſome degree of credit; his ſix books concerning the method of cure being compiled for the uſe of one of the chief officers at court, the lord chamberlain, who was ſent upon an embaſſy into the North. Fabricius by miſtake makes Actuarius himſelf the ambaſſador. In theſe books, though he chiefly follows Galen, and very often Aetius and Paulus, without naming them, yet he makes uſe of whatever he finds to his purpoſe, both in the old and modern writers, as well barbarians as Greeks; and, to do him juſtice, we may find ſeveral things in him not to be met with any where elſe. Thus, for inſtance, he is the firſt Greek writer who has mentioned or deſcribed the milder ſorts of purging medicines, ſuch as caſſia, manna, ſenna, myrobalans: the two laſt he ſays were brought from foreign parts to his country, i. e. from Syria and Egypt. Senna he deſcribes as a *fruit*, by which, no doubt, he means the ſame thing as Serapion does by the *vagina*, and Meſue by the *folliculus*, which contains the ſeed; for neither theſe authors, nor Actuarius, mention any thing of the leaves; and, though theſe are chiefly in uſe now, yet the pods are ſometimes made uſe of too; and, by what we can learn from theſe writers were probably the only part of ſenna which was then adminiſtered in phyſic. Another thing which we meet with in no Greek writer before Actuarius, is the mention of diſtilled liquors, as diſtilled roſe-water, &c. &c.

There are not proofs clear enough to point out to us the time where we might fix the preciſe age of this writer. He is commonly, but without any good authority, reckoned to have lived in the eleventh century by ſome, and in the twelfth by others. Lambecius brings him down as low as the beginning of the fourteenth; but from his ſtyle we may conclude that he was more ancient; for, if we compare him either with Pſellus or Simeon, he will appear to have a much greater purity in his diction; and indeed after 1200, we ſhall ſcarce meet with any writer but who has ſome mixture of modern Greek, or ſome barbariſms taken from other languages.

We have brought down this ſection to a much later period than we intended, in order to complete the hiſtory, as far as we could ground it upon any good authorities, of the few Greek phyſicians who appeared after the time of Galen. There has been a prevailing opinion that nothing was done among the ancients towards advancing this art, but what is compriſed in the voluminous works of that great man. What gave the firſt riſe to ſuch a notion probably might be this: that becauſe thoſe who ſucceeded Galen did tranſcribe a great deal from him, many were inclined to think, without giving themſelves the trouble of examining and comparing their writings, that they did nothing elſe but tranſcribe. And no editor of theſe authors has yet taken the leaſt pains to undeceive them in this point, what has been left us by way of comment, being chiefly employed in grammatical or critical remarks, without any view of explaining what relates either to the hiſtory or the practice of phyſic in the time of each reſpective writer. But we have given ſome inſtances, and more might be given, where the phyſicians we have been ſpeaking of have deſcribed diſtempers which were omitted before; where they have taught a new way of treating old ones; where they have given an account of new medicines, both ſimple and compound, and where they have made large additions in the practice of ſurgery. And, if theſe be any real improvements of the art, it cannot be denied but that phyſic was ſtill making a progreſs till the year 600. As to ſurgery in particular, we may, without derogation to the more ancient writers, affirm, that whoever carefully looks into Aetius and Paulus, will be convinced that a great many improvements have been made in that branch of pathology which are not recited in Galen or any where elſe. And in general it may be remarked, once for all, that the writers mentioned in this period, till the beginning of the 7th century, and thoſe whoſe remains they have preſerved, were not ſuch collectors (which is commonly the caſe) as had little knowledge of the ſubject they undertook to treat of, but were every one of them men of experience and practice. And, if the later Greek writers who ſucceeded, were perſons of a lower character, and made little advancement in the art they profeſſed, it is the leſs to be wondered at, ſince, for many centuries, univerſal ignorance prevailed over all the world; and it could not be expected that phyſic ſhould make any progreſs, when all other ſciences and all ſorts of learning were almoſt quite extinct, or that it ſhould be exempt from the common calamities of thoſe times.

II. From the DARK AGES to the end of the SIXTEENTH CENTURY.

After the downfal of the Roman empire, and when the inundation of Goths and Vandals had almoſt completely exterminated literature of every kind in Europe, medicine, though a practical art, ſhared the ſame fate with more abſtract ſciences. Learning in general, baniſhed from the ſeat of arms, took refuge among the eaſtern nations, where the arts of peace ſtill continued to be cultivated. The Arabians, from their vicinity to Alexandria, from their intercourſe with the ſect of Neſtorians and with the Greek philoſophers, who had been compelled by the perſecution of Juſtinian to take refuge in the Mahometan ſtates, had acquired a taſte for literature and the ſciences. The knowledge which they poſſeſſed of medicine is a ſubject of curious inquiry. In the anatomical branch, they did little more than tranſlate and paraphraſe the Greek writers. The errors which their originals had made in anatomy became ſacred; and, if the Arabs have deſcribed certain parts of the body with more exactneſs than Galen, theſe deſcriptions were only conjectures, or the conſequence of the ſtudy of ſome Greek authors who have not deſcended to us. The Mahometan laws prohibit diſſections, becauſe, in the opinion of the Muſſulmans, the ſoul does not depart from the body at the moment of death: it paſſes from one member to another till it centers in the breaſt, where it remains for a conſiderable time. The examination by the angels, of the deceaſed perſon in his tomb, could not be made on a mutilated corpſe. The phyſicians of the Arabs ſtudied, therefore, only ſkeletons in the cemeteries, and in moſt ſurgical caſes implicitly followed the ancients.

Chemiſtry, with the reſt of the ſciences, being baniſhed from the other parts of the world, alſo took refuge among the Arabs. Geber in the ſeventh or eighth, and others in the ninth, century of the Chriſtian æra, wrote ſeveral chemical, or rather alchymical, books, in Arabic. In theſe works of Geber are contained ſuch uſeful directions concerning the manner of conducting diſtillation, calcination, ſublimation, and other chemical preparations, and ſuch pertinent obſervations reſpecting various minerals, as juſtly ſeem to entitle him to the character which ſome have given him of being the father of chemiſtry, the diſcoverer of the key to the richeſt treaſures of nature, though he himſelf modeſtly confeſſes that he has done little elſe than abridge the doctrine of the ancients concerning the tranſmutation of metals. He mentions ſeveral mercurial preparations, ſuch as the corroſive ſublimate and red precipitate, nitric acid, muriatic acid, and many other chemical compoſitions.

The Herbal of Dioſcorides was enriched by the Saracens with the addition of two thouſand plants, and their knowledge of the vegetable world enabled them to inſert in their pharmacopœia ſeveral remedies which had been unknown to the Greeks. One great difference between the Grecian and Saracen diſpenſatories was, that the medicines in the latter were of a milder nature than thoſe in the former: another difference was the common uſe of ſugar in lieu of honey. Dioſcorides, ſpeaking of the various ſpecies of honey, ſays, that there is a kind of it in a concrete ſtate, called, *ſaccharon*, which is found in reeds in India and Arabia Felix: he alſo deſcribes its medicinal virtues. Galen writes upon it nearly in the ſame manner; but the hiſtory of the artificial preparation of ſugar, by boiling or other means, was very imperfectly known. The Saracens appear, however, to have underſtood the art; for, by a mixture of ſugar with other ingredients, they made various medicines with which the ancients were unacquainted.

The caliphs had done much to render the Arabians thus eminently learned. In the ſeventh century, Almanſor, and his famous ſucceſſor Harun Al Raſchid, patroniſed ſeveral medical ſchools, founded hoſpitals and academies, and aſſiduouſly cultivated the introduction of Grecian learning. Unfortunately, the Arabian phyſicians mixed abſurd and myſterious ſuperſtitions with the knowledge they thus acquired. The popular taſte for the marvellous induced them to reſort to every means of impoſing on the vulgar. Aſtrology was introduced, particular poſitions and appearances of the ſtars were ſtudied in dangerous caſes, and amulets were in the poſſeſſion of every ſucceſsful and popular practiſer of medicine.

As diſcoverers and inventors, the Saracens have few claims to praiſe, but they formed the link which unites ancient and modern literature; and, ſince their relative ſituation with Europe ſomewhat reſembled the relative ſituation between Egypt and Greece, they are entitled to a portion of our reſpect and gratitude. When the princes of the weſt began to emerge from barbariſm, they correctly acknowledged the Moors to be the great depoſitaries of knowledge. Many uſeful treatiſes, now loſt in the original, for example the fifth, ſixth, and ſeventh, books of the Conic Sections of Apollonius Pergamus, and ſome of the commentaries of Galen and Hippocrates, were preſerved in the language of the Saracens, or Arabians, as they are indifferently called.

Among the moſt eminent of the Arabian phyſicians, we may reckon Rhazes, Avicenna, Albucaſis, and Avenzoar.

Rhazes, one of the oldeſt and moſt diſtinguiſhed, was born at Rei, in the province of Choraſan, about the year 852. There was a ſchool in his native town, at which he received his early education; but he is ſaid not to have commenced the ſtudy of medicine till ſomewhat late in life, having given up his time much to the cultivation of muſic. After he was thirty years of age, he removed to Bagdad; and then he turned his attention to philoſophy, and afterwards to phyſic. He became, however, indefatigable in his application; and was continually occupied in obſerving, reading, and writing, until he obtained the higheſt reputation; and he was ſelected out of a hundred eminent phyſicians, who were then reſident at Bagdad, to ſuperintend the celebrated hoſpital of that city. The hiſtorians conſidered him as the Galen of the Arabians; and, from his long life and conſtant practice, during which he paid the moſt aſſiduous attention to the varieties of diſeaſe, he obtained the appellation of *the Experimenter*, or the experienced. He was ſaid alſo to be profoundly ſkilled in all the ſciences, eſpecially in philoſophy, aſtronomy, and muſic. He travelled much in purſuit of knowledge, and made frequent journeys into Perſia, his native country, and was much conſulted by ſeveral princes, particularly by Almanſor, the chief of Choraſan, with whom he frequently correſponded, and to whom he dedicated ſeveral of his writings. Abi Oſbaia enumerated 226 treatiſes compoſed by Rhazes, among which the ten books addreſſed to his patron Almanſor are mentioned, and therefore are doubtleſs genuine, although Haly Abbas, who has given an account of him and his works, has not noticed them. This work Rhazes deſigned as a complete body of phyſic, and it may be deemed the great magazine of all the Arabian medicine: the ninth book, indeed, which treats of the cure of diſeaſes, was in ſuch general eſtimation for ſeveral centuries, that it was the text-book of the public ſchools, and was commented upon by the moſt learned profeſſors. Nevertheleſs, like the reſt of the Arabian writings, it contains very little more than the ſubſtance of the works of the Greeks, from whom the Arabians borrowed almoſt all their medical knowledge. They have, indeed, and Rhazes in particular, given the firſt diſtinct account of the *ſmall-pox*, a peſtilential malady which the Greeks have nowhere accurately deſcribed, and which is, therefore, generally inferred to have been unknown among that people. This is queſtionable; but, at all events, the firſt ſpecific account of the ſmall-pox is to be found in the works of Rhazes. He was the author, alſo, of the firſt treatiſe ever compoſed reſpecting the diſeaſes of children. His book on the affections of the joints is intereſting, and contains an account of ſome remarkable cures, effected chiefly by copious blood-letting. He deſcribes the ſymptoms of hydrophobia

drophobia very well; and alſo ſome diſeaſes peculiar to eaſtern countries, as the ignis perſicus, vena medinenſis, &c. and he firſt noticed the diſeaſe called ſpina ventoſa. Rhazes had the reputation of being a ſkilful alchemiſt; the art of chemiſtry, in fact, originated with the Arabians; and Rhazes is the firſt, as Dr. Freind has ſhown, who mentions the uſe of chemical preparations in medicine. He has a chapter on the qualifications of a phyſician; and a ſingular tract on quacks and impoſtors, in which he has pourtrayed that claſs of pretenders to the life; and his detail of their pretenſions ſhows that they were at leaſt as numerous, and ingenious in their contrivances of cheatery, as in more recent times. Rhazes lived to the age of eighty, and loſt his ſight: he died in the year 932. His works that have come down to us, through the medium of tranſlations in Latin, are, 1. A ſort of common-place book, entitled *Continens*, or *Libri Continentes*. 2. A much more perfect work, the *Libri Decem, ad Almanſorem*, publiſhed at Venice, 1510. 3. Six books of Aphoriſms, publiſhed under the title of *Liber de Secretis, qui Aphoriſmorum appellatur*, Bononiæ, 1489. 4. A tract on the ſmall-pox and meaſles, entitled, *De Peſtilentia*. This laſt was tranſlated by Dr. Mead in 1747, and by Mr. Channing in 1766. As it is a ſubject ſo much in diſpute, we ſhall give an extract from the very firſt chapter. "As to thoſe phyſicians who affirm, that the moſt excellent Galen has made no mention of the ſmall-pox, and therefore that he did not know this diſtemper; ſurely they have either never read his works at all, or only very curſorily; nay, moſt of them do not know, whether what he plainly ſays of it is to be underſtood of that diſeaſe. For Galen, in a certain treatiſe, ſays, this drug does good this and that way, and alſo againſt the *ſmall-pox*. And in the beginning of the fourteenth book, of pulſes, that the blood is putrefied in an extraordinary degree, and that the inflammation runs ſo high, that it burns the ſkin; ſo that the ſmall-pox and peſtilent carbuncle are bred in it, and quite conſume it. And in the ninth treatiſe of the book of the Uſe of the Parts, he obſerves, that the ſuperfluous parts of aliments, which are not turned into blood, and remain in the members, putrefy, and in time increaſing do ferment; whence, at laſt, are generated the peſtilential carbuncle, the ſmall-pox, and confluent inflammations. Laſtly, in the fourth part of his Commentary upon the Timæus of Plato, he ſays, that the ancients gave the name φλεγμὸν to every thing which produces redneſs, as the carbuncle and ſmall-pox; and that theſe diſeaſes are bred in thoſe in whom bile abounds. But, as for thoſe who allege, that he has propoſed no remedy or cure, nor explained the nature of this diſtemper, they indeed ſay what is true: for he mentions no more than what we have cited. But God knows whether he might not have done it in ſome other books, which have not yet appeared in Arabic."

Avicenna's *Canon Medicinæ*, or General Syſtem of Medicine and Surgery, was for many ages celebrated through all the ſchools of phyſic. It was principally compiled from the writings of Galen and Rhazes. The latter had, in difficult labours, recommended the fillet to aſſiſt in the extraction of the fœtus; and, for the ſame purpoſe, Avicenna recommends the forceps. He deſcribes the compoſition of ſeveral coſmetics to poliſh the ſkin, and make the hair grow, or fall off. See the article AVICENNA, vol. ii.

Albucaſis flouriſhed about a hundred years after Avicenna: the date of his birth is not known, but he died in 1106. He is chiefly eminent as a ſurgeon; and, although much of what he has left on the ſubject of his art is copied from Rhazes, from Paulus Æginæta, and other preceding writers; he has many original obſervations; and by thoſe who love to ſee the firſt dawnings of improvement in ſcience, his works will be ſtill turned over with pleaſure. He inſiſted on the neceſſity of a ſurgeon's being ſkilled in anatomy, to enable him to operate with ſucceſs; he alſo held it to be equally neceſſary that he ſhould be acquainted with the materia medica, or the properties of the medicines employed in curing diſeaſes; and inveighs againſt thoſe who undertake for gain the cure of diſeaſes, of the nature and cauſes of which they are unacquainted. It appears from his writings, that he extracted polypi from the noſtrils, performed the operation of bronchotomy, and uſed a preparation ſimilar to the lapis infernalis, as a cauſtic. He enumerates a tremendous liſt of operations, ſufficient to fill us with horror. The hot iron and cauteries were favourite remedies of the Arabians; and, in inveterate pains, they repoſed, like the Egyptians and eaſtern Aſiatics, great confidence in burning the part. He deſcribes accurately the manner of tapping in aſcites; mentions ſeveral kinds of inſtruments for drawing blood; and has left a more ample and correct delineation of ſurgical inſtruments than any of the ancients. He gives various obſtetrical directions for extracting the fœtus in caſes of difficult labour. He mentions the bronchocele, or prominent tumour on the neck, which, he tells us, was moſt frequent among the female ſex. We are alſo informed by this writer, that the delicacy of the Arabian women did not permit male ſurgeons to perform lithotomy on females; but, when neceſſary, it was executed by one of their own ſex.

Of Avenzoar nearly all that is known has been communicated under his article. The date of his birth is uncertain; he is ſaid to have lived to the great age of 135 years; but, as he had a ſon of the ſame name and profeſſion, it is very probable that the age of both is included in this term. He (or his ſon) died at Morocco in 1166, or at Seville in 1162. Avenzoar prepared his own medicines, reduced luxated bones, and performed other chirurgical operations. The work by which he is principally known is a compendium of the practice of medicine; in which ſome diſeaſes are deſcribed not found in other writers. It includes a number of caſes, candidly, it ſhould ſeem, related, as the author does not conceal thoſe in which he was unſucceſsful. See AVENZOAR, vol. ii.

Thus we ſee, that, in conſequence of the general decay of learning in the weſtern parts of the world, the Greek writers were entirely neglected, becauſe nobody could read the language; and the Arabians, though principally copiers from them, enjoyed all the reputation that was due to the others. The Arabian phyſic was introduced into Europe very early, with the moſt extravagant applauſe: and not only this, but other branches of their learning, came into repute in the weſt; inſomuch that in the 11th century, the ſtudies of natural philoſophy and the liberal arts were called "the ſtudies of the Saracens." This was owing partly to the cruſades undertaken againſt them by the European princes; and partly to the ſettlement of the Moors in Spain, and the intercourſe they and other Arabians had with the Italians. For, long before the time of the cruſades, probably in the middle of the 7th century, there were Hebrew, Arabic, and Latin, profeſſors of phyſic ſettled in Italy and Spain. The univerſity of Cordova, which had been founded by Alhakem, became the moſt celebrated in the world, and maintained its repute for a long courſe of years. As early as the tenth century, Cordova could boaſt of the largeſt library in the weſt; a library of 250,000 books, and of which the catalogue is ſaid to have filled forty-four volumes. In the twelfth century, there were no leſs than ſeventy public libraries in Spain: Cordova had produced 150 authors, Almeria 52, and Murcia 62. At Seville, at Toledo, and at Murcia, academies were alſo eſtabliſhed, which continued to flouriſh during the whole period of the dominion of the Arabians.

In the tenth century, the rich and maritime city of Salerno, in the Neapolitan territory, arreſted the attention of the predatory Muſſulmen. Frequently engaged either in war or in negociation, they became mixed with the Chriſtians, and gradually communicated their literary attainments; and, in the year 802, Charlemagne founded in Salerno a ſchool, which in proceſs of time became the moſt

moſt celebrated in the world. About the latter end of the 11th century, Conſtantine the African introduced into the Salernian ſchool the Grecian authors, as well as the learning which he had obtained from a long reſidence in Babylon and Bagdad. In the twelfth century, however, this ſchool arrived at its higheſt fame; and was much frequented by the cruſaders in their paſſage to and from the Holy Land. Among theſe, Robert, the ſon of William the Conqueror, had the honour of having the well-known "Regimen Sanitatis Salerni" dedicated to him. In the year 1140, the emperor Frederic II. conferred particular privileges on the ſchool of Salerno, and regulated the courſe of ſtudies, and the probations which phyſicians and ſurgeons ſhould undergo before they were permitted to practiſe. Many of the ordinances ſhow great judgment. The Salernian ſchool continued accordingly to flouriſh till the middle of the fourteenth century, when it appears to have begun to decline. "Fuiſſe Salerni," ſays Petrarch, "medicinæ fontem fama eſt; ſed nihil eſt, quod non ſenio exareſcat." Gariopontus, Nicolaus, Ægidius, Enos, and John of Milan, the author of the Regimen Sanitatis, are the chief writers whom this ſchool boaſts. This ſchool was perhaps, the firſt that eſtabliſhed the form of public examination and admiſſion, and poſſeſſed the power of conferring medical licenſes and degrees. It recogniſes moſt obviouſly the exiſtence of apothecaries, and enforces the propriety of diſcriminating the three branches of the medical profeſſion from each other. The phyſician was under the neceſſity of producing teſtimonials that he had been a medical ſtudent for ſeven full years; the ſurgeon that he had attended to anatomy for at leaſt one; and the apothecary was prohibited from charging more than an eſtabliſhed ratio for the medicaments he compounded or employed.

While the eaſtern nations aſſiduouſly cultivated the knowledge of the Greek writers, and while their caliphs and rulers encouraged ſcience by a liberal patronage, a very different part was followed by the Chriſtians. The clergy, actuated by avaricious motives, ſeized upon the province of the phyſician; and the moſt ignorant prieſts and monks ventured upon the practice of medicine, without any proper ſtudy or preparation. At length the evil became too crying to be any longer endured; and the firſt Lateran council, held in 1123, forbade the regular clergy to viſit any longer the ſick. The prohibition was repeated, in other terms, by the council of Rheims in 1131, and by the ſecond general Lateran council in 1139; and thoſe monks and canons who applied themſelves to phyſic, "ordinis ſui propoſitum nullatenus attendentes, *pro deteſtanda pecunia ſanitatem pollicentes*," were threatened with ſevere penalties; and all biſhops, abbots, and priors, who connived at their miſconduct, were ordered to be ſuſpended from their eccleſiaſtical functions. "But the French prieſts and monks," ſays Cabanis, "bade defiance to theſe thundering anathemas; and it was not till three hundred years after, that common ſenſe, and a regard to propriety and the public good, triumphed finally over their artifices. A ſpecial bull, procured by the cardinal d'Eſtonteville, in 1452, which permitted phyſicians to marry, effected their complete ſeparation from the clergy; and, by this means alone, put a ſtop to a variety of ſhameful abuſes.

To the honour of our country, however, be it mentioned, that theſe abuſes do not appear to have prevailed to ſuch an extent among us. The clergy did not indeed practiſe phyſic, but they were armed with great authority over thoſe who did. In the days when *benefit of clergy* had a ſaving ſignification in courts of law, the miniſters of religion were regarded with great reverence; and their powers over the practice of medicine are not yet quite extinct. The firſt control exerciſed over the practice of phyſic in England appears to have been eccleſiaſtical, though the end and purpoſe of the interference of the church on this occaſion, as in moſt others in thoſe times, as not ſo much the health of the body as the welfare of the ſoul, *eccleſiaſtically underſtood*. One of the conſtitutions of Richard Wetherſhed, archbiſhop of Canterbury anno 1229, in the fourteenth year of the reign of Henry III. runs as follows: "Under pain of anathema, we forbid any phyſician to give advice for the health of the body which may prove perilous to the ſoul, which is much more precious than the body. But, when it happens that he is called to a ſick man, let him firſt effectually perſuade him to call for the phyſician of the ſoul; that, when the ſick man has taken ſpiritual cure, he may, with better effect, proceed to the bodily medicines. Let not the tranſgreſſors of this conſtitution eſcape the puniſhment appointed by the council." The puniſhment here denounced againſt phyſicians ſo offending, was a prohibition from entrance into the church till they had made ſatisfaction, according to chap. xxii. of the council of Lateran, under Pope Innocent III. from whence this conſtitution is taken.

It was nearly two centuries after this, namely, in the reign of Henry V. anno 9. that the firſt ſtatute was enacted relative to practitioners in phyſic. The preamble to this act, after reciting the miſchiefs ariſing from illiterate practiſers, ſtates, "that if no man practiſed therein but all only conynge men, and approved, ſufficiently ylearned in art, filoſofye, and fiſyk, as it is kept in other londes and roiaumes, ther ſhuld many man that dyeth for defaute of help lyve, and no man periſh of unconnyng." The petition then goes on to pray, that no perſon be allowed to practice phyſic, "but he have long time yuſed the ſcoles of fiſyk within ſome univerſitee, and be graduated in the ſame."

The next act reſtraining the practice of phyſic in London and its immediate vicinity, to perſons of approved competency, was paſſed in the third year of the reign of Henry VIII. ſeven years prior to the eſtabliſhment, by charter, of the preſent College of Phyſicians. Its title was, "An Act for the appointing of Phyſicians and Surgeons." It was enacted that no perſon within the city of London, nor within ſeven miles of the ſame, take upon him to exerciſe and occupy as a phyſician or ſurgeon, except he be firſt examined, approved, and admitted, by the biſhop of London, or by the dean of Paul's, for the time being, calling to him or them four doctors of phyſic, and, for ſurgery, other expert perſons in that faculty. When the Charter of the College of Phyſicians was granted by the king, it was on the petition of a prieſt, the cardinal Wolſey, chancellor of England, in conjunction with John Chambre, Thomas Linacre, Ferdinand de Victoria, foreign graduates, the king's phyſicians, and Nicholas Halſwell, John Francis, and Robert Yaxley, phyſicians. And the archbiſhop of Canterbury can, and does to this day, by his diploma, conſtitute a phyſician.

To return from this digreſſion.—After Salernum, the univerſities of Montpellier, Paris, Boulogne, Pavia, Padua, and Ferrara, became the moſt diſtinguiſhed ſeminaries for medical education; but the ſervile attachment to ancient dogmas which obtained in their ſchools materially retarded their progreſs. In 1271, the College of Surgeons at Paris was eſtabliſhed by Pitard, a man who, according to Queſnay, was born for the advancement of his art; and ſurgery was henceforth cultivated with much ſucceſs in France, as a diſtinct branch of the profeſſion. Several writers on phyſic appeared in England; among whom Gilbert has the merit of having furniſhed the beſt deſcription of the leproſy of the middle ages; but he trod in the footſteps of the Arabians, and gave into the ſcholaſtic ſtyle. The ſame remark applies to his ſucceſſors, John of St. Giles, Richard of Windermere, Nicolas of Farneham, John of Gaddeſden, &c. It was in Italy that medical ſcience was revived in the trueſt ſpirit. In the year 1315, Mondini de Luzzi, profeſſor at Bologna, aſtoniſhed the whole world, to uſe Vicq d'Azyr's expreſſion, by the public diſſection of two human bodies. His example was followed in other univerſities; but the utility of the practice was in a great degree fruſtrated by the

the predilection for ancient opinions, which made the anatomists of the age less anxious to discover new facts, than to reconcile the appearances which they observed with the dogmas of Galen and Avicenna. An absurd bull of pope Boniface VIII. forbidding the maceration and preparation of skeletons, also concurred to impede the progress of anatomy; (Blumenbach, Hist. Med. Litterar. p. 99) but from this time forward, the Italian professors maintained a high repute for anatomical science, and have ranked among the most zealous contributors to our knowledge of the human frame.

Though the crusades had conferred no direct benefits on science, they had given a new impulse to the human mind, by the spirit of commerce which they excited. They were also the occasion of the rapid spreading of leprosy and some other diseases in the West, and of the consequent increase of institutions for the relief of the sick, after the example of the Oriental nations. Several orders of knighthood, as the Templars, the knights of St. John, of St. Lazarus, the Hospitalarii Sancti Spiritus, &c. were founded with this charitable view; the members devoting themselves to the cure of such pilgrims as were afflicted with disease.

In the fifteenth century several new diseases appear to have invaded mankind, or, at least, to have attacked them with a degree of violence that was before unknown. The whooping-cough was epidemic in France in the year 1414: and, according to Mezeray, it attacked all descriptions of persons, even the oldest men. The sweating sickness, which broke out first in the same country, was brought to England by the soldiers of the duke of Richmond (afterwards king Henry VII.) upon his landing at Milford-haven in 1485; and spread itself at London from the 21st of September to the end of October. It returned there five times, and always in summer; first in 1495, then in 1506, afterwards in 1517, when it was so violent that it killed many in the space of three hours, so that numbers of the nobility died, and of the commonalty in several towns often the one-half perished. It appeared the fourth time in 1528, and then proved mortal in six hours; many of the courtiers died of it, and Henry VIII. himself was in danger. In 1529, and only then, it infested the Netherlands and Germany, in which last country it did much mischief. The last return of it was in 1551; and in Westminster it carried off 120 in a day.

At this time also a new disease overran the world, and threatened greater destruction than almost all the old ones put together, both by the violence of its symptoms, and its baffling the most powerful remedies at that time known. This was the venereal disease, which is supposed to have been imported from the West Indies by the companions of Christopher Columbus. Its first remarkable appearance was at the siege of Naples in 1494, from whence it was soon after propagated through Europe, Asia, and Africa. The symptoms with which it made the attack at that time were exceedingly violent, much more so than they are at present; and consequently were utterly unconquerable by the Galenists. At this period, as sea-voyages of considerable duration were more frequent, the scurvy became a more common distemper, and was of course more accurately described. But probably, from supposed analogy to the contagions which at that time were new in Europe, very erroneous ideas were entertained with regard to its being of an infectious nature: and it is not impossible, that, from its being attended also with ulcers, it was on some occasions confounded with syphilitic complaints.

Dreadful as the infliction of these maladies must have been on the suffering world, we have reason to believe that they were not without their use in leading to the improvement of medicine. The physicians of the time, finding the rules of their favourite authors quite inapplicable to the cure of distempers so malignant, naturally began to observe and judge for themselves. Manardi and Leoniceno (see their respective articles) laboured to expose the errors of the Arabs, and bring back their followers to the study of Nature and Hippocrates. In this laudable undertaking they were seconded by the German, French, and English, professors; and particularly by the labours of Dodoneus, Schenkius, Forestus, and Platerus.

In the early part of the sixteenth century, Brissot of Poitou revived a subject which had before engaged physicians in violent disputes. According to the Hippocratic mode of treating inflammation, which was to take the blood from the inflamed part as closely as possible, the Greek physicians were wont, in pleurisy, to bleed in the arm of the same side as was affected with pain. Avicenna had objected to this, and recommended venesection in the opposite arm. This produced a great deal of altercation; and in the end a decree of the university of Palermo issued forth which forbade any one to bleed except in the contrary arm; and the professors endeavoured to persuade the emperor Charles V. to second it by an edict. Brissot met with almost as much opposition in reviving the old method as the Salernitans had done in introducing the new one: but at length the dispute was settled in favour of Brissot by the great anatomical discoverers of that century.

The science of anatomy gradually became improved in the hands of Zerbi, Winter, Laguna, and Sylvius; which last taught anatomy at Paris in 1532. But it was reserved for the great and comprehensive mind of Vesalius to throw off the shackles which had so long fettered the progress of anatomy. So far from adopting as infallible dogmas the anatomical relations of Galen, he attached himself particularly to discloſing the errors of that author. He first advised anatomists to inject coloured fluids into the vessels of the body, in order to facilitate the labour of minutely tracing them. Whilst he was a young man at college, he pursued anatomical inquiries with great ardour and assiduity, and published some of his discoveries before he was twenty-five years of age, and seven books on the anatomy of the human body before he was twenty-nine, A. D. 1542. These books contain great discoveries, and, in many circumstances, correct the ancients. But, although they have entitled their author to the gratitude of posterity, they procured to him scarcely any thing but animosity from his contemporaries. The authority of Galen was still held in high veneration; and, when Vesalius exposed his errors, the hatred of all seemed turned against him. People could not bear to be set right by so young a man; and even Sylvius denounced perpetual enmity against him. But, confident in the certainty with which dissection furnished him, he acquired a complete ascendancy over his adversaries: so much so, indeed, that his lectures were sometimes attended by 500 pupils. He pressed Sylvius, his master, so hard, in these controversies, that the latter, rather than admit his favourite Galen was wrong, asserted that "*the structure of the human body had become altered in some particulars since the time of Galen*, and that man's nature had degenerated!" Thus, for instance, the number of the pectoral bones occasioned a dispute, which was carried on with great acrimony between them. Galen had adopted seven in the human skeleton; but Vesalius proved that there were only three, and that his opponent had again been misled by the skeleton of a monkey. But Sylvius objected to this, "that men had been larger and taller in the time of Galen, and had seven pectoral bones, but that, in this dwarfish century, three only could be found." Vesalius asserted, that the bones of the hand are not totally destitute of medullary substance, as Galen had maintained; and Sylvius again endeavoured to refute his assertion, by the absurd argument, "that the bones in former times had been firmer and harder, and consequently required no such substance." Vesalius rejected the large curvature which Galen ascribed to the os humeri, and the os ilium; while Sylvius defended Galen, by asserting, that the bones had become more

ſtraight by the modern mode of dreſs. He vindicated, in a ſimilar manner, Galen's neglect in deſcribing the cartilages of the extremities of the bones: "In former times," ſaid he, "the bones were more ſolid, and conſequently required no cartilages!"

Theſe prejudices had not paſſed away from among the French phyſicians even in the following century; for we find Moliere, in his *Medecin malgré lui* (Mock Doctor), alluding to the abſurdity we have juſt mentioned, of ſome parts of the viſcera having changed their places.

"*Doctor.* Now theſe vapours of which I am ſpeaking having paſſed from the left ſide, which is the ſeat of the liver, to the right, where the heart is ſituated, then the lungs, which we call in Latin *armyan*, communicating with the brain, which in Greek we call *naſmus*, by means of the vena cava, which is *cubile* in Hebrew, meets in its way with theſe vapours, which fill the ventricles of the omoplate; and, ſince theſe vapours poſſeſs a certain malignity cauſed by the acridity of the humours engendered in the concavity of the diaphragm, it therefore happens that theſe vapours—in ſhort, this is preciſely the reaſon why your daughter is dumb.

"*Father.* Nothing in the world can be clearer than this reaſoning. Only one difficulty occurs to me; namely the ſeat of the liver and of the heart. I always thought the heart to have been on the left ſide, and the liver on the right.

"*Doctor.* Yes; *it was ſo formerly; but we have altered all that, and medicine is now adminiſtered in a manner totally new.*" Mock Doctor, act ii.

Veſalius had great advantages over his predeceſſors in being able to perpetuate his labours by means of the beautiful repreſentations which Titian and others painted for him. In 1561, Fallopius, in Italy, publiſhed his Obſervationes Anatomicæ; he was an indefatigable anatomiſt, and made great diſcoveries. About the ſame time, Euſtachius made himſelf conſpicuouſly eminent by promoting anatomical knowledge. He ſeemed calculated for ſubtle inveſtigations; he drew many figures of the human body, and engraved his own plates, the accuracy of which cannot fail of exciting ſurpriſe in an anatomiſt of the preſent day. When the labours of theſe eminent men had, as it were, ſmoothed the path, anatomy was taught with a moderate degree of correctneſs and minuteneſs in the different ſchools of Europe.

But the moſt important diſcovery of this ſcience was that of the circulation of the blood. Berengar, who had paid great attention to the ſtructure of the heart, conjectured the right uſe of the ſemilunar valves. In 1547, Cannani and Amatus obſerved the valve at the termination of the vena azygos; but they did not turn the diſcovery to account; and it was reſerved for Fabricius of Aquapendente to prove the preſence of valves throughout the whole courſe of the veins. Five years afterwards, the circulation of the blood through the lungs was imperfectly deſcribed by Servetus, who had availed himſelf of the reſearches of Berengar and Veſalius. In the year 1571, Cæſalpinus had the merit of ſtating it more clearly, and even of ſuggeſting the firſt hint of the greater circulation; but the full honour of the latter diſcovery muſt be aſcribed to our countryman, Harvey.

This improvement in anatomical knowledge was neceſſarily accompanied by a correſponding one in ſurgery. The Italian ſurgeon, Maggi, corrected the abſurd notions that his predeceſſors had inculcated, viz. that gunſhot wounds were connected with combuſtion, and that gunpowder poiſoned the wound. He ſhowed that, ſince the balls did not ſet the wadding on fire when they came firſt from the barrel of the gun, they could not be hot; nor could gunpowder poiſon a wound, ſince it was compoſed of none but harmleſs materials. Maggi likewiſe left ſome uſeful directions concerning amputation. Ambroſe Paré introduced into France the treatment of gunſhot wounds eſtabliſhed by Maggi. The ſame practice was likewiſe adopted by John Baptiſt. Carcano Leone, profeſſor at Pavia. Paré was, however, unqueſtionably the moſt celebrated ſurgeon of the 16th century. Beſides the improved treatment of gun-ſhot wounds, which he had the merit of introducing, together with many other peculiar methods in operative ſurgery, he has rendered eſſential ſervice to different branches of that ſcience. He treated, for inſtance, the hydrocele with a ſeton; as the dangerous conſequences of inciſion were in that age more frequently obſerved than they are at preſent. He did not apply the actual cautery to wounded blood-veſſels, according to the old practice, but ſecured them by the ligature. The fracture of the collum oſſis femoris, formerly conſidered as a luxation of that bone, was firſt aſcertained by him with accuracy; he alſo reprobated the frequent dreſſing of ulcers, and the application of the trepan to the ſutures of the cranium and the temporal bones. He made very judicious remarks on concuſſions of the brain, of which Henry II. died, and on ſuppurations of the liver ariſing from injuries of the head. Wounds of the throat, in which one of the jugular veins, and even the trachea, was cut through, he did not conſider as mortal. He ſucceſsfully treated an injury of the nervus medianus from veneſection, and thereby acquired the confidence of Charles IX. who had been ſubject to that dangerous accident. A perſon who, from loſing a great part of his tongue, had been ſpeechleſs for a conſiderable time, accidentally recovered the power of ſpeech, by thruſting a table-ſpoon into his mouth. Paré ingeniouſly imitated this method, by contriving an appropriate inſtrument.

Amatus, or, according to ſome, his maſter Aldaretti, had invented the uſe of bougies; and thoſe inſtruments now came into very general uſe, both ſimple and cauſticated.

The doctrine of lithotomy was conſiderably improved in this century, by the invention of two different methods of operating, namely, the *great* and the *high operation*. Germain Colot had undertaken a ſucceſsful operation for the ſtone, in the fifteenth century, and probably by the high operation: but it does not appear that learned ſurgeons had imitated this method, till an obſcure practitioner at Cremona, John de Romani, in 1525, began to adopt what is commonly called the high operation: he taught it to Mariano Santo de Berletta, a ſurgeon at Naples, who deſcribed the particulars of it in a ſeparate treatiſe, publiſhed at Venice in 1543, wherein he profeſſes to have been a pupil of Romani. It is probable that previous to this time no other method of operating was practiſed than that known under the name of the *ſmaller apparatus*, which can be employed only on children under fourteen years of age. In ſome rare inſtances which are related by Benivieni and Chriſt. de Vega, particularly in women, the ſtone had been found in the urethra itſelf, in which caſes it could be more eaſily extracted. But, ſince that period, the paſſage was cleared by the application of the gorget, by means of which the forceps could be introduced into the bladder. Mariano Santo made uſe of the following apparatus: he firſt employed a curved ſound, which he introduced into the urethra ſo as to direct the point to the left ſide; he expreſsly cautioned the operator againſt the inciſion into the perinæum, and is therefore unjuſtly cenſured for having attempted the inciſion in the middle. His ſound was excavated, and he performed the inciſion in the direction of the groove; then introduced the ſound, and along with it the conductors, and afterwards the gorget, which, according to its original conſtruction, terminated in a blunt point; and laſtly, he extracted the ſtone with the forceps, and removed the remaining particles of it, as well as the gravel or ſand, by means of the lithotomical ſpoon. By the application of the blunt dilator, the parts were neceſſarily lacerated, and the wound occaſioned by this laceration could not be healed without great difficulty. Hence Le Dran endeavoured to improve upon this method, eſpecially by making an inciſion through the proſ-

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tate gland and the bladder with his guarded knife *(couteau en rondache)*; and the immortal Schmucker of Berlin was uncommonly ſucceſsful in uſing the great apparatus for lithotomy in that improved ſtate.

The diſcovery of the *high operation* was the work of neceſſity and accident. Peter Franco, of Turrieres in Provence, ſurgeon at Berne, Lauſanne, and Orange, was requeſted in the year 1560 to perform this operation for lithotomy, at Lauſanne, on a child two years of age. He had already begun to operate with the ſmall apparatus, when he found that the ſtone was of the ſize of a hen's egg, and conſequently too large to be removed in that manner. The child's parents inſiſted that the operation ſhould nevertheleſs be finiſhed; and, as the bladder very much projected above the oſſa pubis, he determined upon making the inciſion above theſe bones. Although he eventually ſucceeded in this bold attempt, yet he prudently diſſuades his brethren from imitating that practice; and indeed the danger to be apprehended from the effuſion of the urine into the abdomen is ſo great, that even the improvements made by Douglas, on the high apparatus of Franco, have not much diminiſhed it. In order to remove the ſtone from female patients, Franco rejects both the large and ſmaller apparatus, while he propoſes merely the dilatation of the urethra, by means of an inſtrument invented by himſelf; after which he extracts the ſtone with the forceps, without diſſecting the parts. He likewiſe invented a gorgeret, and a forceps, the arms of which expand in the bladder; but the uſe of theſe inſtruments has been ſuperſeded by others that are more convenient.

A very painful but curious operation excited great attention during this century, although it had been previouſly performed. The reader will perhaps ſmile at an attempt to repair and reſtore that prominent part of the human face, the noſe, when mutilated by accident. Barri, an Italian author, in his "Italia illuſtrata," 1600, conſiders Vincent Vianeo as the inventor of this ſingular practice. However that may be, two Sicilian ſurgeons of the name of Branca, father and ſon, had, ſo early as the latter end of the fifteenth century, acquired celebrity by the ſucceſsful renovation of noſes; an art which became hereditary in the family of the Bojani. But Caſpar Tagliacozzi, profeſſor at Bologna, raiſed this art to ſuch high perfection, as to render it one of the principal branches of ſurgery: he became ſo celebrated by his operations, that his contemporaries erected a public monument at Bologna, where he is repreſented with a noſe in his hand. This operation is deſcribed in an intereſting work, intitled, "Tagliacot. de Curtor Chirurg." fol. Venet. 1597; in which he compares it to the ingrafting of trees, expatiates on the dignity and ornament of the noſe, and endeavours to prove that there is not the leaſt danger in cutting out a piece from the biceps muſcle of the arm. With reſpect to the diet to be obſerved during the operation, he gives ample and rigid inſtructions, while he maintains that the inoculated noſe is poſſeſſed of a more acute ſmell, and that it generally grows much larger and ſtronger than the organ which had been accidentally loſt. We may ſuppoſe that this operation became leſs ſucceſsful in the hands of other ſurgeons, and ſo fell into diſuſe and contempt, as we find it ridiculed by Butler in the 17th century:

> So learned Taliacotius from
> The brawny part of porter's bum
> Cut ſupplemental noſes, which
> Would laſt as long as parent-breech;
> And, when the date of that was out,
> Off dropt the ſympathetic ſnout. *Hudibras*, Canto i.

It has, however, been revived in the preſent day; and has been practiſed with great ſucceſs by Mr. Carpue, Mr. Linn, and others.

We might here mention the names of other practitioners who improved and illuſtrated the uſeful art of ſurgery: as John de Vigo, Jacob Berenger de Carpi, and Mariano Santo de Berletta; the latter of whom aboliſhed the actual cautery in hæmorrhages, and urged the ſuperiority of a proper ligature. The anatomiſt Fallopius, likewiſe cultivated ſurgery with ſucceſs, as did moſt of the anatomiſts of his age; and among them we might enumerate many who have contributed important improvements, would our limits permit.

The obſtetric art, that important branch of ſurgery, began to emerge from its barbarity during the ſixteenth century, and to excite the attention of ſurgeons more than it had hitherto done. There appeared ſeveral introductions to midwifery, the greater number of which, however, contained much uſeleſs and abſtruſe reaſoning on the generation of man, and the vitality of the embryo in certain months, while they were extremely deficient in well founded and practical rules for facilitating delivery. See the article PARTURITION in the preceding volume.

The military ſurgeons of ancient times are very little mentioned in hiſtory. Perhaps they were not in very great eſtimation; as ſeems probable from the perſons with whom they are claſſed in the military code made at Mans by Henry V. where, under the head of the perſons ſubject to the conſtable and marſhal, the *medici* are introduced in the following company: "Whether ſoldiers, ſhoemakers, taylors, barbers, phyſicians, or *waſher-women*." See Upton de Re Militari.

The low ſtate of military ſurgery in France, even ſo late as the time of Francis I. (contemporary with our Henry VIII.) may be gathered from the following extract from an old and ſcarce book called *Treaſure of Ancient and Modern Times*: "In the year of our Lord 1536, the victorious king Fraunces ſent a great army into Piedmont to vitaile Thurin, &c. I was at that time but a young chirurgion, and but little experienced in the art, becauſe I never had as yet ſeen the curation of wounds made by gun-ſhot. True it is, I had read John de Vigo, his firſte booke of wounds in generall, chap. 8. where he ſaith, that thoſe wounds made by fiery engines do participate of venenoſity, becauſe of the powder; and for their curation he commands to cauterize them with the oile of elders, mixed with a little treacle. Yet nevertheleſſe, becauſe I would not be deceived, before I made uſe of the ſaid boyling oile, knowing that it brought extreme paine to the patient, I obſerved the method of other chirurgeons in the firſt dreſſinge of ſuch wounds, which was by the application and infuſion of the aforeſaid oile, as hot as poſſibly they could ſuffer it, with tents and ſetons; wherefore I became emboldened to do as they did. But in the end my oile failed me, ſo that I was conſtrained to uſe, inſtead thereof, a digeſtive made of the yolk of an egge, oil of roſes, and terebinth. The night following I could hardly ſleep at mine eaſe, fearing leſt that, for want of cauterizing, I ſhould find my patients, on whom I had not uſed the aforeſaid oile, dead and empoyſoned; which made me riſe early in the morning to viſit them, where, beyond my expectation, I found them on whom I had uſed the digeſtive medicine, to feele but little paine, and their wounds without inflammation or tumour, having reſted well all that night; the reſt, on whom the aforeſaid oile was applied, I found them inclining to feavers, with greate paine, tumour, and inflammation, about their wounds; then I reſolved with myſelfe, never to burne ſo cruelly the wounded patients by gun-ſhot any more. A famous chirurgion at Turin, propoſed a balm for gun-ſhot wounds as follows: Two young whelps, one pound of earth-worms, two pounds of the oil of lilies, ſix ounces of the terebinth of Venice, and one ounce of aqua vitæ. In my preſence he boiled the whelps alive in the ſaid oile, untill the fleſh deſerted from the bones: afterwards he took the worms, having before killed and purified them in white wine, to purge themſelves of the earth which they have always in their bodies; being ſo prepared, he boiled them alſo in the

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ſaid oil, till they became dry; this he ſtrained thorow a napkin without any great expreſſion; that doone, hee added thereto the terebinth; and laſtly the aqua vitæ; and called God to witneſſe that this was his balme, which he uſed in all wounds made by gun-ſhoot, and in others which required ſuppuration; withall praying me not to divulge his ſecret."

How terrible muſt have been the ſtate of the military hoſpitals, and what numbers of men muſt have fallen a ſacrifice to ignorance, who under proper management might have been recovered to the ſervice of their country! But, bad as the ſurgeons were, ſome were nevertheleſs neceſſary in our armies; and, although the general mode of raiſing and paying them is not handed down, certainly ſome regular form of doing it muſt have exiſted.

In the wardrobe-account of the pay of the army raiſed againſt the Scots, by Henry II. in the 15th year of his reign, many of the Welſh corps have an officer ſtyled *Medicus;* but whether by that term a phyſician or ſurgeon is meant, ſeems doubtful, as the word medicus is ſometimes uſed for both a ſurgeon and an apothecary. None of theſe phyſicians or ſurgeons are charged to the Engliſh levies. And to the Welch they ſeem to bear no regular proportion to the number of private men; a corps of 1907 men having only one, and another of 968 having two; the wages of all, except the two laſt-named, was 6d. per diem each; thoſe which were raiſed on the king's land in Cardiganſhire had only 4d. each per diem.

In the liſt of the troops that attended Edward III. to the ſiege of Calais, only one ſurgeon is mentioned, who ſeems to have been part of the retinue of the prince of Wales; and, in the military eſtabliſhment of the 18th of the ſaid reign, as given in the accounts of Walter Wentwayt, treaſurer of the houſehold, there is one ſurgeon for the king's houſehold-troops; four doctors and one ſurgeon for the army of North Wales; two doctors and one ſurgeon for that of South Wales; a ſupply by no means competent to the number of men to which they were appointed. Suppoſing the inferior ſurgeons to have been ſtyled barbers, like the field-ſhaver of the Germans, it ſeems reaſonable to expect they would ſomewhere appear on the muſter-roll.

Henry V. A. D. 1415, engaged Maſter Nicholas Colnet, a phyſician, to ſerve him for one whole year, in the voyage then to be made either to the duchy of Guyenne or France. Colnet was to bring with him three archers. If the expedition went to Guyenne, he was to have for his own wages forty marks, and twenty marks for each of his archers, for the whole year. If to France, for his own wages 1s. and to each of his archers 6d. a day, with regards. In the ſame year the king engaged Thomas de Moreſtede, a ſurgeon, who contracted to bring with him twelve other ſurgeons and three archers. Moreſtede was to be paid as a man at arms, 12d. by the day; and his twelve aſſiſtants and three archers, each 6d. with the uſual regard. The ſame conditions were covenanted, in caſe the campaign lay in Guyenne, that were made with Colnet. Upon a petition, the king granted Moreſtede one waggon and two ſumpter-horſes, for the carriage of the baggage and neceſſaries for himſelf and the twelve other ſurgeons. He likewiſe petitioned for money to buy neceſſaries for his office, but it was not granted. The next year the king employed Moreſtede, joining with him William Bredewardyn, with the title of his ſurgeons, in a commiſſion to impreſs as many ſurgeons as they thought neceſſary for the expedition, with a ſufficient number of artificers for making their inſtruments, to be taken wherever they could be found.

Among the different perſons who indented in the 14th of Edward IV. to ſerve that king in Normandy and France, for one year, are the following phyſicians and ſurgeons: Maſter Jacobus Fryle, king's phyſician, 2s. per diem, with two ſervants at 6d. per diem; Maſter William Hobbis, phyſician and ſurgeon of the king's body, 18d. per diem; ſeven ſurgeons at 12d. and five other ſurgeons every one at 6d. per diem, for their attendance in the ſaid ſervice beyond ſea. It is remarkable, that here are juſt twelve ſurgeons, the ſame number that appears to have been employed on the expedition under Henry V.

In the expedition to St. Quintin's in the reign of Philip and Mary, 1557, an army conſiſting of five hundred heavy armed horſe, five hundred light horſe, four thouſand foot, and two hundred pioneers, with officers and a train of artillery proportionable, there were fifty-ſeven ſurgeons, two of them belonging to the ſuite of the general, one to the lieutenant-general, one to the high mariſchal, one to the general of the horſeman, one to the general of the infantry, and one to the maſter of the ordnance; all theſe at the daily pay of 1s. each. The remainder belonged to the corps of horſe, light horſe, and infantry, in the proportion of one ſurgeon to an hundred men; the daily pay of a ſurgeon of heavy horſe was 2s. of light horſe 1s. 6d. and of infantry 1s. No ſurgeon is charged for either the ordnance or pioneers.

Beſides the king's pay, it ſeems as if the ſurgeons of former times, as well as thoſe of late, received a weekly ſtoppage from the private men. This may be gathered from the following deſcription of the duties of a military ſurgeon, written in the reign of Queen Elizabeth. "Surgeons ſhoulde be men of ſobrietie, of good conſcience, and ſkillfull in that ſcience, able to heal all ſoares and woundes, ſpecially to take oute a pellett oute of the ſame. All captaines muſt have ſuche ſurgeons, and ought to ſee them to have all their oyles, balmes, ſalves, and inſtruments, and neceſſary ſtuffe to them belonginge, allowinge and ſparinge carriadge for the ſame. That every ſouldier, at the paye daye, doe give unto the ſurgeon 2d. *as in tymes paſt hathe beene accuſtomed*, to the augmentation of his wages; in conſideration whereof, the ſurgeon oughte readilie to employ his induſtrie uppon the ſoare and wounded ſouldiers, not intermedlinge with any other cures to them noyſome. Regarde that the ſurgeon bee truelye paid his wages, and all money due to hym for cures, that bye the ſame hee maye bee able to provide all ſuche ſtuffe as to him is needfull. Such ſurgeons muſte weare their baldricke, whereby they may be knowen in the tyme of ſlaughter: it is their charter in the field." From this paſſage it ſhould ſeem that ſurgeons formerly wore a diſtinguiſhing belt over their ſhoulders, like that now uſed by the itinerant farriers, vulgarly ſtyled ſow-gelders, in order to protect their perſons whilſt adminiſtering to the wounded in the field of battle; a precaution now rendered unneceſſary by the apparatus of bandages, &c. carried by ſurgeons attending a party where ſervice is expected, or in a field of battle.

In an eſtimate made, anno 1620, for an army of twenty-five thouſand foot, five thouſand horſe, and twenty pieces of artillery, propoſed by king James to be ſent to the Palatinate, a number of ſurgeons is appointed, but no allowance or proviſion whatever appears in the eſtimate for medicines or an hoſpital, although there is a very minute detail of almoſt every other neceſſary ſtore; and this ſeems the more extraordinary, as many of the moſt experienced officers of that time were called in to aſſiſt in forming the eſtimate. The medicinal liſt appointed for this expedition were: "In the general's trayne, two phyſicians, at 6s. 8d. per diem each; two apothecarys, at 3s. 4d. and two ſurgeons, each at 6s. 8d. Every regiment of foot conſiſted of twelve companies of 150 men each, and had one chief ſurgeon, at 4s. per diem, and another ſurgeon to each company at 1s. per diem. Among the general officers of horſe is one chief ſurgeon at 4s. a-day, probably to ſuperintend the ſurgeons of troops. To every troop, which was to conſiſt of a hundred men, one ſurgeon was allotted; his daily pay, 2s. 6d. To the ordnance, pioneers, &c. there was allowed one barber-ſurgeon, at 2s. per diem; and two under barber-ſurgeons, at 6d a-day each."

One reaſon may be aſſigned for our ancient armies being

being able to do with ſo ſmall a number of ſurgeons; which is, that, immediately after a battle, ſuch of the meaner ſort of ſoldiers, whoſe wounds ſeemed to require a conſiderable time for cure, were by the general diſmiſſed, with a ſmall pecuniary proviſion to carry them home: this, according to Barnes's Hiſtory of Edward III. was done immediately after the battle of Poictiers. Perhaps likewiſe the inferior ſurgeons, ſtyled *barbers*, were taken from the ranks, and therefore paid and muſtered as private men.

The practice of medicine did not keep pace in improvement with anatomy and ſurgery. In the early part of the 16th century the moſt conſpicuous name we meet with is that of *Paracelſus*. This bold and conceited chemiſt, who had been greatly neglected in his education, endeavoured to combine the principles of alchemy, medicine, and aſtrology. He travelled much in ſearch of remedies, which he did not diſdain to accept from old women, gipſies, and conjurers. He acquired very great reputation; and on his return to Germany he was appointed profeſſor of ſurgery to the univerſity of Baſle. The pathological doctrines of Paracelſus are very imperfectly underſtood. It appears, however, that he admitted three component parts of the animal body, ſalt, mercury, and ſulphur. We muſt not ſuppoſe that he carried his notions ſo far as to conceive that theſe chemical ſubſtances were really exiſtent in our frame. On the contrary, he appears to have merely uſed the abovementioned terms to illuſtrate his meaning by analogy. Thus, *mercury* is ſuppoſed to mean the principle of fluidity, *ſulphur* that of inflammability, and *ſalt* ſolidity. The vital principle of Paracelſus he denominated *Archæus*; it was ſeated in the ſtomach, and was the principal agent in digeſtion; it ſeparated the noxious, and prepared for aſſimilation the nutritious, parts of our aliment, with a great deal of intelligence, and was the principal agent in the recovery and preſervation of health. Paracelſus likewiſe mentioned a humour as producing diſeaſe, though he had abuſed with ſo much virulence the humoral pathology of Galen. This humour he called *Tartarus*; it produced rigidity of the ſolids, viſcidity of the fluids, &c. but it ſhould be remarked, that this author did not, like Galen, impute diſeaſe to the preſence of humour, but humour to diſeaſe; for the proximate cauſe of this Tartarus he contended was the irregular action of the Archæus, or preſiding ſpirit. He moreover mentioned five remote cauſes of diſeaſe, viz. *ens aſtrale*, *ens veneni*, *ens naturale*, *ens ſpirituale*, and *ens deale*. Diveſted of chemical jargon and obſcurity, the theory of Paracelſus ſeems to be this. He remarked, with many others before him, the three principles of the animal frame; ſolidity, fluidity, and contractility or irritability; and he endeavoured to trace their origin in ſubſtances which poſſeſſed properties bearing to them a remote analogy. In the ſecond place, in tracing the phenomena of diſeaſe, he referred to the defective or inordinate energy of the vital power the aſſimilation of noxious particles of food into the blood: hence a humour which, circulating in all parts, produced the varied phenomena of diſeaſe. Paracelſus in his practice uſed the chemical remedies with ſome ſucceſs: he has the merit of firſt introducing mercury as a cure for the venereal diſeaſe, which had before his time been treated with inert quinteſcences, diet-drinks, guaiacum, &c. He was likewiſe the firſt who preſcribed opium freely; and he was no friend to that abſurd practice, which had come into vogue with the Arabian phyſicians, of compounding 50 or 60 ſimples together, under the miſtaken notion that all the ſubſtances would retain and exert their ſeparate virtues, or that among ſo great a number ſomething would be found applicable to the caſe.

Modern pharmacy may be ſaid to commence about the middle of the fifteenth century, at which time it appears to have been in a moſt deplorable ſtate of empirical barbarity. Though it is probable that, among the earlier practitioners of medicine, remedies were employed in their moſt ſimple forms, the art of compounding a number of ſimples together into one medicine had, by the time of which we are now ſpeaking, arrived at a pitch of extravagance which has never been exceeded. What carried this oſtentation of compoſition to the higheſt exceſs, was the project of framing *antidotes*, which being previouſly adminiſtered, might defend againſt any poiſon whatever that ſhould *afterwards* be taken into the body. To this ſcheme is owing the multitudinous compoſition of the celebrated Mithridate and the Theriaca; for ſuch medicines muſt of courſe recommend themſelves by the number and variety of their ingredients, as they were to contain a proper antidote for every poſſible ſpecies of poiſon, and more eſpecially as theſe compoſitions were to be farther wrought up into little leſs than univerſal remedies for all diſeaſes to which the human body is ſubject.

The firſt of theſe antidotes was ſaid to be compoſed from the reſult of experiments made ſeparately with all kinds of ſimple antidotes by the famous king whoſe name it bears; but, as no records are left us of any of thoſe particular experiments, we may reaſonably conſider this tale as fabulous. As it is not likely that this medicine or the Theriaca will ever again appear in our Pharmacopœias, we ſhall, for the amuſement of our readers, deſcribe the compoſition of each, as given in the London Pharmacopœia publiſhed in 1746.

The Mithridate is thus compoſed. "Take of cinnamon 14 drams, of myrrh 11 drams; agaric, ſpikenard, ginger, ſaffron, ſeeds of treacle muſtard, or of mithridate muſtard, frankincenſe, Chio turpentine, of each 10 drams; camel's hay, coſtus, or in its ſtead zedoary, Indian leaf, or in its ſtead mace, French lavender, long pepper, ſeeds of hartwort, juice of the rape of ciſtus, ſtrained ſtorax, opoponax, ſtrained galbanum, balſam of Gilead, or in its ſtead expreſſed oil of nutmegs, Ruſſian caſtor, of each an ounce; poley-mountain, water-germander, the fruit of the balſam-tree, or in its ſtead cubebs, white pepper, ſeeds of the carrot of Crete, bdellium ſtrained, of each ſeven drams; Celtic nard, gentian-root, leaves of dittany of Crete, red roſes, ſeeds of Macedonian parſley, the leſſer cardamom-ſeeds freed from their huſks, ſweet fennel-ſeeds, gum Arabic, opium ſtrained, of each five drams; root of the ſweet flag, root of wild valerian, aniſe-ſeed, ſagapenum ſtrained, of each three drams; ſpignel, St. John's wort, juice of acacia, or in its ſtead Japan earth, the bellies of ſcinks, of each two drams and a half; clarified honey, thrice the weight of all the reſt. Diſſolve the opium firſt in a little wine, and then mix it with the honey made hot; in the mean time melt together in another veſſel the galbanum, ſtorax, turpentine, and the balſam of Gilead, or the expreſſed oil of nutmeg, continually ſtirring them round, that they may not burn; and, as ſoon as theſe are melted, add to them the hot honey, firſt by ſpoonfuls, and afterwards more freely: laſtly, when this mixture is nearly cold, add by degrees the reſt of the ſpecies reduced to powder."

The preparation of the *Theriaca Andromachi*, or Venice treacle, is thus directed. "Take of the troches of ſquills, half a pound; long pepper, opium ſtrained, dried vipers, of each three ounces; cinnamon, balm of Gilead, or in its ſtead expreſſed oil of nutmeg, of each two ounces; agaric, the root of Florentine orris, water-germander, red roſes, ſeeds of navew, extract of liquorice, of each an ounce and a half; ſpikenard, ſaffron, ammomum, myrrh, coſtus, or in its ſtead zedoary, camel's hay, of each an ounce; the root of cinque-foil, rhubarb, ginger, Indian leaf, or in its ſtead mace, leaves of dittany of Crete, of horehound, and of calamint, French lavender, black pepper, ſeeds of Macedonian parſley, olibanum, Chio turpentine, root of wild valerian, of each ſix drams; gentian-root, Celtic nard, ſpignel, leaves of poley-mountain, of St. John's wort, of ground-pine, tops of creeping-germander with the ſeed, the fruit of the balſam-tree, or in its ſtead cubebs, aniſeſeed, ſweet fennel-ſeed, the leſſer cardamom-ſeeds freed from their

huſks, ſeed of biſhop's-weed, of hartwort, of treacle-muſtard or mithridate-muſtard, juice of the rape of ciſtus, acacia, or in its ſtead Japan earth, gum Arabic, ſtorax ſtrained, ſagapenum ſtrained, Lemnian earth, or in its ſtead bole-armenic or French bole, green vitriol calcined, of each half an ounce; root of creeping birthwort, or in its ſtead of the long birthwort, tops of the leſſer centaury, ſeeds of the carrot of Crete, opoponax, galbanum ſtrained, Ruſſia caſtor, Jews pitch, or in its ſtead white amber prepared, root of the ſweet flag, of each two drams; of clarified honey thrice the weight of all the reſt. The ingredients are to be mixed in the ſame manner as in the Mithridate." The Theriaca may be conſidered as a modification of the Mithridate by Andromachus, though we are not informed what were his reaſons for the variations, except that by the addition of the viper's fleſh the medicine was rendered more uſeful againſt the bite of that animal. The Theriaca was in ſo great repute before the decline of the Roman empire, that even the wiſe Marcus Aurelius was induced to make a daily uſe of it, to the great prejudice of his health; for we are told by Galen, that his head was ſo much affected, that he doſed in the midſt of buſineſs; and, when on this account he omitted the opium in the compoſition, he could not ſleep at all.

When the alchemiſts had extended the bounds of their art from the mere drudgery of manufacturing gold and ſilver to the more noble and philoſophic employment of compoſing an univerſal elixir that ſhould ſecure its poſſeſſor from diſeaſe, and prolong his life to an indefinite period, pharmacy derived from their labours conſiderable and ſolid advantages. The experiments inſtituted by theſe viſionaries with the metals, led to the accidental diſcovery of ſome of the moſt efficacious remedies which we at preſent employ, eſpecially the preparations of antimony and mercury, and moſt of what are called the neutral or ſecondary ſalts. By calling in the aid of fire, they enabled us to produce in bodies changes which, without the aſſiſtance of this powerful agent, we ſhould have been unable to effect. Now, every thing was ſubmitted to *digeſtion*, *calcination*, *fermentation*, *diſtillation*, and *ſublimation*; but, as generally happens in caſes of innovation or reform, theſe new methods of obtaining active remedies were carried to an abſurd and ridiculous extent. Finding that the healing powers of many ſubſtances were eliminated or increaſed by the application of heat, they ſeemed to imagine that the ſimple medicine could in no caſe poſſeſs any medical virtue till it had been placed upon the fire or kept for ſome hours in a furnace. Hence the immenſe number of diſtilled waters and ſpirits, eſſential and empyreumatic oils, with which the old pharmacopœias are crowded, and which ſeem in many caſes to poſſeſs no other powers than what they derive from the water or the ſpirit that forms the bulk of the preparation. Not only plants and minerals, but animals and animal matters of all kinds, were diſtilled, digeſted, or calcined. Thus, we find a *water of ſnails*, a *ſpirit of millepedes*, an *oil of earth-worms*, &c. &c. The abſurd and pompous names by which the preparations were diſtinguiſhed, are truly ridiculous. *Magiſterial balſam*, *Hiera picra*, *Ethiops mineral*, *Ens Veneris*, *Flores Martis*, *Calomelas*, *Aquila alba*, are a few which long retained their ſeat both in public and private diſpenſatories. As theſe preparations were, from their contrivers, denominated *chemical*, the more ancient medicines which were drawn almoſt entirely from the animal and vegetable kingdoms, were denominated *Galenical*, becauſe chiefly employed by the followers of Galen. Hence the diviſion of medicines into *Galenical* and *Chemical*, a diviſion which obtained for ſome hundred years, and which only a few years ago was preſerved in the ſale-catalogues of the London druggiſts.

The chief follower of Paracelſus was Van Helmont. He made many important chemical diſcoveries; ſtrongly oppoſed the Galenical doctrine: and, though often miſled in his ſpeculations by a ſtrong bias to theoſophiſm, he obſerved Nature very attentively; he pointed out more fully than Paracelſus had done, the influence of the epigaſtric organs on all the other parts of the ſyſtem; and he gave ſome account of the origin of urinary calculi. The nature of inflammation was likewiſe explained by him, and the pernicious conſequences of exceſſive bleeding well pointed out. Van Helmont had not, however, many adherents at the time he lived. His theory was afterwards taken up by Deſcartes, who attempted to explain all the phenomena of life according to chemical and mechanical principles. Thus, the circulation of the blood and animal heat were produced, according to him, by the ebullition or fermentation that took place in the heart; digeſtion was likewiſe performed by a ſpecies of fermentation; and the ſenſation of hunger proceeded from the acid which was evolved during the proceſs. To explain the nature of ſecretion, Deſcartes had recourſe to the corpuſcular philoſophy; comparing the ſecreting organs to ſieves, which allowed only the more minute and homogeneous particles to paſs through, while the coarſer and heterogeneous bodies were rejected: the round particles were ſuppoſed by him to enter into cylindrical tubes; pyramidal particles penetrated by triangular pores, and cubical particles by ſquare pores; and in this way each ſecretion remained diſtinct, at leaſt in the healthy ſtate. Theſe ideas were eagerly embraced by the Dutch phyſicians of the time, and may be conſidered as forming the groundwork of the chemical and mechanical ſyſtems, which divided the medical world at the end of the ſeventeenth century, notwithſtanding the claims to originality which ſeveral of their followers have put in.

After the revival of genuine philoſophy in the ſixteenth century, it might naturally be expected that medical ſcience would immediately avail itſelf of its light, and partake of its benefit; but this was ſo far from being the caſe, that, in the firſt inſtance, it proved a new ſource of error, and threw freſh impediments in the road which was ſuppoſed to be opened to the improvement of rational medicine. The diſcovery of the circulation of the blood may, indeed, be conſidered as one of the firſt fruits of the inquiries into nature begun in that age. But, though this is a fundamental element in the economy of the living body, it throws little or no light on the principles peculiar to life, being purely of a mechanical nature; and, abſtractedly conſidered, hardly admits of any application to the practice of medicine. On the contrary, this diſcovery, by its perverted application, tended to corrupt and miſlead, by a looſe adoption of the principles of mechanical philoſophy, ſo well laid down in that age by Galileo and others. Borelli, in inveſtigating the force of the heart by experiment, eſtimated it at 180,000 pounds; Hales, at 51 pounds; Keil, at 1 pound. The mechanical powers of the ſtomach were, about the ſame time, ſubjected to experimental reſearch by Pitcairn, who gravely gave out that he found this viſcus, in the human ſubject, exerted a force equal to 12,900 pounds, in compreſſing food in the proceſs of digeſtion. Others, conceiving that chemical power had the chief ſhare in this function, endeavoured to evince that the change in the food was brought about by means of heat and fermentation. Sounder principles have referred theſe changes to powers which have nothing in common with the mechanical and chemical powers which characterize inanimate nature.

From the picture that has been exhibited of the innumerable doubts and difficulties which clog the attainment of medical knowledge, and embarraſs the application of it to practical purpoſes, the timid, ſceptical, and indolent, may be diſcouraged from ſtudies apparently ſo arduous in their proſecution, and ſo queſtionable as to the efficiency and utility of their reſult. But it is not from characters of this deſcription that much good can be expected in any of the uſeful arts of life. If a like deſpondency were to pervade mankind in general, there would be an end to all that enterpriſe and energy which alone can enable them

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to act up to their deſtiny, and follow up thoſe purſuits upon which the perfection of their nature depends. As the ſenſes would have lain dormant for ever had there been no external objects to ſtimulate them, ſo the faculties and virtue which characterize rational nature and civilized life could never have been developed, but through the excitement of thoſe pains, wants, difficulties, and dangers, inſeparable from human life. By no other arrangement could our duties, our happineſs, our mental and bodily perfections, have been bound together in one harmonious and conſiſtent ſyſtem. Let us compare the art of medicine, under this aſpect, with thoſe of navigation and agriculture. Had man been furniſhed by the Creator with wings, by which he could have traverſed all ſeas and oceans, ſo as to ſuperſede the uſe of ſhips, where would have been that hardihood of character, and all thoſe ingenious devices which have called forth the active energies and deep reſearches of the human mind? If, contrary to the actual inſtitutions of Providence, the life of man had been ſuſtained by the ſpontaneous productions of nature, inſtead of the products of induſtry, neither the faculties of the mind nor the powers of the body could ever have been developed: man would have been little ſuperior to the brutes; his active and inventive energies would have lain aſleep for ever; there would have been no room for the talents exerciſed in the procuring of food, raiment, and ſhelter, nor in commercial intercourſe; all the mutual and endearing ties and dependences of ſocial and civilized life, all trades, profeſſions, arts, and ſciences, whether miniſtering to accommodation or elegance, conſtituting man's greateſt felicity, whether as objects of purſuit or enjoyment, would have been unknown and untaſted. It is obvious that this reaſoning, being founded on a general law of nature, muſt apply equally to medicine. In a probationary exiſtence, it was neceſſary that man ſhould be tried, not only by pain and ſickneſs, but by the difficulties of remedying them, as exerciſes of virtue and ingenuity. Why ſhould the road to medical relief lie through fewer and ſlighter ſtruggles and dangers, than thoſe of navigation and agriculture? But the ſubject is more conciſely and emphatically illuſtrated by the philoſophical poet, than by any amplitude of illuſtration, or farther multiplicity of words which we could employ:

——— Pater ipſe colendi *(medendi)*,
Haud facilem eſſe viam voluit, primuſque per artem,
Movit agros, *(ægros,)* curis acuens mortalia corda.

We ſhall conclude our view of the general ſtate of pathology in the ſixteenth century, with ſome account of the violent diſputes which prevailed in France, on the prerogatives of the medical art over thoſe of ſurgery, but particularly on the conteſted privileges of the ſurgeons. Although the documents relative to this ſubject have been partly printed, or have at leaſt not been withheld from the inſpection of hiſtorians, yet no part of medical hiſtory has been conducted with more partiality, and leſs regard to truth, by both parties. The author of the work entitled "Recherches ſur l'Origine et la Progrès de la Chirurgie en France" is guilty of the groſſeſt miſrepreſentation, though this book has by ſome been aſcribed to Franc. Queſnay. Paſquier, in his "Recherches de la France," fol. Paris, 1620, deſerves much more credit; and, therefore, the moſt important points relative to that extraordinary diſpute are here briefly collected from his more authentic ſtatement. And this alſo will remind the reader of ſimilar diſputes in our own country, and about the ſame time: for, it has been already hinted, that, during great part of the 16th century, ſurgery was practiſed indiſcriminately by barbers, farriers, and ſow-gelders. We know that barbers and ſurgeons continued for 200 years after to be incorporated in one company, both in London and Paris. In Holland and ſome parts of Germany, we are told, that, even to this day, barbers exerciſe the razor and lancet alternately.

The ſurgeons of Paris had, ſince the time of Lanfranc, (1295), formed a diſtinct body, called the College of St. Côme; and they obtained additional and reſpectable privileges from Philip the Fair, in 1311, which entitled them to equal rank with the members of the medical faculty; hence they could not bear the idea that barbers ſhould uſurp the right of bleeding, applying plaſters, and treating external injuries and ulcers. In conſequence of this encroachment, the ſurgeons, in 1425, obtained an act or arrêt of the parliament of Paris, by which the performance of chirurgical operations was prohibited to the barbers, while they were permitted to dreſs wounds, and extirpate corns by the knife. But the phyſicians embraced the cauſe of the barbers, and inſtructed them in the practice of ſurgery, with a view to take revenge on the ſurgeons, who, it was affirmed, had uſurped medical privileges. The complaint of grievances which the ſurgeons, on this occaſion, laid before the faculty, in the years 1491 and 1494, were not attended with any effect; and the members of the faculty were even permitted to deliver anatomical lectures to barbers in the French language. The ſurgeons again, though in vain, repreſented to the faculty, that they acted contrary to the laws made by themſelves, by permitting their members to inſtruct barbers in the knowledge of anatomy, and this in their native language. However, no other redreſs could be obtained, but that of licenſing the ſurgeons to undertake public diſſections, and of granting them a certain rank above the barbers, for which they paid ſixty ſolidos annually to the treaſurer of the faculty. This event took place in the year 1502; and in 1505 the ſurgeons renewed their application in the character of ſcholars or pupils to the faculty, whom they intreated to confirm their privileges; but Helin, the ſenior of that body, ſent them the diſcouraging anſwer, that their pretended rights or immunities had been acquired by ſurreptitious means.

In the ſame year, the phyſicians of Paris, as Paſquier expreſſes himſelf, "paſſed the Rubicon," and entered into a formal contract with the barbers, who, on account of their implicit obedience, were patronized in preference to the ſurgeons. The barbers were conſequently, in contempt of the ſurgeons, pronounced to be "the true ſcholars of the faculty:" they were matriculated under that name; but a promiſe was exacted from them, according to which they were not allowed to adminiſter internal medicines, without conſulting, in every caſe, a member of the medical faculty; they farther agreed to undergo an examination, previous to their commencing buſineſs as maſters. After that period, the barbers were no longer called *Barbitonſores*, the complaiſant faculty having conferred on them the more honourable title of *Chirurgici a Tonſtrina*, or *Tonſores Chirurgici*. A few days after this change, the faculty proceeded to ſuch extremities as to proſecute the ſurgeons in a court of law, becauſe they had received information, that ſeveral ſurgeons had preſcribed internal remedies without the previous advice of a phyſician.

At that time, probably, no man of genius and activity preſided over the College of St. Côme; for no ſooner was Stephen Barat elected preſident of that college, than the ſituation of affairs was thoroughly changed. In the year 1515, he urged the faculty to exempt the ſociety of ſurgeons from the oppreſſive tax they were obliged to pay annually, and not to compel them to attend the lectures given by members of the faculty. As Barat addreſſed himſelf to the whole univerſity, and as old Helin, the moſt zealous antagoniſt of the ſurgeons, died in the ſame year, this remonſtrance had the deſired effect. The univerſity iſſued a decree, by which the ſurgeons of Paris were nominated *Scholaſtici*, or perpetual ſcholars of the faculty. But ſtill greater immunities were granted to the ſurgeons in 1545, by the good offices of William Vavaſſeur, principal ſurgeon at the court of Francis I. He effected a complete ſeparation of the barbers from the ſurgeons; and at the ſame time obtained a decree, in conformity to which every maſter of the chirurgical art, if he wiſhed to obtain the privilege

privilege of exerciſing his profeſſion, was obliged to ſtudy the Latin language, logic, and other elementary ſciences. By this favourable regulation, the College of Surgeons was at once raiſed to the rank of a learned ſchool, and obtained at length the right of creating Maſters, Bachelors, Licentiates, and Doctors, of Surgery. In conſequence of this arrangement, Henry II. granted to the members of the Chirurgical College of St. Louis, all the prerogatives attached to a faculty; and the patent iſſued on that occaſion was regiſtered in the parliamentary laws, under the name of *Lettres d'Octroi*.

In the year 1551, the medical faculty, under the deanery of John du Hamel, re-commenced the diſpute againſt the ſurgeons. Although Rudolph le Fort, dean of the College of St. Louis, zealouſly defended the ſurgeons, yet du Hamel found the means of procuring a repeal of the decree enacted in 1515; and, contrary to the ſpirit of that law, the ſurgeons were again obliged to ſubmit to an examination before the medical faculty. Under Henry III. however, the ſurgeons once more obtained a confirmation of their privileges, in 1577, by virtue of which they were entitled to confer academical dignities; and, notwithſtanding the new oppoſition of the faculty in 1579, the ſurgeons, as well as the univerſity of Paris, were in the ſame year favoured with an indult of pope Gregory XIII. while de Thou vindicated the cauſe of the former, in a ſpirited and ſucceſsful manner, againſt the oppreſſions of the faculty. The colleges ſubſequently eſtabliſhed by ſurgeons acquired ſuch a degree of authority, that, in the year 1596, they were empowered to give poſitive orders to the barbers, in difficult chirurgical caſes always to conſult a ſworn ſurgeon, and upon no account to undertake the treatment of any other but the ſlighteſt external injuries. Theſe privileges and prerogatives of the ſurgeons of Paris were further confirmed by Henry IV. in 1602, and by Louis XIII. in 1614.

About this time was framed the following oath, which to this day is taken by every phyſician who takes a degree at the univerſity of Montpelier. "I, ————————, before the image of Hippocrates, in preſence of the profeſſors of this ſchool, and of my dear fellow-collegians, do ſwear, in the name of the Supreme Being, to be faithful to the laws of honour and probity in the exerciſe of medicine. I will give my care gratuitouſly to the indigent, and will not exact a ſalary beyond my juſt demands. Admitted into the interior of families, my eyes ſhall not ſee what they ought not to ſee, nor ſhall my tongue betray any ſecrets confided to me; nor ſhall my profeſſion be made available to corrupt morals, or to favour guilt. Reſpectful and grateful to my maſters, I will endeavour to return to their children the inſtruction which I have gathered from the fathers. May men grant me their eſteem in proportion as I am faithful to this oath; and may I be diſgraced among my colleagues when I ſwerve from it."

III. From the SEVENTEENTH CENTURY to the PRESENT TIME.

The moſt brilliant diſcovery of the 17th century was that of the *circulation of the blood*, by our countryman Harvey, who was born in the year 1578. He firſt opened the diſcovery in 1616, in his lectures in the Latin language, which are preſerved in MS. in the Britiſh Muſeum; but his work, containing the details, was not publiſhed till the year 1628, when his "Exercitatio anatomica de Motu Cordis et Sanguinis in Animalibus" appeared at Frankfort: and this is the only edition which bears the ſtamp of Harvey's own authority. This treatiſe, which Haller has moſt appropriately ſtyled *aureum opuſculum*, is conſtructed entirely upon the reſult of experiment, and contains an excellent arrangement of the ſubject. The author was now created phyſician to king Charles I. and demonſtrated the circulation before him in a living animal.

The vaſt importance of this diſcovery to the whole ſcience of phyſiology; the influence which it neceſſarily exerted on the doctrines of pathology; and the general revolution which aroſe from this ſource throughout the whole circle of medical knowledge; will juſtify us in giving a ſlight hiſtorical ſketch of the ſubject, and in pointing out the opinions held by thoſe anatomiſts and phyſiologiſts who preceded our immortal countryman Harvey. To him, indeed, the glory of this greateſt of all phyſiological diſcoveries has been aſſigned by the almoſt unanimous concurrence of his ſucceſſors. Some, however, have endeavoured to deprive him of his well-earned fame, by aſcribing a knowledge of the circulation to various preceding writers. Mr. Dutens, in the ſecond volume of his "Recherches ſur l'Origine des Decouvertes attribuées aux Modernes," has brought forward paſſages from Hippocrates, Plato, Ariſtotle, Julius Pollux, Apuleius, and others, in order to prove that they knew the courſe of the blood. After the poſitive dogmatical aſſertions with which the author ſets out, we are ſurpriſed by the weakneſs and inadequacy of his proofs, and can only account for the inconſiſtency by ſuppoſing him to have been utterly ignorant of the ſubject. He quotes a few inſulated paſſages which cannot, by the moſt favourable interpretation, be conſtrued into the ſemblance of a proof, that the writers in queſtion knew the circulation of the blood. But the only fair and unexceptionable method of determining whether any individual was acquainted with a particular fact, is to conſider all that he has ſaid on the ſubject, and to draw our inferences from the reſult of this general examination. Such an inquiry will prove moſt clearly, that a knowledge of the circulation, ſuch as we poſſeſs at preſent, can be aſcribed to no one before Harvey; although a part of the ſubject, viz. the paſſage of the blood through the lungs, had been deſcribed by ſeveral perſons before the time of that illuſtrious character.

That the blood moves, has been univerſally known and admitted, ſince the ſcience of medicine has aſſumed a diſtinct form: how much of its courſe, and of the laws that regulate its motion, has been aſcertained at any given period, is another queſtion. The circulation is ſo generally known in the preſent day, and the proofs on which it reſts are ſo obvious and familiar to every tyro in the profeſſion, that we feel ſurpriſed how they ſhould ſo long have eſcaped the obſervation of the numerous ingenious and learned characters, whoſe names adorn the annals of anatomy. We muſt remember that the courſe of the blood, taken altogether, forms a ſubject of conſiderable intricacy; that the purſuit of anatomy was attended in the early periods of the ſcience with conſiderable difficulty and danger; and that the unlimited ſway which the authority of Galen held over the minds of men for ſome centuries, precluded all attempts at further inveſtigation.

Hippocrates ſtates that the blood meets with obſtacles in its courſe, which retard or entirely arreſt its progreſs; that it goes from the internal parts towards the ſurface; and *vice-verſâ*, that the blood muſt flow forwards from the heart, ſince the valves hinder its return, and that the arteries are diſtended when their blood is ſtopped. In ſpeaking of the blood's motion, he compares it to the courſe of rivers, to the ebbing and flowing of the ſea, and even to the revolutions of the planets. He aſſigns the origin of the arteries to the heart, and that of the veins to the liver; and ſuppoſes that there are two oppoſite motions in the temporal arteries, by which their pulſations are produced. He ſpeaks of four fluids in the body, the blood, water, mucus, and bile, which come from the heart, head, ſpleen, and liver; all thoſe parts are, however, ſupplied from one principal ſource, the ſtomach. Can we diſcover any traces of a knowledge of the circulation in this confuſion of ideas; and may we not be juſtly ſurpriſed, to find that enlightened men ſhould be ſo led away by their prejudices, as to allow to Hippocrates the knowledge of a diſcovery, which no one had perceived in his writings for nearly three thouſand years? The obſervations of the founder of medicine had led aſtray

aſtray all who followed him to the time of Harvey; but, when the reſearches of that great man had unfolded the myſtery of the circulation, his enemies dared to affirm, that the writings of Hippocrates had furniſhed the lights which guided him in the path of diſcovery.

The philoſophers who joined the ſtudy of medicine to that of the other ſciences, ſeem to have been equally ignorant of the laws which regulate the blood's motion. Thus, Ariſtotle expreſsly ſtates that the blood never returns to the heart. The Alexandrian anatomiſts maintained that the arteries held no blood, but were filled with air; from which circumſtance they gave them the name, which they have conſtantly retained, from αηρ, air, and τηρεω, to hold. To explain the occurrence of blood in theſe veſſels after death, they ſuppoſed the exiſtence of ſubtle communications with the veins.

The genius of Galen diſdained to follow blindly the ſteps of his predeceſſors; and he endeavoured at leaſt to diſcover the truth by experiments and obſervations on the ſtructure of the body. By theſe means he aſcertained ſome facts, although he could not ſucceed in piercing the veil which concealed the ſecret of the circulation. He ſeems to have recognized the uſe of the valves at the two orifices of the ventricles. He proved, by tying an artery with two ligatures, that theſe veſſels contain blood during life; and ſtates that they are filled by the contraction of the heart, in conſequence of which they pulſate. Theſe circumſtances ſeem to indicate a conſiderable advancement in the knowledge of the circulation; but we muſt mention, in the ſame ſpirit of impartiality, the contradictions and uncertainty which prevail in the works of Galen on this ſubject, and the limits which his labours could not exceed. He ſtill referred, with Hippocrates, the origin of the veins to the liver, and ſuppoſed a paſſage of the blood through the ſeptum of the ventricles, while a ſmall portion entered the pulmonary artery to nouriſh the lungs: he imagined, laſtly, that it might paſs reciprocally between the pulmonary artery and veins.

There could be little reaſon to expect, that in the troubled and barbarous times which followed the age in which Galen flouriſhed, the ſecret of the circulation ſhould be diſcovered; ſtill leſs that it ſhould be explained to phyſicians by men whoſe purſuits were foreign to the ſcience of medicine. Yet it has been boldly aſſerted that Nemeſius, biſhop of Emeſa, knew the courſe of the blood, as it has been aſcertained by the ſubſequent labours of Harvey. The editor of the Oxford edition of his works, has imbibed the true ſpirit of a commentator; who diſcovers in the writings of the ancients, meanings which never were in the contemplation of the authors; and abuſes the moderns as plagiariſts, for decorating themſelves with the diſcoveries of antiquity. But on what grounds does Nemeſius claim the honour of a diſcovery, denied to ſo many great geniuſes? Becauſe, according to Freind, the biſhop ſtates, that the blood paſſes from the arteries into the veins during ſleep. This reſtriction immediately overturns the claim; which would indeed be deſtroyed by the kind of motion that he ſuppoſes to take place, viz. a reciprocal alternation of undulations, like that of the Euripus. In another paſſage cited by Dutens, he ſpeaks of the arteries in their dilatation attracting the blood from the veins; but this paſſage, which we have already quoted at p. 16, ſufficiently proves that he knew nothing of the matter; and exemplifies ſtill further the abſurdity of a perſon's attempting to dogmatize, as Dutens has done, on ſubjects of which, as being foreign to his profeſſion, and difficult of inveſtigation, he cannot reaſonably be expected to be a competent judge. "Thus," to uſe the words of Senac, "a theologian writes on the nature of man; a ſubject which does not very properly belong to ſuch a writer: on no other teſtimony than ſome vague and ridiculous expreſſions, he gains the credit of knowing the circulation, of which the greateſt phyſicians and anatomiſts had been hitherto completely ignorant. Thus it is, that interpreters and commentators are miſled by a blind zeal for antiquity, and diſcover hidden meanings in the moſt ſimple expreſſions. How would their boldneſs and aſſurance have been augmented, if Nemeſius had expreſſed himſelf as clearly as an ancient ſcholiaſt of Euripides has done, where he ſays, "that the blood flows through the veins, and that theſe veſſels receive it from the arteries." Should we, however, on this inſulated and caſual expreſſion, be juſtified in beſtowing on a weigher of words, and meaſurer of phraſes, the honour of a diſcovery, which had eluded the reſearches of the greateſt philoſophers?

The ſtate of darkneſs and ignorance, in which the human mind languiſhed during the ſucceeding ages, does not allow us to expect that any writer of that period can diſpute with Harvey the honour of the great diſcovery. About the ſixteenth century the curioſity of mankind was again excited to the inveſtigation of this intereſting ſubject. Reaſon, which had hitherto ſubmitted to the yoke of authority, began to aſſert her rights; and ſeveral phyſicians were bold enough to examine ſubjects which Hippocrates and Galen had not been able to develope.

The firſt ray of light was thrown on the circulation, by a man, whoſe name cannot be mentioned without exciting feelings of compaſſion for his unmerited and barbarous treatment, and of indignation at the unrelenting bigotry of his cruel perſecutor. Gifted with an ardent and penetrating genius, *Servetus* made a rapid progreſs, at a very early age, in the ſciences of natural philoſophy and divinity. Compelled to leave Spain, his native country, he paſſed into France, and ſtudied medicine at Paris, under Winter d'Andernach, who was profeſſor in the college lately founded by Francis I. He viſited different parts of France and Germany, and, after various perſecutions on account of his religious opinions, ſettled in Dauphiny. But Calvin, being too narrow-minded to grant to a rival that freedom of thought and liberty of conſcience which he had ſo ſucceſsfully exerted in his own perſon, had him ſeized and condemned to the flames. Thus, ſays Portal, "one heretic deſtroyed another; but the difference was, that an ambitious and deſigning knave pronounced the condemnation, and one of the fineſt and moſt enlightened geniuſes of Europe was the lamented victim of this iniquitous ſentence."

The paſſage, which proves Servetus to have been acquainted with the pulmonary circulation, occurs in his work *de Reſtitutione Chriſtianiſmi;* which, having been carefully deſtroyed on account of the hereſy which it contains, is now extremely ſcarce; ſo that two or three copies only are ſuppoſed to exiſt, and the duke de la Valiere gave the ſum of 132l. for one. It ſtates, that the vital ſpirit is compoſed of the moſt ſubtile parts of the blood, and of the air, which inſinuates itſelf into the lungs; and that the ſource of this blood is in the right ventricle. "But the communication, that is to ſay, the paſſage of the blood, from the right to the left ventricle, does not take place acroſs the middle ſeptum, as perſons have generally imagined; it depends on a more ſingular ſtructure. In the long windings of the lung, this ſubtile blood is agitated, and prepared by the action of the viſcus, and gains a yellow colour. From the *vena arterioſa* (pulmonary artery) it paſſes into the *arteriæ venoſæ* (pulmonary veins) where it becomes mingled with the air that has entered the lungs, and loſes its fuliginous excrements. Laſtly, it enters the left ventricle, which attracts it in its diaſtole. Such is the preparation of the blood, from which the vital ſpirit is formed; this preparation, and this paſſage from the arterial vein into the venous artery, are evidently proved by the ſize of the veſſels; which would not be ſo large, nor poſſeſs ſo many branches; nor carry to the lung ſo great a volume of blood, if it were deſtined to the nouriſhment only of the viſcus." He adds, that the vital ſpirit is ſent from the left ventricle into all the arteries of the body. This repreſentation proves inconteſtably that Servetus knew the minor circulation. He laid the foundation of a building,

which had baffled all the efforts of the great geniuſes of antiquity. In order to perfect this deſign, it was only neceſſary to extend the ideas of the firſt architect. He indicated the route, through which the blood paſſes from the right to the left ventricle; it remained to be proved that all the blood takes this paſſage, and that it returns again to the heart from the arteries through the veins.

The obſcure ſketch of the circulation, which was furniſhed by Servetus, appears in a more finiſhed and luminous form in the works of Realdus Columbus. He deſcribes the entrance of the blood into the heart from the vena cava, and its ſubſequent paſſage through the lungs into the left ventricle and aorta. He advanced a ſtep farther than Servetus; for he ſtates that the whole blood paſſes through the lungs, and not the vital ſpirit only. But he falls into the ſame error with preceding anatomiſts on the ſubject of the liver; ſuppoſing that gland to be the ſource of the blood which nouriſhes the ſtomach, ſpleen, &c. Arantius and Cæſalpinus deſcribed more perfectly and clearly than Columbus the paſſage of the blood through the lungs; which they confirmed by ſeveral arguments drawn from the ſtructure of the parts, and particularly from the poſition and mechaniſm of the valves. The latter indeed approached very nearly to the grand deſideratum, the paſſage of the blood from the arteries through the veins to the heart. He obſerves that a vein ſwells below the ligature; but he did not follow this up to prove the circulation. He ſays that the blood returns to the heart through the veins during ſleep; but he ſuppoſed it to move backwards and forwards in the ſame veſſels, like the Euripus. He was miſled alſo in the labyrinth of the liver, where ſo many phyſiologiſts have loſt themſelves. The arrangement of the arteries and veins in this organ preſents ſuch an intricate combination, that we need not wonder at its proving, for ſo long a time, a ſource of miſtake and illuſion. Paul Sarpi, the learned hiſtorian of the council of Trent, is one of thoſe to whom the circulation is ſaid to have been known; but the want of all arguments that bear the leaſt conviction on the ſubject, will juſtify us in declining any particular conſideration of his claim, as well as thoſe of Fabri a Jeſuit, of Helvicus Dietericus, and others.

Notwithſtanding the labours and writings of the anatomiſts whoſe opinions we have thus curſorily examined, the minds of men were ſtill enſlaved by thoſe errors, which, having prevailed for ſo many centuries, had acquired the ſanction which time and authority beſtow on any opinions, however abſurd. The moſt enlightened phyſicians were ſatisfied with the labours of their predeceſſors; and Harvey alone had ſufficient courage and information to canvaſs theſe inveterate prejudices, which length of time had conſecrated as infallible truths. He obſerved and deſcribed the true courſe of the blood with a wonderful ſagacity and clearneſs. None of the arguments, which prove the circulation, eſcaped the reſearches of this acute obſerver; ſo that a modern phyſiologiſt, in recounting the proofs of this phyſiological fact, could add little, if any thing, to what is accumulated in the original work of Harvey. He was not contented with demonſtrating the circulation in ſome parts only; but followed up the ſubject in all the viſcera of the body. He traced the courſe of the blood through the liver, where every preceding anatomiſt had diſcovered nothing but perplexity and confuſion. The work of Harvey is, in ſhort, one of thoſe rare and precious productions which embrace a ſubject in its whole extent, and preſent it to the mind in ſo perfect and finiſhed a form, as ſcarcely to admit a ſingle addition or improvement.

The merits of our countryman, whoſe fame can never periſh while medical ſcience continues to be cultivated, will be exalted to a ſtill higher pitch, when we conſider the ſtate of medical knowledge in England at that time. While anatomical ſchools had been long eſtabliſhed in Italy, France, and Germany, and ſeveral teachers had rendered their names illuſtrious by the ſucceſsful purſuit of the ſcience, anatomy was ſtill unknown in England, where diſſection had hitherto hardly begun. Yet, at this inauſpicious period, did Harvey make the diſcovery, which may be conſidered as a ſecond and more perfect foundation of the ſcience of medicine; and which amply juſtifies Haller in ranking him as ſecond to Hippocrates only.

The publication of this grand diſcovery rouſed the attention of all Europe. The old profeſſors, accuſtomed to pay a blind and implicit deference to the authority of Galen, which was now utterly ſubverted, and, aſhamed of confeſſing that their whole life had been ſpent in teaching the groſſeſt errors, took up their pens in oppoſition to the author of theſe innovations. One party aſſerted that the diſcovery was not a new one: that it had been known to ſeveral perſons, and, indeed, to all antiquity. Such were the aſſertions of Nardi, Vander Linden, Hartmahn, Almeloveen, Barra, Drelincourt, Patin, Falconet, Heiſler, Regnault, &c. A ſufficient refutation of theſe ſtatements will be found in the hiſtorical ſketch, which we have already exhibited. Other adverſaries of Harvey proceeded in a more rational manner; and attempted to diſprove his ſtatements by experiment and reaſoning. Primeroſe led the way in this attack, and he was followed by Emilius Pariſanus, John Riolan, Caſpar Hoffman, and others. If men of ſuch acknowledged erudition as Riolan and Hoffman were ſo utterly unacquainted with the circulation as to deny it altogether, may we not ſafely conclude that the ſubject is not deſcribed in any of the writers who preceded Harvey? Out of all his numerous opponents, this illuſtrious man anſwered Riolan only, in his "Secunda et Tertia Exercitatio de Circulatione Sanguinis." The reply was rather extorted by the rank and fame of Riolan, than by the ſtrength of his argument.

If we ſeek to define exactly the preciſe ſhare of merit which Harvey may claim in the grand diſcovery of the circulation, it will be neceſſary to hold a middle courſe between the groſs and palpable abſurdity of thoſe who diſcover a knowledge of the circulation in the writings of Solomon, Hippocrates, Plato, Ariſtotle, &c. and the too great partiality of ſuch as would deny all knowledge of the ſubject to every anatomiſt who preceded Harvey. It ſeldom happens, that ſo extenſive and intricate a ſubject as that which we are now conſidering, is ſurveyed and brought to light in all its branches by the labour of an individual; nor has it happened in the preſent inſtance. For Servetus, Columbus, Arantius, and Cæſalpinus, were acquainted with the courſe of the blood through the lungs; and the latter writer has even an obſcure hint towards the greater circulation. But no one attempted to prove the latter point by arguments and experiment before the time of Harvey: the expreſſions of Cæſalpinus, which are by no means clear or ſatisfactory, had been before the public for half a century without exciting the leaſt inveſtigation, and without ſuggeſting to Fabricius the true office of the valves in the veins. The entire merit of the greater circulation may, therefore, be aſcribed to our illuſtrious countryman; and, if we compare the luminous method and irrefragable proofs which are found in his expoſition of the other part of the ſubject, with the partial and confuſed ſtatements of preceding authors, his merit will here be only ſecond in degree to that of actual diſcovery.

The doctrine of the circulation met with ſome ſupporters on its firſt promulgation. Walæus of Leyden exerted himſelf ſtrenuouſly on this ſide, and defended the propoſitions of Harvey in two excellent letters addreſſed to Bartholin. Des Cartes alſo, whoſe authority at that time carried vaſt weight with it, took a decided part in the controverſy in favour of Harvey, from its commencement. The doctrine was pretty generally admitted throughout Europe before the deceaſe of its propoſer.

The nature of the communication between the arteries and veins was left undetermined by Harvey, who decided no point which he could not make the ſubject of experiment.

experiment. The art of injecting the veſſels of the dead body, which has been diſcovered and carried to great perfection ſince his time, has ſhown a continuation of canal joining the two ſyſtems of blood-veſſels; and the employment of the microſcope has completed the proof, by demonſtrating the circulation in the tranſparent parts o ſfrogs, &c. during life. The transfuſion of the blood o ſone animal into the veſſels of another, which has been performed with ſucceſs in many inſtances, has added another ſtrong proof to the demonſtration of the circulation. See the Hiſtoire de l'Anatomie et de la Chirurgie of Portal, and the Bibliotheca Anatomica of Haller, in the articles concerning the writers whoſe names are mentioned in this account.

Francis de le Boe, otherwiſe Sylvius, was born at Hanau in 1614; and became profeſſor of medicine at the univerſity of Leyden in 1658. He will be therefore readily diſtinguiſhed from James du Bois, who is alſo called Sylvius, the maſter and violent adverſary of Veſalius, of whom we have ſufficiently ſpoken in the preceding ſection. Francis Sylvius was a much more diſtinguiſhed perſonage: he was alſo one of the earlieſt advocates for Harvey's doctrine of the circulation of the blood, and was the principal cauſe of its reception into the medical ſchool of Leyden. In other reſpects, however, he was inſtrumental in retarding the progreſs of medical ſcience, by the invention of an hypotheſis reſpecting the cauſe of diſeaſes, which contributed much to excite the attention of the medical world, and to extend his own fame. He aſcribed all the morbid actions of the vital ſyſtem to certain chemical operations, to fermentations, and ebullitions, which he believed gave origin to an exceſs of acid or of alkali, to the neutralization of which all the efforts of the medical art were of courſe to be directed: whence he adminiſtered volatile alkali, abſorbent earths, and cordials, largely, paying little regard to the different ſtages of a diſorder, or the character of prevailing epidemics. The extent to which this doctrine was received and defended in moſt parts of Europe, founded as it was upon a gratuitous hypotheſis, and therefore productive in many caſes of much miſchief, is ſurpriſing, and the interruption which it occaſioned to the improvement of medicine was conſiderable. In fact, the *chemical ſyſtem* of Sylvius was admitted in almoſt every country in which chemical ſcience was cultivated: it was in Holland and in Germany however that it was carried to the moſt extravagant pitch. While one phyſician was earneſtly employed in changing the acid ſtate of the blood, another took great pains to counteract the alkaline properties of the ſame fluid. While Bontekoe, deducing all morbid phenomena from the viſcidity of fluids, eulogized the medical properties of tea, and drenched his patients with fifty cups in ſucceſſion of that liquor; Van Ruſtingh preſcribed aſſiduouſly large quantities of volatile ſalts in the moſt inflammatory complaints; believing that the two elements of fire and water compoſed the ſubſtance of all living bodies, and that to reſtore their balance of power or equilibrium was the only propoſitum of the medical art.

In our own country the more moderate of theſe tenets, with ſome degree of modification, acquired celebrity. Willis, Flower, and others, adopted them, and, multiplying on the acid and alkaline humours of Sylvius, aſſerted the exiſtence of a great many different humours, viz. mucilaginous, vitriolic, corroſive, &c. each of which they thought had the effect of producing a diſorder *ſui generis*: and hence they endeavoured to trace the various characters of diſeaſe. The phenomena of fever they likewiſe attempted to explain according to the chemical laws of fermentation and ebullition. And, though Willis probably uſed theſe terms merely in an analogical ſenſe, yet many phyſicians of his time applied them to the human frame in their ſtrict and chemical ſignification.

With reſpect to the preciſe mode by which theſe actions were thought to bring about the phenomena of health or diſeaſe, the following is a brief ſummary. Digeſtion was ſuppoſed to be carried on by *fermentation*. If this proceſs was too active, or, on the contrary, too weak, improper or unfermented particles of aliment remained, which, when aſſimilated and introduced into the blood, produced the ſame effect on that fluid as certain ſubſtances called *ferments* do upon vinous liquors; viz. they produced fermentation. Now, viewing the matter in this light, theſe chemical pathologiſts defined *fever* to be a fermentative proceſs which nature inſtituted for the purpoſe of throwing off the aforeſaid offending humours or cacochymiæ: If nature ſucceeded in performing this taſk, health was reſtored; if not, death enſued. Some diſeaſes were however produced by external cauſes; for inſtance, infectious and contagious diſtempers, &c. but then each of thoſe diſorders was brought about by means of *humours*, whether derived from the air by means of reſpiration, or from actual contact.

It is rather remarkable, that theſe phyſicians admitted a third cauſe of production of cacochymiæ, which went to overturn their whole ſyſtem. They expreſsly ſtated, that organic diſeaſe of any of the viſcera engendered a *peccant humour*; hence we naturally infer, that in this caſe the ſolid or fibrous ſtructure was the firſt cauſe of diſeaſe.

In Italy, where mechanical ſcience had made much progreſs, the chemical doctrine obtained few ſupporters. Indeed, anterior to the period we are treating of, Sanctorius had, in his expoſition of the cutaneous functions, taught phyſiologiſts the illuſtration which the vital derived from the conſideration of the mechanical laws. He endeavoured to diſtinguiſh the different alimentary matters according to their ſpecific gravity, and referred diſeaſe to an obſtructed ſtate of the exhalant ſyſtem: an opinion, however, which this author carried too far, and which was by no means conducive to his ſucceſsful practice. Nevertheleſs it has been of great importance to his more enlightened ſucceſſors.

Sydenham was born about the year 1624. One of the greateſt benefits which he conferred upon the ſcience of medicine was that of detaching phyſicians from this and other hypothetical ſyſtems, and of leading them to the only true path, obſervation and experience. He introduced a great reform into medical practice. Though not entirely free from the humoral hypotheſes which were ſo prevalent in his time, yet he took care to ſtudy nature with exactneſs, and he reported her appearances with fidelity, even when oppoſed to his own reaſonings. Indeed in many parts of his writings he takes occaſion to deprecate the practice of his predeceſſors, becauſe they not only did not ſufficiently remark the minute phenomena of diſeaſe, but becauſe they actually miſrepreſented thoſe phenomena for the purpoſe of corroborating their fanciful theories. Nor did Sydenham admit the chemical explanation of diſeaſe which was ſo ſtrongly inſiſted on by his contemporaries, and even ſucceſſors; for he expreſsly ſtates, that, although he has no objection to the terms *ebullition* and *fermentation*, yet he rather uſes them as illuſtrating certain morbid proceſſes by analogy than in their own commonly-received ſenſe: and indeed he quotes ſome very judicious arguments tending to diſprove the identity of thoſe chemical proceſſes with diſeaſed actions. This author followed very cloſely the ſteps of Hippocrates: like him, he was principally intent on obſerving the minute features of diſeaſe, and of referring them to their obvious and immediate cauſes; like him, he admitted to a great extent the ſalutary operation of nature, and the deleterious agency of humours; and like him too he paid particular attention to atmoſpherical changes, and the effects of them on the human body. Indeed the chief merit of Sydenham conſiſted in writing clearly, fully, and from his own individual obſervation, the hiſtory of diſeaſes. He inveſtigated the minuteſt changes which occurred in them, whether ſpontaneouſly or from the action of remedies, as well as thoſe

ariſing from temper, age, conſtitution, or other adventitious circumſtances.

A ſyſtem of therapeutics founded on ſuch a baſis could ſcarcely deviate from the right path; and accordingly the works of this author remain moſt important ſtudies, whether regarded as indications to the art of diagnoſis, or to the cure of diſeaſe. His practice was in the moſt eminent degree ſucceſsful; and among the remedies he had recourſe to we may remark many which are again firmly eſtabliſhed after having long fallen into diſcredit under the inauſpicious influence of ſpeculative theoriſts. Among theſe, the uſe of bleeding, and other antiphlogiſtic methods, in the treatment of continued eruptive fevers, has conduced very materially to the preſervation of the lives of our ſpecies. We may remark, that in this aſſumption we are borne out by the fatality which occurred during the exhibition of alexipharmics and hot cordials by the chemiſts, which the cooling ſyſtem has very much obviated. The doctrines of Sydenham, notwithſtanding the intereſting ſtyle in which they were written, the fame they acquired for their author, and their conſonance with nature, were by no means generally received; and the chemical doctrines continued to be advocated by many till the commencement of the following century.

In proportion as true chemical ſcience advanced, the partiality for chemical explications of the functions of the living ſyſtem abated; and phyſicians ſeem to have diſcovered, for the firſt time, that the theory of the humours, even with all the improvements which it derived from the corpuſcular philoſophy, threw no light whatever on the actions of the ſolids. A new hypotheſis, therefore, was projected; and, as men in avoiding one error are apt to run into the oppoſite extreme, phyſiologiſts now attempted to explain all the phenomena of life according to the mere *mechanical powers* of the organs, and to reduce the laws of the animal economy to the rigid calculations of geometry. They imagined, that they could illuſtrate every operation of the human body, by comparing it to a ſyſtem of ropes, levers, and pulleys, united with a number of rigid tubes of different lengths and diameters, containing fluids, which, from variations in the impelling cauſes, moved with different degrees of velocity. When the fibres of this machine were not ſufficiently flexible; when the pulleys and joints of the levers were not kept in ſufficient repair; or when the apertures of the pipes were not ſufficiently free; the movements were neceſſarily ſuſpended, or leſs perfectly performed; and they were only to be brought into proper regulation, according to the practitioners who adopted this fanciful theory, by removing the above-deſcribed impediments. The compoſition of the fluids was ſuppoſed to be the reſult of their motion in the tubes; and in theſe nothing was attended to but the forces of gravity and coheſion; as in calculating the action of a pump, or other hydraulic engine. "If the chemical ſchool," to uſe the words of Sprengel, "had degraded the phyſician to the rank of a brewer or diſtiller, the diſciples of the iatro-mechanical ſchool, on the other hand, were glad to be eſteemed as hydraulic engineers; and ſeveral of them, in fact, ſerved in the double capacity of engineers and profeſſors of medicine." One of them, Dionis, a profeſſor of ſurgery at the Jardin du Roi, went ſo far as to compare the circulatory ſyſtem to the water-works at Marly, by which the water of the Seine is raiſed to conſiderable height, and from thence made to fall again upon the great wheel.

Among the cauſes which conduced to the eſtabliſhment of this ſect, the diſcovery of the circulation of the blood is the moſt prominent. When it was found that the blood flowed in a regular manner, through certain conduits, from the heart, and returned to that organ, by other veſſels, from the extremities, phyſicians ſet about calculating the mechanical force which they ſuppoſed neceſſary for enabling the heart and arteries to produce this effect; and, elated with their apparent ſucceſs, were led by degrees to transfer their calculations to the other functions of the body. Geometry had become the prevailing ſtudy of the learned; and ſocieties for the promotion of experimental philoſophy were eſtabliſhed in the different countries of Europe, among which the Florentine Academy del Cimento took, in ſome meaſure, the lead. It was in Italy that mathematics had been moſt aſſiduouſly cultivated; and it was there that the firſt attempt was made to introduce them into medicine. In the year 1614, Sanctorius publiſhed his *Medicina Statica*, in which he endeavoured to ſhow the great influence which the inſenſible perſpiration has upon health, and to calculate with preciſion all the variations in its quantity, in the different conditions of the body. According to his theory, diſeaſes originated from the noxious particles of the food being retained in the ſyſtem, in conſequence of the ſtoppage of the tranſpiration; and, till the latter function was reſtored to the proper ſtandard, no cure could well take place. Sanctorius diſtinguiſhed the different alimentary matters according to their ſpecific gravities, and according as they appeared more or leſs fitted to paſs off in the way of inſenſible perſpiration. He even ventured to apply his maxims to the paſſions of the mind; ſhowing how joy and equanimity favoured the excretions, while ſorrow and fear impeded them; how fevers and melancholy aroſe from the obſtructed perſpirable matter, where grief was long continued; and how they were to be removed by reſtoring the ſuſpended exhalation. Among the aphoriſms of Sanctorius, there are many ſound obſervations; and medical ſcience is under conſiderable obligations to him for having directed the attention of phyſiologiſts to the functions of the ſkin, which, till then, had been in a great meaſure overlooked; but his views, like thoſe of moſt theoriſts, were far too partial; and there can be little doubt that, in one reſpect, they had a moſt injurious influence, viz. by encouraging phyſicians in the univerſal employment of ſudorifics, to which they were already too prone; and no one will now ſubſcribe to the judgment of Boerhaave, who ſays of Sanctorius and his work, "Nullus medicorum, qui ante eum ſcripſerunt; cardinem rei ita adtigit; nec ullus liber in re medica ad eam perfectionem ſcriptus eſt."

The mechanical philoſophers began by calculating the force of the contractile power of the heart neceſſary to produce the phenomenon of circulation: but in this calculation they proceeded on the erroneous datum, that the reſiſtance oppoſed by coheſion and gravity was the ſame in living veſſels as in inanimate pipes. Even if this ſuppoſition had been true, yet they had no means of meaſuring the numerous diameters of theſe veſſels, their curves, angles, &c. circumſtances indiſpenſably neceſſary to be known before the above-mentioned calculation could have been made. A more ingenious mode of illuſtrating the proceſs of circulation was that adopted by Borelli. This author aſſumed that the power of a muſcle was in direct ratio to the ſize of fibrous portion: hence, taking the deltoid muſcle for an example, and having found the force that muſcle was capable of exerting, he next proceeded to calculate the force which the contraction of the heart muſt exert according to its proportionably larger ſize. This aſſumption, however, is unfounded; for exerciſe increaſes the power of a muſcle, without, in every inſtance, increaſing its ſize: nor does it appear by what means he could preciſely inſulate the action of the deltoid muſcle, ſeeing that it is inſeparably conjoined with ſeveral others which co-operate with its motions. The experiments of Kiel and others, though founded on different aſſumptions, were not more ſatisfactory than thoſe of Borelli. At this period, however, geometry was ſuch a favourite purſuit among the learned, that its cultivation rendered the mind almoſt diſſatisfied with every theory which did not bear the teſt of mathematical demonſtration. Theſe calculations therefore,

to

to which we muſt allow the merit of ingenuity, became generally received. Mechanical principles were applied to every function of the body: not only the motion of the blood, but the compoſition of that fluid, and the various and elaborate proceſſes of nutrition, ſecretion, &c. were referred to the ſame laws. This abſurd application of mathematical knowledge to vital phenomena, led theſe philoſophers into a labyrinth of error aſtoniſhing to common ſenſe. For inſtance, while one author calculated the contractile power of the femoral artery at upwards of 1000 pounds, he overlooked the very obvious circumſtance, that the pulſation of that veſſel may be immediately ſuſpended by the uſe of a tourniquet which ſcarcely exerts the preſſure of a few pounds. Indeed, the contradictory reſults arrived at by theſe experimenters ſhowed the abſurdity of their experiments. Thus, Borelli aſſerted that the contraction of the heart was equal to a reſiſtance of 180,000 pounds; Keil, that it was equal to five, or, at moſt, eight ounces. Hecquet calculated the digeſtive (or, according to him, triturative) powers of the ſtomach, in conjunction with the abdominal muſcles, to be equal to 261,000 pounds; Aſtruc ſtated the amount of that power at four pounds three ounces.

Yet was this mode of inveſtigating the ſcience of life by no means uſeleſs; for, by teaching pathologiſts to reſort frequently to *experiment* in proof of their aſſertions, it deſtroyed the attachment to fanciful and gratuitous hypotheſis which had ſo long prevailed: it directed their attention to parts and actions of the animal economy which the humoral phyſicians had paſſed over unnoticed and undeſcribed; and, what was of ſtill more importance, it induced correct and analytical habits of reaſoning. Accordingly, we find, during the 17th century, which may be conſidered as the period at which the mechanical philoſophers principally flouriſhed, diſcoveries which have ſtood the teſt of time, and theories, concerning the correctneſs of which we are ſtill earneſtly employed in diſcuſſion. Phyſiology and the minute parts of anatomy were inveſtigated with the grandeſt reſults; the circulatory ſyſtem was gradually and ſucceſsfully illuſtrated by many diſtinguiſhed phyſiologiſts. Excellent deſcriptions of the ſtructure and relative poſition of the heart were given by Steno and Lower. The microſcopical experiments of Leeuwenhoek and others ſerved to eſtabliſh the important fact of the continuation of arteries and veins with each other. Ruyſch likewiſe, by the great degree of nicety in the uſe of injections to which he attained, was enabled to throw much light on this ſubject. Some important parts of the arterial ſyſtem were diſcovered by Vieuſſens. The neceſſity of the abſorption of oxygen gas through the lungs was firſt inculcated by Mayow. Malpighi improved the knowledge of the ſtructure of thoſe organs.

The mechanical part of reſpiration, the compound actions of the muſcles, &c. were beautifully demonſtrated by Borelli; and Kepler applied mechanical principles to the explanation of the functions of the eye in a manner the moſt clear and ſatisfactory. He firſt pointed out the true uſe of the cryſtalline lens, and ſhowed how the images of external objects are formed, in an inverted poſition, on the retina. A public experiment with the eye of an ox, which was made at Rome, in 1625, by the Jeſuit Scheiner, fully confirmed Kepler's theory: but afterwards Mariotte, having found that the images of objects diſappeared when they fell on the ſpot where the optic nerve enters the eye, called in queſtion the ſenſibility of the retina, and maintained that the choroid coat was better calculated to receive and tranſmit the perceptions of ſight; and a controverſy aroſe concerning the actual ſeat of viſion, which was carried on, with great eagerneſs, by Pecquet, Perrault, and St. Yves, and which had the effect of eliciting many valuable obſervations. The Newtonian diſcoveries, reſpecting the properties of light, contributed ſtill more to the accurate analyſis of the functions of the eye; and the treatiſes of Du Petit, Porterfield, and Zinn, which followed ſoon after, have left little for their ſucceſſors to accompliſh.

The lymphatic ſyſtem was likewiſe brought into notice during this century. To Caſpar Aſellius is due the merit of having taken the firſt ſtep in the inveſtigation of this important part of the animal frame. While diſſecting a dog, for the purpoſe of demonſtrating the recurrent nerves, the appearance of a milk-like fluid iſſuing from ſome ſmall white veſſels arreſted his attention. Examining them more minutely, he traced them to the villous coat of the inteſtines; and repeated diſſections informed him, that theſe veſſels were only obſervable in the animal which had lately fed. Hence he concluded theſe to be the vaſa chylifera. He confeſſed, however, that theſe veſſels had been mentioned by ancient authors, though deſcribed in a very imperfect manner; but he juſtly claimed the honour of having firſt pointed out their uſe. Aſellius, however, entertained erroneous ideas as to the termination of the lacteals: he ſuppoſed that they united together in the pancreas, and paſſed from that gland into the liver. This error was corrected by the reſearches of Pugent, who, obſerving on one occaſion a milky fluid in the vena cava of a dog, traced carefully the progreſs of that veſſel, and diſcovered the thoracic duct. This diſcovery was diſputed however with much acrimony; and the character of Harvey was tarniſhed by the circumſtance, that he ſtood forth among the moſt illiberal of its opponents. The abſorbents of the large inteſtines were diſcovered by Olaus Rudbeck in the year 1651; he likewiſe refuted the received opinion, that the liver poſſeſſed lacteals, and, by their means, aſſimilating powers: he ſhowed that the only abſorbent veſſels exiſting which could have led to this error, were the lymphatics of the hepatic glands. The glandular ſyſtem in general was afterwards more fully illuſtrated by the writings of Gliſſon and Wharton, the experiments of Lower, Drelincourt, Liſter, and Muſgrave; and the anatomical reſearches of Nück, Pacchioni, and Duverney.

Nor were the more abſtruſe and difficult queſtions of phyſiology neglected by the philoſophers of this age. With much talent Willis ſupported the hypotheſis of a nervous fluid, the vehicle of animal ſpirits; and, when deficient or exceſſive, the cauſe of diſorder; and he ſeems in ſome reſpects to have anticipated the ſpeculations of Spurzheim and Gall, in referring to particular parts of the brain peculiar mental faculties. The errors of this author on the former ſubject were pointed out by Malpighi, who moreover inveſtigated the cerebral ſtructure with great minuteneſs, particularly in reference to the exiſtence of fibres in the cortical ſubſtance. Here too the injections of Ruyſch and the microſcopical experiments of Leeuwenhoek were uſefully employed to ſhow the vaſcularity of the brain. Many improved deſcriptions were furniſhed by Caſſerius, Duverney, Riverius, Vieuſſens, and others, of the ſtructure of the ear. The tunica arachnoides was deſcribed by Swammerdam and Blaes. Many intereſting experiments were made on the generation of animals; among which the moſt famous, though certainly not the moſt uſeful, was that of Leeuwenhoek on the animalculæ of the ſeminal fluid. See our article ANIMALCULE, vol. i. p. 727.

To the "triumviate," as they have been called, Stahl, Hoffman, and Boerhaave, pathology and therapeutics are indebted for many important illuſtrations. The firſt of theſe phyſicians has rendered himſelf famous by the introduction of an hypotheſis, which, with various alterations, has maintained its ground until the preſent day. We allude to the exiſtence of an immaterial principle, or eſſence, as producing the phenomena of life. The particular tenets, however, on which this theory was founded, had been promulgated before the time of Stahl: René des Cartes had taught his followers to conſider matter as purely paſſive, and to refer all the changes to which it is ſubjected to a ſpiritual cauſe: the union of body and

ſpirit was, in his eſtimation, merely one of its modes, or accidental conditions. Malebranche, extending the Carteſian doctrine, endeavoured to explain more fully the nature of this union, and to ſhow that the ſoul had a more or leſs diſtinct conſciouſneſs of all the movements and affections of the body. From theſe tenets, the tranſition to the ſyſtem developed by Stahl was very eaſy; and an attentive review of the progreſs of the opinions in queſtion muſt convince every one that the Stahlian hypotheſis, far from being entitled to the merit of originality which its author claimed, was nothing more than an offſpring of the Carteſian philoſophy. Educated under Wedel, who was a devoted adherent of Sylvius, and an aſſiduous teacher of his doctrines, Stahl began very early to queſtion the ſufficiency of thoſe chemical explanations which he heard applied to all the phenomena of life. It appeared very wonderful to him, that the humours of the body, which are, of themſelves, ſo diſpoſed to putrefaction, ſhould yet ſo ſeldom fall into that ſtate; and that the daily preſence of ſo many ſaline ſubſtances, as we are in the habit of receiving in our food, ſhould produce ſo few ſymptoms of acrimony. The intervention of *animal ſpirits* he conceived to be a very unſatisfactory ſuppoſition; and all the attempts which had been made to explain the theory of life on pure chemical and mechanical principles he held very cheap. Taking the paſſiveneſs of matter for the baſis of his ſyſtem, he maintained, "that the body, as body, had no power to move itſelf, but was put in motion only by immaterial ſubſtances; that all motion, therefore, was immaterial, and a ſpiritual act." It had been always obſerved, that there is a certain power in the animal body of reſiſting injuries, and correcting ſome of its diſorders; and Van Helmont had aſcribed ſome degree of intelligence to this power: but it was reſerved for Stahl to refer it entirely to the rational ſoul, which, he affirmed, not only originally formed the body, but is the ſole cauſe of all its motions, not excepting digeſtion, aſſimilation, and ſecretion, in the conſtant excitement of which life conſiſts. While he referred to this principle the actions by which health is eſtabliſhed, he attributed to its irregularity the occurrence of diſeaſe; admitting however, to a very great extent, the operation of ſlighter cauſes, among which *plethora* held a favoured rank. To this ſtate Stahl ſuppoſed the human frame was perpetually diſpoſed, and that at particular periods of life this diſpoſition manifeſted itſelf with great preciſion in different parts of the body. Hence aroſe, according to him, in infancy complaints of the head, during adoleſcence in the pulmonary ſtructures, and in old age in the digeſtive organs. Fever he deſcribed as an autocratic effort of nature to conquer the morbific cauſe, and to expel it from the body; and all the ſymptoms, not excepting *rigor*, were only ſo many proofs of the *tonic* action which was thus excited. Congeſtions were ſuppoſed, in contradiſtinction to obſtructions, to reſult from an afflux of the fluids occaſioned by the ſame tonic power; when obſtruction followed, or when the object of the congeſtion, i. e. *evacuation*, was not accompliſhed, inflammation took place; and the tendency of the violent actions which accompanied it, was to diſperſe the obſtructed humour. If this end was not attained, the obſtructed matter became vitiated, and pus was formed. Hypochondriaſis, gout, melancholy, and almoſt all cachectic diſorders, were attributed to a *diminution* of the tonic power of the vena portæ, and the conſequent ſtoppage of the blood in it; while ſpaſmodic diſeaſes were thought to indicate an *exceſs* of the general tonic power of the ſyſtem.

Rejecting the aids derivable from anatomical reſearches, of the uſe of which in medicine Stahl entertained a very mean opinion, he proceeded, in conformity to the general principles we have related, to the treatment of diſeaſe. It may very naturally be ſuppoſed that a theory which attributed ſo much to the ſalutary operations of nature, was not likely to lead to very active practice: accordingly we find that Stahl adopted, to a very great extent, the Hippocratic mode of watching theſe healing operations, without interfering with them farther than to aſſiſt their weakneſs or moderate their exceſs: and, in fact, he and his followers, truſting principally to the operations of nature, zealouſly oppoſed the uſe of ſome of the moſt efficacious remedies, as opium, cinchona, and mercury; and were extremely reſerved in the employment of bleeding, vomiting, &c. Notwithſtanding, however, the hypothetical notions of Stahl, his inert practice, and his contempt for anatomical reſearch, yet much praiſe is due to him for having directed the attention of pathologiſts to the phenomena of *vitality*, and ſhowing the fallacy of the chemical hypotheſes, a taſk for which he was pre-eminently qualified by his profound inveſtigations in the ſcience of chemiſtry.

Hoffman was a phyſician who obtained great celebrity at this period, leſs however on account of his ſuperior mental faculties than for his extenſive erudition, and the art he had of diſplaying it to advantage. He was educated under the mechanical ſect of phyſicians; and it is rather remarkable, that Stahl, who had been taught the chemical doctrines, ſhould have diſcarded entirely chemical illuſtrations of diſeaſe, while Hoffman, who had been taught by the mechaniſts, admitted the exiſtence of acid cacochymiæ, and even attempted to ſhow how the union of this acid with blood produced neutral ſalts which were the cauſe of gout, calculi, rheumatiſm, and cutaneous diſeaſes. Though engaged at one period of his life in controverting the opinions of Stahl, on the ſuppoſed ground of their atheiſtical tendency, yet the theory of Hoffman, as far as the vital or motive principle was concerned, ſcarcely differed from that of his enlightened colleague: for, though he applied to it the appellation of *nervous fluid*, or ether, and fixed its ſeat in the nervous ſyſtem; yet, in attributing to it the faculties of mind, ſenſe, and intelligence, he cauſed it to approach very nearly to the *anima*, or ſoul, of Stahl. Like Stahl, too, he allowed that morbid actions were frequently induced by a plethoric ſtate of the ſyſtem; and, in conformity likewiſe with the views of that author, he referred much to the obſtructions of the humours, eſpecially in the vena portæ. Fever and inflammation he ſuppoſed to ariſe from ſpaſm, or conſtriction of the capillary veſſels, particularly of the ſkin, an opinion which was illuſtrated and improved in after-times, and more fully developed in the famous theories of Cullen.

In the practical department of the art, however, Hoffman left Stahl far behind him. We have to obſerve in his treatment of inflammatory diſorders great deciſion and correctneſs, and conſequently a great degree of ſucceſs. He aboliſhed too, in a great meaſure, the ſudorific plan of treatment which the humoral pathologiſts had practiſed to a very dangerous extent, and to which Stahl was particularly attached. To him likewiſe we are indebted for the uſe of the *Liquor anodynus*, an excellent and well-known article of the materia medica. He likewiſe ſhowed the great uſe of bark in intermittent fevers, and of chalybeates in chronic diſorders. Moreover he inveſtigated, with great care, the compoſition of mineral waters, and taught the act of preparing them artificially. We ought not to forget to remark that, in the work of Hoffman, "De Conſenſu patium nervoſarum," many valuable obſervations will be found, particularly thoſe which regard the influence which various organs exert upon one another.

But the phyſician who obtained at this period the higheſt rank as a pathologiſt was Boerhaave. Educated by his father with a view to the miniſtry, he imbibed at an early age a knowledge of the learned languages; afterwards applying himſelf with aſſiduity to the ſtudy of mathematics, and then to the profound inveſtigations of moral philoſophy, he next proceeded to botany and natural hiſtory, by which he laid the foundation for a very extenſive acquaintance with the ſcience of medicine, which at length he adopted for his profeſſion. See BOER-

HAAVE, vol. iii. Anatomy (of which his works betray great deficiency) was the only branch of his education which ſeems to have been neglected; which is nevertheleſs ſurpriſing, becauſe he diſſected for ſome time under Nuck, an anatomiſt of much repute. Boerhaave conceived that that theory of medicine muſt be the beſt which reconciled the opinions of all ſects; and, accordingly, he laboured to unite the chemical doctrines of the day with the valuable obſervations derived from the other ſchools and from Hippocrates. Of the father of medicine he profeſſed to be a great admirer, and affected to return to the good and ancient method of acquiring knowledge by obſervation and experiment; but unfortunately forgot his own rules, yielded to the influence of early ſtudies and a love of theoriſing, and in many inſtances obſcured the ſcience his abilities had otherwiſe enabled him to adorn in a moſt eminent degree. However, the plauſibility of Boerhaave's doctrines, the beauty of his ſtyle, and the graces of his delivery, gained for him an aſcendancy which is almoſt unparalleled. We may form ſome idea of the importance attached to his labours when we read, that, on his beginning a courſe of lectures, the occurrence was deemed of ſo much conſequence, that the whole city was illuminated. Boerhaave adopted a notion, of which his philoſophical education ſhould have taught him the abſurdity; viz. the exiſtence of an intermediate ſubſtance between matter and ſpirit, a principle which regulated or produced all the vital functions. He had taken this idea from an ancient dogma found in one of the writings attributed to Hippocrates; and his nephew, Kaan Boerhaave, followed up and illuſtrated this hypotheſis with much ſpirit, and, unfortunately, with the admiration of his contemporaries, who adopted it almoſt univerſally, until the ſplendid diſcourſes of Haller began to wean them from opinions ſo diſſonant to the reſults of ſound reaſoning.

Boerhaave died in the year 1738; ſo that we have now fairly got into the eighteenth century, and have arrived at a period when phyſiology, long obſcured by the miſapplication of the natural ſciences, at length began to be ſtudied according to the dictates of ſound reaſoning and the reſults of experiment. The name of *Haller* (who ſtudied under Boerhaave) ſtands in lofty pre-eminence among the cultivators of medical ſcience during this century. Panegyric has been ſeldom more properly applied than to this diſtinguiſhed author. His biographers have ſhown how aſſiduouſly, at the earlieſt periods of his life, his mind was bent on the acquiſition of knowledge; and they have reported his varied, his extenſive, accompliſhments. His poem of the Alps ſhows how eminently he poſſeſſed ſublimity of imagination and the harmony of numbers; and his reſearches in our own ſcience manifeſt the profundity of his reaſoning; while the admirable picture is cloſed by the relation of his earneſt regard for the intereſts of morality and religion. In a word, Haller ſeems to have almoſt realized the account given of the gods, or inventors of medicine, who individually united the four grand ſciences of poetry, legiſlature, phyſic, and divinity. See the article HALLER, vol. ix.

The irritability of the body was the point to the eſtabliſhment of which a very large proportion of Haller's reſearches were directed; and in this principle he formed a ready ſolution of many phenomena which had puzzled his predeceſſors and given riſe to much idle and fanciful ſpeculation. We may be excuſed, however, from entering into the phyſiological diſcoveries of Haller, as we ſhall have occaſion to treat of them ſomewhat largely in our article PHYSIOLOGY. It ſhould be mentioned, however, that the *Elementa phyſiologiæ* of Haller is a work of the greateſt merit, and which, notwithſtanding the wonderful progreſs of phyſiology in our own time, may ſtill be referred to, as containing an immenſe body of reſearch arranged in a very beautiful manner. And this book would probably have ſtill remained the text-book of every phyſiological ſchool, had not the profound reſearches of our countryman Hunter led mankind to detect its errors and deficiencies, and ſhown how much ſtill remained to be done ere the fabric of this ſcience could be conſidered as reſting on a ſtable foundation.

It would appear that Haller was not an operating ſurgeon; for, in his Bibliotheca Chirurgica, vol. ii. he ſays, "Although I have practiſed ſurgery ſeventeen years, and exhibited the moſt difficult operations on the dead body, I have never ventured to apply a cutting inſtrument to a living ſubject, through a fear of giving too much pain."

Among the other phyſiologiſts who flouriſhed during the early part of the eighteenth century, we may mention Porterfield, Whytt, and Bordeu. The two former were diſtinguiſhed by their reſearches on muſcular action and nervous influence; and the latter has the merit of having pointed out the importance of the cellular tiſſue, and of deſcribing many properties belonging to it which his predeceſſors had overlooked.

We can ſcarcely draw a ſtronger contraſt as to the different methods of acquiring knowledge than by mentioning the name of *John Hunter* immediately after that of Haller: the one poſſeſſing every advantage which collateral knowledge could procure, a man of the moſt perfect ſkill in languages, and profoundly erudite; the other ignorant of the moſt ſimple and elementary branches of education. Yet they ſtand each unrivalled in the annals of our art. The name of Hunter will frequently come before us when treating the ſciences of phyſiology and zoology; but we muſt here pauſe to deſcribe, in ſome meaſure, the ſpeculation which he adopted on the ſubject of life, or vitality, becauſe it has probably had much influence on pathological doctrines. Before the time of Hunter, many authors had remarked that a vital principle exiſted in the body independent of organization; but he firſt aſſerted, (to uſe the words of his own enlightened eulogiſt,) that "*life* actually conſtructed the very means by which it carried on its various proceſſes; and that it could operate in ſemi-fluid, and even fluid, ſubſtances."

This ſpecimen of hypothetical reaſoning which Hunter has left us, forms the only exception to the unqualified admiration with which we are diſpoſed to regard him. But certainly, this notion of a vital principle is very extravagant; and, in attributing to it ſome degree of intelligence (which he has done when treating of the abſorbents,) he has rendered himſelf liable to be oppoſed by the ſame concluſive arguments which had long ſince refuted the notions of Stahl. The labours, however, of Hunter, by giving a more certain and fixed character to phyſiology, have cauſed that ſcience to be uſed as the baſis of medical practice and every modern ſyſtem of noſology; and his extenſive reſearches in comparative anatomy, opened a field of which the further cultivation has produced, and is ſtill producing, great information in regard to the ſcience of life, and, hence, to the ſcience of medicine. The ſurgical operative improvements which Hunter made, were ſome new methods of treatment in rupture of the tendo achillis, and in the operations for hydrocele and fiſtula lacrymalis; and likewiſe in the mode of operating for popliteal aneuriſm, by taking up the femoral artery in the fore part of the thigh.

The publications for which John Hunter is moſt diſtinguiſhed, are—his work on the Veneral Diſeaſe, 1786, and his Treatiſe on the Blood, Inflammation, and Gun-ſhot Wounds, not given to the public till after his death. Nor ſhould we omit to notice the very numerous and important papers which he preſented to the Royal Society, in rapid ſucceſſion, eſpecially between the years 1773 and 1783, chiefly relating to comparative anatomy and phyſiology.† His fame, however, will principally reſt upon his various diſcoveries in this branch of ſcience; and it would be injuſtice to his character not to deſcribe, as amply as our limits will admit, the Anatomical Muſeum, the formation of which may be regarded as having been the main

object

† V. the end of the leaf

object of his life. In its plan it was abſolutely unique, and the perfection to which he brought it rendered it the admiration of all who were capable of judging of its value. It embraced the grand deſign of expoſing to view the gradations of nature, from the moſt ſimple ſtate in which life is found to exiſt, to the moſt perfect and complete piece of animal mechaniſm, that of man. This collection of anatomical facts is arranged according to the functions they are intended to illuſtrate, the different parts of animal bodies intended for ſimilar uſes being brought together in ſeries, ſo that the various links in the chain of perfection are readily followed, and clearly underſtood. This arrangement comprehends four great orders: the firſt, parts conſtructed for motion; ſecond, parts eſſential to animals reſpecting their own internal economy and preſervation; third, parts ſuperadded for purpoſes connected with external objects; and, fourth, parts for the propagation of the ſpecies, and the maintenance of the young. The Firſt Order exhibits the fluids of living bodies in a ſeries, from the ſimple colourleſs ſap of ſome vegetables to the coloured and coagulating blood; the muſcles, from the ſtraight ſimple muſcle to the moſt complicated ſtructure with elaſtic ligaments; the growth of bone, horn, ſhell, &c. and the varieties of joints. The Second Order comprehends the organs of digeſtion, beginning with the hydatid, which is itſelf a ſimple pouch, and paſſing to the polypus, the leech, and more complicated animals, including a ſeries of ſtomachs, of inteſtinal canals, and of the glands connected with them, as livers, ſpleens, &c. After the organs of digeſtion follows the ſyſtem of abſorbing veſſels, from the roots of plants up to the lacteals and lymphatics of different animals. The next ſtep is to the heart, which, in the caterpillar, is a ſimple canal, and receives various additions as we aſcend in the ſcale, until we find it a double heart in man and quadrupeds: this leads to the ſtructure of arteries and veins. Then the lungs are ſhown in all their gradations, from the ſimple vaſcular lining of the egg-ſhell, which ſerves as lungs for the chicken, to thoſe of the more perfect animals, including gills, &c. The windpipe and organs of voice are ſhown under their different forms. And, laſtly, the kidneys are exhibited, which ſeparate the ſuperfluous fluids from the circulation. The Third Order takes up the brain from its ſimpleſt ſtate in the leech, to the ſnail, inſects, fiſh, &c. upwards; the varieties of all the organs of ſenſe in the different tribes of living things; and, laſtly, the external coverings of hair, feathers, ſcales, &c. the weapons of offence and defence, as ſpurs, hoofs, horns, ſtings, and electric organs. As an Appendix to this Order, ſome peculiar ſtructures are added, ſuch as the air-bladder in fiſh, &c. The Fourth Order includes all the variety of parts connected with the proceſs of generation in plants and animals, from the polypus and coral to the perfect animals; thoſe of females in the maiden and impregnated ſtate, including the products of ſeeds, ſpawn, eggs, &c. the progreſs of incubation; the peculiarities of the fœtus; and the various organs for the nouriſhment of the young. This ſketch gives a very inadequate idea of the amazing number of objects, from every department of nature, which the collection compriſed; but it contains, beſides, a large ſeries of whole animals, arranged according to their internal ſtructure, many of them the rareſt ever brought into this country; ſuch as the camelopard, hippopotamus, &c. It comprehends, moreover, a ſeries of ſkulls of different animals, and ſkeletons of almoſt every known genus; an immenſe number of calculi, urinary, biliary, and inteſtinal; a large collection of ſhells and inſects; and a moſt complete aſſortment of extraneous foſſils. By his will, Mr. Hunter directed that this Muſeum ſhould be offered to the purchaſe of government; and, after ſome negociation, it was bought for the public uſe for the ſum of 15,000*l.* and given to the College of Surgeons, on condition of expoſing it to public view on certain days in the week, and giving a ſet of annual lectures explanatory of its contents. A large building for its reception has been completed in Portugal-ſtreet, connected with the College of Surgeons, in Lincoln's-Inn Square; and, in the ſpring of the year 1810, the firſt courſe of lectures was delivered by Mr. Home and Sir William Blizard.

One of the very firſt ſurgeons of the preſent day, Mr. Lawrence, in a Lecture at the College of Surgeons a few months ago, ſpeaks of John Hunter in the following terms: "Mr. Hunter is the glory of England in the 18th century. In vigour and originality of genius, in comprehenſion and depth of thought, in unwearied induſtry, he has been ſurpaſſed by none. He was one of the men who gave a character to the age in which they live, whoſe names are aſſociated to the great æras of ſcience, and who do honour to the country which produces them. Occupied by a laborious profeſſion, and defraying from its hard earnings the expenſes of his multifarious inquiries, he accompliſhed what appears almoſt incredible. What might he not have done, had his time been devoted excluſively to his favourite purſuits, and had they been aided by that pecuniary aſſiſtance and foſtering ſupport, which the rulers of mankind ſo ſeldom and ſo unwillingly ſpare from their ſchemes of war and conqueſt? He ſurveyed anatomy and phyſiology with the eye of a philoſopher; proceeding conſtantly, with the aid of diſſection and experiment, to aſcertain the ſtructure of animals, and to determine the nature of their functions. There is ſcarcely a branch of phyſiology which he has not illuſtrated by ſome original reſearches, while he has examined each organ in every animal that he could procure. His Muſeum is arranged on this truly philoſophical principle; a plan followed by Ariſtotle, and to be completed, I hope, by Cuvier." This laſt eminent perſon is mentioned by the ſame diſtinguiſhed authority, as one who has ſuffered no corner of the wide field of zoology to eſcape his penetrating glance: "Equal (obſerves Mr. Lawrence) to Buffon in enlarged views and comprehenſive graſp of mind, and much ſuperior to him in patient reſearch, minute obſervation, and learned inquiry, he preſents a rare union of all the great requiſites for promoting natural knowledge. He has been not leſs fortunate in his ſituation than in his qualifications; devoting his whole time to ſcience, and ſurrounded by numerous able aſſiſtants, he could avail himſelf, to their full extent, of thoſe liberal inſtitutions for the advancement of natural knowledge, and that uniform encouragement of talent, for which ſcience will ever be indebted to the late French government. Accordingly, his progreſs has been every-where marked by improvement and diſcovery."

Dr. William Hunter, the elder brother of John, was a very diſtinguiſhed phyſician, anatomiſt, and accoucheur. We have already devoted two pretty long articles in our ninth volume to the HUNTERS. We need, therefore, only add, that to William the profeſſion is indebted for the diſcovery of the *membrana decidua reflexa;* and to remind our readers how much we have availed ourſelves of his ſplendid work, the Anatomy of the Gravid Uterus, in our articles ANATOMY and PARTURITION, vols. i. and xviii. His Muſeum, which is extremely valuable, though of a different nature from that of his brother, is now in the univerſity of Glaſgow, having been ſent there by Dr. Baillie ſome years before the time mentioned in his uncle's will. See HUNTER, vol. ix. p. 481, 2.

Among the moſt diſtinguiſhed anatomiſts of the 18th century, as enumerated by Haller in his Bibliothecæ, we have the names of Morgagni, Winſlow, Cheſelden, &c. which were dated in about the firſt 30 years of that century, except Morgagni's work, de Sedibus and Cauſis Morborum, which he publiſhed at an advanced age. Under the title of the *perfect ſtate* of anatomy, Haller reviews the works of Albinus, Senac, Monros, (the father and ſon,) Nicholls, Lieutaud, Ludwig, Leiberkuyn, Daubenton, Camper, Walther, Meckel, Zinn, Fontana, Wriſberg, Spalanzani, Hewſon, Portal, Sabatier, Scarpa, Blumenbach, Troja, &c. whoſe writings extend to the time

& on the electric organs of the torpedo and the gymnotus electricus; on certain receptacles of air in birds; on the gallaroo kangaroo; on the animal & vegetable powers relating to heat; on the recovery of persons apparently drowned; on the free agency; on the communication of small pox to the fœtus in utero; on an extraordinary pheasant; on the organs of hearing in fishes on the effects of the extirpation of ovaria; on the species of the wolf, the jackall and the dog; on the structure and economy of whales; on bees; on inflamed veins; on the mode of conveying substances into the stomach; on palsy of the œsophagus; on the venereal disease and on muscular action in various croonian lectures read before the Royal Society

Sir Wm. B. M.D.

time when he wrote, and indeed about twelve years after, ſince the two laſt of the 10 vols. of which that noble work conſiſted were publiſhed, in 1788, with additions, by the learned editors, to that time.

While ſupplying the deficiencies of Haller, and extending the enquiries to our own times, we ſhall be convinced of the impropriety of the title of one of his chapters juſt quoted, "the perfect ſtate of anatomy," ſince anatomy and ſurgery, as well as pathology and phyſiology, have been rapidly improving ever ſince. This has ariſen from the aſſiſtance of governments in the different countries. They being convinced that anatomy is one of the moſt neceſſary ſciences, and the groundwork of the whole healing art, but particularly of ſurgery, in many great cities academies were inſtituted for the cultivation of practical anatomy; and ſchools were alſo eſtabliſhed for the inſtruction of the theoretical and practical parts of ſurgery.

Theſe improvements in ſurgery have been chiefly made in England, France, and Germany; and in all theſe countries a number of very eminent men have appeared.

The Engliſh ſurgeons, beſides poſſeſſing an accurate knowledge of anatomy, and great abilities in the operative part of their profeſſion, were the firſt who endeavoured to bring the art to its preſent ſimplicity. They directed alſo their attention, in a particular manner, to the diet of patients; the neglect of which had cauſed the unfortunate iſſue of many operations which had been dexterouſly performed.

Among the ſurgeons of later times, we may firſt mention the name of Sharp. He was a ſcholar of Cheſelden, and one of the beſt ſurgeons of his day. He wrote a Compendium of Surgical Operations, 1746; and alſo a Critical Inquiry into the State of Surgery; both of which works are ſtill in high eſtimation.

In the year 1719, Dr. Monro, after viſiting the ſchools of London, Paris, and Leyden, where he was a pupil of the great Boerhaave, came to Edinburgh; and this may be conſidered as the date of the foundation of the Edinburgh medical ſchool. He began by giving lectures on anatomy and ſurgery, the firſt which were delivered in Edinburgh; and in the year 1721 he was appointed profeſſor of anatomy and ſurgery to the univerſity. This eminent anatomiſt and ſurgeon, beſides filling his chair with the greateſt reputation, contributed to the advancement of our knowledge in many important parts of anatomy and ſurgery. His works, publiſhed by his ſon, beſides his Treatiſe on Oſteology, which is certainly the beſt deſcription of the bones that has ever been given, will be found to contain many intereſting and valuable obſervations on various ſurgical diſeaſes.

Joſeph Warner, ſurgeon of Guy's Hoſpital, in London, publiſhed his Caſes and Remarks in Surgery in the year 1754, a work which contains many very important practical remarks. He afterwards publiſhed a very good work, containing a deſcription of the human eye and its adjacent parts, in which he particularly rejects the faſtening of the eye during the operation of cataract. He alſo publiſhed An Account of the Teſticles, their Common Coverings and Coats, &c.

Percival Pott, ſurgeon of St. Bartholomew's Hoſpital, may be juſtly conſidered as one of the principal Engliſh ſurgeons of his time. He was not only a ſucceſsful practitioner, but an induſtrious and excellent writer. The merits of Pott are indeed conſiderable. He threw much light on the doctrine of wounds of the head, by his accurate arrangement of the different kinds of injuries to which the head is ſubject. He alſo gives a good account of hydrocele and the other diſeaſes of the teſticle. For the operation of the fiſtula in ano, he made material improvements. He has given many uſeful hints on fractures and diſlocations; and he was a great champion in favour of the operation for cataract by couching. He was the firſt perſon who deſcribed the chimney-ſweeps cancer; and on herniæ, polypus, and curvatures of the ſpine, he has made many judicious pathological and practical obſervations.

Charles White, ſurgeon in Mancheſter, publiſhed an excellent practical work in the year 1770, in which he recommends amputation of the foot, a little above the ankle-joint, inſtead of under the knee, as had uſually been practiſed. He alſo ſhows the effect of ſawing off the ends of bones; and diſcuſſes ſeveral other intereſting points in ſurgery. In the ſame year, Mr. Elſe, of St. Thomas's Hoſpital, publiſhed his treatiſe on the hydrocele, in which he recommends the uſe of cauſtic in the cure of that diſeaſe.

In the year 1770, Mr. Deaſe, of Dublin, wrote an excellent treatiſe on the wounds of the head. Mr. Bromfield, of St. George's Hoſpital, and Mr. Hill, ſurgeon at Dumfries, alſo diſtinguiſhed themſelves; Mr. Bromfield for his Chirurgical Obſervations, and Mr. Hill for his Obſervations on Cancers.

In the year 1778, Mr. Benjamin Bell publiſhed the firſt volume of his Syſtem of Surgery. The reputation of this work was ſoon ſuch, that it was tranſlated into the French and German languages; and it has ſince gone through ſeveral editions in theſe, and many in Engliſh. This work preſented the moſt complete ſyſtem of ſurgery which had ever appeared; and in every part of it there is diſplayed a talent for practical obſervation and clearneſs of thought which muſt render it ever a uſeful and valuable preſent to ſurgery. Like all ſuch extenſive works, it is not without faults, and the language in which it is written is in ſome places prolix and diffuſe; but, notwithſtanding its errors, it certainly muſt be conſidered as the moſt uſeful body of ſurgery that has yet appeared in this country.

We are aware that we have omitted the names of very many eminent Engliſh ſurgeons and anatomiſts; as Douglas, Cowper, Alanſon, Hawkins, Smellie, &c. &c. The details, however, of their reſpective inventions and diſcoveries, would exceed our limits; and, indeed, may very well be ſpared, for there is confeſſedly great difficulty in aſcribing even anatomical facts to their right diſcoverer, much more the abſtruſe and obſcure ſpeculations of phyſiologiſts. Moreover, the ſame facts have been diſcovered by different perſons, ignorant of the reſearches of each other, and each has been equally tenacious of his prior claim. Thus, the diſcovery of certain parts of the lymphatic ſyſtem, was made by Dr. Wm. Hunter, and by Monro, jun. of Edinburgh, each unconſcious of the other's labours. The publication of them arouſed much controverſy and litigation. Numerous inſtances might be adduced of a ſimilar kind.

Periodical medical works were ſet on foot in Great Britain about this time. Upon the great utility of ſuch publications, in diffuſing knowledge far and wide, we need not enlarge after what has been ſaid under the article MAGAZINE, vol. xiv. p. 90. The Edinburgh Medical Eſſays were firſt publiſhed in 1732, being eleven years antecedent to the appearance of the Memoirs of the French Academy.

Italy, during this period, lent ſome aid to the improvement of ſurgery, by the lectures of Molinelli, Bertrandi, and Moſcati; while, in Holland, Albinus, Deventer, and Camper, by their diſcoveries and improvements, and ſtill more by their free communication of them, endeavoured to remove the ſtigma which the charlataniſm and ſecrecy obſerved by Ruyſch, Roonhuyſen, and Raw, had thrown on the ſurgery of that country.

In Germany, and the north of Europe, flouriſhed Heiſter, the fellow-ſtudent of Albinus, Blatner, Roederer, Stein, Bilguer, Acree, Brambilla, Theden, Richter, &c.

The reign of Louis XIV. has been called, by Richerand, the iron age of ſurgery in France. Yet the French, at that time, prided themſelves on the almoſt excluſive poſſeſſion of chirurgical practitioners. "Les progrès de la chirurgie," obſerves M. De Francheville, "furent ſi rapides

rapides et ſi celebres dans ce ſiècle, qu'on venait à Paris des bouts de l'Europe, pour toutes les cures, et pour toutes les operations qui demandaient une dextérité non-commune. Non ſeulement il n'y avait guères d'excellens chirurgiens qu'en France; mais c'etoit dans ce ſeul pais qu'on fabriquait parfaitement les inſtrumens neceſſaires." It is ſomewhat ſingular however, that, amidſt all this boaſted poſſeſſion of chirurgical knowledge, the fiſtula in ano ſhould be a diſeaſe in which the French ſurgeons were fearful of operating, and which had often proved fatal beneath their attempts. Cardinal Richelieu fell a ſacrifice to the unſkilfulneſs with which the operation was performed; and, when the king entruſted himſelf to the care of M. Felix, his chief ſurgeon, ſo hazardous was this operation deemed, that all the hoſpitals were ranſacked for thoſe who had laboured under the ſame diſeaſe; and innumerable conſultations were held with other ſurgeons of known reputation, to determine on the mode of operating that ſhould appear leaſt painful and dangerous. The churches alſo were perpetually crowded, and prayers perpetually offered up throughout the whole kingdom, to avert the fatal termination which was ſo generally apprehended. And, when this monarch was attacked by the diſeaſe to which he fell a victim, he became diſſatisfied with his own phyſicians, and employed an empiric, who boaſted of being able to cure him ſpeedily, but under whoſe care he expired in a few days.

We have gone back to the 17th century to ſpeak of the ſtate of ſurgery under Louis XIV. as he died at the beginning of the 18th. Yet we cannot help attributing the great perfection the art acquired in the laſt century to the exertions of that powerful monarch. He founded hoſpitals and colleges, eſtabliſhed profeſſorſhips, which he required to be filled only by ſurgeons of acknowledged talent: he commanded bodies to be liberally ſupplied to the anatomiſts; and hence Paris became the medical and chirurgical ſchool of the greateſt celebrity on the continent.

Petit and Deſault are the firſt and moſt conſpicuous authors who come under our obſervation at this time. The eulogium on J. L. Petit, delivered in the Royal Academy of Surgery, of which he was one of the firſt and moſt diſtinguiſhed members, repreſents him as blending the ſtudy of anatomy with his amuſements when a boy; and ardently ſeeking every opportunity to increaſe his knowledge by obſervation. He had had experience enough to publiſh, at an early period of his life, his "Traité ſur les Maladies des Os," Paris, 1705, 12mo. a work, which for a century was eſteemed the beſt upon the ſubject. It may be noticed, that his ſucceſs was moſt virulently oppoſed by the envious. It was not till after more than thirty years of academical labours and extenſive practice, that he was unanimouſly elected chief of his aſſociates. This acknowledged ſuperiority was the more flattering, as J. L. Petit obtained it at a period when ſurgery was in a flouriſhing ſtate in France, and where he held no place from which he could derive an influence foreign to his perſonal merit. While Mareſchal, La Peyronie, and La Martiniere, aſſured him of the royal favour, Queſnay, Morand, and Louis, who corrected his writings, made him ſpeak a language that does honour to the famous collection to which he contributed his obſervations (ſee Memoires et Prix de l'Académie Royale de Chirurgie, 10 vols. 4to.) and in which, if we except ſome theoretical explanations, nothing has loſt its value by age. In ſhort, it will ever be conſidered as one of the moſt valuable collections of ſurgical knowledge. J. L. Petit was alſo the author of a "Traité des Maladies Chirurgicales, et des Operations qui leur conviennent; Ouvrage poſthume;" a production that will always ſtand high in the eſtimation of the judicious ſurgeon.

Of Déſault we may remark, that he is highly celebrated for the exactneſs and method which he introduced into the ſtudy of anatomy; the ingenious apparatus which he invented for the treatment of fractures; a noble ardour in his profeſſion, which he knew how to infuſe into all his pupils; and the boldneſs and ſimplicity of his modes of operating. His clinical lectures upon ſurgery were the firſt ever delivered. Indeed, ſuch was his genius, that, when he practiſed only methods already underſtood, he did them with ſo much adroitneſs, that he rather appeared to be the inventor of them. He wrote the Journal de Chirurgie, 4 vols. 8vo. and left behind him Œuvres Chirurgiques, 3 vols. edited by Bichat. He likewiſe furniſhed many papers to the Memoirs of the Academy of Surgery, and was a diſtinguiſhed member of the Ecole de Santé which ſucceeded it.

What tended principally to raiſe the reputation of French ſurgery to ſo high a pitch, was the union of individual labours in the Academy of Surgery juſt mentioned. This valuable inſtitution, which gave our continental neighbours ſo great an advantage over us, was unfortunately ſuppreſſed at the time of the revolution; and every one intereſted in the improvement of ſcience muſt deeply regret the diſcontinuance of a ſociety, in which emulation and talents were ſo long united for the benefit of mankind. The various diſſertations, publiſhed by the illuſtrious members of the Academy, will ſerve as a perpetual memorial of the ſpirit, ability, and ſucceſs, with which the objects of the inſtitution were purſued; and centuries hence, practitioners ſhall reap from the pages of its Memoirs the moſt valuable kind of ſurgical information. Indeed, the "Mémoires et Prix de l'Académie Royale de Chirurgie" is a work which is abſolutely indiſpenſable for every ſurgeon, and the various parts of which cannot be too often conſulted. In it are preſerved the labours of Le Dran, Garengeot, De la Faye, Louis, Verdier, Foubert, Hevin, Pibrac, Fabre, Le Cat, Bordenave, Sabatier, Puzos, Levret, and ſeveral other practitioners, who, though leſs famous, have contributed by their exertions and knowledge to form this uſeful body of ſurgical facts. The preceding ſurgeons alſo diſtinguiſhed themſelves by other productions.

Le Dran publiſhed, 1. Parallèle des différentes Manières de tirer la Pierre hors de la Veſſie, 12mo. 2. Opérations de Chirurgie, 2 vols. 12mo. 3. Obſervations de Chirurgie, 2 vols. 12mo. 4. Traité des Plaies d'Armes à feu, 12mo. 5. Conſultations de Chirurgie, 12mo.

Garengeot wrote: 1. Traité des Inſtrumens de Chirurgie, 2 vols. 12mo. 2. Traité des Opérations de Chirurgie, 3 vols. 12mo.

Fabre was the author of Recherches ſur l'Art de Guérir, 8vo.

Le Cat wrote: Recueil de Pièces ſur l'Opération de la Taille.

Sabatier publiſhed the Médécine Opératoire, 3 vols. 8vo.

Puzos compoſed Traité des Accouchemens; Paris, 1759, 4to.

Levret wrote, 1. Obſervations ſur les Accouchemens laborieux; Paris, 1747. 2. Art des Accouchemens, démontré par les Principes de Phyſique; Paris, 1761, 8vo. 3. Eſſai ſur l'Abus des Regles générales, &c. Paris, 1766, 8vo. 4. Obſervations ſur la Cure radicale des Polypes; Paris, 1749.

La Motte publiſhed: 1. Traité complet des Accouchemens naturels, non-naturels, et contre Nature. 2. Traité complet de Chirurgie.

Mâitre-Jean was the author of Traité des Maladies de l'Oeil, 4to.

Goulard wrote: Œuvres de Chirurgie; Liege, 1763, 2 vols. 12mo.

Ravaton compoſed, Le Chirurgien d'Armée.

Pouteau: 1. Melanges de Chirurgie, 8vo. 2. Œuvres poſthumes, 3 vols. 8vo.

David, Obſervations ſur la Nécroſe; Paris, 1782, 8vo.

The Academy of Surgery, which was overthrown during the French revolution, had at firſt a very inferior ſubſtitute in the Ecole de Santé; but, ſince the reſtoration, has been ſucceeded by the Ecole de Chirurgie, (ſee PARIS, vol. xviii. p. 467.) which has brought forward Boyer,

Boyer, Heritier, Dubois, Manoury, Lallemand, Richerand, Petit de Lyon, and, above all, Bichat.

To Bichat, the ingenious and enlightened Bichat, the world is indebted for the firſt truly philoſophical view of the ſtructure of the human body. The ſimple diviſion of it into its component parts, which this great anatomiſt and philoſopher has pointed out, muſt be conſidered as the ground-work of all future anatomical and pathological inquiries.

Bichat demonſtrated, that moſt of the organs of our body are made up of a variety of elementary parts or textures; each of which, in whatever part of the body it is found, uniformly has the ſame phyſical properties, and preſents the ſame morbid phenomena. Theſe he conſiders as the *elementary parts*; which, by the diverſity of their combinations, produce all the modifications of ſtructure and functions exhibited in the different organs of animals. This method of conſidering organized bodies, accords with every phenomenon with which we are acquainted, and ſeems to ariſe from the eſſential nature of their conſtitution. We may trace this view of the ſtructure of the body in the obſervations of many of the older anatomiſts; and particularly it may be conſidered as the baſis of ſome of the moſt ingenious philoſophical theories of the late ingenious Mr. John Hunter.

In order to fix the characters of the elementary textures, Bichat employed various modes of inquiry. He performed numerous experiments on living animals; perſevered in tedious and minute diſſections; employed chemical re-agents to ſupply the place of the knife; and examined with minuteneſs all the varieties of morbid ſtructure. Having by theſe means accompliſhed his object in tracing the character of each ſeparate texture, he proceeded next to inveſtigate their combinations as they are found in the different organs.

The effects of this mode of inveſtigating the ſtructure of the human body when diſeaſed, muſt be at once obvious. We learn from it, that diſeaſes at their commencement are generally confined to one texture of an organ; the other textures of which the organ is compoſed remaining ſound. There is no organ of the body from which this important truth may not be deduced. It may be readily illuſtrated from conſidering the diſeaſes of the mucous, ſerous, and muſcular, textures, which compoſe the ſtomach and alimentary canal; of the cellular texture of the lungs; of the mucous membrane of the bronchi, the ſerous one of the pleura, and many others.

But diſeaſes are not only confined to one individual texture of any organ, as in the caſes juſt mentioned; the ſymptoms and morbid changes are likewiſe uniformly the ſame in textures of a ſimilar ſtructure, in whatever parts of the body theſe textures may happen to be found. Thus the ſerous membranes which inveſt the lungs, the brain, the heart, the abdominal viſcera, have one common character when affected with any ſpecific diſeaſe; ſo alſo have the mucous membranes, whether we trace them in the mouth, the noſe, the vagina, the urethra, or covering the eye-ball; and the ſame may be obſerved of every individual texture which enters into the compoſition of our bodies.

Beſides the ſymptoms and morbid changes which are common to all textures whoſe ſtructure is ſimilar in the natural ſtate, there are others which are determined from the particular functions of the organ in which the diſeaſed texture exiſts. For example, when any of the ſerous membranes are inflamed, the nature of the pain, the degree of fever, and the duration of the ſymptoms, are the ſame, in whichſoever one it may have taken place. But to theſe ſymptoms are added, cough, difficulty of breathing, &c. when it happens to be connected with the organs of reſpiration, as in the caſe of pleuritis; coſtiveneſs, ſtrangury, delirium, loſs of viſion, when the inteſtines, the bladder, the brain, or the eye, are involved in the diſeaſe.

This view of the ſubject naturally ſuggeſts a correſpondent diviſion of the *ſymptoms*. The firſt claſs are general, and characteriſe a whole genus of textures; the ſecond are in a manner acceſſory, and depend upon the relative ſituation or the particular functions of the organ into the compoſition of which the affected texture enters. But here we muſt ſet bounds to this theory. The hiſtory and progreſs of diſeaſes ſhow, that we ought not to confine our obſervations within ſuch narrow limits. The principles which have been ſtated, indeed, account admirably well for the propagation of ſome affections; and for ſome of the ſympathies which ſubſiſt between different parts of the body; but there are other diſorders which advance in a very different manner. In ſome diſeaſes which are termed chronic, for example, the whole ſtructure of an organ becomes gradually altered, although the primary affection was confined to one of its component textures. This is often to be obſerved in cancer, ſcrofula, lues venerea, &c. Theſe general obſervations, however, will be ſufficient to give an outline of the principles of a pathological ſyſtem founded on the baſis of anatomical knowledge; but the details of which are reſerved for another place.

With regard to the *ſurgery* of the preſent day, we may remark, that our labours have of late been chiefly directed, by means of phyſiology and pathology, to the *treatment* of ſurgical caſes; and, though in that reſpect we may be allowed to ſtand far before our anceſtors, yet even in ſimple operations we are not without improvement. The bold and ſucceſsful operations of Larrey will teſtify this, as well as the grand operations for aneuriſms performed by Abernethy, Lawrence, Aſtley Cooper, and others of our Engliſh ſurgeons, whoſe names however we forbear to mention, convinced of our inability to do juſtice to the merits of all, and unwilling to appear invidious by the excluſion of any.

We now haſten to the conſideration of thoſe pathological theories, which, perhaps more than any other branch of medicine, form the criteria of medical practice.

The medical theoriſts, then, of the 18th century, were chiefly Cullen, Brown, and Darwin. If we were inclined to draw compariſons in regard to merit, the firſt of theſe phyſicians would deſerve our greateſt encomium; for he obſerved nature with acuteneſs, and was conſiſtent and rational in his treatment of diſeaſe, which cannot be accorded to either of the latter. He likewiſe made an arrangement of diſeaſes which had great merit, and which nothing but the increaſe of phyſiological knowledge, and its ſucceſsful application to pathology, that has taken place in our time, can warrant us in departing from, and which indeed we promiſed to adopt. See vol. xvii. p. 245.

Cullen's pathological doctrines were a modification of the theory of Hoffman. From that author he took up the doctrines of ſpaſm and debility, and deduced from them all the phenomena of febrile diſorders; and he endeavoured to confirm his theory by proofs drawn from the laws of the nervous ſyſtem, and from the conſideration of the remote cauſes of the diſeaſes in queſtion. Rheumatiſm was referred by him to a ſpaſm of the muſcular fibres, ariſing from an increaſed afflux of blood; but gout he conceived to originate in atony, eſpecially in atony of the digeſtive organs. In theſe latter diſeaſes, he rejected the idea of a peculiar morbific matter; yet in his explanations of certain other complaints, as, for inſtance, of ſcrofula, he had recourſe to the ſuppoſition of an acrimony of the fluids. He laid much ſtreſs on the efforts of the *vis medicatrix naturæ*, advocated the hypotheſis of a nervous fluid and vital principle, and aſcribed to the brain a peculiar faculty, by which it was enabled to excite the muſcles to action, independently of the mind, and to which he gave the name of *irritability of the ſenſorium*. Cullen ſeems to have been much in the ſame ſituation with Boerhaave as to anatomical and phyſiological

phyſiological learning, of which many of his ſpeculations betray a ſad deficiency.

In regard to *fever*, Dr. Cullen's theory was that the firſt change induced in the animal ſyſtem by the operation of the exciting cauſes of fever is, "diminution of the energy of the brain." The powers of the body and the mind, the functions of ſenſation and motion, reſpiration, circulation, and ſecretion, all fail, or are diminiſhed in the general debility; but, after a certain time, a morbid increaſe of ſome of theſe functions, eſpecially of the circulation, takes place, with an augmentation of the heat. The three ſtates of debility, of cold, and of heat, which regularly ſucceed each other in fever, in the order juſt mentioned, are preſumed to exiſt in the relation of cauſe and effect; the firſt ſtate being the reſult of the ſedative or debilitating influence of contagion, marſhmiaſmata, and cold, which are the exciting cauſes. Dr. Cullen acknowledges his inability to explain ſatisfactorily, how the debility produces all the phenomena of the cold ſtage, eſpecially the *ſpaſmodic* conſtriction of the extreme arterial veſſels, which is inferred from the ſuſpenſion of the ſecretions, and the ſhrinking of parts, in the cold ſtage, as well as from the continuance of this ſuſpenſion in the hot ſtage, after the action of the heart and large arteries is increaſed. Were the conſtriction of the cold ſtage merely the reſult of the weakened action of the heart, it is ſuppoſed, that, on the return of its ordinary or increaſed action, the conſtriction would be removed, and the ſecretions reſtored. Here Dr. Cullen reſorts to "the *vis medicatrix naturæ*, ſo famous in the ſchools of phyſic;" i. e. the innate preſerving power of the conſtitution, which has been appealed to for the ſolution of difficulties by all medical theoriſts, from Hippocrates downwards. This "ſpaſm of the extreme veſſels," then, is conſidered as "a part of the operation of the vis medicatrix naturæ;" at the ſame time, Dr. Cullen is of opinion that, during the whole courſe of fever, there is an atony exiſting in the extreme veſſels, depending on the diminiſhed energy of the brain, and that the relaxation of the ſpaſm requires the reſtoration of the tone and action of theſe. To this atony in the veſſels of the ſkin, he attributes the loſs of appetite, naufea, and vomiting, the ſtomach being affected by ſympathy. The ſpaſm induced in the extreme veſſels throws a load of blood upon the central parts of the circulating ſyſtem, which proves a ſource of irritation to the heart and arteries, and excites them to a greater action, which continues till the ſpaſm is relaxed or overcome. The hypotheſis is thus briefly recapitulated: "Upon the whole, our doctrine of fever is explicitly this. The remote cauſes are certain ſedative powers applied to the nervous ſyſtem, which, diminiſhing the energy of the brain, thereby produce a debility in the whole of the functions, and particularly in the action of the extreme veſſels. Such, however, is, at the ſame time, the nature of the animal economy, that this debility proves an indirect ſtimulus to the ſanguiferous ſyſtem; whence, by the intervention of the cold ſtage, and ſpaſm connected with it, the action of the heart and large arteries is increaſed, and continues ſo till it has had the effect of reſtoring the energy of the brain, of extending this energy to the extreme veſſels, of reſtoring therefore their action, and thereby eſpecially removing the ſpaſm affecting them; upon the removing of which, the excretion of ſweat, and other marks of the relaxation of excretories, take place." Cullen's Firſt Lines, § 46.

To this theory it has been objected, firſtly, that it is founded, as far as regards the *vis medicatrix naturæ*, on the gratuitous aſſumption that a principle exiſts of which we have ſenſible evidence; ſecondly, that, to take the cold ſtage as the proximate cauſe of the after-phenomena of fever, is diſſonant with evident fact; for the hot ſtage of fever often comes on apparently from external cauſes, and unaccompanied by the cold ſtage; and thirdly, that, with regard to ſpaſm of the external veſſels, ſuch an occurrence affords no explanation of febrile phenomena; and indeed it ſeems quite abſurd to ſuppoſe that the hot ſtage and the cold ſtage can by any means be conſequences of the ſame action; and that, ſo far from the capillaries being contracted, we have pretty clear evidence that they are extremely diſtended with blood during all febrile diſeaſes in which the ſkin is affected.

In a paſſage of his "Inſtitutions of Phyſiology," Cullen ſpeaks of a ſtate of *excitement*, or *collapſe*, of the brain and nervous ſyſtem, on which he ſuppoſes the ſtrength or debility of the other parts of the body to depend; and in his other writings, he is conſtantly labouring to prove in what manner theſe conditions may be occaſioned by the agency of various cauſes. *Brown*, ſeizing upon this idea, ſet about the formation of a new theory, according to which all the actions of life were to be referred to the *excitement* of the body by *ſtimuli*, and all diſeaſes reduced to the two general heads of *direct* and *indirect debility*, or debility ariſing from a deficiency, or a previous exceſs, of excitement; or in other words into *ſthenic* and *aſthenic* diſorders.

The Brunonian ſyſtem might very well be compared with the Methodic, its diſtinguiſhing features being the referring of all diſeaſes to two oppoſite conditions of the conſtitution, *ſthenia* and *aſthenia*, or ſtrength and debility, which might with almoſt equal propriety have been called *ſtrictum* and *laxum*, (ſee p. 11.) and the conſequent excluſion of all particular inveſtigation of the minute diſtinctions in the phenomena of diſeaſes which it encouraged.

This ſweeping arrangement was, however, much lauded in many parts of the continent, and gained a very large proportion of advocates in our country, among thoſe who had not ſufficient knowledge of nature to detect its fallacy. The moſt general of Brown's principles are thus explained.

1. To every animated being is allotted a certain portion only of the quality or principle on which the phenomena of life depend. This principle is denominated *excitability*.

2. The excitability varies in different animals, and in the ſame animal at different times. As it is more intenſe, the animal is more vivacious or more ſuſceptible of the action of exciting powers.

5. Exciting powers may be referred to two claſſes. 1. External; as heat, food, wine, poiſons, contagions, the blood, ſecreted fluids, and air. 2. Internal; as the functions of the body itſelf, muſcular exertion, thinking, emotion, and paſſion.

4. Life is a forced ſtate; if the exciting powers are withdrawn, death enſues as certainly as when the excitability is gone.

5. The excitement may be too great, too ſmall, or in juſt meaſure.

6. By too great excitement, weakneſs is induced, becauſe the excitability becomes defective; this is *indirect debility*: when the exciting powers of ſtimulants are withheld, weakneſs is induced; and this is *direct debility*. Here the excitability is in exceſs.

7. Every power that acts on the living frame is ſtimulant, or produces excitement by expending excitability. Thus, although a perſon accuſtomed to animal food may grow weak if he lives upon vegetables, ſtill the vegetable diet can only be conſidered as producing an effect the ſame in kind with animal, though inferior in degree. Whatever powers, therefore, we imagine, and however they vary from ſuch as are habitually applied to produce due excitement, they can only weaken the ſyſtem by urging it into too much motion, or ſuffering it to ſink into languor.

8. Excitability is ſeated in the medullary portion of the nerves, and in the muſcles. As ſoon as it is anywhere affected, it is immediately affected every-where; nor is the excitement ever increaſed in a part, while it is generally diminiſhed in the ſyſtem; in other words, different parts can never be in oppoſite ſtates of excitement.

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We will not detain our readers by detailing all the numerous controverſies in which this theory has engaged the medical world, nor by repeating the various arguments which oppoſed its adoption among the more enlightened of our own phyſicians: for an hypotheſis which fails to explain all the phenomena of diſeaſe cannot be conſidered worthy of our notice; and how could it be ſuppoſed that Brown, who paid little attention to the minute ſymptoms of diſeaſe, was capable of generalizing facts ſo various and anomalous? In no inſtance does the application of theſe principles form ſo much a ſubject for regret as in regard to the treatment of fever practiſed by the followers of Brown. It may be ſaid, without exaggeration, to have immolated millions of our fellow-creatures. It inculcated methods of treatment the moſt oppoſite to thoſe indicated by nature and common ſenſe. Let the ſtatiſtical reports of mortality in every climate teſtify the truth of this painful aſſertion. To ſtimulate in inflammatory diſorders is a mean ſo repugnant to the feelings of the patient, or the advice of every practical author, from the time of Hippocrates downwards, that we are aſtoniſhed at the extenſive prevalence of ſo abſurd a practice. We ſhould remark, however, that the more enlightened of Brown's followers modified his doctrines conſiderably, and in their practice often departed eſſentially from his dogmas. In attempting to explain the phenomena of fever according to the doctrine of direct and indirect debility, Brown has the following expreſſions: "The diſtinctions that phyſicians have made about the differences of fevers are all without foundation; they are all the ſame, with no other difference but in degree; and, unleſs in that reſpect, they do not differ from other diſeaſes of the ſame form." Elements of Medicine, § 662. note *m*. He does not, however, attempt to explain the manner in which the various ſucceſſion of ſymptoms reſults from the ſtate of debility, or how the various modifications of the pyrexiæ are to be accounted for upon this principle. The only approximation to ſuch an explanation, is merely an enumeration of the leading changes in the ſymptoms after the manner of Cullen, but leſs explicit than the one given by that author. We are told, that "the debility during the cold ſtage is the greateſt; that of the hot leſs; and that of the ſweating ſtage, which ends in health for the time, is the leaſt of all. Hence, in a mild degree of the diſeaſe, as cold is the moſt hurtful power, its effect is gradually taken off by the agreeable heat of the bed or of the ſun, and the ſtrength thereby gradually drawn forth. The heart and arteries, gradually excited by the heat, acquire vigour, and, at laſt, having their perſpiratory terminations excited by the ſame ſtimulus, the moſt hurtful ſymptom is thereby removed, the hot fit produced, and afterwards the ſame proceſs carried on to the breaking out of ſweat." § 666. We are farther told, that "the cauſe of all theſe diſeaſes, (viz. fevers, from the ſimple and intermittent to the gaol-fever and the plague,) is the ſame with that of diſeaſes not febrile, to wit, debility; differing only in this, that it is the greateſt debility compatible with life, and not long compatible with it." § 670.

Such is the vague and inexplicit theory which divided the medical world, which excited ſo much intereſt in thoſe who eſpouſed or oppoſed it, and inſpired ſuch a degree of enthuſiaſm in the debates and writings eſpecially of the pupils of the ſeminary which gave it birth, that it not unfrequently burſt forth with all the violence of religious phrenzy. This indeed is little to be wondered at, when we conſider that half-educated young men, as is the caſe with the great proportion of medical ſtudents, unaccuſtomed to patient inveſtigation, and fond of novelty, are the moſt apt to embrace ſuch ſpeculations as could be ſupported and defended by ingenious and ſubtle reaſonings rather than by accurate and extenſive obſervation. It was admirably well calculated to flatter the vanity of the ſuperficial, and to abridge the labours of thoſe diſpoſed to be idle, ſince it was abundantly more eaſy to deſcant upon the ſthenic and aſthenic forms of diſeaſes, and the exceſs and deficiency of excitement, than to deſcribe the diſtribution of the blood-veſſels, or to trace the courſe of the nerves. The knowledge of anatomy and phyſiology was to a Brunonian perfectly uſeleſs; and the laborious toil requiſite for the acquirement of theſe branches of ſtudy might well be ſpared him, ſince the ſtructure of the human frame and the functions of its various organs were by no means neceſſary conſiderations, either in his eſtimation of the cauſes of diſeaſes or of the means requiſite for their removal. The *beautiful ſimplicity* of the ſyſtem, accordingly, recommended it chiefly to thoſe who were moſt deficient in that ſolid knowledge which can alone form the baſis of a ſucceſsful cultivation of medical ſcience; whilſt its fallacy was too evident to thoſe who had opportunities of witneſſing its want of accordance with the natural operations of health and the phenomena of diſeaſes.

It is, however, fully admitted, that Dr. Brown poſſeſſed great vigour of mind, and ſeems to have been capable of conſiderable application. His talents, had they been directed to more practical and more uſeful objects, would have probably raiſed him to eminent diſtinction, and rendered him a valuable member of ſociety. The ſtyle of his *Elementa Medicinæ* is harſh and unpoliſhed, and his meaning is often dark and ambiguous. But perhaps this want of perſpicuity is as much owing to the ſubjects which he treated, the principles of which are far from being ſettled, as to the obſcurity of his expreſſion. He attempted an unbeaten path; it is not wonderful that he was often bewildered and loſt.

A French phyſiologiſt and pathologiſt of the preſent day, Dr. Brouſſais, (Examen des Doctrines Medicales, 1821.) has beſtowed about a hundred pages on a review of the Brunonian ſyſtem; but at length he happily comes to the concluſion, at which all the reſt of the medical world had arrived long ſince, "That the claſſification of diſeaſes by Brown, into ſthenic and aſthenic, general and local, is quite arbitrary." He then enters upon the conſideration of what he calls the Browniſm of the Italian ſchool. He firſt ſhows how readily the Italian phyſicians adopted the ſyſtem of the Scotch reformer in the firſt inſtance; and, next, how they ſubſequently modified it, by various interpolations of their own, ſo as to create a new doctrine, to which the name of *contra-ſtimulant* has been given. According to this ſyſtem, of which Raſori was the founder, there exiſt but three claſſes of diſeaſes: 1ſt, thoſe ariſing from exceſs of excitement; 2dly, thoſe from want of due excitement; and 3dly, thoſe reſulting from local irritation, or diſturbance of the vital actions of the part, differing both from inflammatory excitement and from debility. The two former are, reſpectively, the ſthenic and aſthenic maladies of the older ſchools. The latter requires a little explanation. According to Guani, the founder of this point of doctrine, the animal body is endowed with a property, inherent with its organization, by which it either aſſimilates to itſelf thoſe ſubſtances brought into contact with it, or enters into a reaction for the purpoſe of rejecting them. All thoſe ſubſtances which it appropriates to itſelf, produce what is termed animal *excitement* which is the agency of the aſſimilative property; whilſt thoſe which are not aſſimilable produce an action called *irritation*, which is a ſort of diſturbance, tumult, or orgaſm, of the part, and which may extend from the part where the irritating cauſe is applied more or leſs generally over the ſyſtem. This ſtate, he argues, differs from the two former, becauſe it is not relieved by either ſtimulants or ſedatives. It obſtinately continues as long as the cauſe of it exiſts; but, when the cauſe is removed, the effect inſtantly ceaſes, and it is never productive of real excitement, but ſoon, if it perſiſt, induces debility.

Guani appears to conſider that animal *excitement* properly, (by which he means exaltation of the vital actions without abſolute change of their qualities,) only ariſes

from the local application of ſubſtances really aſſimilable, or from the preſence of ſuch in the ſyſtem generally.

This doctrine of irritation was adopted by Giannini, and applied by him to the explanation of the phenomena of fever ariſing from contagion. The virus, he ſays, on being admitted into the ſyſtem, in proportion as it is diffuſed and applied to different parts of the body, cauſes an irritation, which is improperly called *excitement*, or the effects of a *ſtimulant*. This irritation extending throughout the ſyſtem, becauſe the irritating matter is thus diffuſed, carries every-where a *local* cauſe of diſeaſe, and thus produces a malady that is "univerſally local," *(una malattia univerſalmente locale,)* but which does not conſtitute the *ſthenic diatheſis* of the ſchools. This fever is only the *tumultus toto corpore diffuſus* of Brown; and is ſimilar to the affection ariſing from the irritation of a ſtone in the bladder, or the fever ariſing from burns, ſevere ſurgical operations, &c. ſo well treated by Dumas.

Guani, Bondoli, and Rubini, conſidered this ſtate of irritation as a particular diatheſis, and propoſed what they imagined to be the cauſes of its exiſtence and progreſs. Profeſſor Tommaſſini alſo adopted the elementary principles of the ſame doctrine, but modified the propoſitions the phyſicians already named had made reſpecting its laws. He believes that irritants may at length give riſe to real inflammation. The following are the general axioms he endeavours to eſtabliſh.

1ſt, There exiſts an order of ſubſtances (as well as a partial condition of the animal ſtructure, which relatively to the reſt of the organization is an extraneous body) which, on making an impreſſion on the animal economy, produce an action different from thoſe termed *ſtimulant*, and *ſedative*, or more properly *contra-ſtimulant*; and which is, properly ſpeaking, *irritation*.

2dly, Some ſubſtances are *naturally* and *primitively* irritative, but which may *ſecondarily* become ſtimulants where they give riſe to phlogoſis; or they may become contra-ſtimulants *(ſedatives)* when they produce pain or coldneſs, or diſtreſſing nauſea; as pain, coldneſs, and nauſea, themſelves, act as contra-ſtimulants. Others are irritants by their quantity or concentration, or the manner of applying them, which induce either mechanical diſtenſion, or chemical decompoſition, *accidentally*, and may by their nature appertain to one or the other of the two claſſes of dynamics.

3dly, The ſtate they produce may be diſtinguiſhed from all other ſtates by the following characters: 1. by its incurability by means either of ſtimulants or contra-ſtimulants: 2. by the obſtinacy of its duration in ſpite of all attempts to remove it, as long as the cauſe is preſent and active: 3. by the readineſs, and as it were inſtantaneouſneſs, of its ceſſation, as ſoon as the cauſe is deſtroyed: 4. by the type of the diſeaſe, which is manifeſtly local, even where the diſturbance by ſympathetic conſent is univerſally diſperſed.

4thly, Irritating ſubſtances may be either chemical agents, which enter the organization, or mechanical agents, which torment it, or a diſordered ſtate of a living part, which becomes a centre of irritation with reſpect to the whole ſyſtem.

5thly, Inaſſimilability, heterogenity, and inaffinity, cannot be the eſſential and diagnoſtic characters of irritants; becauſe thoſe characters do not appertain excluſively to them; nor, perhaps, to them univerſally.

6thly, In the preſent ſtate of our knowledge, we are, then, conſtrained to define an irritant *à poſteriori*, that which produces the train of morbid phenomena deſcribed under the name of the *irritative tumult*.

7thly, Irritation very often terminates by inducing phlogoſis in the centre of its own action, and then it enters into the claſs of diathetic (inflammatory) diſeaſes, preſerving nevertheleſs, not unfrequently, the character of irritation.

1. The diſeaſes of the firſt claſs, thoſe conſiſting in exceſſive excitement, may then ariſe from all irritating and exciting cauſes, whether contagious virus, mechanical or chemical injury, or exceſs of the natural excitants of the economy. Theſe produce, in the firſt inſtance, local effects of the nature above indicated, which effects are at length diffuſed over the ſyſtem to a greater or leſs extent, according to the violence of the cauſe, and the conſtitutional diſpoſition of the patient. This inflammatory excitement is of the ſame nature, from whatever cauſe it ariſes, and in whatever part it may be ſeated. It is of importance to remark, too, that local excitement produces only excitement as far as its influence extends, and not debility of the reſt of the ſyſtem by any concentration of the vital actions, as is taught in ſome other ſchools. Inflammation may occur, alſo, in an intenſe degree, in any certain organ, whilſt the reſt of the ſyſtem is in a ſtate of the utmoſt debility; and it is, indeed, more readily excited in a ſtate or weakneſs than in vigour, becauſe the animal fibre is then more ſuſceptible of the influence of ſtimulants. Inflammation is, however, always originally of a *ſthenic* character; and it preſerves this as long as it exiſts, even in the midſt of the moſt deſolating privation of vital power.

All fevers, acute and chronic, whether ariſing from the impreſſion of cold, exceſs of the natural excitants of the body, animal contagion, or marſh-effluvia; all acute and chronic local inflammations, cutaneous ulcerative diſeaſes, and phthiſis; take their place in the firſt claſs. The general cauſes of this claſs of diſeaſes have already been deſignated as thoſe of eſſentially excitant or irritating qualities, but, in addition to thoſe ſhould be mentioned, ſome others which, under circumſtances, are contra-ſtimulants. Thus, pain, to a certain degree, is a ſedative; but it becomes an excitant, when intenſe; and many ſubſtances, which are contra-ſtimulant in certain quantities, become either excitants or irritants when given in larger quantities; this is the caſe with the tartarized antimony, belladonna, digitalis, &c.

2. The ſecond claſs of maladies are of the nature which the doctrines of Brown would term *direct debility*, or that depending on want of due excitement. The doctrine under conſideration does not admit the exiſtence of ſuch as he termed diſeaſes of *indirect debility*, or exhauſtion from previous exceſs of excitement. The effect of ſtimulants is conſidered to be conſtantly and ſolely excitement.

3. The character of the diſeaſes of the third claſs was indicated when the nature of irritation was particularly conſidered.

This doctrine not only oppoſes the moſt favourite dogmas of the Brunonians, that of the exiſtence of what they term *indirect debility*; it alſo attacks their principle of the eſſentially ſtimulating quality of every ſubſtance making an impreſſion on the animal body. It teaches, 1ſt, That many ſubſtances act on the animal fibre in a mode diametrically oppoſite to the ſtimulant agency, whence reſult the effects which Brown attributed only to the negative action, or want of action, of different ſubſtances; or to the diminution of the natural excitants of the ſyſtem. 2dly, That we may deſtroy, by the adminiſtration of theſe ſubſtances, the effects of exceſſive ſtimulants, and that without theſe ſubſtances neceſſarily producing any evacuation; and that we may, by frequent repetition of their uſe, produce diſeaſes which are not ſuſceptible of cure by the intervention of ſtimulants. 3dly, That contra-ſtimulants, ſuch as blood-letting and purgatives, offer the means of cure for all maladies which reſult from exceſs of ſtimulation; and that, by the ſame analogy, the effects reſulting from the abuſe of contra-ſtimulants are combated with efficacy by ſtimulants, ſuch as wine, aromatics, &c. 4thly, That the animal fibre ſupports the agency of ſtimulants or contra-ſtimulants in a direct ratio, reſpectively, to the degree of intenſity of the diatheſis of excitement or of debility. 5thly, That we may diſcover the degree of the diatheſis rather by the aptitude to ſupport the agency of the one

or

or the other of thoſe claſſes of ſubſtances, than by the apparent ſymptoms of the malady.

This part of the new doctrine is not, however, ſo extenſively adopted in Italy as the former. Many reflective phyſicians ſtill maintain the opinions of Brown, and cannot be induced to believe that tartar emetic, digitalis, and the like, can directly depreſs vital action in the part to which they are applied.

Connected with this, and bearing ſome reſemblance to it, is the ſyſtem of Brouſſais himſelf, of which the following is an outline. 1. That the exaggeration of the vital actions in one tiſſue, which ſubſequently re-acts on others, conſtitutes the far greater proportion of diſeaſes. 2. That all the tiſſues are ſuſceptible of experiencing this modification, but certain ones are more expoſed to it than others. 3. That thoſe in which it is ordinarily developed, are the mucous tiſſues, becauſe they are the organs of relation, (that is to ſay, organs which receive impreſſions, and which beſides develop other actions by the influence they exert on the nervous centres,) and becauſe they are all ſanguineous and ſecretory organs. 4. That theſe tiſſues, being formed of capillaries and nervous ſubſtance, have the irritation they experience participated both by veſſels and nerves. 5. That *irritation* being eſtabliſhed in a tiſſue, calls the fluid to it; and that it is on this phenomenon that all the ſecretions, all the vital excretions, and, in a word, the actions of all the organs, depend. 6. That theſe irritations, with the ſolicitation of the fluids, being carried to a certain degree by the influence of certain cauſes, conſtitute ſtates of diſeaſe. 7. That, whilſt we do not diſtinguiſh in the economy, the four phenomena of inflammation (*tumor*, *dolor*, *rubor*, and *calor*), we ſhould not give this name to the irritations which may be manifeſted. 8. That, in certain ſubjects, they are hardly ever raiſed to the degree which merits the name of *inflammation*; but that they then conſtitute, in ſome caſes, the neuroſes of authors; in others, organic affections. 9. That, in ſome perſons, theſe irritations, confined for a long time to a certain degree, ſuddenly become exalted, and paſs to the ſtate of *phlegmaſia*; that is to ſay, we then obſerve exaggeration of the action of the red capillaries, an extraordinary afflux of blood, with augmentation of heat, pain, &c. 10. That, in others, this exaltation takes place ſuddenly. 11. That, when then theſe exaggerations of the actions of organs have for the reſult, not the ſolicitation of blood, with heat, &c. but the accumulation of colourleſs fluids, and the predominance of the veſſels which contain them, we then ſee the phenomena of irritation in a degree inferior to true phlegmaſia, and to which, for this reaſon, the name of *ſub-inflammation* may be given. 12. That neuroſis, inflammation, and ſub-inflammation, conſtitute the three varieties of irritation which furniſh the principal and moſt important diviſion in pathology: that is to ſay, *neuroſis*, when the irritation is confined to extraordinary action, without increaſe of heat or imminent danger of diſorganization; *inflammation*, when heat, with injection of blood, and imminent danger of diſorganization, exiſt; *ſub-inflammation*, when the irritation accumulates in the part only lymphatic fluids.

Theſe are the morbid phenomena of *irritation* in the part where it originates. But, in addition to theſe, it ſhould be conſidered, 1. That, as ſoon as the organic action is exaggerated in a part, it is tranſmitted to other organs by the nervous cords, (which ſhould be diſtinguiſhed from the nervous ſubſtance in the ſtate of expanſion, or in the pulpy ſtate, as it exiſts in the organs of ſenſe, and in the brain.) 2. That this tranſmiſſion of the exaggeration of local organic action is a ſympathy. 3. That it takes place, in the ſtate of diſeaſe, according to the ſame laws, and by the ſame means, as in the ſtate of health. 4. That the irritation, ſympathetically developed in an organ ſecondarily affected, is of the ſame nature as the primitive irritation.

This is the mode in which M. Brouſſais has himſelf ſtated the principles of his pathology of inflammatory diſeaſes; and he has ſhown that, when fully developed, they will involve the far greater part of the maladies to which human beings are liable: but to trace theſe extenſions of them does not come within the plan of this ſection. It is, however, neceſſary to advance ſo much reſpecting this doctrine, ſince it is becoming daily more extenſively adopted in France, and has already obtained the conſent and ſupport of a great proportion of the more reflective part of the phyſicians of that nation.

An union of the reaſoning and imaginative faculties has ſeldom been poſſeſſed by an individual with any advantage to the intereſts of philoſophy. Of the truth of this propoſition we have a melancholy example in the writings of *Darwin*. The figurative expreſſions and brilliant diction which ſo much adorned his poems, being applied to a ſtricter ſcience, have equally obſcured and tarniſhed his compoſitions.

We obſerve in the medical ſpeculations of this author a near approach to ſome of the Brunonian tenets. Educated, however, in a ſuperior manner, endued with better taſte, and more minute in his obſervance of nature, Darwin ſaw that Brown's *two* general principles were inadequate to explain many forms of diſeaſe; and he therefore added a third. Two general laws of the animal economy are ſtated by Darwin, as well as by Brown: 1. That all excitement or action of the living organs and functions occaſions a diminution or exhauſtion of their power, (*excitability* in the language of the latter, *ſenſorial power* in that of the former,) according to the degree of excitement. 2. That reſt, inactivity, or the abſtraction of the uſual ſtimuli, render thoſe organs more ſuſceptible of the action of the ſtimuli ſubſequently applied. Thus, when a ſmall part of the capillary veſſels of the ſkin are expoſed for a ſhort time to a cold medium, as, when the hands are immerſed in iced water for a minute, theſe capillaries become torpid or quieſcent, owing to the abſtraction of the ſtimulus of heat. The ſkin then becomes pale, becauſe no blood paſſes through the external capillaries, and appears ſhrunk, becauſe their ſides are collapſed from inactivity, not contracted by ſpaſm; the roots of the hair are left prominent from the receding or ſubſiding of the ſkin around them; and the pain of coldneſs is produced. But in this ſituation, if the uſual degree of warmth be applied, theſe veſſels regain their activity; and, having now become more irritable from an accumulation of the ſenſorial power during their quieſcence, a greater action of them follows, with an increaſed glow of the ſkin, and another kind of pain, which is called the hot-ache, enſues.

Thus far the two theories nearly accord; but beyond this point the Brunonian doctrine leaves us to a general ſtatement of debility, altogether inadequate to account for the various forms and phenomena of fever. But Dr. Darwin appeals to other eſtabliſhed facts in the animal economy, upon which theſe varieties appear to depend. From theſe he deduces a *third* general law; namely, That the functions of different parts of the ſyſtem are ſo far catenated, or aſſociated with each other, as it were in circles, either from direct connexion in ſtructure, from the habit of acting together, or, more frequently, from cauſes at preſent inſcrutable, that an increaſe or decreaſe of the action of one organ is followed or accompanied by an increaſe or decreaſe of the action of another; ſometimes by a ſimilar change, that is, increaſe followed by increaſe of activity, or decreaſe by decreaſe; but occaſionally by the contrary change, that is, increaſe followed by decreaſe of activity, and *vice verſâ* in the aſſociated parts. The former of theſe is termed a *direct ſympathy*; the latter a *reverſe ſympathy*.

The inſtances of ſympathy between different parts of the animal frame are very numerous; as, between the ſtomach and brain, the ſtomach and ſkin, the ſtomach and heart, the brain and heart, the ſkin and lungs, the uterus and mammæ, &c. And this, which occaſioned him

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to call his ſyſtem "the ſympathetic theory," is the moſt important part of that theory; for the catenation, or aſſociation, which takes place between various functions when diſordered, had, before his time, been very ſlightly touched on. A partial view of one circumſtance of ſympathy had made Cullen attribute too much to the ſtate of the *ſkin* in fever; and inſulated facts of the ſame nature had impreſſed almoſt every pathological ſyſtem with error. Darwin embraced then the whole range of theſe aſſociated actions, and formed the deſign of founding a ſyſtem of pathology and therapeutics on the contemplation of all the laws of animated nature. And hence this may be conſidered as the firſt ſyſtem conſtructed in exact conformity with phyſiology. Of this latter ſubject, Darwin, however, knew little; and hence the failure of the ſuperſtructure which he raiſed on it. Yet the conception was grand, and has been acted upon by all pathologiſts ſince his time.

The three laws or principles of action in the animal economy, which we have mentioned before, viz. 1. The exhauſtion or diminution of the ſenſorial powers by exertion; 2. The recovery or accumulation of the ſame powers, during quieſcence, or impaired action; and 3. The direct and reverſe aſſociation of parts, by which the actions of one part give riſe to actions in others; are the grounds of Dr. Darwin's explanation of the phenomena of fevers. He ſuppoſes that the cold ſtage accrues in conſequence of the torpor of the capillary veſſels, from the abſtraction of the ſtimulus of heat, or other cauſes; the hot ſtage, in conſequence of the renovated activity of the capillaries, from the accumulation of ſenſorial power during that torpor. Dr. Darwin, however, remarks, that this renovated activity of the capillaries is not owing to the renewed action of the heart, which forces them open by the mechanical impulſe of blood; that the action of the capillaries often re-commences ſooner than the action of the heart, theſe veſſels having a greater mobility than the heart and large arteries, as appears in the ſudden bluſh of ſhame; and that, in low fevers, the capillaries acquire increaſed ſtrength, as is evinced by the fluſh and heat of the ſkin, while the pulſations of the heart and arteries remain feeble. Hence ſimple fever is of two kinds; in one the pulſe is ſtrong, in the other weak: in the fever with ſtrong pulſe, not only the cutaneous capillaries, but alſo the heart and arteries, readily acquire a greater activity by the accumulation of ſenſorial power during the torpid ſtate, which laſt is farther increaſed by direct ſympathy with the increaſed activity of the capillaries; this happens in ſtrong conſtitutions, and is often ſeen in vernal intermittents: in the fever with weak pulſe, on the contrary, the heart and arteries do not acquire much increaſe of ſenſorial power, but continue in ſome degree in their ſtate of torpor, while the orgaſm of the capillaries is produced; whence there is a hot fit, with feeble pulſe.

But, when the ſympathies of other parts of the ſyſtem are called into action, together with this torpor and orgaſm of the cutaneous veſſels, and of the heart and large arteries, the fever-fit becomes more complicated and dangerous. And again, when the torpor commences, from the operation of other exciting cauſes of fever in other organs of the body, and extends, with the ſubſequent orgaſm, by direct or reverſe ſympathy, to the organs aſſociated with them, other various forms and modifications of febrile diſeaſe are produced. Thus, if the ſtomach is affected with torpor, either primarily, as from the action of contagion ſwallowed with the ſaliva, or ſecondarily, by its ſympathy with the cutaneous capillaries, or with ſome internal viſcus; a total loſs of appetite occurs, followed by ſickneſs and vomiting. If the brain is affected, either primarily, as by the depreſſive paſſions, by exhauſtion from watching, &c. or ſecondarily, as by the influence of contagious or marſh effluvia received into the ſtomach or the lungs, then proſtration of the general powers, head-ache, delirium, ſtupor, tremors, convulſions, &c. are induced. In the ſame way, the ſecretions from the internal organs, as from the kidneys, are diminiſhed when a torpor takes place in them, either primarily, or by ſympathy with the cutaneous capillaries, or other parts, and are reſtored with the renovated action. Theſe phenomena take place in different degrees in almoſt all fevers, and vary according to the nature of the organs primarily affected, and to the ſtate of the conſtitution, or of the organs individually. Thus, when the ſtomach is ſlightly diſordered, as by indigeſtible food, or when the vaſcular ſyſtem is deranged from expoſure to cold, (when no inflammation is produced,) the fever which enſues is mild, the brain ſuffers little by ſympathy, no delirium, &c. occur, and health is ſoon reſtored. If, on the contrary, a virulent contagion acts upon the ſtomach, and through its medium upon the brain, the ſenſorial powers are greatly exhauſted, and the complication of dangerous ſymptoms, ariſing from the morbid condition of the nervous ſyſtem, and from the total loſs of powers in the organs of digeſtion, occurs, conſtituting the contagious, nervous, and malignant, fever, or *typhus*, under its various forms and denominations.

Dr. Darwin explains the peripneumony as "generally induced by the patient reſpiring very cold air, and this eſpecially after being long confined to warm air, or after being much fatigued or heated by exceſſive labour or exerciſe. For we can cover the ſkin with more clothes, when we feel cold; but, the lungs not having the perception of cold, we do not think of covering them, nor have we the power of covering them, if we deſired it; and the torpor thus produced is greater, or of longer duration, in proportion to the previous expenditure of ſenſorial power by heat or exerciſe. This torpor of the lungs affects the ſkin with ſhuddering, and the ſtomach is alſo ſecondarily affected; next follows the violent action of the lungs from the accumulation of the power of irritation, and an inflammation of them follows this violent action, &c."

This author claſſed diſeaſes according to their ſuppoſed origin in diſturbed ſtates of the vital powers; but the arrangement is quite fanciful, to ſay the leaſt of it; and the frequent repetitions of ſpecies which occur under different heads, ſhow its imperfection. Thus, he divided diſeaſes into four kinds; thoſe of irritation, ſenſation, volition, and aſſociation; and, forming his therapeutical doctrines according to the ſame views, he arranged the materia medica into ſeven claſſes. 1. *Nutrientia*, or thoſe things which preſerve in their natural ſtate the due exertions of all the irritative motions. 2. *Incitantia*, or thoſe things which increaſe the exertions of all the irritative motions. 3. *Secernentia*, or thoſe things which increaſe the irritative motions which conſtitute ſecretion. 4. *Sorbentia*, or thoſe things which increaſe the irritative motions which conſtitute abſorption. 5. *Invertentia*, or thoſe things which invert the natural order of the ſucceſſive irritative motions. 6. *Revertentia*, or thoſe things which reſtore the natural order of the inverted irritative motions. 7. *Turpentia*, thoſe things which diminiſh the exertions of all the irritative motions.

This theory was never very generally received in England; but, ſtripped of the hypothetical phraſeology and much modified, it appears to have been taken up and illuſtrated with much ſucceſs by the celebrated Hufeland in Germany.

We are now arrived at a period when phyſicians, no longer dazzled by brilliant hypotheſes, required in pathology and phyſiology the cloſe analogical reaſoning which had been found ſo uſeful in every other department of ſcience. Hence ſyſtems of medicine, incapable of embracing all known forms of diſeaſe, have ceaſed to exiſt. Impreſſed with the conviction that our ſtock of known facts required much addition ere it could be generalized, the pathologiſts of our time have individually attached themſelves to the acquiſition of further expe-

rience in particular diſeaſes; and, when theory has been promulgated, it has generally had its foundation in new diſcoveries in phyſiology. Hence too it is no longer poſſible to enliſt ourſelves under the banners of any one pathologiſt, and, by quietly aſſuming the infallibility of his doctrines, ſave the trouble of thinking for ourſelves. It muſt not therefore be ſuppoſed, that, becauſe this æra may not tranſmit to poſterity the name of an author whoſe works might contain all that we know on medical ſubjects, we have done leſs for the ſcience we profeſs than our continental neighbours. True it is, that the ſpeculations of Brouſſais and Tommaſini have ſomething better to recommend them than the ſyſtems of Cullen, Brown, or Darwin; yet ſtill many imperfections exiſt in them, imperfections neceſſarily connected with the unfiniſhed ſtate of the ground-work on which pathology is built. Nevertheleſs, in real improvement, the firſt twenty years of this, the 19th, century, affords the moſt delightful proſpect. The errors of Brown, here firſt promulgated, were here firſt refuted. Currie introduced the judicious uſe of cold bathing in the moſt numerous and formidable complaints to which human nature is liable, viz. fevers. Abernethy and Hamilton have ſhown the efficacy of purgatives in moſt diſeaſes, and the innocence of their properly-regulated exhibition in all. The bold and decided treatment practiſed by Jackſon, as well as his ſound theoretical views, deſerve the higheſt encomium; and we have to regret that the peculiar ſtyle and expreſſion of that author has ſo long oppoſed the general reception of opinions which are equally conſonant with reaſon and the long experience of thirty years. To Armſtrong, Clutterbuck, and a hoſt of others, the inſertion of whoſe names would tend to render our hiſtory a mere catalogue, we owe the preſervation of many of our fellow-creatures. Nor have our inveſtigations on theſe topics been confined to our own iſland. The accounts we receive from our Indian poſſeſſions ſerve to inſtruct us in the treatment of acute diſeaſes, by ſhowing them in the intenſe marked forms which they exhibit in tropical climates.

Phyſiology likewiſe has been by no means neglected in this age. That ſcience, which no longer can be called uncertain, has received auxiliaries from the improvements daily occurring in the collateral branches of knowledge. Its more general principles have been illuſtrated by diſcuſſions which the ſpeculative notions of Hunter and Abernethy on the one hand, and Lawrence and the French phyſiologiſts on the other, have given riſe to. The motive powers of the vaſcular ſyſtem have been illuſtrated by Parry, Carſon, Bell, Philips, and Brodie. To the two laſt of whom we are moreover indebted for ſome uſeful information concerning the phenomena of ſecretion and the dependence of that function on nervous influence. The contradictory opinions, however, which we meet with on theſe ſubjects, compel us to acknowledge that this ſcience bears little proportion in its advancement to that of the practice of medicine.

In the early part of the preſent year, Mr. James, a ſurgeon of Exeter, publiſhed "Obſervations on ſome of the General Principles, and on the Treatment, of the different ſpecies of Inflammation." This work is an amplification of the Diſſertation which gained the Jackſonian prize on Inflammation, when the illuſtration of this ſubject was recently propoſed by the Court of Aſſiſtants of the Royal College of Surgeons. This production compriſes many intereſting obſervations; but the author is too much the diſciple of John Hunter, and he exhibits more of the manner of reaſoning of that phyſiologiſt, than a cloſe inveſtigation into the mode of production of the phenomena he deſcribes: like him, he reſts contented with a ſubſtitution of terms, inſtead of endeavouring to explain the operations of which they are only the expreſſion: in a word, his ideas want preciſion, and his pathology depth. Mr. James adduces a new claſſification of inflammation. His arrangement is founded on the diſpoſition which inflammatory action aſſumes to ſpread or diffuſe itſelf, or to be limited by the adheſive proceſs or other means. In this point, too, we recognize John Hunter. As, however, this fortuitous quality of inflammation but ſeldom conſtitutes a generic difference in the form which the diſeaſe aſſumes, but depends on ſeveral varying conditions of temperament and other things in the patient, and on accidental conditions of the atmoſphere, and other external circumſtances, it appears to be objectionable, and not likely to be adopted by the generality of pathologiſts. The author's conſiderations in other reſpects, eſpecially thoſe relating to ſemiology and therapeutics, are judicious, and developed with ſufficient order and perſpicuity.

In anatomy, as far as the relative ſituation of parts is concerned, our diligent anceſtors have left us little to do. So that, if we except a few diſcoveries concerning the more minute ſtructure of membranes, the muſcularity of veſſels, &c. we have nothing new to tranſmit to our ſucceſſors on this ſubject. Far different is the reſult of our reſearches on morbid anatomy. The labours of Dr. Baillie, accompanied with deſcriptions and plates of great accuracy, are too well known to require our comment; as likewiſe the excellent works of Farre, Bell, &c. in the ſame department. And theſe examples have been followed very generally by our moſt eminent practical phyſicians.

Of courſe this brief ſketch cannot be ſuppoſed to embrace all the names or diſcoveries which dignify our country in this enlightened æra. We ſhall have occaſion to ſpeak largely of them in the body of this article, when we come to notice particularly the treatment of each diſeaſe; and therefore may be excuſed entering in the detail of them here. In the mean time, it may not prove unintereſting to trace a faint outline of the labours of our foreign brethren at this moment. By ſo doing, we enlarge the fund of our experience, and thus correct the error into which more limited obſervation might betray us.

France.—If reiterated experiment and unceaſing obſervation be the means which moſt forward medical ſcience, the French nation have claim to high honour. In no other country is the ſcience of life illuſtrated by ſo many experiments, elucidated by the application of ſo many different ſciences, or examined ſo cloſely in all its varied and extenſive phenomena: yet we obſerve theories continually ariſing, opinions aſſerted one day to be refuted the next. But ſome recent labours of the French phyſiologiſts, have eſtabliſhed facts which ſtand on the firmeſt baſis: ſuch are many of the doctrines of Bichat, of Majendie, and of Brouſſais.

Of Bichat enough has been ſaid, in every country where his works have been read, to ſtamp him as a philoſopher of the greateſt merit; and all who are intereſted in the improvement of ſcience, muſt deeply regret the loſs of one whoſe comprehenſive and enlarged mind, whoſe minute anatomical ſtudies, and whoſe brilliant pathological diſcoveries, alike fitted him for re-forming and re-caſting the fabric of medical ſcience. This vaſt deſign had been formed by Bichat; and, when a few lectures had developed his opinions, he was ſuddenly carried off. In teaching mankind to ſtudy the minute ſtructure and fabric of the body, rather than to be perpetually occupied with the deſcription of its relative ſituations and parts, he ſeems, like our countryman, John Hunter, to have followed that courſe which Lord Bacon had ſo clearly pointed out to anatomiſts, and in which much ſtill remains to be done: he ſays, that "they (anatomiſts) inquire of the parts and their ſubſtances, figure, and collocations; but they inquire not of the diverſity of the parts, the ſecreſies of the paſſages, and the ſeats or neſtlings of the humours, nor much of the footſteps or impreſſions of diſeaſes; the reaſon of which omiſſion I

ſuppoſe to be, becauſe the firſt may be ſatisfied in the view of one or a few anatomies, and the latter, being comparative and caſual, muſt ariſe from the view of many."

The name of Majendie, already well known by his Elements of Phyſiology, is preſented to us, in every periodical work we receive from France, as occupied in ſome intereſting or uſeful experiment. Paſſing over his experiments in regard to the nervous ſyſtem, to the abſorptive power of veins, &c. we may remark, that he has lately been endeavouring to diſcover ſome more effectual mode of controlling the action of rabies than has hitherto been known. And, though it would be premature to offer any opinion on the probable reſult of his experiments, we may remark, that he has done the public great ſervice by ſhowing the complete inefficacy of drugs hitherto reputed ſpecifics in the cure of this dreadful diſeaſe.

Of Brouſſais's phyſiological ſyſtem of pathology we have given a ſhort account at p. 43. Nothing is wanting to the full ſucceſs and acceptance of that ſyſtem, but that every body ſhould think as well of it as the doctor himſelf does. On its firſt appearance, Dr. Hutchinſon, the editor of the London Medical Journal, gave a favourable account of it; not quite ſufficiently ſo, however, as entirely to ſatisfy the inventor. Dr. Granville, the preſent editor of that work, ſpeaks rather contemptuouſly of it; Raſori (the contra-ſtimulant ſedative Raſori) oppoſes it on the continent; and upon the whole it ſeems to be going down. Two commentaries on the doctrines of Brouſſais, of very different characters, have been recently produced at Paris. One of them, by Monſ. Begin, is intended to advocate his principles, and to diſplay them in a more perſpicuous and orderly manner than has been done by Brouſſais himſelf; while the other, publiſhed anonymouſly in the Revue Médicale, a new monthly journal of great merit, is a jeu d'eſprit, full of that fine ſatire and delicate ridicule which the French ſo well know how to employ, which, while it diſplays the character and conduct of Brouſſais and the merit of his writings with great force and ſufficient eulogy, deſcribes his vanities, his ingenious obſcurities, the *nonchalance* with which he cuts the gordian knots he happens to encounter, and apologizes for the art with which he has appropriated to himſelf the opinions of others, in a manner truly Rabelaic. From this publication we ſhall make an extract, in reading which the reader will bear in mind, that Dr. B. contends that all complaints ariſe from the ſtomach, and that lemonade and leeches are to cure every complaint.

"A diſtinguiſhed man of letters, who is publiſhing a new edition of Moliere, aware of the ridiculous appearance of ſome modern phyſicians, has determined to make ſome variations in the celebrated ſcene of the comedy of that author, entitled *Le Malade Imaginaire*. The following is a ſpecimen:

Toinette, (dreſſed as a phyſician.) Let me feel your pulſe. Come, come, beat as you ought. Ah! I'll ſoon make you go right. Faith! this pulſe is mightily impertinent. I ſee plainly it does not know whom it has to deal with. Who is your attending phyſician, ſir?

Argan. Monſieur Purgon.

Toin. That name is not to be found in my pocket-book, amongſt the phyſicians of eminence. What did he ſay was the matter with you?

Arg. He ſays my liver is affected: others contend that it is the ſpleen.

Toin. Pooh! pooh! They are a pack of *ignoramus*. It is your ſtomach, ſir, that is affected.

Arg. The ſtomach?

Toin. Yes! the ſtomach. What do you feel?

Arg. I have occaſionally the head-ache.

Toin. Exactly ſo. The ſtomach.

Arg. I ſometimes ſee double;—I have a veil over my eyes.

Toin. The ſtomach!

Arg. And a great difficulty in breathing.

Toin. The ſtomach again!

Arg. I ſuffer from great languor and laſſitude in all my limbs.

Toin. The ſtomach!

Arg. And I now and then feel pain in my feet, in my heels, and toes, as if I had the gout.

Toin. Exactly ſo. It is the ſtomach! You eat with good appetite?

Arg. Yes, ſir.

Toin. The ſtomach! You like to drink a ſmall quantity of wine.

Arg. Yes, ſir.

Toin. The ſtomach! You feel rather drowſy after dinner, and delight in taking a nap?

Arg. Oh yes, ſir.

Toin. The ſtomach, the ſtomach, I tell you! What has your phyſician deſired you to eat?

Arg. He deſired me to take ſome ſoup.

Toin. Ontologiſt! [An appellation of contempt adopted by Dr. Brouſſais to deſignate all thoſe phyſicians who ſeem to have identified or perſonified the different cauſes producing diſeaſes, ſuch as the gouty principle, the ſcrofulous humour, &c.]

Arg. And chicken.

Toin. Fataliſt!

Arg. And occaſionally veal.

Toin. Incendiary!

Arg. Broth.

Toin. Murderer!

Arg. Some freſh eggs.

Toin. What an aſſaſſin!

Arg. And ſtewed prunes in an evening.

Toin. Incendiary! the murderous diet of the ontologiſtic ſchool.

Arg. And, above all, he deſired me to put water to my wine.

Toin. Ignorantus, ignoranta, ignoratum! This is not the way of a *medecin phyſiologiſte*. You muſt drink pure water, which is indeed too nouriſhing as it is: it will calm the gaſtro-inteſtinal irritation under which you labour; and thin your blood, which is now too denſe. You'll apply five hundred leeches to the pit of the ſtomach, which will remove the *gaſtro-enteritis* in the twinkling of an eye. Don't you ſee that "irritation is preying heavily on the mucous membrane of your ſtomach, from whence it extends its malignant power over all the organs of your economy, through ſympathetic irradiations?" Be aſſured that your phyſician is an *ontologiſt*, who will believe only what he ſees. I will come again to ſee you in a fortnight, if you are alive; and, above all, reſt aſſured that, if I have abuſed my brethren of the profeſſion, it was not through envy, but for the good of mankind. How ſuperior to them all the *doctrine phyſiologique* makes me! "a doctrine which is deſtined to do more good even than the immortal diſcovery of Jenner." [The two paragraphs in this ſpeech marked with inverted commas, are not a parody, but the real words of Brouſſais.]

The brain has of late been to the French pathologiſts what the abdominal viſcera have long been to the Engliſh, the great object of intereſt and the ſubject of their eſpecial conſideration. Several works of much value have been the reſults of their labours. That which preſents moſt evidence of a talent for original obſervation and profound and comprehenſive reaſoning, is one by Dr. F. Lallemand, of Montpellier. The greateſt merit in the work of Dr. Lallemand conſiſts in the admirable preciſion and perſpicuity with which the hiſtories of diſeaſe are given, and, for the moſt part, the very judicious reflections with which they are accompanied; the eſpecial object of which is to trace the relations between the appearances obſerved after death, and the ſymptoms of the diſeaſe that were manifeſted during life. Dr. Lallemand differs from Dr. Roſtan reſpecting the nature and origin of what the latter has deſcribed under the name of *ramolliſſement du cerveau*, and thinks that it is really a conſequence

conſequence of inflammation of a more or leſs chronic kind. He relates ſome caſes which ſeem to ſhow that it has, at leaſt ſometimes, ſuch an origin. He advances a curious propoſition reſpecting *delirium*, that has much apparent probability. He ſays, delirium is never obſerved in caſes of inflammation of the brain alone; this ſymptom appertains eſpecially to inflammation of the arachnoid membrane. It is not becauſe the arachnoid is the ſeat of the immediate cauſes of delirium; but becauſe this membrane, when inflamed, irritates the ſurface of the brain which is in contact with it; and, as the tiſſue of this organ is then not altered, its functions are merely "exalted:" theſe functions, on the contrary, *ceaſe* (to an extent correſponding with the extent of the inflammation,) when inflammation has its ſeat in the proper ſubſtance of the brain.

A work of very conſiderable value on inflammation of the arachnoid membrane of the brain and ſpinal marrow, has been publiſhed by two young phyſicians of Paris, Drs. Martinet and Parent-Duchatelet, which is the reſult of ſeveral years' obſervation at the Hotel-Dieu and the Hoſpice des Enfans Malades, under the direction, and indeed aſſiſtance, of Drs. Recamier and Jadelot, phyſicians, reſpectively, to thoſe inſtitutions. This work preſents ſuch a number of caſes (not ſelected, and therefore the more valuable, as preſenting a view of what is of ordinary occurrence,) as will admit of general inferences, of more or leſs validity, reſpecting every point of moſt intereſt in the hiſtory of the diſeaſe.

The characters of arachnitis appear to vary as the diſeaſe occurs in parts of the membrane correſponding to different parts of the brain. Thus, the ſymptoms of arachnitis at the baſe of the brain, preſent, in general, characters by which the diſeaſe may be recognized, and diſtinguiſhed from arachnitis in the convexities. There are, however, ſome varieties in thoſe ſymptoms, connected with diverſities in the age of the patient. In children, for example, who are diſpoſed to be affected with this form of the diſeaſe almoſt excluſively, the exceſſive irritability of their nervous ſyſtem occaſions ſpaſms in different parts, which give a particular character to the malady. Theſe affections ſometimes appear in a ſudden manner, without any previous indications; at other times, the progreſs to them is more gradual; the ſtate of the intellectual faculties preſents leſs varieties than that of other organs. The degree of energy which the brain poſſeſſes in adults, and even in adoleſcents, enables patients of this claſs to reſiſt much longer the diſpoſition to ſtupor; ſo that this ſymptom is much leſs early and completely manifeſted in them than in children. In both, the leſion of the intellectual faculties reſults eſſentially from the want of action of the brain, from the inertia of this organ, and not from the derangement of its functions, or delirium, which is the predominating characteriſtic of arachnitis of the convexities. When inflammation is ſeated in the portion of the arachnoid which lines the ventricles, the ſymptoms are the ſame as thoſe which reſult from it at the baſe of the brain; and in the greater number of caſes it is preſent alſo in the latter region. Thirteen caſes of inflammation of the arachnoid membrane of the ſpinal marrow are related, from which it appears, that the chief characteriſtic ſymptoms of this affection, are ſtiffneſs of the neck and trunk, pain along the vertebral column, in addition to the common ſymptoms of irritation of the nervous ſyſtem, with the abſence of ſigns of cerebral diſorder when the inflammation is confined to the arachnoid of the ſpine, and their coincidence when the ſerous membrane of the brain partakes of the inflammation.

Two intereſting caſes of inflammation, and conſequent diſorganization, of the ſpinal marrow itſelf, have been lately publiſhed by Dr. Pinel the younger, which were characterized by continual convulſive motions of the whole of the trunk of the body, followed by an almoſt complete annihilation of the functions of the nerves of voluntary motion, and accompanied by a febrile ſtate of the ſyſtem, having a paroxyſm of exacerbation every evening.

The ſurgery of France, as far as operations are concerned, ſcarcely appears on an equal footing with the ſurgery of this country; and, if we were diſpoſed to criticiſe our Gallic neighbours, we might further remark, that a great want of attention and reſpect is manifeſted by them for the labours of others. Thus Brouſſais, juſt mentioned above, has been lately labouring to ſhow that we know next to nothing; and very unfairly ſupports his aſſertions by quoting the practice or the reveries of ſome of the obſcureſt contributors to our periodical publications. And Boyer, a character of great repute in France, and author of one of their ſtandard ſurgical works, has the blindneſs to reject Mr. Hunter's excellent mode of operating for popliteal aneuriſm, and even denies his claim to the diſcovery of it. By the way, we may juſt extract from a caſe lately publiſhed by De Roux, an account of the method in which the operation for aneuriſm is performed in France: "I performed the operation," he ſays, "in the place where it is now practiſed in England. The artery was completely inſulated from all adjacent parts, even from the crural vein, for the ſpace of an inch. I placed four ligatures at about two lines diſtant from each other. Thus there were two ligatures to intercept the blood, the firſt and laſt being only left as *ligatures d'attente*. I then followed the recommendation of Scarpa, in applying upon the artery a ſmall cylindrical body, an inch long and two lines in diameter, upon which I put a piece of linen, which had been dipped in melted plaſter; on this I tied the two middle ligatures. I took care not to let the wound unite, and kept the lips ſeparated by ſoft lint." An Engliſh ſurgeon will have little difficulty in ſeeing the ſtriking contraſt exhibited between this operation and the manner it is performed in the hoſpitals of London. Let us not however confound all in this cenſure: there are many who duly appreciate our toils and our merits; and there are many who deſerve from us the ſame regard. We might mention ſcores of names in proof of this; but Larrey, Richerand, and Dupuytren, are ſufficiently known to our medical readers.

In parturition, we have two curious recent caſes to record.—A male child was born in May laſt, at the Hoſpital of la Maternité, at Paris, with the whole ſurface of the body deeply wrinkled, like that of a very old man. Its hands and feet are double the ordinary length, and are equally wrinkled. It has ſtrong grey hair, and a beard of the ſame colour. In every other reſpect it enjoys perfect health, and is nurſed in the hoſpital.—The following is not leſs intereſting; though we have already remarked, (ſee the article PARTURITION, in the preceding volume,) that the French are in general more ſucceſsful in theſe deſperate caſes than ourſelves. At a meeting of the Royal Academy of Medicine at Paris, on the 7th of July laſt, (1821.) M. Beclard, one of the moſt diſtinguiſhed ſurgeons of that capital, reported that he had, the day before, performed the cæſarian operation, by an inciſion made in the direction of the linea alba; and that both mother and child were doing well. The report continues favourable down to the 10th, on which day the account was tranſmitted.

The French pay more attention to pharmacy than perhaps any other nation, and conſequently their attainments in that branch of the healing art are very great. Simplicity has aſſumed the place of that multiplicity of formulæ which had overrun all the old pharmacopœias; and the analyſis of vegetables which at preſent engages ſo much the attention of the French chemiſts, promiſes to afford very important information in regard to the modus operandi of medicinal ſubſtances; a ſubject of which very little is at preſent known.

Theſe remarks have occurred to us in peruſing the laſt Paris Pharmacopœia, or Codex, publiſhed in 1818, in a

handſome 4to of 600 pages. But we muſt obſerve, that the French preſcriptions continue to have more ingredients in them than our own; for we find one of the compound tinctures containing 18 ingredients, another 16, and ſo on. They are however, as we ſaid, improving; for their Alcoholatum vulnerarium, which, in the former edition of the Codex, conſiſted of 42 ingredients, is now reduced to 13. We cannot, however, avoid noticing the Electuarium opiatum polupharmacum, theriaca dictum; and never was an epithet ſo juſtly applied as the term *polupharmacum* to a farrago containing upwards of 70 articles. This ne plus ultra of complexity is uſhered in by the moſt ſolemn aſſurances that the compilers have not dared to encroach on, or alter in the ſlighteſt degree, the directions given in the preceding Codex (60 years ſince), for the preparation of this "percelebris compoſitio;" and that, although ſeveral of the compound medicines, which formerly entered its compoſition, have lately been excluded from the pages of the Codex, yet they have taken eſpecial care to introduce every one of the conſtituents of thoſe compounds in the exact proportion in which they entered the preceding formula; for inſtance, though the trochiſi viperini are no longer in uſe, yet the caro viperina is carefully preſerved as an ingredient of the theriaca. In order to give our readers ſome idea of the complexity of this formula, ſuffice it to obſerve, that the authors have judged it neceſſary to divide it into thirteen diſtinct heads, for the purpoſe of giving us ſome inſight into the nature and action of this monſter in pharmacy. Theſe are, 1. Acria. 2. Amara. 3. Styptica. 4. Aromatica exotica. 5. Aromatica ex indigenis. 6. Aromatica ex umbelliferis. 7. Reſinæ et Balſami. 8. Graveolentia. 9. Viroſa. 10. Gummoſa. 11. Terra inert. 12. Dulcia. 13. Vinum. The amazing complexity of this medicine, the very circumſtance on which its celebrity is grounded, is a ſufficient cauſe of condemnation. How is it poſſible to ſuppoſe, that the ſimultaneous exhibition of agents ſo oppoſite, is a deſirable object? It will, no doubt, be always a moſt valuable acquiſition to the quack, who, not knowing what intention he ſhould endeavour to fulfil, may reckon with tolerable certainty, that ſome of the articles of this panacea are adapted to the wants of his patient. We cannot too ſtrongly reprobate the retention of this compound, which has obviouſly ariſen from timidity in the authors, who feared to reject a remedy of which ſo high an opinion is entertained. But by whom? They themſelves anſwer the queſtion, and confeſs they have acted according to the wiſhes of thoſe who are totally unqualified to form an opinion. One of the reaſons given for its introduction into the new Codex is, "quia a vulgo ſæpius requiritur." A parity of reaſoning would lead them to introduce into their Pharmacopœia all the quack-medicines of the compoſition of which they could attain a knowledge; and, indeed, this intention they have diſplayed on one or two other occaſions. It appears to us, that in aſſigning the above cauſe for the retention of certain remedies, they have miſtaken their duty, which is no leſs to decide what medicines ought to be retained or rejected, than to give accurate inſtructions for the compounding and preparing of ſuch as are judged proper to compoſe a part of their materia medica. After all the ingredients of the theriaca have been mixed together, ſecundum artem, they are ſet aſide for one year, in order to undergo a ſlow fermentation, as it is directed in the Codex. That they do *not* undergo this proceſs, ſeems probable from the circumſtance that analyſis diſcovers no difference between parcels of theriaca differing much in age, the recent preparation perfectly reſembling that which has been of ſeveral years ſtanding. Diaſcordium is another electuary, tranſlated from the old edition to the new Codex, in all its priſtine complexity, with the ſame ſcrupulous regard to its compoſition as that we have juſt been conſidering. It is only to be wondered how the Theriaca cœleſtis, and the Benedicta laxativa, each of them conſiſting of at leaſt twenty articles, could have ſo far degenerated as to have forfeited a place in this new edition.

A new preparation of opium has been very recently propoſed by Mr. Robiquet of Paris. It has been aſcertained, that the moſt active properties of opium reſide in two ſubſtances, which may be obtained in diſtinct forms, and which produce very different effects; *narcotine* and *morphine*, as they have been named. The former is a very powerful irritant to the nervous ſyſtem, as appears from the experiments of Dr. Majendie; and it ſeems to be this ſubſtance which produces the effects which we ſo much wiſh to avoid in the adminiſtration of this medicine, and which are obviated, to a certain extent, by giving it in the form of the *black drop*, or other analogous acid preparations. *Morphine*, according to the evidence of the ſame experiments, and others made on human beings, produces ſedative effects without ſymptoms of the ſlighteſt irritation. To ſeparate the narcotine, then, from the other parts of opium, is a very deſirable object of pharmacy; and Mr. Robiquet ſays it may be eaſily effected in the following way: "I macerate," ſays Mr. Robiquet, "common opium, divided into ſmall pieces, in cold water, as if it were for the aqueous extract of opium; I filter the ſolution, evaporate it to the conſiſtence of a thick ſyrup, and treat it, in convenient veſſels, with rectified ether; the whole is then ſhaken a great many times, before the ethereous tincture is poured off; this, being ſeparated, is then ſubmitted to diſtillation, that the ether may be drawn from it. This proceſs is repeated as often as cryſtals of *narcotine* are obtained as a reſidue of the diſtillation. When the ether is without action, I evaporate the ſolution of opium to a conſiſtence proper for pills; and I obtain, by this means, an extract wholly free from narcotine."

In the *Revue médicale*, before quoted, there is an article continued from time to time, called "Medical Letters." Theſe contain the medical chit-chat of Paris. From the 2d N° of that work, we ſhall make a few extracts applicable to our preſent purpoſe. Theſe letters contain much truth, but not without a mixture of what the French call *malice*, a term, however, not of ſo harſh a meaning as the ſame word in our language; and will certainly give an idea of the ſtate of medicine, and the opinions upon it, at this time.

"Paris has long given the ton to Europe; and ſo completely dictates to the provinces, that whatever comes from the capital excites the greateſt curioſity; a feeling the more predominant in medical men, from its having been as yet, with regard to them, leſs gratified. The daily papers detail only events of general intereſt; and the ſcientific journals exclude all anecdote. To fill ſuch a gap will be a difficult enterpriſe, and the execution of it will offend many; but the conſideration that ſcience and the public will gain by it, is a ſufficient incitement to the attempt.

"Petitions have been preſented to both chambers, to proteſt againſt the ſuppreſſion of the *concours* (examination and competition) in the election of profeſſors; and one of the petitioners has proved to demonſtration, that the only object in this ſuppreſſion is to ſerve the intereſts of M. Royer-Collard. If this gentleman had taken the trouble to ſtudy chemiſtry, anatomy, and medicine, by way of qualifying himſelf to deliver a courſe of medical juriſprudence, there is no doubt but he would have ſaved government from all the blame which this election has thrown upon it. John Hunter, arriving at the age of twenty-two years from the mountains of Scotland, where he exerciſed the trade of a carpenter, became nevertheleſs one of the firſt anatomiſts of England. M. Royer Collard, arriving at Paris at the age of forty from Chambéry, where he performed the duties of a commiſſary, might have found ſome better method of teaching medical juriſprudence than by reading lectures copied from a printed book which is known to the whole world.

The

The ſource from which the profeſſor drew theſe waters of ſcience was ſoon diſcovered; each ſtudent, being able to taſte them at the fountain-head for the moderate ſum of thirty francs, the price of M. Fodéré's excellent Treatiſe on Medical Juriſprudence, did not heſitate between this expenſe and the fatigue of liſtening to tedious lectures; ſo that the profeſſor found himſelf abandoned by his pupils, and left alone in the vaſt amphitheatre of the ſchools of the faculty. Such a miſhap is certainly a ſufficient apology for M. Royer-Collard's having given ſo few lectures in the firſt year of his profeſſorſhip, and for having, during the ſucceeding years, renounced all public inſtruction. Still we are indebted to the profeſſor for the excellent courſe of lectures which his pupils heard in the ſummer of 1819. As director of the Bibliotheque Médicale, he inſured the ſucceſs of the work by contributing the feweſt articles to it; as profeſſor of medical juriſprudence he felt it his duty to reſort to ſimilar means to recall his truant pupils, and accompliſhed his object by employing M. Orfila to lecture for him; and the ſucceſs of the experiment did not detract from the reputation of the learned author of the Toxicologie.

"Several nominations followed that of this able chemiſt. M. Béclard was called to the chair of anatomy, M. Marjolin to that of external pathology. MM. Fouquier and Roux have alſo been lately appointed; the firſt to the chair of the Clinique de Perfectionnement, vacant by the death of M. Bourdier; the latter to a chair of pathology, vacant by the reſignation of M. Percy. A-propos of this reſignation; it is ſaid in the medical world of Paris, that 60,000 francs was the price M. Percy received for this profeſſorſhip; certainly a large ſum for a place, the receipts and preſervation of which are not certain. The caſe is not without precedent; at Montpellier in 1786, M. de Barthez ſold a profeſſor's chair to M. Grimaud for 30,000 francs. This is great authority for the venality of profeſſorſhips; which, however, has one little inconvenience, i. e. that of excluding the poor man of talent, though it preſents the inappreciable advantage of narrowing the field of favour, a divinity more to be feared than riches. Still we cannot complain of ſimilar bargains, when they bring ſuch men as M. Roux into a more extended ſphere of uſefulneſs. This excellent ſurgeon and learned profeſſor muſt always have appeared to advantage in a concurrence with any rivals.

"Since the ſuppreſſion of the *concours*, the faculty of medicine preſents to the choice of the committee of public inſtruction four candidates. The three laſt are, however, only inſcribed for form's ſake. This ſort of election is not at all approved by the faculty, who accordingly, in 1818, unanimouſly demanded that the vacant profeſſorſhips ſhould be given by the concours. The committee of public inſtruction refuſed to accede to this requeſt; and, to avoid all diſcuſſion with the faculty, reſolved to chooſe the firſt of the candidates named. It was therefore without any chance of ſucceſs, that MM. Huſſon, Récamier, and Pariſet, were joined candidates with M. Fouquier.

"You have not forgotten that M. Pariſet left Paris, by order of the miniſter of the interior, to obſerve the yellow fever which raged at Cadiz, with great violence, in the ſummer of 1819. In Europe, as well as in the tropics, this diſeaſe always diſappears on the firſt approach of winter; a little trifling fact, of which M. Decazes ought to have been aware before he put the ſtate to ſuch an expenſe. As M. Pariſet was ſtill at Madrid on the 23d of November, it is clear that he could not make obſervations on a diſeaſe which had already diſappeared from Cadiz. The only ſubjects for examination would be convaleſcents, who are perhaps as fit to give an idea of the character of a diſeaſe as a few ſtragglers to convey an appropriate impreſſion of the nature and ſtrength of an army. If M. Pariſet had departed three months earlier, he might have given us the reſult of his own obſervations; as it is, we ſhall only now have the opinions of the Spaniſh phyſicians, which could have as well been tranſmitted by the poſt. As yet the fruits of ſuch an expenſive journey are confined to four coloured engravings, publiſhed by M. Pariſet, which, announced at a moment when all eyes were directed to Cadiz, excited great curioſity. We expected at leaſt portraits of Quiroga, Riego, plans of the fortifications of La Iſla, and the redoubts of La Cortadura. It was a cruel diſappointment for the curious to find three faces of men dying of the yellow fever, and fourteen tongues; not tongues of eloquence and fire, but the dirty tongues of patients announcing to the eye and finger the ſtate of the inteſtinal canal; and which are intended by M. Pariſet to expreſs the different phaſes of the yellow fever in ſucceſſion. You will be ſurpriſed at this. Why? Since we claſs and deſcribe diſeaſes by the ſame method which botaniſts employ to claſs and deſcribe plants, it is natural that we ſhould endeavour to determine the characters of the former, by the aid of drawings. M. Pariſet, indeed, muſt view diſeaſes as enjoying great advantages in this reſpect; for Linnæus affirms that the colour of the corolla is too variable a quality to determine the diſtinction of vegetables; and our learned traveller conſiders the colour of the face and tongue as characteriſtic of diſeaſes, in which the expreſſion and colour of the face change from minute to minute.

"M. Gall has commenced his annual courſe of craniology in the amphitheatre in the Rue St. Victor. This ſcience is getting ſingularly out of faſhion. Time was when M. Gall made us pay high enough for his lectures, and we had difficulty to fight our way to the door. Now we enter gratis, and there is plenty of room. When M. Decazes was miniſter of police, he greatly encouraged the ſcience of craniology, by giving its inventor a penſion of 3000 francs. M. Decazes undoubtedly found the ſcience uſeful in chooſing his counſellors; and, if this miniſter's reign had continued, the late preventive laws would have been founded on craniological principles.

"A ſubject which has more reality and practical application, is the excellent courſe of human anatomy which M. Béclard gives to the faculty of medicine. M. Dumeril had already greatly advanced the ſtudy of this department of anatomy, conſidered in a philoſophical point of view. Some indeed thought that he too frequently introduced the ſubject of comparative anatomy. M. Béclard is more reſerved on this point; but the compoſition and analogies of textures, the forms and relations of parts, both in a ſtate of health and diſeaſe, ſuggeſt to him at every ſtep a variety of intereſting general obſervations, which enliven the dryneſs of anatomical diſcuſſion, and are almoſt all of practical application. M. Béclard, before he became profeſſor, underwent the probationary trials, as "chef des travaux anatomiques." MM. Dumeril and Dupuytren occupied this honourable poſt before him. M. Breſchet now fills it in a manner which will ſoon place him on the diſtinguiſhed level of his predeceſſors. M. Chauſſier ſtill teaches phyſiology, and gives two lectures a-week. This learned teacher always diſplays the ſame profound views, and the ſame originality of ideas. He ſtill preſerves his prejudices againſt the acceſſary ſciences, which he calls "ſtrangers to medicine," and againſt chemical explanations of phenomena, which he ſtyles chimerical.

"Since Profeſſor Cuvier has become a ſtateſman, and ſcience is only the amuſement of his leiſure hours, there are no other lectures on comparative anatomy at Paris, but thoſe given by M. de Blainville, at the Faculté des Sciences. They are very well attended, and would be more ſo if the theatre of the College de Pleſſis were larger. M. de Blainville, as a ſavant and profeſſor, promiſes to be a worthy ſucceſſor of his maſter Cuvier, whom we truſt he will follow in his Linnæan zeal for the ſcience of nature; but we hope he will not imitate him in thoſe

pretenſions to nobility, which made Buffon ridiculous though born noble; nor that in love of office, which was the misfortune of Pliny the elder, and of which M. Cuvier ſeems to have his ſhare.

"You are acquainted with the work which M. Geoffroy de Saint Hilaire publiſhed laſt year on philoſophical anatomy, in which he endeavoured to bring all the types of organization to a primitive and unique form. M. Geoffroy continues to illuſtrate his diſcoveries at the College de Pleſſis before a numerous audience, and demonſtrates that "inſects are provided with a ſkeleton as complete as that of the large quadrupeds; that the cruſtaceæ do not walk upon their claws, but upon their ribs. It is a pity that man is not a lobſter, for then, like our firſt father, Adam, we might loſe our ribs without being aware of it, which would have diminiſhed the riſk which M. Richerand ran in removing thoſe of the unfortunate Michelleau, in his famous operation for cancer." For a long time M. Richerand has publiſhed nothing but new editions of his old works: it is matter of regret; for this ſurgeon has great talents as a writer. The clearneſs of his ſtyle is admirable, and his works have been univerſally popular as elementary books. But M. Richerand as author, and M. Richerand as profeſſor, are two very different perſons. It appears to be matter of regret that M. Richerand ſhould have changed his former chair of external pathology for that of operative medicine. In the latter he had to ſucceed M. Dupuytren. Who could ſtand the compariſon? M. Dupuytren is perhaps the only ſurgeon, who with C. Bell and M. Delpech, has made it his ſtudy to teach the art of operating by ſhowing the relation of different methods with the ſtructure of parts, and by determining the advantage of each proceeding according to the alterations of form produced on organs by diſeaſe. "The lectures on chemiſtry are, of all the lectures delivered at the Faculty of Medicine during winter, the beſt attended. He who wiſhes to know chemiſtry thoroughly, muſt attend M. Vauquelin. He who wiſhes to ſee chemical facts philoſophically arranged and illuſtrated by experiments ſkilfully performed, muſt go to the College of France, and to the Faculty of Sciences, to hear M. Thénard; but he muſt make haſte, for it is as difficult to get a place to hear Thénard as to ſee Talma.

"A new and rival ſchool has riſen by the ſide of the Faculty of Medicine. A generous oppoſition is already the reſult, and it will probably ſave the medical ſchools of France from the deſtruction which hovers over them. Indeed the ſchool of Val-de-Grâce can only yet boaſt of one profeſſor of celebrity; but this teacher is endowed with real talent. He has all the enthuſiaſm of a reformer, and the power of communicating it when neceſſary. It is in vain to conceal the influence which M. Brouſſais already exerciſes, not only on the ſtudies of the pupils, but on the practice of the phyſicians of the capital. As this influence is the moſt important fact I have to communicate at preſent reſpecting our ſcience at Paris, I ſhall take an early opportunity of detailing to you the doctrines of M. Brouſſais. It would not be judging properly of his doctrines or practice to repeat with the public, that the annual conſumption of leeches in the civil hoſpitals of Paris, which conſtituted only an expenſe of 2000 francs, is now 80,000. (See p. 46.) You will nevertheleſs have heard that M. Brouſſais is not ſo much in vogue as laſt year, when the miniſter at war found it neceſſary to cloſe the doors of the hoſpital to the crowd of ſtudents who beſieged them. As the doctrines of M. Brouſſais are of a direct practical application, the above-mentioned circumſtance may have retarded their propagation. It does not much ſignify. If theſe doctrines are true, reflection and time will only ſerve to eſtabliſh them; if they are falſe, it is perhaps better that the pupils ſhould defer the examination of them until they are qualified to judge and think for themſelves.

"There are ſome people in the world, doubtleſs, who wiſh to eſtabliſh the amount of a ſalary upon any other conſideration than the ſervice rendered for it; but we muſt look to a madhouſe only to ſee the ſalary increaſe in *direct proportion to the diminution of attendance.* In the hoſpital of lunatics at Charenton, the following regulation appears: "The phyſician ſhall reſide in the eſtabliſhment; he ſhall receive a ſalary of 4000 francs, and pay five viſits a week; if he does not reſide, he is to receive 6000 francs, and pay only three viſits." Talking of the Charenton, I muſt give you an account of a new method of improving the ſalaries of phyſicians in hoſpitals where the patients pay for their board. This plan conſiſts in aſſigning to the former a certain ſhare, ſay two-twelfths, of the ſavings which are made on the ſum the patient pays, rendering it of courſe the intereſt of the phyſicians to make this ſaving as conſiderable as poſſible. The ſalary of the phyſician, therefore, it is evident, can only be limited by the bad intentions of a director too much attached to the welfare of the patients. This may be eaſily obviated. By the aſſiſtance of calumny, the director is got rid of; and, to prevent all future diſputes, the direction of the hoſpital is made the marriage-portion of the phyſician's daughter. I need not tell you that the Lunatic Aſylum of Charenton is out of the adminiſtrative control of the hoſpitals of Paris.

"When a man profeſſes zeal for his profeſſion and love for humanity, his ardour in diſcharging his duties is above all remuneration. At the Hotel Dieu, M. Dupuytren receives a very moderate ſalary, which is neither directly nor inverſely proportioned to the number of his viſits, and which does not prevent his going winter and ſummer to the hoſpital from half-paſt five in the morning to ten, and again returning in the afternoon to ſee the patients who have been recently operated upon. Here, alſo, M. Dupuytren, before performing an operation, eſtabliſhes, in preſence of a numerous audience, the cauſes which indicate it; he diſcuſſes the methods of operating employed by ſurgeons, and deſcribes the one at length which he is about to employ.

At the Charité, MM. Boyer and Roux alternately take charge of the clinical department. M. Boyer examines the houſe-pupils on the patients entruſted to their care. The profeſſor diſcuſſes the moſt important caſes, and diſplays all that profound knowledge and practical ability which have long ranked him amongſt our firſt ſurgeons.

At the Hoſpice de la Faculté, there are only forty beds, and the patients are ſelected with great care. M. Dubois can therefore devote to each patient a ſufficient time to eſtabliſh the diagnoſis, and anſwer the queſtions which each pupil has a right to addreſs to him. In the theatre, the profeſſor enters on the caſes which have been operated on, or thoſe which are about to take place. The operation is then performed, after which M. Dubois ſees the out-patients. Here he applies public inſtruction to private practice, and preſents us in part with the advantages of thoſe private eſtabliſhments which in Germany are called *clinica ambulatoria.* M. Dubois is really indefatigable; to the experience of age he joins the ardour of youth. Charged with the inſtruction of female midwives at the Hoſpice de la Maternité, he has juſt commenced a public courſe of lectures on midwifery for medical ſtudents. Theſe lectures will be quite an epoch, and unfortunately they will be the laſt which M. Dubois will give on a ſubject which requires more to be reduced than extended. Who will be better able than this learned ſurgeon to reduce to their proper value the pretenſions of thoſe ſurgeons, who have only become great accoucheurs becauſe they were not fit for any thing elſe?

"M. Roux has repeated with ſucceſs the beautiful operation of the ſuture of the *velum palati*, which he was the firſt to practiſe, upon an American, who had had a congenital diviſion of this muſculo-membraneous part. Some months ago, at the Royal Academy of Sciences, the ſubject of this operation, whoſe voice before was hardly perceptible, read his own caſe very diſtinctly."

The

The following account of the funeral of the celebrated Corviſart, well known to the Engliſh faculty by his writings, which we extract from the Journal des Debats of the 22d September, 1821, may be thought curious by the mere Engliſh reader. "The obſequies of M. le Baron de Corviſart, phyſician, took place to-day. In purſuance of the directions contained in his will, his body was not taken to the church of St. Elizabeth, his pariſh, but was conveyed to his eſtate at Atys, where he deſired that the religious ceremonies ſhould be performed. A deputation from the Faculty of Medicine, in their doctor's robes, *(en habit doctoral,)* and nearly all the phyſicians of Paris, repaired this morning to his late reſidence, Rue de Vendome, for the purpoſe of attending his funeral. Mr. Leroux, dean of the phyſicians of Paris, pronounced a diſcourſe over his body. The coffin, covered with the mantle of a doctor, and with the different orders which had been conferred upon the deceaſed, was afterwards placed in a hearſe, to be taken to its deſtination, whither the deputation of the faculty, and a great number of other perſons, accompanied it."

As we have ſpoken largely of the management of the hoſpitals, we ſhall conclude with a few words upon the ſubject of the lunatic aſylums.

The Salpêtrière, under Dr. Eſquirol's management, affords as fair a ſpecimen of the reſult of benevolent conſideration and exertion as any inſtitution to be found in France, or on the continent. Here the claſſification of patients is attempted, and to a conſiderable degree carried into effect; though, without doubt, there is ſtill much to be deſired. The uſe of chains, and all that apparatus of ſeverity which formerly obtained, are entirely done away; and the reſult has pretty clearly demonſtrated that in an inſtitution of this kind, properly conducted, they are uſeleſs. Confinement and the ſtrait-waiſtcoat, we are told, are the only reſtraints now had recourſe to at La Salpêtrière. The latter of theſe, for very good reaſons, is very much abandoned in this country: it is never uſed at Bethlem, and very ſeldom at St. Luke's: its inexpediency is very apparent. The patient is quite incapable of aſſiſting himſelf in a thouſand little neceſſary offices; and, when locked up by himſelf, this becomes unuſually irkſome. When the wriſts are manacled together, even the moſt furious are helpleſs: or a leathern girdle may be put round the waiſt, and the arms may be pinned down to this in a way to prevent any injury.

The treatment purſued here is no longer the decided and active one, in the way of bleeding, purging, &c. which uſed to be practiſed. M. Eſquirol conſiders mental alienation as an acute diſeaſe, having its ſucceſſive periods of intenſity, decline, and convaleſcence, the order of which is not to be diſturbed by officious interference, though the ſymptoms are to be moderated by gentle means, viz. tepid baths, diluents, occaſional ſoothing medicines, and very ſlight douches. Speaking to Dr. Clark of relapſes, he ſaid that he had known many caſes where a paroxyſm had occurred after bleeding; in ſome caſes after a ſmall, in others after a large, bleeding. The treatment is made as much moral as poſſible. An effort is made to gain the confidence of the patient; and this is generally obtained by appearing to take an intereſt in his affairs, and by ſcrupulouſly preſerving good faith. As much work is given them as can be procured. The convaleſcents have a large room where they are employed at their needle; and, by way of encouragement, they receive a trifling remuneration for their work. M. Pinel, as is well known, removed the regular ſervants from the inſtitution, and ſet the convaleſcents, with much profit to themſelves and their unhappy companions, to attend upon the patients, and do the little menial offices.

Dr. Eſquirol, from 800 diſſections which he has made, has come to the concluſion that "he has never found any conſtant alteration in the ſtructure of the brain, or of any other part. The hardneſs of the brain, inſiſted upon by many, he had not generally remarked."

The excellent regulations we have juſt noticed belong to Paris, not to the provinces. But the Report of the Committee appointed by the Britiſh parliament produced a ſenſation on the public mind which was ſtrong and permanent; and, we rejoice to ſay, that its good effects have not been confined to England alone. The governments on the continent have taken alarm, and inveſtigation has every-where commenced. The French government appointed Dr. Eſquirol to viſit all the receptacles for lunatics in France; and the reſult of a tour which he undertook for that purpoſe, is ſtated in a "Memoire preſenté au Miniſtre de l'Intérieur." It is but juſtice to Dr. Eſquirol to ſtate, that this Memoir is drawn up with much ability and feeling; and, as far as we are able to judge, with ſtrict juſtice and candour. It, in fact, does equal credit to the head and heart of the writer.

"Thoſe for whom I plead," ſays Dr. Eſquirol, "are the moſt intereſting members of ſociety; for they are almoſt always the victims of the prejudice, injuſtice, and ingratitude, of their fellow-creatures. Among them are to be found fathers of families, faithful wives, ſkilful artiſans, brave warriors, and diſtinguiſhed literary characters, ardent, proud, and acutely ſenſible minds; and yet theſe individuals, who ought to attract a peculiar degree of ſympathy and intereſt; theſe unfortunate beings, ſuffering under the moſt fearful of human miſeries, are treated worſe than criminals, and reduced to a condition below that of the inferior animals. I have ſeen them naked, or half covered with rags, with only ſtraw to protect them from the cold and wet pavement upon which they lay. I have ſeen them badly fed, without air to breathe, water to quench their thirſt, without, in fact, the firſt neceſſaries of life. I have ſeen them in narrow, dirty, infectious, cells, without air, without light, chained in dens, where we ſhould heſitate to confine the wild animals which the luxury of our governments keeps up at ſuch expenſe in our capitals. This is a faithful picture of what I have ſeen all over France; and this is the manner in which the inſane are treated in almoſt every country of Europe."

The inſane, in France, are almoſt all placed in public eſtabliſhments; either in inſtitutions ſpecially devoted to them, in hoſpitals, in the *depôts de mendicité*, or in houſes of correction and priſons. They amount to 5153 in number, and occupy 59 houſes; out of this number, more than 2000 belong to the three great eſtabliſhments of Paris. It is rather ſingular, that in the ſouthern provinces of France, the proportion of men conſiderably exceeds that of women; while, in the north, the reverſe is obſerved. In Spain, the proportion of men is greater than that of women.

There are only eight eſtabliſhments peculiarly dedicated to the reception of lunatics in France. Theſe are at Armentières (for men only), Avignon, Bourdeaux, Charenton, Lille (for women only), Marſeilles, Marville, Rennes. There are ſeveral glaring defects in theſe inſtitutions. At Charenton, for inſtance, part of the inſtitution is uſed as a workhouſe for the poor of the neighbourhood. Epileptic patients are mixed with the lunatics, and priſoners are occaſionally confined in the ſame houſe. Incurable caſes are alſo received, and are kept there for life. So it may be ſaid, that there is in France no inſtitution ſpecially devoted to the treatment of inſanity. In thirty-three towns of France, which M. Eſquirol ſpecifies, the inſane are received into the general hoſpitals, which are alſo appropriated to the old, the infirm, and the diſeaſed; to venereal patients, and to thoſe affected with cutaneous diſorders, and which even admit women of diſorderly lives, and criminals. In the cities where *depôts de mendicité* have been eſtabliſhed, a portion of the building is devoted to lunatics, but only to thoſe who are furious; theſe are kept conſtantly chained in their

their cells. The others, intermixed with paupers, are without any of the care which their ſtate requires. Dr. Eſquirol ſpecifies twelve places where lunatics are received into the *depôts de mendicité*. In ſeven towns, lunatics are even confined in priſons, and chained by the ſide of the moſt abandoned criminals. The latter can work, and the produce of their labour enables them to procure many comforts: the inſane are deprived of this reſource, and expoſed to the jeſts of the moſt abandoned wretches. How humiliating muſt their ſtate be, if a lucid interval reveal to them their ſituation; and if, in ſpite of ſo many obſtacles, a cure ſhould be effected, how dreadful muſt the recollection be of ſuch ſcenes!

Our author now proceeds to give, in a general way, the reſult of his obſervations. The buildings devoted to the inſane in France are bad: for they are always confined, damp, and generally in a ruinous ſtate; and even in the *depôts de mendicité*, and ſome hoſpitals where new buildings have been erected for the inſane, they have been conſtructed without reference to the object for which they are intended. The cells are dreadful: without air or light, narrow and damp. They are paved like the ſtreets, are often under ground, and ſometimes in caves. They have ſeldom any other aperture than the door, and a ſmall ſquare hole oppoſite to it; and very often, even this aperture is wanting. There is, conſequently no circulation of air, and the ſmell is almoſt ſuffocating. Almoſt all the inſane, not only the indigent, but thoſe who pay, are naked, or only clothed in rags. They receive the tattered garments which have been thrown off by the poor, or the priſoners. Straw is all they have to protect them from the humidity of the ground, and the coldneſs of the air; and ſtraw is ſometimes wanting! "J'ai vu un malheureux imbécile, tout nu et ſans paille, couché ſur le pavé. Exprimant mon étonnement d'un pareil abandon, le concierge me répondit que l'adminiſtration ne lui paſſait, pour chaque individu, qu'une botte de paille tous les quinze jours. Je fis remarquer à ce barbare que le chien qui veillait à la porte des aliénés était logé plus ſainement, et qu'il avait de la paille fraiche et en abondance; cette remarqué me valut un ſourire de pitié. Et j'étais dans une des grandes villes de France!"

In no inſtitution is there room enough for the patients to take air and exerciſe. The ſpace allotted for that purpoſe is promiſcuouſly devoted to both ſexes; and, in ſome houſes, the patients are brought out and "chained to the walls of the court, by way of taking the air."

The attendants are inſufficient, and ignorant; and, indeed, in moſt houſes the patients have no ſervants. In priſons, the jailor, who has fifty or ſixty criminals to look after, has alſo to attend to beings who have not the power of expreſſing their wants.

Chains are every-where employed: 1. On account of the wretched ſtate of the buildings: 2. From the inſufficiency of attendance: 3. From the ignorance of the keepers: 4. From the expenſe of waiſtcoats. "J'ai envoyé des gilets pour ſervir de modele dans pluſieurs villes; on ne s'en ſert point par economie; il eſt certain que les chaines coutent moins d'entretien." The chains employed conſiſt of iron collars, girdles, and fetters. In one inſtitution, the patients were confined by means of an iron collar attached to a chain, a foot and a half in length. A whip is in the hands of the ſervants, and the bunch of keys is made a common inſtrument of correction. In all the eſtabliſhments of *Paris*, containing 2000 individuals, corporal puniſhment has been long aboliſhed.

The medical men in the different towns have made many efforts to remedy theſe abuſes; but, diſappointed in their attempts, they have become diſguſted, and only viſit the inſane who labour under illneſs, but never with a view to cure the inſanity. The ſervants of the hoſpital order the means which they judge neceſſary. At Toulouſe, from time immemorial, it has been the cuſtom for the medical men to viſit the indigent in the general hoſpital, *but they never go into the quarter where the inſane are confined.*

The magiſtrates, deceived by falſe reports, and frightened at the tales with which intereſted keepers awaken their fears, never viſit the lunatics; reconciling their conſciences to this act of neglect, by viewing the patients in the light of incurables, and thinking they have done enough when they have put them out of a ſtate to do harm, and given them bread and water ſufficient to keep them from ſtarvation.

Having detailed the abuſes which exiſt, our author next proceeds to conſider the beſt method of remedying them. The outline of his plan is ſomething like what has been propoſed in England; to build aſylums in various parts of the kingdom, which ſhould be appropriated to lunatics only. Dr. Eſquirol is of opinion, that about twenty of theſe buildings would be required for the whole kingdom of France; and, as there are already three at Paris and eight in the provinces, he would retain theſe for the ſake of economy; and, after radically reforming them, built nine others; all which he would place under the direction of a managing committee, to conſiſt of the prefects of different departments, ſubſcribers, manager, phyſician, &c. The directors and phyſicians to be in conſtant correſpondence with a central committee, immediately under the ſuperintendance of the miniſter of the interior. In concluſion, Dr. Eſquirol announces his intention to publiſh an extenſive work on inſanity, which may perhaps afford us an opportunity of reſuming this intereſting ſubject.

In ITALY, the madhouſes are in a ſtate equally lamentable, or more ſo. Dr. James Clark (Medical Notes on the Hoſpitals of France, Italy, &c. 1820.) has given us ſome ſhocking inſtances at Turin and Genoa; and the temper of the Sardinian government does not lead us to expect any prompt amendment, as reformation is not the order of the day in that unhappy country. Dr. Clark ſays,

"The part of the hoſpital (Caſa de'Pazzi) we were firſt taken to, conſiſted of ſmall rooms ſimilar to thoſe generally met with in ſuch inſtitutions; but I was diſappointed to find theſe were not for the poor patients, but for thoſe who paid a certain ſum for being kept. The firſt of theſe that was opened preſented to us the wretched priſoner, perfectly naked, and chained down to his bed by both wriſts. He had raiſed himſelf in his bed as far as his chains admitted, by which movement he had caſt off the ſingle coverlet that had been thrown over him. He had no ſhirt; his legs (apparently red and ſwollen from cold) were drawn up under the corner of the bed-cover, which lay over a ſmall part of his body; he was pale and emaciated; he uttered not a word. In ſhort, a human being in ſo wretched a ſtate I had never before ſeen; but I was ſoon to witneſs others in a ſtate ſtill more horrible. We were next conducted into a ward where thirty beds were huddled together, on moſt of which lay a poor wretch chained by one or more limbs to the bedſtead; for to each corner of theſe was attached a maſſy iron chain, with a claſp of the ſame materials and ſtrength at the extremity, for admitting the wriſt and ankle; and, according as the keeper judged neceſſary, one or more of theſe were applied. Some were poliſhed and bright as ſilver, from conſtant uſe. I imagined that theſe were the moſt unruly patients, but was told that this was by no means the caſe. To theſe we were next led; and, on unbolting the door of a large cell, the ſcene that preſented itſelf almoſt exceeds belief. The ſpectacle of the poor wretches, naked, or covered only by ſome ſtraw, chained down hand and foot to their bedſteads; the clanking of their chains; the dreadful vociferation they ſet up at the ſight of him who had rivetted theſe chains; the ſtill more horror excited by ſuch a ſpectacle; no terms are ſtrong enough to depict! I had read and heard of chains and other means of torture for ſubduing (irritating) the unfortunate maniac; I had even ſeen ſuch,

 ſingly

ſingly chained to the wall by the neck, like an infuriated and dangerous beaſt; but a den like this, crowded and crammed with human beings, chained down, without a rag of covering, ſtruggling to raiſe their heads, and exhibiting their emaciated and galled limbs from the heap of ſtraw that had been thrown over them, was a ſcene I never expected to witneſs, and which I hope I may never witneſs again. In this cell there were twelve men, three of whom only were allowed any thing more than ſtraw to cover them. Some I was told had been confined there for many months. On approaching them, they exhibited their chained limbs with the moſt earneſt entreaties for liberation. One man had two chains on one arm. In this caſe the ſpace between the iron claſps was red, ſwollen, and ulcerated; and the mortification, which in all probability was to follow, would ſoon render chains unneceſſary for him. Others had their limbs galled, but not in ſuch a degree as that deſcribed. In one inſtance only, in the whole hoſpital, did I obſerve any thing introduced between the iron ring and the limb. The reſt of the men's wards were ſimilar to that I firſt noticed.

"From the men's we were led into the women's department, which was in the higher part of the houſe, and which, in every reſpect, we found ſimilar to that we had juſt left, the beds huddled cloſely together, chains always ready, many applied, and moſt of the beds occupied; for, whether to ſave trouble, or from the poor creatures having no clothes but the coverlet that was thrown over them, almoſt every one was in bed. Here, as below, was alſo a cell where ſtraw afforded the only covering, where the chains were more heavily applied, and where the ſtate of furious deſperation to which the wretched victims were driven, was expreſſed in terms equally violent, and ſtill more affecting. One of theſe tortured women held up her arm which was raw, and had been bleeding, from the iron claſp having worked its way into the fleſh!

"Such is the dreadful ſtate of this houſe, which contains 180 males and 97 females, of whom one third, the keeper told me, were kept *conſtantly* chained. From the ſame ſource I learned, that the annual number of deaths (and this, I apprehend, is the principal way in which this houſe gets rid of its inhabitants) ſometimes amounted to eighty (nearly one third of the whole); that it *had* been as few as thirty; and that the average was fifty (nearly one fifth); a mortality, I believe, unequalled in any inſtitution of the kind in any country." But we now turn to a more pleaſing topic, the general ſtate of pathology in Italy.

We have mentioned the celebrity the Italians acquired in the 17th century as profeſſors of anatomy; and we may obſerve of the preſent æra, that the labours of Volta, Scarpa, Fontana, Roſſini, and Maſcagni, have much contributed to maintain that reputation. As far as the practice of medicine is particularly concerned, until of late, it appears to have been in a very lamentable condition up to the year 1812. The Italian phyſicians were divided into Browniſts, humoriſts, thoſe who followed French *expectante* ſyſtem, and a few who practiſed more correctly according to precepts originally derived from Sydenham. To theſe are now added others who adopt what is called the *contra-ſtimulant* method, (ſee p. 41.) and who boaſt among their diſtinguiſhed advocates Tommaſini and Borda. It was Raſori, however, who firſt introduced this *nuova dottrina medica Italiana*. During the memorable blockade of Genoa, that phyſician obtained very great opportunities of ſtudying the progreſs and character of petechial diſeaſes; and the calamitous reſults which followed the application of the means recommended by Brown in almoſt all caſes ſoon led him to attempt a contrary plan of treatment, the ſucceſs of which amply proved that theſe fevers were of an inflammatory nature. Further inveſtigation convinced him that ſcarcely any diſeaſes could be traced to direct debility; and he accordingly eſtabliſhed that theory of fever of which the leading features correſpond very cloſely with the obſervations of the Engliſh pathologiſts. The medical ſchool of Bologna, which is in a very flouriſhing condition, may be conſidered "at the head of the new doctrine;" and the profeſſors, among whom we find the name of Tommaſini, its moſt zealous and able advocates. A periodical journal, too, has been eſtabliſhed at this place, to give an account of the riſe and progreſs of theſe opinions. In the mean time, theſe opinions are warmly oppoſed by many of the Italian phyſicians. Among the moſt diſtinguiſhed of theſe opponents are Spallanzani of Venice, (a nephew of the celebrated Spallanzani,) and Federigo of Venice; but their efforts are not calculated to have much influence in the medical world.

The doctrine of this ſchool in regard to the operation of drugs merits our moſt earneſt conſideration. The grand axioms in Raſori's theory, and that in which it is moſt ſtrenuouſly oppoſed to the doctrines of Browne, is that "*there exiſts a claſs of ſubſtances whoſe action reduces fever; ſlackens the circulation; and, if puſhed too far, induces direct debility, without the intervention of any notable diſcharge.*" Inſtead of preſuming to argue upon this ſingular and bold aſſertion, we ſhall avail ourſelves of the "State of Medicine," appended to Lady Morgan's ITALY, by Sir Charles Morgan, M. D. for a full expoſition of Raſori's doctrine, and alſo for ſome very juſt and perſpicuous remarks on the general ſtate of medicine throughout Italy at this time.

Alluding to the axiom ſtated above, Dr. Morgan proceeds thus: "The notions formerly entertained of theſe drugs were, that they operated by diminiſhing or diluting the maſs of circulating fluids; in which they were ſuppoſed to coincide with the operation of letting blood. The *contra-ſtimulant* doctrine attributes their utility to their direct impreſſion on the living ſolid; to an action which, when exceſſive, will extinguiſh life by an inſtantaneous exhauſtion. In this claſs of ſubſtances muſt be placed aconite, digitalis, antimonials, and in general all mineral ſubſtances, cicuta, the venom of the viper, the laurel-water and pruſſic acid, camboge, tea, coffee, &c. &c. The claſſes of ſtimulants and contra-ſtimulants, according to this theory, ſtand oppoſed to each other in their relations to the living fibre, and ſerve mutually as counter-poiſons to each other. Hence, ſay the advocates for this doctrine, has ariſen the abundant uſe of coffee among the Turks, as an antidote to the opium they employ ſo largely. Hence alſo the utility of the vegetable acids as counter-poiſons to the ſame drug. The contra-ſtimulant effect of lemon-juice is much greater than is commonly ſuppoſed. The author, when at Naples, having experienced a ſlight coup de ſoleil, inducing a bilious vomiting and febrile paroxyſm, adopted, under the advice of the natives, the free uſe of lemonade. Two or three quarts of this fluid, taken in the courſe of the morning, not only removed the diſeaſe, but induced a degree of debility ſufficiently irkſome to require vinous ſtimulation.

One of the moſt important facts attached to this doctrine is, that the effect of any given doſe of a contra-ſtimulant drug upon the conſtitution, is inverſely as the degree of ſtimulation; and conſequently, that, in inflammatory diſeaſes, the patient not only requires quantities totally unuſual in Engliſh practice of theſe remedies, but bears them without any notable effect upon the excretions. In practice, therefore, the meaſure of the doſe is found in the quantity of excitement; and no doſe is deemed exceſſive which does not change the diatheſis and induce dangerous debility. Thus in ſthenic maladies, the Italians employ aconite, from a grain to a drachm; the kermes mineral, from eight to twenty-eight grains; emetic tartar, from eight to ſeventy-eight grains; the laurel-water, from ten to ſixty drops; digitalis, from four grains to half a drachm; nitre, to half an ounce or an ounce. Theſe are commonly given in divided portions through the courſe of the twenty-four hours, largely diluted with

any ſimple drink the patient prefers. It is uſual to begin with a ſmall quantity, increaſing it more or leſs rapidly according to the urgency of the ſymptoms. However extraordinary theſe facts may appear, there are few Engliſh practitioners who have not had opportunities of witneſſing ſimilar reſults from the adminiſtration of James's powder. Indeed, ſo great is the apparent caprice in the action of this drug on the ſtomach, and the variety in its evacuant effects, that it would be almoſt impoſſible not to ſuſpect an inequality in its preparation, without this key to explain the phenomena. Half a paper or a paper of the real James's powder, repeated at ſhort intervals, has, in ſome caſes of fever, appeared to be perfectly inert, neither inducing vomiting nor perſpiration, though the tongue has been found moiſter, and the fever abated, on the following morning. The author's attention was firſt attracted to the fact by the practice of a friend, who truſts eſpecially to this remedy in the cure of fevers, notwithſtanding the abſence of all ſenſible action from it, except the very important one of the amelioration of the patient.

The poſſeſſion of theſe facts could not fail to have had a moſt beneficial effect on the practice of phyſic, in a country whoſe climate developes inflammation with ſo much intenſity and rapidity; but it has been far more extenſively uſeful in baniſhing thoſe dangerous errors of practice which had crept in, through the Brunonian doctrine of indirect debility, or of diſeaſes ariſing in exceſſive ſtimulus being curable by ſtill greater ſtimulation. In inflammatory diſeaſe, (no matter whether chronic or acute, no matter whether occurring in a vigorous or a debilitated ſubject,) exceſſive ſtimulation is the cauſe of malady; and the contra-ſtimulant remedies afford much more ſucceſsful methods of cure than are to be hoped from wine, or ether, or any other ſtimulant. Although the means employed by the contra-ſtimulant phyſicians may ſomewhat differ from our own, yet the indications are generally the ſame as are recommended by our beſt authorities. There is a conſiderable agreement between their views and thoſe of Dr. Blackall, reſpecting the treatment of dropſy. In this fatal diſeaſe, the contra-ſtimulant phyſicians have to boaſt of much ſucceſs. It is a malady rendered very common in Lombardy by the prevalence of intermittents generated in the rice-grounds, and it ſeldom finds its way into the hoſpitals till more or leſs extenſive diſorganization has taken place: yet the mortality in the clinical wards of the Oſpidale Maggiore of Milan, during three years (1812, 13, and 14) that the contra-ſtimulant practice was purſued there by profeſſor Raſori, did not exceed $\frac{28}{100}$.

A conſiderable comparative ſucceſs has reſulted alſo from the ſame mode of treating conſumption. The deaths in the regiſter amount indeed to $\frac{68}{100}$; but, if the diſeaſe had been defined with any degree of accuracy in the entries upon the hoſpital-journals, even this limited ſucceſs is a matter of comparative triumph.

The treatment of dyſentery is chiefly by camboge, given as a contra-ſtimulant, the doſe being gradually increaſed till it induces diarrhœa, which is conſidered as a ſign of the reſolution of inflammation.

With reſpect to acute diſeaſes, although the contra-ſtimulant practitioners puſh their remedies further than was uſual under the other Italian ſyſtems, it may be doubted whether they do not yet ſtop ſhort of a proper vigour. The average mortality of the clinical wards in the Oſpidale Maggiore, during three years, was leſs than 11 per cent. whereas in the other wards, where the older practice was followed, it amounted to 16 per cent. The total number of ſick was 4855; that of the deaths, 520. Of theſe caſes, 1302 were pneumonies, conſumptions, tabes, dropſy, typhus, and patients received in articulo mortis, of whom died 428. The deaths in pneumonies were $\frac{22}{100}$; and in typhus, $\frac{13}{100}$. This exceeds the deaths in the worſt epidemics that have occurred of late years in England. That 22 per cent. in pulmonary inflammations ſhould be thought a ſmall proportion, (every allowance being made for the ſtimulating qualities of the climate,) ſeems to indicate an inefficiency of practice, at leaſt as compared with that of England. It is not therefore improbable, that the employment of contra-ſtimulant drugs may have led to a partial abandonment of blood-letting, or, at leaſt, to a confidence in ſmaller effuſions of blood than are neceſſary to cure the diſeaſe by a coup-de-main. The action of tartar-emetic, however powerful, is ſlow; and, in acute diſeaſes, the firſt twenty-four hours are moſt important. It is not therefore impoſſible, that this valuable time may be loſt in the employment of drugs, which, if given to a cure by the abſtraction of blood, might, in ſome caſes, have ſaved lives, not ſuſceptible of reſcue by the ſame means when employed at a later period. From all I could gather, in repeated converſations with Dr. Raſori, he ſeemed indeed to be ſufficiently alive to the importance of blood-letting; and I ſhould make this remark with more heſitation, if that phyſician did not ſeem to me to ſtand alone among his countrymen for boldneſs and deciſion. Throughout the ſouth of Italy, wherever I had the opportunity of direct obſervation, I found the blood taken, in inflammatory diſeaſe, leſs in abſolute amount than is now uſual among Engliſh phyſicians; and it is taken by ſmaller and more frequent bleedings. It is not therefore improbable, that when the mind has been pre-occupied by another idea, the ſame error may have occurred in the practice of more efficient phyſicians.

Of the contra-ſtimulant theory, the part which ſeems the leaſt perfectly developed, and concerning which there is the leaſt unanimity, is that which relates to the action of particular drugs; indeed, there is no branch of medical inquiry more contradictory and obſcure among the phyſicians of all ſects and all countries: of this, the endleſs diſputes on the action of digitalis, in the medical writings of the Britiſh practitioners, afford a ſtriking inſtance. Among the contra-ſtimulant remedies are included, by ſome perſons, all the mineral remedies, various bitters, and (mirabile dictu) the bliſtering-fly itſelf. Raſori totally rejects from the materia medica the claſs of diuretics, whoſe action he conſiders wholly contra-ſtimulant: for, he ſays, not only do dropſies, curable by ſuch remedies, likewiſe get well by the uſe of other contra-ſtimulants, not diuretic; but theſe very diuretic medicines do not provoke the ſame diſcharges in other diſeaſes; while, on the other hand, opium and ether produce diuretic effects in dropſies, which ariſe from a real debility of the living fibre. From theſe facts, judging empirically, we muſt come to the moſt oppoſite and contradictory concluſions: but, in adopting the contra-ſtimulant doctrine, the philoſophical induction is, that diuretics, and other ſpecifics for dropſy, derive all their efficacy, and their ſuppoſed ſpecific action, from their relation to the general diatheſis or conſtitutional diſeaſe.

One of the moſt obſcure parts of the new medicine is, that which diſtinguiſhes between the irritative and contra-ſtimulant effects of drugs. Several of the contra-ſtimulant drugs are, in certain doſes, of the moſt acrid and irritating activity: (not to mention cantharides,) nitre, the bitter purgatives, and moſt mineral ſubſtances, excite, when taken in over-doſes, immenſe irritation, followed by ſevere and fatal inflammation of the inteſtinal canal. Upon the ſubject of irritation, the theoriſts have run into the niceſt diſtinctions; one aſſerting the exiſtence of a peculiar diatheſis, produced by irritative ſtimulation; while another denies the exiſtence of ſuch a diatheſis. Some perſons, again, conſider the irritation as a phenomenon ſui generis, removable only by the removal of the cauſe; while others hold the firſt effect of irritation and of all pain, to be purely contra-ſtimulant. In all this logomachy, there ſeems to be more intellectual ſubtilty than practical obſervation; and perhaps alſo no little precipitation in the claſſification of

particular drugs. It is difficult to conceive irritation in any other light than that of direct ſtimulation, ſince, when carried to a certain point, it always induces inflammation. That irritants therefore ſhould be at the ſame time contra-ſtimulants, is difficult to underſtand. Whatever gives a violent ſhock to the nervous ſyſtem has a temporary power of diminiſhing, and in ſome caſes of even totally extinguiſhing, the vital energy. Blows on the ſtomach, ruptures of ligaments, extenſive injuries of any important viſcus, are followed by a very marked condition of contra-ſtimulus; but this peculiar affection of the nervous apparatus has nothing to do with the power which a drug may hold over the circulation. In all caſes of poiſoning, where the coats of the ſtomach are either chemically or phyſiologically deſtroyed, this ſtate of contra-ſtimulus precedes the acceſſion of that inflammatory fever which accompanies the effort to caſt off the ſlough; but it by no means follows, that the collapſe is the direct effect of a ſpecific property in the drug adminiſtered.

Dr. Clarke (in his obſervations "On the Climate and Diſeaſes of the South of France and Italy," a work which may be ſafely conſulted by thoſe invalids who are exiled in ſearch of health) has moſt juſtly remarked, that the ſciences in general, and medicine in particular, are upon a much more reſpectable footing in Upper Italy, than on the other ſide of the Apennines; and the former is preciſely the territory of the contra-ſtimulant practitioners. To their bold adminiſtration of powerful remedies, the profeſſion in general is largely indebted, more eſpecially for their more philoſophic uſe of digitalis and of antimony, which, notwithſtanding all that has been written in England, had not been before reſcued from a very groſs empiricism. The uſe of laurel-water and the pruſſic acid is another benefit derived from this ſource, though it is probable that the French will obtain the chief merit of this application of a moſt deadly poiſon to the purpoſes of medicine. To thoſe Engliſh practitioners who have returned upon the traces of Sydenham, and have diſentangled themſelves from the learned errors of the laſt generation, the contra-ſtimulant writers of Italy will prove highly intereſting, by the confirmation they afford to views entertained at home, upon ſeparate and independent grounds of reaſoning and obſervation.

When the contra-ſtimulant ſyſtem has been noticed, there remains but little to be ſaid of the ſtate of medicine in Upper Italy, where the merits of individuals is rendered leſs available by inſtitutions and by combinations of circumſtances, more or leſs fatal to all national proſperity. One of the principal misfortunes attendant upon the political diviſions of this ill-fated country is, the eſtabliſhment of petty univerſities, laden with obſcure profeſſors, whoſe exertions meet with no adequate reward, either in fame or money. Theſe teachers educate gratuitouſly, and conſequently produce a greater ſupply of practitioners than the demand can employ. This facility of inſtruction and inſufficiency of remuneration operate to invite the lower claſſes into the career; and, if perſons of more adequate pecuniary means attach themſelves to the profeſſion, and are deſirous of ſeeking education in foreign univerſities, they are reſtrained by the reſtrictive laws, which confer licenſes to practiſe only on thoſe who have graduated at home. Pavia, Padua, and Bologna, which ſtill preſerve an aſtoniſhing zeal for ſcience, and which afford great facilities for the ſtudent, would abundantly ſuffice for the neceſſities of the north of Italy, but municipal jealouſy operates very generally to exclude the ſubjects of other ſtates from profiting by their propinquity to theſe ſeats of learning. Florence, Sienna, and Piſa, Modena, Parma, Genoa, and Turin, have each their ſchools of medicine, all coſting the public large ſums, and all more or leſs unequal to maintain profeſſors of high talent or extenſive acquirements."

The moſt recent particular we have to mention in the medical practice of Italy, is the adminiſtration of black pepper as a remedy for agues, by Dr. Louis Frank, firſt phyſician to the ducheſs of Parma. A man, having tertian fever, had been treated, without benefit, by cinchona, opium, and muriate of ammonia; when, after the lapſe of three months, he was adviſed, by ſome goſſip, to take, twice a day, ſix grains of whole black pepper; he rapidly recovered his health. Dr. Ghighini, phyſician at the court of Parma, being in a country where agues prevailed every year, more or leſs, from the influence of ſtagnant waters, tried the efficacy of the medicine, and with the moſt favourable reſults. Dr. Frank has treated about 130 patients, in the greater proportion of whom the fever diſappeared after the ſecond or third paroxyſm from the time when the remedy was firſt adminiſtered. From ſix to ten corns of the pepper (given to the patients as pills) were generally adminiſtered twice a-day. But very few relapſes occurred.

SPAIN and PORTUGAL.—This is a ſhort and barren ſection. The Spaniards have not lately been in a ſituation to cultivate the ſciences, or literature of any kind. Long oppreſſed by bigoted rulers and deſpotic governments; ſtruggling for liberty, and not knowing how to uſe it; and even now torn by inteſtine commotions, while employed in the moſt laudable purſuits; we have little information to expect from ſuch a ſource. Yet we begin to hope for better times; and it has given us great pleaſure to be informed, that a medical magazine, to be publiſhed every ten days, has been announced at Madrid, under the title of "Decadas Medico Cirurgicas." The objects of this periodical miſcellany are—1. To inform the profeſſion and the public of all the diſcoveries and intereſting facts relating to medicine and ſurgery in Spain and in foreign countries. 2. To give an impartial account of modern theories, medical doctrines, &c. 3. To convey intelligence reſpecting all endemic diſeaſes. 4. An account of extraordinary cures. 5. Miſcellaneous queries and obſervations; with an analyſis of medical publications appearing in Spain, and of the more important ones publiſhed in foreign nations.

A publication of this kind, tending to invite diſcuſſion, will, we think, be of infinite ſervice to the medical cauſe in Spain. In the mean time, a very ſingular retroſpective decree of the Faculty of Pharmacy in Madrid has lately been iſſued, by which every perſon practiſing pharmacy, or keeping a chemiſt's ſhop, who has not reached the age of 25 years, is enjoined to attend courſes of lectures at the Royal College up to that age, with a view to his being re-examined previouſly to obtaining a freſh licenſe to practiſe.

The following is the account given by Mr. Broughton, a ſurgeon, in his "Letters from *Portugal*," of the miſerable ſtate of pathology in that country about the year 1814.

"In my profeſſional capacity, it has fallen to my lot to viſit the pooreſt and moſt diſtreſſed claſſes; and, miſerable as the ſtate of this order of ſociety appears to be upon a caſual view of it, it is yet nothing when compared with that which is furniſhed by a more intimate acquaintance with its evils. Often deſtitute of hoſpitals, and without the aid of medical men, the unfortunate victims linger in the moſt loathſome and deplorable ſtate which poverty and diſeaſe can inflict, and are conſequently doomed to drag out their miſerable exiſtence a burthen to their families and to themſelves. I found the little aſſiſtance I was able to afford them was eagerly ſought, and moſt gratefully accepted; and, as the intelligence of the opportunity of relief ſpread abroad, the numbers of the afflicted, and the exceſs to which their various diſeaſes had reached by neglect, aſtoniſhed me. Whenever I met with medical men, I uniformly found this ſcience limited to a degree that almoſt exceeds belief. Their ſtudy is chiefly confined to the peruſal of a few old authors, whoſe practice among us has become obſolete; and they have conſequently few conceptions beyond the dogmas of the latter. The ſurpriſe they evinced at the ſurgical

ſurgical apparatus of an Engliſh medical officer, and at the commoneſt operations, proved the lamentable ſtate of the whole profeſſion in Portugal.

"The people in general, as well as the medical practitioner, are in perpetual terror of infection; for they are wholly ignorant of its nature, and the moſt common ways of preventing it. Even to this day the Portugueſe cheriſh an invincible prejudice againſt the uſe of mercury, in caſes where we know of no other remedy to check the progreſs of diſeaſe. Their prejudice againſt vaccination was equally ſtrong; but, by the interference of the legiſlature, it has been introduced; and the arrival of vaccine matter from England is occaſionally announced in the Gazette, and inoculation performed gratuitouſly."

In viewing the ſtate of medicine in GERMANY, we have much to admire; for, whether we conſider the Germans as minute anatomiſts, patient inveſtigators of diſeaſed function, or as ſurgical operators, they will deſerve high encomium. In many grand pathological points, we diſcover a great ſimilarity between their opinions and our own. And this coincidence is the more ſatisfactory, becauſe it occurred at a period when the horrors of war prevented a free communication with the continent. We perhaps cannot give a better account of the German medical doctrines than by a ſhort hiſtory of the preſent ſtate of their numerous univerſities, the moſt diſtinguiſhed profeſſors attached to them, and their reſpective doctrines.

It is well obſerved, by an amuſing modern writer, (An Autumn near the Rhine, 1818.) that nothing can be imagined more ſtriking than the contraſt between an Engliſh and a German univerſity. "In the former, the Gothic buildings, the magnificent colleges, the noble libraries, the chapels, the retired walks, the ſcholaſtic grace of the coſtume, are all ſo many intereſting indications of the antiquity, the munificence, and the dignity, of the inſtitution. But the conſtitution of a German univerſity has neceſſarily no monument of architecture, no appendage of dignity, ſcarcely any decent building belonging to it. The Univerſitat-Gebaude, or public buildings, containing the library and the lecture-rooms of the profeſſors, barely come under this laſt deſcription. Indeed, in moſt univerſities, the lectures are delivered at the profeſſors' houſes; the univerſity being, in fact, only a place where there is a good library and lectures delivered to thoſe who are willing to attend them."

There were, at one time, between thirty and forty univerſities in Germany. The events of the laſt twenty years have conſiderably diminiſhed that number. Viewed as literary inſtitutions, the Proteſtant Univerſities, which chiefly occupy the north of Germany, are undoubtedly ſuperior to the Catholic Schools; and, in the words of Madame de Stael, "toute la gloire litéraire de l'Allemagne tient à ces inſtitutions." We ſhall therefore begin with them; and, without enumerating all, it will be ſufficient for us to ſtate that the moſt celebrated are Gottingen, Halle, Berlin, Jena, Leipſic, and Heidelberg.

They are divided into four faculties; Divinity, Juriſprudence, Medicine, and Philoſophy. Each department has ſeveral profeſſors. The prince of the country in which the univerſity is ſituated, is nominally the rector; while a pro-rector, choſen annually from among the profeſſors, exerciſes all the powers and privileges of head of the univerſity. The profeſſors are appointed by the crown, and receive a ſmall annual ſalary. Their principal emolument is, however, derived from the ſtudents who attend their lectures, and from their literary labours. Perhaps, no claſs of men concentrates within itſelf ſo much talent, induſtry, and devotion to ſcience, as the German profeſſors. The welfare and proſperity of an univerſity are generally of ſo much conſequence to the ſtate in which it is ſituated, and that proſperity depends ſo entirely on the popularity of its profeſſors, that they are always ſelected from among thoſe who have by their talents and induſtry rendered themſelves conſpicuous in their reſpective branches of ſtudy.

The conſtitution of the German univerſities would at firſt ſight appear very favourable to the ſtudents. By decrees, even more ancient than the Reformation, theſe conſtitute a free body in the ſtate; and, except in criminal caſes of great magnitude, the ordinary police of the country has no power either of puniſhment or control. They are in fact only ſubject, if ſubject it can be called, to the Univerſity Police, conſiſting of one or two old men acting under the orders of the pro-rector. There is no gradation of rank or birth, diſtinctions of country are *profeſſedly* abandoned, and poor and rich are on the ſame foundation, merit being the ſole diſtinction. So far all is well; but the evils which ſpring out of this ſyſtem counteract many of the advantages. In Germany every one goes to the univerſity. To practiſe medicine, a regular univerſity-education is indiſpenſable; while thoſe deſtined for the army or the law muſt qualify themſelves by two years' reſidence at ſome univerſity. They generally therefore enter young, and at 16 or 17 are transferred from the control and diſcipline of the parental houſe to a ſtate of the moſt unbounded licence.

No peculiarity of dreſs is enjoined by the univerſity; but a ſtudent is known all over Germany by his looſe frock, hair flowing down his ſhoulders, and cap bearing the colour and emblem of the country of which he is a native. The ſtudents have a peculiar and ſecret aſſociation, known by the name of *Landmanſchaften*; that is to ſay, the natives of each country unite themſelves into a ſociety, and bind themſelves to obſerve all the laws and enactments which may emanate from it. The particular objects which theſe ſocieties have in view are the preſervation of the ſtudents' rights and privileges, the protection of their weaker countrymen, and the regulation of *duels*, one of the moſt important conſiderations of a German ſtudent. Theſe ſocieties are prohibited by law, but ſanctioned by cuſtom.

It is long ſince enlightened obſervers have ſeen and regretted, that in more than one reſpect theſe inſtitutions have departed from their primitive character, and the ſpirit in which their illuſtrious founders created them. Carried away by the torrent of the age, many academic profeſſors have miſtaken the real object of the univerſities, and have given them an arbitrary and frequently pernicious direction. Inſtead of forming the ſtudents entruſted to their care for the ſituations they were deſtined to occupy in the ſtate, they have purſued the phantom of a coſmopolitic education, have filled with dangerous political reveries minds equally acceſſible to truth and error; and have inſpired them, if not with hoſtile diſpoſitions, at leaſt with a decided averſion for all that they ſee eſtabliſhed around them. The reſult has proved as detrimental to the intereſts of the ſtate as to thoſe of the riſing generation; it has created in the latter the pride of imaginary perfection, and the pretenſion of re-eſtabliſhing ſocial order on the baſis of ſome impracticable ſyſtem: and many young men who were ſent to learn have conſtituted themſelves the preceptors and reformers of their country. This dangerous change did not eſcape the notice of the governments: they had long obſerved and deplored it; yet their anxiety to reſpect the freedom of inſtruction, ſo long as it did not directly compromiſe public order, deterred them from promptly oppoſing the progreſs of evil by efficacious remedies. But at the preſent time, when, under the benign influence of general peace, and the auſpices of princes ſincerely engaged in ſecuring future happineſs to their people, we were authorized in ſuppoſing that the univerſities would again be placed within thoſe boundaries in which they had formerly ſo honourably ſerved the cauſe of their country and of humanity; the moſt hoſtile attacks againſt the principles on which repoſe the peace and ſecurity of Germany have iſſued from thoſe very univerſities; for, either through exceſſive

exceſſive blindneſs or culpable connivance on the part of the profeſſors, the nobleſt faculties of youth have been perverted in favour of extravagant projects and enterpriſes, which, though impotent or abſurd, are not the leſs reprehenſible and criminal, ſince theſe fatal deluſions have given riſe to crimes diſhonourable to the German character. The late melancholy events at Gottingen will fully juſtify us in the above remarks.

In moſt of the univerſities there are what are called *freitiſche* (free tables) for the poorer ſtudents. Independently of thoſe provided by the government, individuals often leave lands or money to ſupport a certain number of theſe *freitiſche*. A ſtudent appointed to one of theſe, receives his dinner daily at his own houſe. By this excellent plan, the feelings of the obliged are ſpared, and the intention of the donor fully carried into execution, by the ſupport given to merit in diſtreſs. Beſides the *freitiſche*, there are *ſtipendiem*, or grants of money, appropriated to the ſame purpoſes; burſaries or exhibitions. The ſtudents reſide in lodgings, and dine either at a table d'hôte or have their dinner ſent them from an eating-houſe. Boarding is quite unknown.

Among the advantages which the ſtudents enjoy, we muſt particularly notice the cheapneſs and independence of living at the univerſities, the low price of books, and the liberality of the public libraries. The general price of lodgings vary at different univerſities: at Gottingen, which is by far the moſt expenſive, the price of two rooms may be quoted from three to eight louis d'ors for ſix months; dinner from one to two louis d'ors per month. Every thing elſe is reaſonable in proportion.

No ſtudent is ſo poor as not to poſſeſs a library. The difference in the price of books is very great, and yet there is no claſs of men more generally opulent and reſpectable than the German bookſellers. By contenting themſelves with a moderate profit, the books bear a price which puts them within the reach of almoſt every ſtudent. In Great Britain, ſtudents are obliged to content themſelves with elementary books, and to borrow others from public libraries. Independently of the difficulties attending the delivery of works in theſe inſtitutions, it is no ſmall inconvenience to the ſtudents not to have his books at all times, and to be able to ſtudy at his own time and in his own way. We are well aware of the difference of price in paper and printing in the two countries, but we contend that they are not ſuch as to juſtify the difference in price; and, if they did, the German bookſellers have another drawback: no ſooner does a work of merit make its appearance, than a pirated edition is publiſhed in a neighbouring ſtate: and yet, with all this, books are one-half or two-thirds cheaper. Thus Blumenbach's Phyſiology ſells in Germany at about 5s. 6d. The tranſlation of the ſame volume in London, a book of the ſame ſize and nature, (and, as books go here, a cheap book,) ſells at 12s. This is a favourable inſtance, for we could ſhow caſes where the proportion is as 3s. 6d. to 15s.

The public libraries in Germany are better conducted and more uſeful than ours. They are not ſo much compoſed of old and curious books, as of works of general utility. They are perfectly open to the ſtudents, nor did we ever hear of a book being purloined or defaced.

There is another advantage which the ſchools of Germany afford—a very conſiderable facility of diſſection. While our preſent reſtraints upon the ſtudy of anatomy exiſt, ſo that it cannot be purſued to any uſeful extent, or at any reaſonable expenſe, nor without expoſing the ſtudent to the vengeance of the law, or the dread of violence from popular prejudice, it is in vain for us to hope to rival the Germans in the ſtudy of elementary, much leſs of minute, anatomy. The ſmalleſt ſchool in Germany is better provided with ſubjects than any of our univerſities or even hoſpital-ſchools, and this without violating the feelings of any one. The rooms are in general ſupplied by the dead bodies of thoſe who die in the hoſpitals, and who have no friends or relations to claim them. We rejoice that this ſubject has not eſcaped the notice of one whoſe eloquence can hardly fail of ſucceſs when the object is, as in this caſe, to benefit the cauſe of humanity and improve the profeſſion of which he is ſo great an ornament. See the Hunterian Oration for 1819.

In recommending the ſchools of Germany to ſuch of our countrymen as may viſit the continent, we muſt be underſtood as addreſſing ourſelves only to ſuch as view the profeſſion of medicine in the light of a liberal and enlightened ſcience: to others the appeal would be in vain. The former we muſt exhort not to be deterred by the manner in which Germany and her ſchools are often mentioned in this country, and that too by men whoſe reputation makes them an authority. They ſpeak of the Germans as illuminati, as proficients in animal magnetiſm and nothing elſe, as mere book-men, &c. &c. but neglect to obſerve, that no country has adorned the profeſſion of medicine with ſo many eminent men, or laboured more aſſiduouſly in her cauſe, than Germany; the land of Hoffman and Richter, Meckel and Walter, Wriſberg and Zinn, Schmidt and Hildenbrand, the land which ſtill boaſts of Franck and Soemmerring, Blumenbach and Beer, and Springle and Hufeland.

The German ſtudent enters the profeſſion much better prepared than the generality of our ſtudents. A thorough knowledge of the claſſics, and ſome acquaintance with natural philoſophy, are conſidered indiſpenſable; while moſt of them poſſeſs ſufficient literary acquirements to feel the dignity and importance of the profeſſion upon which they are entering. Their diligence is unwearied and univerſal.

One great cauſe why the productions of the German ſchool are ſo little known or valued in this country, is the ignorance of the German language which is ſo generally prevalent. The war having ſuſpended our intercourſe with the Germans, our knowledge of their labours has been derived from French tranſlators, the very worſt medium through which it could have been conveyed. It cannot however be denied that, with all the zeal and induſtry which the Germans have diſplayed, the benefit derived from the application of their vaſt learning to practical purpoſes (whether in our profeſſion or in other ſciences) has not been equivalent to what might have been expected from their acknowledged talents and unwearied induſtry. The fault has not lain with them, but with the peculiar conſtitution of their country. Divided into a number of ſmall and inconſiderable ſtates, which were bound by no common union and cemented by no common feeling, its general reſources were weakened, and too few opportunities afforded for putting ſcientific diſcoveries to the teſt of practical application. Diſcoveries often lay dormant, or, in the ſtruggle to make them known, were ſeized by nations more happily circumſtanced, and their real country and author forgotten. Leſſing has expoſed this feeling in one of his charming fables ſo happily, that we ſhall give a tranſlation of it to our readers. "A hen, which had become blind, continued to ſcratch together her ſmall heap of corn. Little did it avail the induſtrious fowl; for another hen, which was not blind, followed her ſteps, and enjoyed the fruits of her labour. As ſoon as the blind hen had laboriouſly ſcratched up a grain, the other carried it off. The induſtrious German collects the knowledge which the lively Frenchman puts to uſe."

The moſt celebrated of the Proteſtant univerſities of Germany is that of Gottingen. This univerſity was founded by George II. when Elector of Brunſwick and Luneburg, on the 7th of December, 1736. The imperial licence had been granted by the Emperor Charles VI. ſo early as January 1733, and lectures were firſt delivered in October 1734. The univerſity was ſolemnly opened on the 17th of September, 1737, and named after its founder, the "Georgia Auguſta." The celebrity which this univerſity has acquired in ſo ſhort a period of time, is to be

aſcribed to the many eminent men it has ranked among its teachers. Of theſe we need only mention Haller and Richter, Zinn and Roderer, among its former, and Blumenbach, Oſiander, Langenbeck, and Himly, among its preſent, profeſſors, to prove that its title to be ranked among the firſt medical ſchools, is as juſt as the claims which it undoubtedly eſtabliſhes, on the merits of ſo many illuſtrious characters in other departments, to be called the firſt literary and philoſophical ſchool in Germany.

In regard to the courſe of ſtudy to be purſued to entitle the ſtudent to a diploma, there are no fixed regulations here, nor, indeed, in any of the Proteſtant univerſities of Germany. All that is required is, that the candidate ſhould be able to undergo his examination. No queſtions are aſked reſpecting the duration of his ſtudies, or the univerſity where he has acquired his knowledge; but, in general, it requires three or four years previous ſtudy to be able to paſs the examination, which is ſtrict and fair. It embraces all parts of theoretical and practical medicine, including botany and chemiſtry; and a theſis in Latin is ſubſequently defended before the univerſity. The expenſe of graduating is about 40 louis d'or, and the examinators are the members of the medical faculty, generally the four eldeſt. Medical ſtudents generally ſpend three or four years at Gottingen, graduate, and then complete their ſtudies in the hoſpitals of Vienna or Berlin. It is, in fact, chiefly a literary medical ſchool, and, the opportunities of diſſecting excepted, bears the ſame relation to Vienna and Berlin, as Edinburgh or Glaſgow does to London. The opportunities for ſtudy are unequalled. The free and unſhackled uſe of a moſt ſplendid library; the excellent lectures of its celebrated teachers, and theſe at a very moderate price; the peculiar ſituation of the univerſity, in a ſmall town, from which public amuſements and other temptations to idleneſs are baniſhed, where there is little or no general ſociety, and where the general tone and habits are purely literary, are advantages which few univerſities in Europe combine.

In 1815, the number of ſtudents at Gottingen was 860; of theſe 604 were foreigners, (i. e. not Hanoverians,) and 146 medical ſtudents:

In 1816, therewere	1132; of theſe,	745 were foreigners,	234 medical.
1817,	1160	710	223
1818,	1158	636	210

An unfortunate diſturbance which broke out among the ſtudents in 1819, had greatly reduced the number; but we are happy to learn, that it is rapidly regaining its former numbers, and that the ſtorm which threatened its entire deſtruction, has purified it of many things which obſcured its advantages.

The ſalaries of the profeſſors depend on government, and are not generally known. They vary according to the merit and popularity of the profeſſor. Thus, a young profeſſor may receive only 400 or 500 dollars, perhaps leſs; while 1500 are given to tempt a man of eſtabliſhed reputation to come and ſettle in the univerſity. We believe that no profeſſor in Gottingen has more than 1500 dollars; few ſo much.

There are three hoſpitals in Gottingen: 1. A medical and ſurgical hoſpital, under the care of profeſſor Himly. 2. A ſurgical hoſpital, under profeſſor Langenbeck. 3. A lying-in hoſpital, under profeſſor Oſiander. There is alſo a botanical garden, a muſeum, chemical laboratory, phyſical apparatus, and a public library. The lectures of the profeſſors are all delivered in German; and here we may obſerve, that in no part of Germany is the language better ſpoken than in Gottingen, and that to foreigners it affords the advantage of a moſt excellent maſter, profeſſor Benecke, profeſſor of the ancient German, and one of the firſt Teutonic ſcholars now living. The terms of ſtudy are called Semeſtres; the one commences on the 26th of April, and laſts about five months; the other ſome time in October. The lectures are delivered every day, except Sunday. The fee to each courſe is generally a louis d'or, and never more than two. Beſides the public lectures, the profeſſors are in the habit of giving private inſtructions to one or more pupils. Theſe are called *privatiſſima*. Profeſſors Himly and Langenbeck each give privatiſſima on the operations of ſurgery, and on diſeaſes of the eye. Three or four pupils generally unite. The profeſſor commonly receives ten louis d'or for a privatiſſimum. There are alſo ſeveral private lecturers, but none of equal eminence with the profeſſors.

The library is one of the moſt ſplendid and uſeful in the world, and occupies a large and convenient building in the centre of the town. It conſiſts of upwards of 200,000 volumes. It poſſeſſes few manuſcripts or curioſities; but aims at general utility. The books occupy nine large halls, and are arranged in a ſyſtematic order. In one department are the theological, in another the medical, books, &c. &c. Theſe are again divided; and under the heads of neurology, midwifery, opthalmology, juriſprudential medicine, &c. &c. the ſtudent finds every thing which has been written on the particular ſubject of his ſtudies. The laſt alphabetical catalogue conſiſts of 180 volumes fólio. There are generally about 3000 books in circulation among the ſtudents. To keep pace with the progreſs of knowledge, about 5 or 6000 dollars (1000l.) are annually expended in new works. Theſe funds are derived from what is called the cloiſter-fund; the produce of the cloiſters and convents which were ſuppreſſed at the time of the Reformation, and which in Hanover have always been devoted to the ſupport of libraries and charitable inſtitutions. This ſum would not, of courſe, be ſufficient for the ſupport of this noble library, were it not to receive many donations from authors. The learned ſocieties are in the habit of ſending their Tranſactions; among theſe we obſerved the name of the Royal Society. His preſent majeſty, while regent, preſented a moſt ſplendid collection of books to this library.

Although the Anatomical School is profeſſedly under the charge of the profector, profeſſor Hempel, it owes its chief advantages to the diligence and celebrity of the profeſſor of ſurgery, Langenbeck. A building was indeed devoted to anatomical purſuits as early as 1738, but in a literary univerſity we ſeldom find that much attention is paid to practical anatomy. The Surgical Hoſpital is a large and commodious building, and has been fitted up in a very judicious and uſeful manner. It is devoid of architectural ornament; but is placed in an open garden, and well ventilated. It contains two lofty wards, adjoining each other; the one for men, the other for women: each ward contains twelve beds. At the one extremity are the nurſes rooms, the other leads to the operation-room, which is built in the form of an amphitheatre. Two ſmall wards, attached to the operating-room, are devoted to diſeaſes of the eye, each containing four beds. Under the Operating Theatre on the ground-floor is the Surgical Auditorium, and adjoining it a moſt ſplendid collection of ſurgical inſtruments and bandages. Patients are received into the hoſpital without the payment of any ſtipend or fee. The reputation of this hoſpital being very great, patients often come a diſtance of fifty or one hundred miles to it; but only curable and inſtructive caſes are admitted. By theſe means no ſemeſtre paſſes over without affording the ſtudents the opportunity of ſeeing almoſt all the important operations.

The Surgical Hoſpital is attended by from ſeventy to eighty ſtudents, who are divided into *practicanten* and *auſcultanten*; i. e. practitioners and liſteners. The former conſiſt of thoſe who have attended a previous courſe, and now take in rotation the charge of a patient. On doing this they are obliged to give an account of the diſeaſe, and anſwer all queſtions which may be put by the profeſſor reſpecting the anatomy, pathology, and treatment, of the patient. Profeſſor Langenbeck in his lectures on ſurgery, which he delivers daily from one to three o'clock,

gives half his courſe in a ſemeſtre. They might more properly be called anatomical and ſurgical lectures; for the profeſſor firſt demonſtrates the anatomy of the different parts in their healthy ſtate, before he proceeds to ſpeak of them in the various forms of diſeaſe which require ſurgical aſſiſtance. The Anatomical Theatre is annually ſupplied with about eighty bodies. During the winter theſe are uſed for anatomical demonſtrations, and in ſummer are devoted to the performance of ſurgical operations. The anatomical demonſtrations and ſurgical lectures are generally attended by 120 or 130 ſtudents, of theſe about forty are *praeparanten* (diſſectors), and aſſiſt in the making of anatomical preparations.

The foundation of the Surgical Hoſpital is entirely due to profeſſor Langenbeck. In 1807, on his repreſentation, a certain ſum was appropriated to its ſupport from the cloiſter-fund. In 1808 the profeſſor built the preſent hoſpital, which is ſtill his own property, the Hanoverian government paying him a yearly rent for it. The beautiful collection of ſurgical inſtruments alſo belongs to the profeſſor. Beſides thoſe which he has himſelf collected, he purchaſed the collection of Heiſter, which, in an hiſtorical point of view, is probably unique. The whole as it now ſtands is undoubtedly the firſt in Germany. It compriſes all the inſtruments that have ever been uſed in ſurgery from the earlieſt days to the preſent time.

Profeſſor Langenbeck, as a practical ſurgeon, is unrivalled in Germany. We have ſeldom ſeen a man ſo enthuſiaſtically devoted to any purſuit, or who brought to the profeſſion of ſurgery more capability of excelling in it. He has been known for ſome time as an excellent anatomiſt, but it was his ſituation in the army that brought him into notice as a ſurgeon. He particularly diſtinguiſhed himſelf at Waterloo, where he held the office of ſurgeon-general to the Hanoverian army, by his indefatigable zeal, brilliant operations, and the excellent arrangement of his department. He not only acquired great diſtinction, but is ſaid to have enriched himſelf during the campaign. It is much to his credit that all theſe circumſtances have rather contributed to increaſe than ſlacken his zeal and exertion. He is unwearied in the purſuit of his favourite ſtudies. Although he has a very conſiderable practice, and lectures five hours every day, he is in the diſſecting-room before it is light, and devotes to it every moment which he can ſpare. He has founded a muſeum, chiefly formed from the labours of himſelf and pupils, and which contains ſome very beautiful preparations. He is alſo the author of a periodical work, and has written ſome other books. Profeſſor Langenbeck however, is more a practical than a book man. His time has been more ſpent in the diſſecting-room than the library, and he is conſequently not ſo well verſed in the literature of ſurgery as ſome of his countrymen who have probably never handled a knife. As an operator, he is unrivalled in his own country, and we are not aware that he is excelled in any. He is clear and deciſive in his judgment; rapid and elegant in his operations.

Lectures on the practice of phyſic are delivered every morning at ten o'clock, by profeſſor Himly, in an auditorium connected with his dwelling houſe, and are generally attended by upwards of one hundred ſtudents. Two ſemeſtres are occupied by the courſe, the term of lectures therefore correſponds very nearly with thoſe of Dr. Gregory of Edinburgh. Profeſſor Himly has printed his "Lehrbuch der practichen Heilkunde" as a text-book. This work is divided into two ſections; the firſt contains general noſology, and the ſecond treats of materia medica. The latter ſection is really excellent, but the firſt appears, at leaſt to our unphiloſophical minds, quite uſeleſs. If the hearer can ſeparate the practical matter of Himly's lectures from his theoretical views, theſe lectures may be pronounced very good and uſeful. He is too much attached to a ſyſtem; but his lectures contain in general a full account of what is known on the ſubject, and diſplay great learning and reſearch. Profeſſor Himly's clinic takes place from eleven to twelve every day. It is connected with a ſmall hoſpital which is under his direction, founded by ſome inhabitants of Gottingen, and which derives its ſupport partly from the intereſt of funds left for its maintenance, and partly from the cloiſter-fund. There are about thirty beds in it. The principal part of the ſick at this clinic are out-patients.

Profeſſor Himly has not of late publiſhed any thing but his "Journal der Ophthalmologie." His text-book is not publiſhed, being merely given to his ſtudents.

Lectures on phyſiology, comparative anatomy, and natural hiſtory, are delivered, the phyſiology at eight o'clock in the morning, comparative anatomy from three to four, and natural hiſtory at five in the afternoon, by the celebrated Blumenbach, a name reſpected and venerated wherever it is known. Blumenbach was born in the year 1752, at Gotha in Saxony, of parents who were in moderate circumſtances. He commenced his ſtudies at Gotha, from whence he went to Jena, where he remained two years and a half, and then came to Gottingen to ſtudy, under Haller, Richter, and Roderer. He took his degree as M. D. in 1776, at Gottingen, and then propoſed to return to Gotha, with the intention of purſuing his profeſſion; but his diſſertation "De Generis Humani Varietate," made ſo great a ſenſation, from the novelty of the ſubject, and the excellence of the execution, that on the ſame day that he received his degree, the Univerſity named him Extraordinary Profeſſor of Natural Hiſtory. Having thus obtained a ſituation which the natural modeſty of his diſpoſition rendered quite unexpected, he aſſiduouſly devoted himſelf to the ſtudy of natural hiſtory; with what ſucceſs, his numerous works, and the ſplendid benefits he has conferred on ſcience, ſufficiently teſtify. His cabinet of natural hiſtory is one of the moſt ſplendid in the world. It is entirely collected by himſelf, and forms, perhaps, the beſt monument of the eſteem in which he is held, for he has never purchaſed a ſingle article in it. It is kept in his dwelling-houſe, and occupies five rooms. Nothing can be more inappropriate than its ſituation, or more diſorderly than its arrangement. The moſt valuable preparations are ſeen out of their caſes lying about. There is no ſyſtematic arrangement in any part of it; but this is not to be wondered at, if we conſider the progreſſive manner in which this collection has been formed, and the age of its poſſeſſor. Many would be happy to arrange it for him, and Dr. Wernekink has done much towards reducing the chaos to order; but Blumenbach does not like any ſetting-to-rights in his muſeum.

The part of his cabinet which attracts principal attention, is his unrivalled collection of human ſkulls. It has been viſited not only by moſt men of ſcience, but by all the crowned heads of Europe. On this ſubject Blumenbach ſays, "If we wiſh to make great people follow us, and not we them, it is only neceſſary to make a collection of ſkulls." This collection is ſufficiently known by Blumenbach's work "Decas Craniorum." The moſt valuable thing in it is a Grecian ſkull, which is at leaſt 2000 years old, a preſent from his pupil the Crown Prince of Bavaria. It is in a perfect ſtate of preſervation, and conſtitutes a moſt beautiful ſpecimen of the beau ideal of the ſkull. The next in point of value are the ſkull of an ancient Roman, and that of a cannibal (Bataku), which he received from the prince of Neuwied. Nothing can be more intereſting than to view theſe three ſkulls, placed as they are by one another, and to compare their appearances with the moral differences of character of the nations to which they belong. In an anatomical point of view, the beſt-preſerved ſkull in the collection is that of a negro. On the ſame ſhelf ſtands the beautiful ſkull of a Georgian female, and ſome very rare ſkulls of the inhabitants of Nukahiva, a preſent of captain Kruſenſtern. There is alſo a remarkable ſkull of a Cretin, which produces

duces an indeſcribable feeling of horror, from its cloſe reſemblance to that of an ape. We have not room to dwell upon individual parts of this collection; but ſhall merely remark, that it derives additional value from the care taken to authenticate the accounts given of its contents, and the ſkulls are preſerved in the ſame ſtate in which they were originally found. Yet Blumenbach, notwithſtanding his collection of ſkulls, is not a craniologiſt. Spurzheim was exceſſively anxious to have Blumenbach's opinion on his craniological ſyſtem, and tried many expedients to elicit it in vain. At length he attacked Blumenbach on his vulnerable ſide, by bringing him a beautiful ſkull as a preſent. This was irreſiſtible. The collector ſtruggled between his love of truth and his extreme fear of wounding the feelings of the craniologiſt. He looked at the ſkull, and exclaimed, "My dear doctor, in your ſyſtem there is much which is new, and much which is true; but the new is not true, and the true is not new."

Blumenbach's collection of foſſil bones is one of the moſt beautiful in Europe. Notice is particularly attracted to the bones of the bear, which exhibit the ſame proportion in point of ſize to the bear of preſent times, as the calf of one month to the ox of two years. There is alſo a very fine collection of minerals; and another, no leſs valuable, of ſkeletons, in which that of a lioneſs is very remarkable. The preparations in this cabinet, illuſtrating the growth of the elephant's teeth, are unique. His wet preparations are invaluable, of which we ſhall only ſay, that they are deſcribed in his "Abbildungen Natur-Hiſtoriſche-Gegenſtände." We may, however, notice as intereſting, the fœtus of a porcupine, and a crocodile eſcaping from the egg. We muſt not forget to mention his beautiful collection of drawings, deſcriptive of all nations of the earth; and an invaluable aſſemblage of curioſities which have no particular relation to ſcience.

The following is a liſt of his principal works: 1. Introductio in Hiſtoriam Med. Litterariam; Gottingen, 1786. 2. Synopſis Syſtem. Scriptt. quibus inde ab inaug. Acad. G. Aug. 1737 uſque ad 1787, diſcipl. ſuam augere ſtud. Profeſs. Med. Gott. 1788. 3. Med. Bibliothek. 3 Bde. 1783—95. 4. Inſtitutt. Phyſiol. 1787. 5. De Vi Vitali Sanguini deneganda; 1788. 6. Geſchichte und Breſchreibung der Knochen; 1786. 7. Ign. v. Born; Zwey Abhdll. üb. d. Nutribus-kraft; Peterſburg, 1789. 8. De oculis Leucaethiopum et iridis motu Comment; Gottingen, 1786. 9. De Generis Humani varietate nativa; 1776. 10. Collectio craniorum diverſ. Gentium; 1790. 11. Ueber d. Bildunſtrieb u. d. Zeugungſgeſchaft; 1781.

Notwithſtanding his inceſſant labours in his ſtudy and his cabinet, his three lectures a-day, and the frequent viſits he is receiving from ſtrangers, nothing can be more affable or kind than his behaviour to ſtudents. He devotes to them the greater part of Sunday, and the evening of nearly every day, from ſix to nine o'clock, when he receives a certain number at tea. To the Engliſh he is particularly attached, having long been on intimate terms with ſir Joſeph Banks, and many other diſtinguiſhed characters. He ſpeaks Engliſh perfectly, and poſſeſſes all the Engliſh works of great merit. He is equally well-informed in the other departments of knowledge; his acquirements ſeem indeed to be univerſal.

Lectures on midwifery are delivered by Profeſſor Oſiander, and are perhaps among the beſt ever heard. They may be entirely depended on, for they are founded on a long courſe of accurate obſervation. His text book is entitled "Oſiander's Lehrbuch der Entbindungſkunſt," which is perhaps the beſt work on the ſubject. Profeſſor Oſiander gives two courſes in the year, each of which laſts about five months; theſe are combined with chemical inſtruction in the hoſpital. The Lying in Hoſpital is the fineſt building in Gottingen, and is admirably adapted to the purpoſes for which it is intended. Beſides the accommodation for patients, it contains apartments for the profeſſor, his beautiful cabinet, and an appropriate lecture-room. Nothing can form a ſtronger contraſt to the chaos of Blumenbach's collection, than the exquiſite arrangement of Oſiander's. It contains a moſt valuable ſeries of preparations, chiefly illuſtrative of his particular department. The room in which it is contained is elegantly fitted up, and the preparations, arranged in the moſt beautiful order, are all ticketed, with a reference to the catalogue. This catalogue conſiſts of ſeven folio volumes of MS. and to each number is affixed a complete hiſtory of the caſe of the patient from whom the preparation was taken. Profeſſor Oſiander owes this beautiful, we had almoſt ſaid unrivalled, collection to his own induſtry. He told an Engliſh gentleman, that he had often in his younger days gone without his dinner, to purchaſe the glaſs and ſpirit for ſome new preparation.

The lectures on botany are delivered by profeſſor H. A. Schrader, from ſeven to eight in the morning. The botanical garden is one of the moſt perfect and uſeful in Europe, the Hanoverian government paying great attention to its maintenance. The lectures on chemiſtry are delivered by profeſſor Stromeyer, who, ſince Klaproth's death, may be conſidered as the firſt analytic chemiſt in Europe. At the latter's death, the Pruſſian government offered profeſſor Stromeyer his place at Berlin; but, the Hanoverian government making a conſiderable addition to his ſalary, he preferred remaining in his preſent poſt. He is as good a teacher as chemiſt, and is peculiarly attentive to his ſtudents. Independent of his lectures every day, he exerciſes the pupils twice a-week in experimenting in an excellent laboratory.

We may alſo here mention profeſſor Hauſmann, whoſe lectures on mineralogy, and whoſe collection, are well worthy the attention of the curious. The lectures on general ſcience and literature are excellent, and every facility is afforded, in this intereſting univerſity, of cultivating the higher branches of our ſcience in a manner which is almoſt unequalled.

We cannot conclude without noticing the viſit of his preſent moſt gracious majeſty to this town and univerſity during his late tour. As the univerſity was founded by George II. it was naturally expected that George IV. would not paſs through ſuch a town with the ſame haſte as he would through a place of leſs conſideration; and the public opinion was not diſappointed, for he was reſolved to ſtay as long as the very ſhort time he had preſcribed for his journey would admit. About noon, (on the 30th of October, 1821,) his majeſty's approach was announced by a diſcharge of artillery; and, when his carriage arrived at the principal gate of the town, he found a grand triumphal arch erected, and a numerous train of young females, dreſſed in white, and each carrying in her hand a feſtoon of variegated flowers, approached, with a poem placed on a ſcarlet velvet cuſhion; which his majeſty was pleaſed to accept in the moſt condeſcending manner. His majeſty did not immediately proceed to the univerſity, to examine the rich ſtores of the library, the orderly cabinet of Oſiander, or the diſorderly one of Blumenbach. No—the firſt place to which he proceeded, on his entrance, was the riding-ſchool, where the *ſtudents* had made all the neceſſary arrangements for entertaining him with a carouſal in the ſtyle of ancient chivalry. Here his majeſty was received by the public authorities; and the *profeſſor of riding in the univerſity* was in waiting to exhibit before his ſovereign ſpecimens of his art, from the firſt eſſay up to the *acme* of proficiency. His performance, we are told, ſhowed that he was without a rival in his profeſſion; and his majeſty was not more pleaſed than ſurpriſed at the exhibition. The ſtudents were marſhalled according to the inſtructions contained in a printed programme, and they aſſembled in numbers not leſs than fifteen hundred. They were placed in array by marſhals choſen from among their body, wearing black coats, cocked hats, long tails, and

and ſcarfs of white ſilk tied round the waiſt. They marched to the riding-ſchool in files of four deep, and formed an immenſe cavalcade. There were, beſides, about fifty ſtudents on horſeback, who were to ſerve as a guard of honour to his majeſty; theſe wore blue coats with red collars, buff-leather ſmall-clothes and large boots, and cocked hats with white feathers. Each of them carried a drawn ſword in his hand. The riding-ſchool is in the form of an oblong ſquare; and on one ſide of it the ſtudents ranged themſelves along in double rows, the inhabitants of the town ſtanding immediately oppoſite to them, while his majeſty was conducted to an open pavilion that was placed at the upper end of the room, and hung with a rich drapery of crimſon velvet and white ſatin. To this there was an aſcent of ſeven ſteps, and two young gentlemen of the guard of honour ſtood on the firſt ſtep in front of his majeſty. In the pavilion with his majeſty were the landgravine of Heſſe Hombourg, his ſiſter, the dukes of Cambridge and Cumberland, with their ducheſſes, ſeveral minor princes, and the noblemen and gentlemen of his majeſty's ſuite, who took their ſtation in the rear. A large party of the ſtudents now got on horſeback, and went through various equeſtrian exerciſes, brandiſhing their lances with great agility, while they made a profound obeiſance every time they paſſed his majeſty. Some Turks in effigy, who ſtood as their opponents, were ſoon deprived of their heads: the young cavaliers ſhot them off with great adroitneſs as they rode forward at full gallop, and diſplayed them alternately on the points of their lances and of their long ſwords. They then rode a quadrille; and no French dancing maſter of the firſt celebrity could have ſhown more preciſion in the different figures than they evinced. His majeſty partook of ſome refreſhment before he re-entered his carriage, and was preſented with two poems, one in German, and the other in Latin. After leaving the riding-ſchool, his majeſty paſſed through the principal ſtreets, and then proceeded to the hall, where the profeſſor of natural hiſtory gives lectures. Here his majeſty received the heads of the univerſity and the civic authorities. He then returned to his carriage, and continued his journey.

Catholic Univerſities.—There are two German univerſities in the Auſtrian empire, Vienna and Prague; and five Lyceums, Lemberg, Gratz, Olmutz, Klagenfurt, and Linz. The difference between the univerſities and the lyceums, ſo far as concerns medical ſtudy, is, that ſurgery alone is taught in the latter, both medicine and ſurgery in the former.

The emperor Frederic II. as appears from a work which he compoſed, and which bears for title, "De Arte Venandi cum Avibus," had himſelf made numerous obſervations in comparative anatomy. He is quoted as an authority by profeſſor Blumenbach. Frederic is entitled to the everlaſting gratitude of mankind, for the exertions which he made in oppoſing the ſuperſtitions and the prejudices, which during the thirteenth century preſſed down into the duſt knowledge of almoſt every kind, eſpecially medical knowledge. He got Galen tranſlated; gave orders that every year in Palermo a human body ſhould be diſſected; and commanded that no man ſhould be permitted to practiſe ſurgery who had not ſtudied anatomy on the human ſubject. It was in the year 1237, that he granted leave to the ſenate of Vienna to eſtabliſh a univerſity. This inſtitution was conſiderably improved by Albert I. in 1296. Ottokar of Bohemia added to the number of teachers, and augmented their incomes. Under Albert II. the univerſity of Vienna flouriſhed ſtill more: he too added to the number of profeſſors, and granted them public *auditoria* and free dwellings in the imperial caſtle. Duke Rudolph IV. in 1364, removed the academical *auditoria*, and the dwellings of the profeſſors, to the Minoriten-Cloiſter, and to the houſes of the former knight-templars, as theſe were more ſtill and retired. In 1365, pope Urban V. iſſued a bull of ratification for the juridical, medical, and philoſophical, faculties of the univerſity. On the ſolicitation of duke Albert III. the theological faculty was added by Urban VI. In 1366, this univerſity was arranged anew, after the model of that of Paris, and ſtudents were now admitted from the Auſtrian, Rheniſh, Saxon, and Bohemian, nations. Under Albert III. in 1388, the number of profeſſors roſe to thirty; and conſiderable additions were made to the accommodations of the univerſity. Ferdinand II. in 1622, gave over this inſtitution into the hands of the Jeſuits, who, though they were themſelves ſhut out from the profeſſorſhips, yet knew how to retain the whole government of the univerſity till the year 1754, when the learned and enlightened commentator on Boerhaave, Gerard baron Van Swieten, ſucceeded, againſt much oppoſition, in introducing very important improvements. He new-modelled the whole medical faculty, and arranged it in a manner much more likely to anſwer its profeſſed object than it had hitherto done. He introduced profeſſorſhips of chemiſtry and of botany; and the eſtabliſhment of a botanical garden, and of a complete collection of chemical and ſurgical inſtruments, was wholly owing to him. He alſo brought forward a propoſal for a profeſſorſhip of midwifery. He drew the moſt celebrated men of all claſſes to Vienna, aſſuring them of adequate ſalaries. The univerſity of Vienna is at preſent the richeſt in all Germany. Under the reigns of Maria Thereſa, Joſeph II. Leopold II. and the preſent emperor, it has ſo riſen in reputation amongſt the catholic univerſities, that it now occupies, eſpecially as a medical ſchool, the very firſt rank.

The buildings of the univerſity of Vienna are ſituated in the town, which is ſmall, and is ſeparated by a wide eſplanade from the ſuburbs, in one of which is the *Allgemeine Krunkenhaus*, or General Hoſpital. The hours of lecturing in the univerſity interfere with thoſe of the viſits in the hoſpital. Hence the lectures are but rarely attended by thoſe foreigners who viſit Vienna in purſuit of their medical ſtudies; amongſt whom are found ſtudents not only from the weſtern and northern countries of Germany, but from Hungary, Swiſſerland, Italy, Ruſſia, Denmark, Holland, and even France and England, and with them many who have already practiſed medicine, and occaſionally profeſſors from diſtant univerſities. It is chiefly from the admirable arrangements of the clinics for internal diſeaſes, for diſeaſes of the eye, and for lying-in women, and from the celebrity of the profeſſors of theſe three clinics, that foreign ſtudents are attracted to Vienna.

In order to be admitted a ſtudent of medicine in an Auſtrian univerſity, it is neceſſary that the candidate ſhould lay before the director of medical ſtudy, certificates of his having ſtudied philoſophy for three years in a lyceum. Under philoſophy are comprehended the Latin and Greek languages, hiſtory, mathematics, natural and moral philoſophy, and religion. The ſchool-year in Vienna begins with November, and ends with Auguſt. The courſe of medical ſtudy extends to five years, and comprehends the following lectures:

Firſt Year: 1. Introduction to medico-chirurgical ſtudy, and natural hiſtory, by profeſſor Von Scherer. 2. Anatomy, by profeſſor Mayer. 3. Botany, by profeſſor Joſeph Von Jacquin.

Second Year: 1. Phyſiology, by profeſſor Prochaſka, 2. General chemiſtry, by profeſſor Joſeph Von Jacquin.

Third Year: 1. General pathology and therapeutics, by profeſſor Hartmann. 2. Midwifery, by profeſſor Boer. 3. Materia-medica et chirurgica, by profeſſor Hartmann. 4. General and ſpecial pathology of external diſeaſes, by profeſſor Von Rudtorffer. 5. Ophthalmology, by profeſſor Prochaſka. 6. Demonſtration of ſurgical inſtruments and bandages, by profeſſor Von Rudtorffer.

Fourth Year: 1. Special therapeutics of internal diſeaſes. 2. Clinic for internal diſeaſes. 3. Veterinary medicine, by the director of the veterinary ſchool.

Fifth Year: 1. Special therapeutics of internal diſeaſes. 2. Clinic for internal diſeaſes. 3. Medical juriſprudence, by profeſſor Bernt. 4. Medical police, by the ſame.

The ſtudents of medicine, a claſs who in Vienna are ſtrictly diſtinguiſhed from the ſtudents of ſurgery, are not obliged to attend the following lectures: 1. Practical ſurgery, by profeſſor Kern. 2. Practical ophthalmology, by profeſſor Beer. 3. General pathology, therapeutics, and materia medica, by profeſſor Herrman. 4. Special therapeutics of internal diſeaſes, by profeſſor Raimann.

Such are the ordinary lectures on medicine in the univerſity of Vienna. Thoſe indeed of Kern, Beer, and Raimann, are delivered in the General Hoſpital. For none of the above lectures is any fee paid by thoſe who are enrolled as ſtudents in the univerſity. The expenſe of enrollment is fifteen paper-guldens half-yearly, which is about 10s. For the lectures and clinic of profeſſor Beer, ſtrangers pay twenty-five paper-guldens yearly. The lectures of profeſſors Herrmann and Raimann are deſigned for candidates in ſurgery, and are ſeldom attended by ſtudents of medicine.

The following are accounted extraordinary lectures: 1. Diſeaſes of women and children, by profeſſor Boer. 2. Philoſophical and phyſical knowledge neceſſary for ſurgeons, by profeſſor Piſsling. 3. Duties of thoſe who attend the ſick, by profeſſor Schmidt. The lectures of Prochaſka on phyſiology, and of Hartmann, are given in Latin: the others in German.

The ſtudents of practical anatomy carry on their diſſections in the univerſity. To foreigners, ſubjects are ſupplied at the price of ſeven paper-guldens. They are brought from the General Hoſpital, but are not ſo plentiful as in the diſſecting-rooms of Paris. All diſſection in the General Hoſpital is at preſent ſtrictly forbidden; but it is not unfrequent to obtain leave to diſſect in the Military Hoſpital, which is cloſely adjoining to the general one, whence the dead bodies are furniſhed.

Beſides the public lectures, ſeveral of the profeſſors in the univerſity of Vienna give occaſional *privatiſſima*. By the ſpecial order of government, foreigners only are allowed to take advantage of theſe private courſes. Profeſſor Mayer gives private demonſtrations on anatomy in this way, or in any particular part of anatomy which is deſired. Profeſſor Von Rudtorffer gives over the *privatiſſima* on bandages and ſurgical inſtruments, to his aſſiſtant. Profeſſor Kern uſually does the ſame in regard to ſurgical operations. The aſſiſtant alſo in the obſtetrical clinic gives *privatiſſima*. Profeſſor Beer and his aſſiſtant, Dr. Roſas, give ſimilar courſes on the operative ſurgery of the eye. The number of ſtudents admitted to a *privatiſſimum*, is generally ſix.

In all the public courſes of medicine and ſurgery, an examination of the enrolled ſtudents is held by the ſeveral profeſſors every half-year, in preſence of one or more of the other office-bearers of the univerſity. In order to be admitted to examination for a degree in medicine, the candidate muſt produce certificates of having acquitted himſelf reſpectably in three ſemeſtral examinations, of having completed his fifth year of ſtudy, and of having publicly treated within the laſt half-year two patients in the clinic for internal diſeaſes, the caſes of which patients he muſt at the ſame time preſent to the faculty, written in Latin.

He who aſpires to the degree of *Magiſter Chirurgiæ*, a rank analogous to that of member of one of our colleges, is obliged to follow nearly the ſame courſe of ſtudy as the candidate for a degree in medicine. It is different in regard to the common civil and country ſurgeons, as they are called. Theſe ſtudy only two years, and, ſo far from being required, are ſcarcely admitted to attend the Latin lectures of Prochaſka and Hartmann. Neither in Auſtria, nor, ſo far as we have ſeen, in any part of Germany, is this claſs of ſurgeons reſpectable. They are inferior to the *officiers de ſanté* of France, and ſtill retain the helmet of Mambrino, and execute at once the duties of barbers and of ſurgeons.

One of the public examinations for the degree of maſter in ſurgery conſiſts in the performance of two operations on the dead body. The operations are determined by lot. The candidate deſcribes the ſurgical anatomy of the parts, lays down the indications for the operations, performs them upon the dead body which is before him, and applies the proper bandages.

Degrees are granted by the univerſity of Vienna in ophthalmology. Doctors in medicine, and maſters in ſurgery, are conſidered as having taken this degree: but no one elſe can publicly practiſe as an oculiſt in the Auſtrian ſtates, unleſs he has attended the lectures of Prochaſka, and undergone an examination by him on the diſeaſes of the eye.

The marked diſtinction of ſtudents of medicine from ſtudents of ſurgery, the ſevere courſe of ſtudy to which the former are ſubjected, the neglectful and almoſt contemptful education of the *inferior* order of ſurgeons, and the uncommon opportunities for ſtudying diſeaſes of the eye, eſpecially under men of ſuch reputation as Prochaſka and Beer, are prominent points in the medical ſchool of Vienna, ſo far as the univerſity is concerned. The ſtate of the profeſſion throughout Auſtria correſponds exactly with the proviſions made by the government for medical and ſurgical education. The phyſicians are diſtinguiſhed for their extenſive and practical knowledge. Surgery, on the other hand, ſeems to languiſh. As for what the Germans have termed ophthalmology; the ſcience of Prochaſka, the enthuſiaſm, the profoundneſs, and the amazing dexterity of Beer, have contributed to render this one of their favourite ſtudies; and accordingly their practice in this branch is very excellent, and their operations are performed with the greateſt judgment and ſpirit. Indeed, a work recently publiſhed in Germany appears to give them the palm over every other nation as oculiſts; and we muſt confeſs that in many points they have outſtripped the Engliſh. This however is not to be wondered at, when we conſider how few in this country make the ſtudy of ophthalmic complaints part of their education, while in Germany it forms one of the indiſpenſible qualifications of every practitioner.

Honour, liberty, and life, in ſo far as they depend upon medico-judiciary reports and inſpections, are not made the ſport of ignorance and careleſſneſs in Auſtria. Medical juriſprudence forms an indiſpenſable part of ſtudy in the univerſity of Vienna; and certain extraordinary means of promoting an accurate knowledge of this branch of medical ſcience have been adopted by the government, which are well worthy of imitation. Theſe conſiſt in the publication of a code of regulations, by which all medico-judiciary inſpections are to be conducted throughout the empire, and reports to be drawn up; and in the performance of inſpections publicly, upon the dead bodies which are found in ſuſpicious circumſtances, and which, not being at firſt recognized, are carried to the dead-room of the General Hoſpital. Due notice is given to the ſtudents at what hour ſuch inſpections are to take place; and they have thus an opportunity of ſeeing thoſe regulations put in practice which they themſelves will one day be called to fulfil. We may here notice, that, after every death in the Auſtrian dominions, the phyſician or ſurgeon who attended is required to ſign a paper, certifying the diſeaſe, and whether it were contagious. If it was contagious, the law obliges the relatives to have all the bed-clothes fumigated. In Vienna there is an eſtabliſhment for this purpoſe, where, on paying a ſmall ſum, the fumigation is properly performed.

There are ſeveral anatomical muſeums contained in the univerſity. That of profeſſor Prochaſka is the only one which excites any peculiar intereſt. As our biographical articles cannot of courſe include any but perſons deceaſed,

deceaſed, the preſent is one of the few opportunities we have of noticing living characters. We ſhall therefore preſent our readers with an account of the viſit of an Engliſh gentleman to profeſſor Prochaſka and his muſeum.

"There is a primitive ſimplicity, a condeſcenſion, and a gentleneſs, in this old man, ſo celebrated at the ſame time for his genius and his learning, which endear him to every one. We had no ſooner announced to profeſſor Prochaſka the object of our viſit, than he put into our hands a foot, which, at firſt ſight, had nothing of an uncommon appearance, except that its ſurface was of a deep vermilion colour. One might have ſuppoſed that it had been roughly coloured, and varniſhed with a bruſh. He then gave us a ſmall microſcope, and deſired us to examine the foot in a good light. We had no ſooner approached to the window, and looked at the foot through the microſcope, than we diſcovered that its cutaneous veſſels were beyond conception minutely injected. The vermilion colour of the preparation aroſe from the injection filling, on every point of the ſurface of the cutis, one might almoſt ſay a myriad of arteries. In a ſecond preparation we ſaw the perioſteum of the femur almoſt equally minutely injected. This preparation ſeemed to prove the non-vaſcularity of cartilage; for, as ſoon as the injected veſſels of the perioſteum reached the border of the articulating ſurface of the knee, they were moſt diſtinctly ſeen to return upon themſelves, and not one could be diſcovered, even with the aid of the microſcope, to be prolonged into the cartilage, which had retained its white, or rather aſſumed from deſiccation a yellowiſh, colour. Profeſſor Prochaſka has never been able to inject any of the cartilages. He is therefore inclined to believe that the patella which Ruyſch has deſcribed, the internal cartilaginous ſurface of which exhibited a conſiderable number of veſſels, muſt have been diſeaſed. Profeſſor Prochaſka next ſhowed us a ſmall box of ſimilar Lieberkuehnian preparations, which had coſt him, he ſaid, nearly ten years. Theſe conſiſted of injected and prepared membranes, and of thin ſections of other organs, fixed upon plates of glaſs in the ſame way that other microſcopical objects uſually are. When viewed through the microſcope, and eſpecially thoſe of the kidney, theſe preparations diſplayed a minuteneſs, a beauty, and a variety, which even exceeded our expectations. Indeed we can conceive nothing in this kind of preparations more beautiful than one of thoſe of which we now ſpeak, in which we ſaw the capillaries of the cortical part of the kidney, forming on each ſide of their trunks thoſe little globules, which both Malpighi and Maſcagni ſuppoſed to be hollow glands, in which the urine was depoſited immediately after being ſecreted.

"We accompanied profeſſor Prochaſka from his houſe to his muſeum. Here we found whole heads and extremities injected microſcopically. He told us that he had injected even whole ſubjects in that way. He ſhowed us a ſeries of preparations in which the perioſteum, the peritonæum, the mucous membrane of the noſe, and that of the inteſtines, could be compared. It is from the redneſs which a part aſſumes, when well injected, that Prochaſka eſtimates its vaſcularity. Some parts, ſuch as the nails, hair, epidermis, cartilages, and arachnoid membrane, never admit injection. Other parts, which exhibit ſcarcely any veſſels immediately after injection, become extremely red on being dried; diſplaying, when viewed through the microſcope, a tiſſue of innumerable arteries. Such is the caſe with the internal ſurface of the cutis, with the nerves, and with the ſalivary glands."

The Muſeum of profeſſor Prochaſka contains a number of intereſting preparations beſides the microſcopical ones. An account of ſome of the moſt curious of theſe has been printed in the Quarterly Journal of Foreign Medicine, N° I.

The Cabinet of Inteſtinal Worms is a part of the Imperial Muſeum of Natural Hiſtory, under the particular direction of Dr. Bremſer, and forms of itſelf an object of conſiderable intereſt, from the great number of ſpecimens which it contains, and from the pains which have been taken to arrange the whole, and even to diſplay the individual ſpecimens. Dr. Bremſer practiſes as a phyſician in Vienna; he is at the ſame time a zealous cultivator of natural hiſtory, and is perfectly enthuſiaſtic in this particular purſuit, to which his office as conſervator of this cabinet directs his attention. He has diſſected no fewer than fifty thouſand animals, with the ſole view of detecting the various ſpecies of worms which ſojourn in their inteſtines and in other parts of their bodies. All the animals which die in the Menagerie at Schoenbrunn are delivered to Dr. Bremſer for this purpoſe; and no expenſe is ſpared to procure dead animals of rarity, including foreign birds and fiſhes.

The method taken by Dr. Bremſer to detect the ſmalleſt worms is extremely preciſe, and often aſtoniſhingly ſucceſsful. He ſlits up the inteſtines, and carefully collects their contents, which he ſets aſide for examination. Having minutely gone over the internal ſurface of the inteſtines which he had emptied, he proceeds to examine the contents in ſmall quantities mixed with water, and poured into a flat glaſs ſaucer, the bottom of which is japanned black, ſurveying each quantity in ſucceſſion through a microſcope. The ſame kind of ſaucers he alſo employs to diſplay the ſmaller worms, which, being moſtly white, are rendered extremely evident by the black ground on which they are thus placed.

The preparations are arranged with much order and neatneſs. We ſee each ſpecies of worm taken from a complete ſeries of animals, beginning with man, and paſſing through the different genera of quadrupeds, birds, and fiſhes. Dr. Bremſer has made drawings of moſt of the ſpecies, both of the natural ſize and magnified: they are executed with great beauty upon a black ground; ſome of them have been already engraved, and will appear in a work upon inteſtinal worms, which Dr. Bremſer is preparing for publication.

In the ſuburb of Vienna called the Alſter Vorſtadt, are ſituated the General Hoſpital, the Joſephine Academy, and the great Military Hoſpital. Hence, in this ſuburb are lodged almoſt all the foreigners, as well as many of the ſtudents from the different parts of the Auſtrian dominions, who come to Vienna in purſuit of medical ſtudy.

The Allgemeine Krankenhaus, or General Hoſpital, is one of the nobleſt inſtitutions of the patriot-emperor Joſeph II. It is one of the moſt extenſive buildings in Vienna, and conſiderably the largeſt hoſpital which we have ſeen. Lunatic and Foundling Hoſpitals are both ſituated near it; and are, in certain economical reſpects, connected with it. The greater part of the hoſpital is of two ſtories in height. It is arranged in ſeven large quadrangular courts, the firſt of which upon entering, and the largeſt, is laid out with graſs-plots and ſhaded walks; and contains, in a building ſeparated from the reſt of the hoſpital, the houſe of the director, the medical clinic, a lecture-room, and the muſeum of pathological anatomy. The phyſicians, ſurgeons, and aſſiſtants, have apartments in different parts of the hoſpital. Like moſt of the hoſpitals in Germany, it is under the inſpection of a medical director, who muſt reſide within the walls of the hoſpital. This office was filled by profeſſor Von Hildenbrand, lately deceaſed; and is looked upon as one of great truſt and high reſpectability.

The number of ſick rooms is 111; of which 61 are for male, and 50 for female, patients. Theſe rooms are each twenty-ſix feet long, and ſeventeen broad; they are lofty and clean. The windows are large; but are all raiſed eight feet from the floor. The advantages of being able, by this plan, to place beds near to the windows, and of avoiding the ſtream of air which blows upon the beds when the windows of an hoſpital are low, are perhaps over-balanced by the diſadvantage of being unable rea-

dily and completely to ventilate the apartments. The beds are placed two feet and a half from each other. The bedſteads are of wood; and are without curtains; but ſquare pieces of dark green cloth, hung from wooden ſupports in the form of the letter T, are occaſionally uſed to ſupply the want of curtains: for inſtance, in moderating the light around a particular bed, or in concealing a patient, during the laſt moments, from the view of thoſe who are lying around him. Though long accuſtomed to the daily view of hoſpital-wards where no ſubſtitute was employed for curtains, we confeſs ourſelves favourable to their uſe, having ſeen their great advantages in the Hôtel-Dieu of Paris, and in other hoſpitals. In beds without curtains, the patients are expoſed to the eye of every ſtranger; whereas, when the contrary is the caſe, they may look upon themſelves as in ſome meaſure at home; they can guard themſelves from the cold of a large apartment, and are not forced to crowd around the fireplace; they can procure for themſelves a certain degree of obſcurity, favourable to repoſe; and conceal themſelves from thoſe by whom they are ſurrounded. The beds of the General Hoſpital are indifferent: the coverings good. A few minutes before the viſit of the phyſician or ſurgeon, a quantity of juniper-wood is burned on a ſhovel carried round in each ward. We never obſerved this practice produce any irritation even in the patients affected with pulmonary complaints, and it completely removes the fœtor of a ſick room. The wards are heated by a large earthen ſtove placed in the centre of each.

The patients treated in the General Hoſpital, independently of the Lunatic and Foundling Hoſpitals, are arranged into five claſſes. Of theſe, lying-in women form one; the remaining four conſiſt of patients affected with internal diſeaſes, external diſeaſes, diſeaſes of the eye, and venereal diſeaſes. To each of theſe five claſſes, different parts of the hoſpital are appropriated. The total number of beds is 2000; and in the winter-ſeaſon this number is nearly filled. The following are the numbers of patients treated during the years 1810, 1811, and 1812, in the General, Lunatic, and Foundling, Hoſpitals:

	General.	Lunatic.	Lying-in.	Foundlings.	Total.
1810	12,374	251	747	2928	16,300
1811	11,709	512	1115	2843	16,179
1812	10,358	212	1489	2809	14,868

The average number yearly in the General Hoſpital alone, has, in the ſucceeding years, amounted to from 15,000 to 17,000.

Three claſſes of the patients of the General Hoſpital pay for their maintenance: the fourth, and, we believe, the moſt numerous claſs, are admitted gratuitouſly. The higheſt rate is eleven-pence daily. Thoſe who enter upon this rate have a ſeparate room, particular attentions, and a very good bed: but they muſt provide themſelves with ſheets and waſhing. Forty ſeparate rooms are appropriated for this claſs. The ſecond rate is ſix-pence daily: the patients of this claſs have no ſeparate room; but, in other reſpects, are treated as the former. The third rate is, for the inhabitants of Vienna two-pence, and for ſtrangers two-pence half-penny, daily. However great and undeniable the advantages may be, of inſtitutions in which thoſe of ſmall fortune may receive medical attendance on paying a moderate ſtipend, and thus the patrimony of the poor be preſerved to the poor, yet the mixing of thoſe who pay and of thoſe who are admitted gratuitouſly in one hoſpital, nay, even in the ſame wards, by no means appears a proper arrangement. Neither are we friendly to thoſe immenſe palaces, we had almoſt ſaid little towns, which we meet with ſo frequently in Italy, and occaſionally in Germany, under the name of hoſpitals. Whenever the number of patients in an hoſpital exceeds a few hundreds, the public may look for abuſes and miſmanagement.

The pharmacy of the General Hoſpital is an extenſive and well-regulated eſtabliſhment. The Pharmacopœia Auſtriaca, of 1814, is followed. The authors of that edition have had eſpecial regard to the cheapneſs of the articles admitted. They have, for this reaſon, ſtruck out many articles of foreign produce, ſuch as, balſamus copaivæ, balſamus peruvianus, caſcarilla; cinnamomum orientale, nux moſchata, quaſſia, ſarſaparilla, ſcammonium, ſuccinum, zingiber. The medical plants, for inſtance aconite, are brought chiefly from the ſubalpine parts of Auſtria. For the ſake of economy, in the commencement of the cure of intermittent fever, it is almoſt general in this hoſpital to preſcribe a decoction of the root of the common taraxacum; and in caſes of chancre, inſtead of the ſolid nitras argenti, a ſolution is employed, which is prepared by digeſting for ſome days, in a warm room, a quantity of filed ſilver with nitric acid.

There are five clinics in the Allgemeine Krankenhaus, two medical, a ſurgical, an ophthalmological, and an obſtetrical.

The *Schola Practica*, or Medical Clinic, was united with the General Hoſpital in the year 1784. It conſiſted of twelve beds, and was under the care of Maximilian Stoll. In the year 1787, he was ſucceeded by Reinlein, and in 1795 by John Peter Frank. It was eſpecially under Frank that this inſtitution flouriſhed, and became much frequented by foreigners. The number of beds was increaſed to twenty-four, and an anatomico-pathological muſeum was eſtabliſhed. In 1804, Frank went to Wilna, as a Ruſſian ſtate-counſellor, and thence to St. Peterſburgh. He was ſucceeded, for a ſhort time, by Benth; and, in 1806, by Hildebrand, who, for thirteen years, had been profeſſor of medicine in Krakau and Lemberg.

There can be nothing, we think, more certain, than that, to be really uſeful, a clinic muſt conſiſt of a ſmall number of patients. For here, the patients are not to be merely ſeen, but to be obſerved; not to be obſerved by a man of experience merely, but their ſymptoms and treatment to be made the ſubjects of inveſtigation by thoſe who are yet unaccuſtomed to the practice of medicine. The clinical viſit ought not to ſurpaſs the ſpace of an hour; and, in that ſpace of time, it is impoſſible to viſit more than twenty-four patients. Frank had rarely above eighteen in his clinic at Pavia.

Particular attention ought to be paid, in erecting an hoſpital, to have the clinical wards both more ſpacious and more lofty, in proportion to the number of patients which they are to contain, than the common apartments, into which it may be ſuppoſed that ſtudents rarely come, and where the viſits are performed with greater diſpatch. In a clinical ward, room ought to be left round each bed, for the accommodation of the ſtudents; and, as they are to remain three or four minutes, at leaſt, by every bed-ſide, there ought to be no chance of the atmoſphere of the ward becoming quickly deteriorated. In theſe two particulars, the number of patients, and the comparative ſize of the wards, the medical clinic of Vienna perfectly correſponds with the above ideas; but in another reſpect it ſtruck us as being extremely defective, namely, in the want of ſmall ſeparate rooms for patients labouring under contagious diſeaſes, for phrenitic, maniacal, and hydrophobic, patients, for young children, and for venereal caſes.

The number of beds in each ward is twelve. Over each bed is hung a black board, on which are written, in Latin, the name, age, country, and profeſſion, of the patient, the name and duration of the diſeaſe, the remedies in uſe, and the name of the *candidatus aſſiſtens*, or pupil who has the particular charge of the patient. A painted ticket, hung up along with this board, indicates the diet of the patient, by the words *weak portion*, *quarter-portion*, *third-portion*, *half-portion*, *whole portion*, terms correſponding with thoſe of the fixed diet-table of the hoſpital, which is ſuſpended in all the wards. It ſeems to be as neceſſary to teach the regulation of a patient's diet in

in an hoſpital as to teach the powers of drugs. Yet we have ſeen hoſpitals where no ſuch thing as a diet-table exiſted; or if it did exiſt, it was at leaſt never ſubmitted to the examination of the ſtudents; and we have obſerved, that it was in regulating the diet of their patients, that young practitioners, iſſuing from ſuch a ſchool, were ever moſt at a loſs.

The number of patients treated in this clinic, during the ſchool-year, is above 200. They are choſen out of a thouſand patients; and the ſelection made by Hildenbrand, as well as his whole manner of conducting the clinic, ſeemed highly judicious. He did not ſearch for extraordinary caſes, ſeldom ventured upon new experiments, and deſpiſed to raiſe the wonder of the unexperienced by a ſhow of boldneſs or of novelty. It was the great object of his inſtructions to make known to his pupils what is already approved and certain in the healing art, and to teach them the method of obſerving, examining, and treating, every kind of internal diſeaſe. He choſe from among the numerous patients who daily entered the hoſpital, ſome acute caſes, and ſome chronic, ſome common, and occaſionally ſome which were rare; but his choice never ſeemed to be made with the view of putting to the teſt any whim of the day, nor of flattering the paſſions of the young for remedies, and even for diſeaſes, which are ſuppoſed to be newly diſcovered. Puerperal women, patients with ſyphilis, and children, were occaſionally admitted.

The viſit in the medical clinic is from eight to nine in the morning. The aſſiſtant, who is a graduate, and is ſtyled *ſekundar-arzt*, regularly follows the viſit, and, along with thoſe ſtudents who chooſe to attend, viſits again in the evening. We have already remarked, that no one can take the degree of doctor in medicine in the Univerſity of Vienna, without having attended this clinic for two years, and treated, under the eye of the profeſſor, two patients within the half year preceding his offering himſelf for examination. This is abſolutely required; but we ſhould ſuppoſe that each ſtudent has the opportunity of treating five or ſix patients at the leaſt, each year of his attendance. The number of ſtudents at the beginning of November laſt was about ſixty, including foreigners.

The duties of the *candidati aſſiſtentes*, or ſtudents who have the care of patients, conſiſt in examining the particular patient committed to their care, publicly on his admiſſion, and again at every viſit; in writing out an *hiſtoria morbi*; and in keeping a careful journal of the ſymptoms and treatment. Theſe caſes are never written in a ſhort and imperfect manner: they are not made up of mere haſty notes of ſymptoms, ſtrung together without order: they contain a faithful and minute account of the ſtate of the patient, at the laſt morning viſit, at noon, and at evening, with obſervations, and even occaſionally ſhort arguments in regard to the diagnoſis, prognoſis, and treatment. Each report is dated both by the day of the month, and by the duration of the diſeaſe: they are written in Latin; are publicly read at the bed-ſide; and, on the diſmiſſion of the patient, are delivered to the profeſſor.

Profeſſor Von Hildenbrand's work, entitled "Initia Inſtitutionum Clinicarum," contains exact rules for the guidance of pupils in their examination of patients; in determining the nature, form, ſtage, and degree, of diſeaſe; in fixing the names, treatment, and prognoſis; and in writing the hiſtory of the caſe. It has, perhaps, too much of a ſcholaſtic air to be all at once reliſhed by common Engliſh readers; but we have met with no work which could better ſerve as a guide both for clinical ſtudents and for clinical teachers. Nor did profeſſor Von Hildenbrand diſtinguiſh himſelf more by the keen-eyed preciſion with which he regarded the ſymptoms, cauſes, treatment, and prognoſis, of a diſeaſe, than by the purity and fluency of the Latin diction in which his obſervations at the bed-ſide, as well as his lectures, were delivered. The whole of the converſation between the profeſſor, aſſiſtant, and candidate, is carried on in Latin. Profeſſor Von Hildenbrand ſeemed to us to ſpeak Latin better than he did his own language; and, though we are more favourable to the Italian and Scottiſh than to the German manner of pronouncing Latin, we could ſometimes have fancied ourſelves in ancient Rome, and that the perſon whom we heard was not a Galician of the nineteenth century, but Celſus himſelf.

Hildenbrand might be regarded as an Agathæus Spartanus. He was known over all Germany, a country which is but too much overrun with hypotheſes, and all the other offſpring of a futile philoſophy, as being one of the ableſt ſupporters of an eclectic ſchool, in which the doctrines of rational medicine were combined with thoſe of empirical. That he was, in a word, a rational empiric, appeared at once from his clinical practice, from his prelections, and from his writings. To what are ſtyled active methods of treatment, Hildenbrand was not favourable; and, having but ſmall faith in the alleged power of drugs, he in general adopted and recommended ſimple, mild, and indirect, means of relieving and aſſiſting nature. It ſeemed to be the obſerving ſpirit of Hippocrates, enlightened by all that phyſiology and pathology have diſcovered ſince the days of the father of medicine, which ſhone forth in Hildenbrand, guiding him in his inquiries, and leading him to watch the moſt minute changes which nature herſelf effects in diſeaſes, but without blinding him to the agency of any really uſeful remedy.

We can ſcarcely conceive any improvement which could be made in the clinical education of phyſicians at Vienna. The ſyſtem ſeems to us to be perfect. A ſtage for dramatic and affected exhibitions, or for hazardous and ill-directed experiments, is the idea which is apt to riſe in the mind upon mention of a *clinic*. But, in that of Vienna, both the phyſician and the pupils ſeemed to do every thing as they would have done in private practice. It ſeemed as if the ſtudents were led by Hildenbrand into the private houſes of his patients; and as if the pupils were not learning a leſſon in an hoſpital, but beginning to practiſe for themſelves, with the advantage of having an experienced and able practitioner with whom they might conſult. The graduates of Vienna have not idled away the ſeaſon for practical improvement. Placed in a ſituation ſuited as well for the communication of knowledge as for the elicitation of talent, they are ſchooled in penetration, and in actual habits of obſervation; and bring into the chambers of the ſick, ſomething more than book-learning, ſomething widely different from faſhionable accompliſhments.

The Muſeum of Morbid Anatomy is attached to the medical clinic; and there is no part of the School of Vienna, which more ſtrongly marks the ſincere wiſh of the Auſtrian government to render the ſyſtem of medical education complete. A profector, who acts alſo as *anatomicus forenſis*, is appointed to examine with care the dead bodies of thoſe who die in the hoſpital, and to preſerve ſuch parts as may prove uſeful pathological preparations. He lives within the walls of the hoſpital; and receives ſuch a ſalary as may prevent him from withdrawing his attention from this office towards other purſuits. The Muſeum conſiſts of upwards of ſix hundred valuable preparations, the greater number of which are preſerved in alcohol. A *Catalogue raiſonné* has been publiſhed by Dr. Biermayer, the preſent profector, in which 586 of the preparations are deſcribed, under the title of "Muſæum Anatomico-Pathologicum Noſocomii Univerſalis Vindobonenſis, 1816."

The chair of the Surgical Clinic is filled by profeſſor Vincent Kern, who gives daily lectures upon the practice of ſurgery in the operation-room adjoining to the wards. This clinic, indeed, owes its origin to profeſſor Kern, and has exiſted only ſince 1806. The number of male patients admitted is eight, and of females ſix. They

are uſually choſen from among the patients of the hoſpital who are admitted gratuitouſly; but, when important operations are about to be undergone, it frequently happens that patients who pay prefer paſſing into this clinic. This clinic is public to every one who leaves his name with the profeſſor. The ſtudents of ſurgery of the ſecond year are obliged to attend, and to undertake the care of patients, as the ſtudents of medicine do in the clinic for internal diſeaſes. From ſixty to eighty ſtudents follow the clinical viſit, but the operations are much more numerouſly attended. The viſit is at ten o'clock every morning.

With this clinic is connected a particular inſtitution, or *Pflanzſchule*, as it is ſtyled, for the education of ſurgical operators. Profeſſor Kern has the liberty of ſelecting ſix individuals from among his pupils: theſe he inſtructs privately for two years, exerciſing them eſpecially in the various operations of ſurgery upon the dead ſubject; after which they are permitted publicly to operate upon the living. Profeſſor Kern, indeeed, leaves almoſt all the operations upon the clinical patients, except lithotomy, to be performed by his pupils, while he himſelf takes his place as their aſſiſtant. The pupils who are ſelected for this purpoſe are not in every caſe ſtudents of ſurgery, but are ſometimes graduates in medicine, whoſe peculiar talents and inclination lead them to the practice of ſurgery. They live in the hoſpital, and receive from the emperor a yearly ſtipend, in conſideration of which they are afterwards obliged to ſerve the ſtate for a certain period. In general they are ſpeedily promoted to be ſurgeons of hoſpitals, regimental ſurgeons, or profeſſors of ſurgery in ſome of the lyceums.

Profeſſor Kern is diſtinguiſhed by his extreme attachment to ſimplicity in his ſurgical inſtruments, and methods of operating. His lithotome is a ſhort and thick knife, of a very ſimple and almoſt uncouth form. The ſimplicity of his external treatment of ſurgical diſeaſes is ſtill more remarkable. His ſchool may well be called the School of Nature; for he truſts almoſt as little to art as did Maiſtre Doublet, the contemporary of Ambroſe Paré, of whom Brantôme tells us; "Et toutes ſes cures faiſoit le dit Doublet par du ſimple linge blanc, et belle eau ſimple, venant de la fontaine ou du puits." Profeſſor Kern has baniſhed from his practice almoſt all the common applications, ſuch as ointments, plaſters, lotions, lint, tow, and even bandages; and has ſubſtituted in their place the application of water, and a ſimple covering of linen. This plan of treatment he follows even with his private patients; and it certainly ſhows no ſmall firmneſs, to humour the prejudices of the public ſo little, as never to preſcribe a plaſter or a ſalve.

In amputation, profeſſor Kern makes uſe of iced water, which he applies by means of a ſponge to the ſurface of the ſtump, as ſoon as the large veſſels are tied. This application, ſo far from being painful, appears to give eaſe. The edges are then brought together by adheſive ſtraps. The ſtump is covered with a large flat ſponge, dipped in cold water, and wrung between the fingers; and this is continued for forty-eight hours. In ſome caſes, this application is changed for a folded piece of linen moiſtened with warm water, and applied over the adheſive ſtraps. The ſame mode of treatment is followed with all wounds after operation. The edges are brought together by adheſive ſtraps, and then water is applied. No ointment, no charpie, no bandage is employed. The ſucceſs of profeſſor Kern in his operations is very great.

The extreme ſimplicity of profeſſor Kern's practice is a ſubject which never fails to excite the attention of thoſe ſtrangers who viſit his clinic. The caſes under treatment are ſeen to be going on well; and the ſucceſs is acknowledged by all to be extraordinary. Yet the uſe of water, as almoſt the only external remedy, is a practice which by no means meets with a favourable reception. There are few, even of profeſſor Kern's pupils, who advocate this practice; many ſeem to think it unworthy of ſerious examination, and to feel as if ſuch a ſimplification of ſurgery were a degradation of the art; others blame the practice with much aſperity, yet without daring to deny the ſucceſs with which they ſee it attended. Thoſe who addreſs the profeſſor upon the ſubject, he refers to the patients before them; or, if he enter into any defence of his opinions and practice, it is nearly in the following manner: "At the commencement of my ſurgical practice, I had a patient brought to me with a large ulcer on the leg, which had reſiſted all kinds of ointments and plaſters. I told the man to lie in bed, to remain at reſt, and to give up all applications except a poultice. In three weeks the ulcer was cloſed. This, and many ſimilar facts, have convinced me of the bad effects of the uſual treatment, and led me to the uſe of a more ſimple plan of cure. I employ water as an indifferent matter, to cover a ſurface which is deprived of its natural inſulator, the external ſkin, and to protect that ſurface from injurious influences. It acts favourably upon the circumference of the ſore, as well as upon the ſore itſelf. Ointments and plaſters, on the other hand, are irritating and prejudicial ſubſtances, when brought into contact with an uncovered ſurface, naturally unaccuſtomed to any ſuch foreign impreſſions. As wounds of bones, for inſtance fractures, are healed without any external application, ſo may all wounds of the ſoft parts be cured. The cure of wounds is the work of nature. Even gangrenous, venereal, and ſcrofulous, ulcers, require only a proper internal treatment, and the uſe of external warmth applied by means of water. Cold, again, applied by means of a ſponge to recent wounds, leſſens in the moſt effectual manner the organic reaction, diminiſhes pain, moderates ſuppuration, and prevents nervous affections. Bandages may be diſpenſed with, except in a very few inſtances. The journals of this clinic are open to your inſpection." A farther account of profeſſor Kern's opinions may be found in his "Annalen der chirurgiſchen Klinik," 2 vols. 1809; and in his treatiſe "Ueber die Abſetzung der Glieder. Wien, 1814.

The Opthalmological Clinic.—It is neceſſary accurately to diſtinguiſh thoſe practitioners who have of late years applied themſelves in Germany to the diſeaſes of the eye, from the claſs who are termed *oculiſts*, whether of that or of any other country. The latter would wiſh to divide ſurgery into a number of trades, of which they would monopolize one. The former have not confined themſelves to the eye, but all of them have come prepared to the ſtudy of that organ by an intimate acquaintance with medical ſcience in general, and many of them have diſtinguiſhed themſelves by their labours in anatomy, and their improvements in the practice of ſurgery; as for inſtance, Richter, Schmidt, Barth, and Prochaſka. Theſe men have not regarded eye-diſeaſes as local merely. They have rendered eye-operations leſs frequent, by their rational and conſtitutional treatment of thoſe affections which give riſe, under mere local and empirical management, to the morbid changes of the eye which afterwards call for the interference of the operator.

Vienna is at preſent the moſt celebrated ſchool for the ſurgery of the eye in Germany. Profeſſor Barth, who is by birth a Malteſe, and ſtill lives in Vienna, as emeritus-profeſſor of anatomy, was the firſt public teacher in this branch of ſurgery in Auſtria. He is but little known by his writings on this ſubject, not having publiſhed any thing upon the diſeaſes of the eye, with which we are acquainted, excepting a ſmall tract, in which he deſcribes a manner of performing extraction of the cataract without an aſſiſtant. He has many pupils, however, who ſtill ſpeak of his leſſons with reſpect; and the preſent profeſſor of practical opthalmology was, for a conſiderable number of years, his aſſiſtant. By the late John Adam Schmidt, the fame of Vienna as a ſchool for the diſeaſes of the eye, was much increaſed. He did not belong to the general hoſpital, nor to the univerſity, but to the Joſephine

Joſephine Academy. He is well known by his opthalmological as well as by his other writings, and eſpecially by his treatiſes upon the Diſeaſes of the Lachrymal Organs, and upon the Inflammation of the Iris. He wrote a conſiderable part of the opthalmological *Bibliothek* of Himly; and it were to be wiſhed that ſome of his countrymen would treat his memory with more reſpect, and acknowledge what they have borrowed from his valuable communications to that journal.

Dr. George Joſeph Beer has been for more than thirty years employed in the practice of this department of ſurgery. He was for many years extraordinary profeſſor only; but in the year 1815 a chair of practical ophthalmology was founded in the univerſity, which has ſince been filled by this learned and enthuſiaſtic man. The name of profeſſor Beer is already known in England. He is a voluminous author, but all his works are upon the ſubject of his favourite ſtudy.

The Clinic for the Diſeaſes of the Eye has undergone various improvements within the laſt ten years. It has exiſted in its preſent ſituation in the General Hoſpital, and with its preſent arrangements, ſince November 1816. The clinic conſiſts of an auditorium, and of two wards, on the ſecond floor of the hoſpital. The auditorium is well lighted, and neatly covered in green. The windows are ſo ſupplied with ſhutters and curtains, that the light can be in an inſtant increaſed or diminiſhed. A large eaſtern window ſupplies the light admitted during operations. Beſides ſeats for one hundred and fifty ſtudents, this room contains a cathedra of an oval form, raiſed about a foot and a half from the floor, and ſurrounded by an iron baluſtrade. From this the lectures are delivered, and it is uſed alſo for the operations, being large enough to contain a patient, along with the profeſſor, the aſſiſtant, and the *ordinarius*, or pupil to whoſe care the patient is intruſted. A collection of inſtruments and bandages both for the uſe of the clinic, and for the illuſtration of the hiſtory of ophthalmology; a collection of anatomical and pathological preparations of the eye; and a library of printed books, manuſcripts, and drawings, illuſtrative of the ſtructure and diſeaſes of that organ; are contained in the auditorium. The duſt of neglect is not allowed to gather on any of theſe collections. They are, on the contrary, yearly increaſing. The library is open to the ſtudents. The auditorium is adorned with a buſt of the preſent emperor; and portraits of Baron Protomedicus Von Stift, the director of medical ſtudy in the Auſtrian dominions; and of the following diſtinguiſhed ſurgeons; Scarpa, Richter, Schmidt, Barth, and Prochaſka. Each ward is about the ſame ſize as the auditorium, is alſo coloured green, and contains twelve beds. The wards are ſeparated from the auditorium by two ſmall rooms appropriated to the uſe of the nurſes. In the middle of each ward is a long table, which ſerves both as a dining-table for the patients, and alſo for laying out the bandages, inſtruments, and medicines, made uſe of at the viſit. The windows are ſupplied with ſhutters and curtains. Each bed has three ſuch ſubſtitutes for curtains as we have already deſcribed at p. 64. The wards are furniſhed with every thing neceſſary both for the ſtrictneſs of clinical inſtruction, and for the peculiar care of patients affected with diſeaſes of the eye. A ſalaried aſſiſtant, reſiding in the hoſpital, is alſo attached to this clinic.

The inſtructions delivered in this inſtitution, which, as in the other clinics, are continued uninterruptedly for ten months, are given in the following order. The lectures on Practical Ophthalmology are delivered every morning, Saturdays and Sundays excepted, from ten to eleven o'clock, in the German language. The lectures commence with a very complete account of the anatomy and phyſiology of the eye, in which conſtant reference is made to the morbid changes to which the various textures of that organ are liable. The diſſections of the eye and of the neighbouring parts, which are made for this part of the courſe, are very numerous, and are executed with great care, chiefly by profeſſor Beer himſelf. Students can readily procure admiſſion when theſe diſſections are preparing; and thus have an opportunity of becoming more intimately acquainted with the practical anatomy of the eye, and with ſome peculiarities in Profeſſor Beer's manner of demonſtrating that organ. Under the anatomy of the eye, Profeſſor Beer includes the oſteology of the orbit, and the demonſtration of the muſcles, blood-veſſels, nerves, and all other parts connected with the organ of viſion. He borrows frequent illuſtrations from the comparative anatomy of the eye; and poſſeſſes a finer collection of original drawings in this particular department than is perhaps in the hand of any other anatomiſt. To this part of the courſe, which laſts about two months, follows a few lectures upon the manner in which the diſeaſed eye ought to be examined. The next and principal part of the courſe continues for nearly ſix months, and is occupied with the pathology of the eye, and the medical and ſurgical treatment of its diſeaſes. The whole concludes with a hiſtory of opthalmology from the moſt ancient times to the preſent, and a critical review of the moſt celebrated works in this ſcience.

Daily, from eleven to twelve, Saturdays and Sundays included, the ſtrictly-practical inſtructions are given, partly at the bed-ſides of the patients who have been admitted into the clinic, and partly in the review of the ambulatory or out-patients. The plan followed by profeſſor Beer is to bring every new and intereſting patient, whether he be afterwards to remain in the clinic, or to be an out-patient only, into the auditorium, and to place him in the cathedra. Any one of the ſtudents may now offer himſelf to be the *ordinarius*, or *candidatus aſſiſtens*, for this patient; and, entering the cathedra, may examine the ſymptoms, pronounce a diagnoſis and prognoſis, and propoſe a plan of treatment. All this is done under the correction of profeſſor Beer, whoſe earneſt deſire to communicate inſtruction in theſe practical exerciſes merits the moſt unequivocal applauſe. It is here perhaps that profeſſor Beer moſt diſtinguiſhes himſelf. We do not mean to leſſen his fame as an eye-operator, already ſo widely and ſo well eſtabliſhed; but we muſt confeſs that it was ever as a diagnoſtician that he appeared to us to riſe beyond all rivalſhip.

The number of ſtudents who attended this clinic from 1814 to 1817 was as follows:

1814-15, 111. Of theſe 65 were not Auſtrians.
1815-16, 170. . . . 92 . . . . . .
1816-17, 199. . . . 104 . . . . . .

The number of patients and of operations was as follows:

	In-Patients.	Out-Patients.	Operations.	For Cataract.
1814-15,	96	114	92	60
1815-16,	106	158	78	57
1816-17,	115	180	96	59

We have already taken notice (p. 58, 62) of the method of inſtruction by what are called *privatiſſima*. Thoſe of profeſſor Beer are extremely valuable. He gives a ſhort courſe of the operative ſurgery of the eye, repeats the different operations, and explains, as he goes along, every ſtep and minutiæ in their performance; and then directs the pupil in the repetition of each of them upon the dead ſubject. After attending one of theſe private courſes, the pupil is allowed to operate upon the living ſubject. Upwards of thirty heads are employed in a courſe.

Daily, at three o'clock in the afternoon, profeſſor Beer gives advice to the poor in his own houſe; and to this *houſe-clinic*, as it is called, ſtudents are admitted. Many of the leſs ſevere diſeaſes of the eye may here be obſerved, which are not ſo frequently ſeen at the hoſpital; and the ſtudent finds in profeſſor Beer a friend ever ready to explain, and to aſſiſt him in the examination of the caſes.

The fee for the clinic is twenty-five paper guldens yearly,

yearly, (19s.) for the houſe-clinic a ducat, (10s. 6d.) for a *privatiſſimum* eighty paper guldens, and for each operation upon the living ſubject four ducats. For Dr. Roſa's *privatiſſimum*, twenty-five paper guldens. For each head for operations, one paper gulden.

The *Gebaerhaus*, or Lying-in Hoſpital, was eſtabliſhed by the emperor Joſeph II. in the year 1784, partly with the view of preventing child-murder. In the courſe of the firſt year after it was opened, 748 children were born in this hoſpital. It forms part of the General Hoſpital, and is under the ſame management; but is ſeparated in ſome meaſure from the other buildings of the hoſpital by a ſmall court.

This eſtabliſhment is divided into two ſections. The one is for thoſe women who pay; to the other admiſſion is gratuitous. The former is committed to the ſuperintendance of Dr. Pelan, and is not open to ſtudents; the latter conſtitutes the Clinical School of Midwifery, and is under the care of profeſſor Boër.

The Private Lying-in Hoſpital conſiſts of two diviſions. The one contains twelve rooms on the ground floor, which are ſet apart for ſecret deliveries, and the greater number of which are occupied each by a ſingle patient. The other diviſion contains ſix rooms, each of from four to ſix beds. In the firſt diviſion, if the room is not occupied for a complete day, ſix paper guldens are paid. If the perſon continues longer, ſhe pays daily a gulden and a half; for which ſhe has board, lodging, medical attendance, nurſing, and the baptiſm of her child. If ſhe gives over her child to the foundling-houſe, ſhe pays forty guldens. Beſides the accoucheur, midwife, and nurſe, no perſon is allowed to enter her room. In the ſecond diviſion, there are indeed ſeveral beds in each apartment, yet there is ſuch an arrangement, that thoſe who have been are ſeparated from thoſe who are to be delivered. A perſon who does not remain in this diviſion during an entire day, pays four guldens and a half. If ſhe remains longer, ſhe pays daily half a gulden. Alſo here, none but the neceſſary attendants are admitted. If a woman of this diviſion would give her child into the foundling-houſe, ſhe pays twenty guldens.

This ſection of the lying-in hoſpital was intended by the imperial patriot as an aſylum for thoſe who might wiſh to conceal their pregnancy; and here thoſe individuals find that they are ſafe from diſcovery. Even the tribunals are obliged, if it be brought as a corroborative ground of accuſation againſt a woman that ſhe had reſided in the lying-in hoſpital, to reject the evidence to that effect as not valid. On entering the hoſpital, the woman is not required to tell her real name or condition, much leſs to declare who is the father of her child. She is required merely to bring along with her a ſealed letter containing her real name, that in caſe of her death information may be communicated to her relations. As ſoon as the number of her room and bed is written upon the letter, it is returned into her own keeping. She can enter the hoſpital and leave it in diſguiſe, or even maſked; and indeed continue ſo during her whole reſidence, if ſhe chooſe it. If ſhe bring a nurſe along with her, ſhe need not expoſe herſelf even to the nurſes of the hoſpital. She can leave the hoſpital immediately after her child is born, or remain for ſome time. She can leave her child, or remove it. Many make uſe of this inſtitution only during labour, leave it ſome hours after their delivery, and give up their child to the foundling-houſe.

The rooms of this ſection are neither ſo ſpacious nor ſo clean as thoſe belonging to the ſection for the poor, but are more crowded. Notwithſtanding, they contain fewer ſick in proportion to the number they accommodate, and fewer die in this ſection. This muſt be attributed in ſome meaſure to the greater degree of warmth, and to the avoidance of draughts of air in ſmall rooms; in which particulars theſe are much preferable to ſpacious and airy wards, eſpecially for lying-in women. The average number of births in this ſection of the lying-in hoſpital, has been for ſome years paſt from 800 to 1000 annually, being about a third fewer than in the clinical ſchool. We ſuſpect that in a conſiderable proportion of theſe births, the children are illegitimate. In the twenty-four hours, there are on an average from two to three births. Three midwives aſſiſt at the labours, and the accoucheur is called in only in difficult caſes.

The Obſtetrical Clinic.—The chair of clinical midwifery is filled by profeſſor Lucas John Boer. The ſection of the lying-in hoſpital, containing all thoſe women who are admitted gratuitouſly, along with almoſt all thoſe who enter on the loweſt rate of twopence halfpenny daily, is committed to his care. Every woman admitted gratuitouſly muſt aſſiſt in the houſehold work of the hoſpital, and afterwards ſerve for a certain time as nurſe in the foundling-hoſpital. The number of births in this ſection is 1200 annually. The proportion of unmarried women delivered, is to that of the whole number delivered, as 47 to 50.

This ſection of the lying-in hoſpital is frequently ſtyled the *Schola Obſtetricia*; and it is here alone that ſtudents are admitted to the practical ſtudy of midwifery. Indeed it is chiefly in this ſchool that midwifery is at all ſtudied, at leaſt by foreigners, at Vienna; for profeſſor Boer's lectures in the univerſity are for midwives rather than male ſtudents; and the lectures of profeſſor Schmitt in the Joſephine Academy interfere with the clinical viſit of profeſſor Boer.

Profeſſor Boer viſits his clinic morning and evening. The morning viſit is from nine to ten; and is ſo far public, that foreign ſtudents, who apply to profeſſor Boer, are permitted to attend gratis, and to be preſent at the deliveries which happen between theſe hours. Thoſe who follow this viſit meet in the delivery-ward, and then attend the profeſſor through the wards containing the women who have been delivered. Two wards for this claſs of patients are conſtantly in uſe, each of fourteen beds. A third was formerly kept for the purpoſe of emptying either of the others at pleaſure; but ſometimes all the three are occupied.

Into one of theſe wards, thoſe who are about to be delivered are brought as ſoon as their labour-pains commence, and there they remain until the os uteri has dilated. They then paſs into the *delivery-ward*, which is ſituated between the two large wards for women who have been delivered. The floors of all theſe apartments are covered along the ſides of the beds with broad pieces of dark-coloured cloth, which are continued alſo between the wards. This prevents thoſe who have been delivered from ſtepping out of bed upon a cold floor, and hides any blood which may fall from the woman in labour, as ſhe paſſes into the delivery-ward. The delivery-ward contains four beds, which are ſurrounded by the kind of moveable curtains formerly deſcribed. No delivery-chair is employed by profeſſor Boer; but the bed is arranged to anſwer the purpoſe of a delivery-chair, by means of ten bags of ſtraw, each three feet long, and from a foot to a foot and a half thick. Theſe are laid above the ſtraw-mattreſs of the bed, and ſerve to raiſe the head and back of the patient. Over all are laid a woollen coverlet and a ſheet, and a coverlet of the ſame kind is laid over the woman.

The aſſiſtant and the midwife live in the hoſpital, and are preſent at all deliveries. The profeſſor does not live in the hoſpital, and is called only in difficult caſes. There are ten male ſtudents, and as many female pupils, to whoſe care the patients are particularly intruſted before and after delivery, as well as during the time of labour. Six of theſe ſtudents are ſtyled *intra-pratikants*, and the remaining four *extra-pratikants*. All the ten female pupils are *intra-pratikants*, and reſide in the Gebaerhaus itſelf. The ſix ſtudents who are *intra-pratikants* reſide in other parts of the hoſpital. The four *extra-pratikants* are not Auſtrians. The appointment of *pratikant* is given by the profeſſor, and no money is taken for it openly. The *pratikants* are the only perſons called

upon to be preſent at operations. A male and female *intra-pratikant* daily take the office of journaliſts, whoſe duty it is to examine all women applying for admiſſion, to be preſent at all deliveries which take place within the courſe of the twenty-four hours, and to enter into a book the names of the patients who are admitted into the clinic, and of thoſe who are delivered during that day, but without any hiſtory of the caſes. The appointment of *pratikants* continues for two months.

Children's beds are ſcarcely ever employed in the clinic: the children are laid by their mothers' ſide. Swaddling, a barbarity almoſt unknown in England, but which holds its ground in many parts of the continent of Europe, is not permitted. After a few hours the breaſt is given, the mother continuing in the reclining poſture. Many of the mothers, indeed, refuſe to give the breaſt to their children, knowing that in not many hours they are to be ſent to the foundling-houſe. Small as the rate of two-pence halfpenny a-day is, it is ſurpriſing how early after delivery the patients leave the hoſpital, in order to ſave this expenſe. We have been aſſured that frequently on the ſecond day, and ſometimes even on the next day after delivery, they give up their child to the foundling-houſe, and return home. The greater number leave the hoſpital at the end of a week. Very few remain two weeks.

For ſeveral years paſt, profeſſor Boer has given no clinical lectures. Neither is there any regular ſyſtem of inſtruction in the practice of midwifery followed in the clinical ſchool, nor is there any demonſtration of the obſtetrical inſtruments, nor any exerciſing upon the phantom or machine, under the immediate direction of profeſſor Boer. The principal part of the inſtruction to be gained at this clinic, muſt be gathered from his occaſional remarks and converſational examinations. His aſſiſtant, indeed, gives *privatiſſima*, both to male and female pupils, at ten or fifteen paper-guldens.

Profeſſor Boer is a pupil and a partiſan of the Engliſh ſchool of midwifery. His forceps are nearly thoſe of Dr. Hamilton; but he almoſt ſcoffs at inſtruments, and, like Dr. William Hunter, ſums up his advice for difficult caſes, in the word PATIENCE. He ſays plainly, that midwifery is better underſtood in England than in any other country. Little, therefore, is to be learned in the clinic of profeſſor Boer of the artificial part of midwifery; while the beſt opportunity is afforded of eſtimating the value of the *ars obſtetricia per expectationem*. To a treatiſe which profeſſor Boer has publiſhed, he has given the title of "Elementa Medicinæ Obſtetriciæ Naturalis." This work is diſtinguiſhed for the claſſic taſte with which it is written.

The medical treatment of the women who have been delivered in the clinic, is in general ſo extremely ſimple, that profeſſor Boer is wont to ſay, that they cure every thing there with beer-ſoup, and require neither great learning nor dear drugs. The number of puerperal diſeaſes which do occur is very ſmall. This is probably owing in a conſiderable meaſure to a regulation, which is ſtrictly followed, that no woman ſhould be left twenty-fours after delivery, without having a clyſter given her, if her bowels have not been opened. In puerperal fever, profeſſor Boer is a friend neither to blood-letting nor to ſtrong ſaline purgatives; but truſts, as in many other caſes, more to nature than to art, ordering little more than ſome powders of ipecacuanha in the commencement, clyſters, ſome ſpoonfuls of tincture of rhubarb, a little of Dover's powder, and emollient cataplaſms to the abdomen. In the pain of the inferior extremities after delivery, with or without œdema, profeſſor Boer has derived great advantage from a bliſter applied like a garter under the knee. He maintains that abſceſſes of the mamma are never to be opened with the knife, but are to be treated with poultices till they open of themſelves, after which neither lint nor ointment is to be applied. The cauſe of ſuch abſceſſes, he conſiders to be the want of timely putting the child to the breaſt, and of regular ſucking. To ſore nipples he applies cloths dipped in warm water, and orders the child to be continued at the breaſt, its ſaliva being the beſt remedy.

As ſoon as profeſſor Boer ſees aphthæ in a child, he concludes that it has had tea, ſugar, or ſyrup, or that it has uſed a ſucking-cloth. Any ſuch foreign irritation, acting upon the tender mouth of the child, cauſes aphthæ. In the clinic, as the children get nothing but their mothers' milk, aphthæ are exceedingly rare, whereas that diſeaſe is extremely common in the foundling-houſe. In the ophthalmia of new-born children, profeſſor Boer rejects all collyria, as irritating and likely to increaſe the inflammation. He rejects alſo the waſhing of the eyes with milk, as it is apt to be ſour. He places by the bed of the mother two cups of cold ſpring-water. In the one ſhe dips a bit of linen, and in the other waſhes out the bit which ſhe has removed. Theſe are frequently applied over the eye-lids. Under this treatment the inflammation diminiſhes, the eye-lids are prevented from adhering together, and the purulent diſcharge is ſaid to be averted.

The Foundling-houſe is alſo under the ſame direction as the General Hoſpital; but ſtands on the oppoſite ſide of the ſtreet, and has its own phyſician, ſurgeon, and overſeer. Of late years it has been much improved by the care of government, and the exertions of a ſociety of the ladies of the Auſtrian nobility. This is called the "Society of Noble Women for the Promotion of the Good and Uſeful." In 1814, the following were among the applications of their funds:

	Guldens.
Care of Foundlings, and Premiums to Nurſes	9871
Inſtitution for the Inſtruction of the Deaf and Dumb	2492
Inſtitution for the Inſtruction of the Blind . .	3349
Care of Patients with Diſeaſes of the Eye . . .	3806
Support of poor Lying-in Women	1250

All attempts to rear the children in the hoſpital itſelf had failed. In the moſt favourable years, only 30 children out of the 100 lived to the age of twelve months; in common years, 20 out of the 100 reached that age; and in bad years not even 10. In 1810, 2583 out of 2789 died; in 1811, 2519 out of 2847 died. Like the cavern of Taygétus, this hoſpital ſeemed to open its jaws for the deſtruction of the deſerted and illegitimate progeny of Vienna. The emperor Joſeph II. frequently viſited this hoſpital in perſon; and upon one occaſion he ordered profeſſor Boer to make a ſeries of experiments with all kinds of food, that it might be aſcertained how far diet had its ſhare in the mortality. Twenty children were ſelected, and fed with various kinds of paps and ſoups; but in a few months moſt of them were dead. In 1813, the government enacted that the foundling-houſe ſhould ſerve merely as a depôt for the children, till they could be delivered to the care of nurſes in different parts of the country. Already, this plan has in part anſwered the benevolent intentions of thoſe who ſupported it, and given credit to the opinion of the medical faculty, who, in their report upon this ſubject, attributed the mortality in the foundling-houſe, not to the want of care, food, or cleanlineſs, but to the crowding together of ſo many children, and the unavoidable deterioration of the atmoſphere which hence reſulted; to the noiſe, and to the contagious diſeaſes to which the children were expoſed, and eſpecially contagious diarrhœa. This hoſpital ſtill continues to contain upwards of ſeventy nurſes, and more than twice that number of children. Every nurſe has her own bed, and beſide it two children's beds. In general, each nurſe has her own child committed to her care, and another child.

The Inſtitution for Sick Children.—This inſtitution owes its origin to Dr. Maſtalier, a celebrated and benevolent phyſician of Vienna. It is at preſent under the care of Dr. Goelis, at whoſe houſe in the Wollzeil-ſtreet the viſit is daily held from three to five o'clock in the afternoon.

afternoon. Students who previouſly intimate their wiſhes to Dr. Goelis, are permitted to attend, and have thus an opportunity of ſeeing the diſeaſes of children treated with much ſkill and attention. The average number of patients is 500 monthly.

Dr. Goelis has undertaken the publication of a ſeries of monographies upon the different diſeaſes of children, to which diſeaſes his practice is nearly confined. The vaſt opportunities of obſervation, the care in conducting this inſtitution, and the numerous diſſections of thoſe children who die, lead us to hope much valuable information from theſe works, the firſt volume of which is already publiſhed.

The Joſephine Academy, conſidered as a building, is one of the moſt ſplendid edifices in Vienna. The emperor Joſeph II. was the founder of this inſtitution, the object of which is to ſupply the Auſtrian army with able phyſicians and ſurgeons. On the front of the academy is the following inſcription: "Munificentia et Auſpiciis Imp. Cæſ. Joſephi II. P. F. Schola Medico-chirurgica, militum morbis et vulneribus curandis ſanandiſque inſtituta, æde et omni ſupellectile ſalutaris artis inſtructa, Anno R. S. 1785." It was opened with much ceremony upon the 7th of November, 1785; and a gold medal of the weight of forty ducats was ſtruck upon the occaſion. The firſt director of the academy was Brambilla, the author of the Inſtrumentarium Chirurgicum, and other works. To him were intruſted the making of the ſtatutes, and the arrangement of the whole inſtitution.

The Joſephine Academy is completely ſeparated from all other ſchools. It is under the direction of the miniſter of war, out of whoſe treaſury the ſalaries of the profeſſors and all other expenſes are defrayed. The number of pupils is 200, of whom fifty receive a monthly allowance from the academy. Having finiſhed their attendance of two years, to which period of time the courſe of ſtudy extends, they undergo a ſevere examination, are promoted to the degree of doctor in ſurgery, and appointed to a regiment; but the academy poſſeſſes no power to grant the degree of doctor in medicine.

There are five profeſſors and a profector in the academy. The profeſſors belong to the army, being ſtaff-phyſicians; and they bear the title of imperial counſellors. The greater number of them reſide in the academy. Their lectures are delivered in German. The Field-phyſician-in-chief and Director is Beinel von Bienenburg.

The pupils of the Joſephine Academy have abundant opportunities for the practical ſtudy of their profeſſion, there being three clinics attached to the inſtitution. The patients are ſoldiers and ſoldiers' wives, choſen from the Great Military Hoſpital, which is ſituated cloſe to the academy, and is fitted up for 1200 patients. The Medical Clinic is under the care of profeſſor Caſtellitz. The viſit is from ſix to ſeven in the morning. The Surgical Clinic is in the hands of profeſſor Zang, a ſurgeon of very diſtinguiſhed merit. The viſit is from four to five in the evening. Profeſſor Schmitt has an Obſtetrical Clinic, in which from 70 to 80 ſoldiers' wives are delivered in the courſe of a year.

To all the lectures and clinics ſtrangers are admitted, who previouſly leave their names with the ſeveral profeſſors, except to the obſtetrical clinic, which is particularly deſigned for the pupils of the academy. The clinic of profeſſor Zang is much frequented by ſtrangers. Indeed that gentleman is looked upon as one of the firſt ſurgeons in Auſtria: he is at preſent engaged in a work, two or three volumes of which have been publiſhed, upon operative ſurgery, which promiſes to become claſſical in medical literature.

The library of the academy is rich in books of medicine, ſurgery, anatomy, botany, and natural hiſtory, and is adorned with a buſt of Joſeph II. by Ceracchi. It is open only to the profeſſors and pupils of the academy. The collection of natural hiſtory contains ſpecimens from the three kingdoms of nature; but chiefly of ſuch objects as are intereſting from their uſe in materia medica and practical chemiſtry. The collections of all kinds of ſurgical inſtruments, bandages, and machines, is extremely magnificent.

The anatomical muſeum is diſtinguiſhed for its collections of ſkeletons and diſeaſed bones, and of pathological preparations in wax; but above all for its rich collection of wax preparations illuſtrative of deſcriptive anatomy and midwifery. The preparations of this collection were executed in Florence, under the direction of Fontana and Maſcagni, and are indeed an exact copy of the collection of the ſame kind in the Muſeo di Fiſico at Florence. This collection occupies ſeven apartments. Two apartments upon the ſecond floor contain the preparations illuſtrative of midwifery. This muſeum is open every Thurſday, and is viſited by all claſſes of the people. The Florentine collection is much admired by the crowd, whom it is well calculated to ſurpriſe. Every preparation lies under glaſs, upon a white ſilk cuſhion fringed with gold. The artiſts have not ſpared ornament even to the preparations themſelves, which are as gay as colours can make them. It is well known that they were executed from drawings; but it may ſtartle our readers a little to hear, that a ſeries of engravings, taken from theſe preparations, is now publiſhing at a great expenſe in Vienna. Privatiſſima are alſo given by the profector of the academy, in which theſe preparations are demonſtrated. We never could look at the collections of wax preparations in the Muſeo di Fiſico at Florence, and in the Joſephine Academy of Vienna, without acknowledging them to be excellently ſuited for teaching anatomy to grand dukes and emperors, or for affording an hour's amuſement to any honeſt citizen whatever, curious perhaps in ſuch matters. That they are of any conſiderable utility to profeſſional ſtudents of anatomy, is by no means ſo evident.

The Joſephine Academy is furniſhed with a botanical garden. It has a perpetual director and ſecretary; perpetual members or profeſſors; actual members, or phyſicians and ſurgeons; foreign honorary members; and correſponding members.

A work of very conſiderable value on Hoſpital Gangrene has been recently publiſhed by Dr. Werneck, phyſician in chief to a diviſion of the Auſtrian army, who has had very extenſive opportunities of obſerving the diſeaſe during the late campaign in Italy, Hungary, Poland, and the greater part of Germany. It is only ſuch points as are either of an original character, or ſuch as ſerve to ſupport doubtful points of theory, that require notice on this occaſion. Dr. Werneck conſiders that the diſeaſe may appear either as affecting primarily the ſyſtem, or developing itſelf originally in an open wound, without any ſpecific affection of the general ſyſtem. He thinks that it ariſes from a contagious virus, which is a modification of that producing the common typhous fever: in ſupport of which notion he cites numerous facts, furniſhing direct and very forcible arguments in its favour. Hoſpital gangrene, like typhous fever, he alſo remarks, may occur ſeveral times in the ſame individual, and affect perſons living in an inſulated manner, as well as in hoſpitals, tranſport-ſhips, or garriſons, where numerous individuals are collected together; and it may be cured, under either of theſe circumſtances, with the uſe of no other meaſures than ſuch as are proper to maintain cleanlineſs of the wound affected. Dr. Werneck has ſome hypothetical opinions about the nature of the contagious virus, that it would not, perhaps, be right to neglect to notice; though it ſhould be underſtood that they are not cited here becauſe their truth is acknowledged. He ſuppoſes that the eſſence of the virus is of an alkaline nature, and is to be corrected by acids, the moſt efficacious of which, for the implied purpoſe, is the acetic acid; next to this, the muriatic and oxy-muriatic acids; and, laſt in the liſt, the other ſtrong vegetable acids.

Similar in its general character to the foregoing treatiſe,

tiſe, that of compriſing a good hiſtory of its ſubject, with obſervations and arguments qualified to ſupport thoſe of former well-informed writers, rather than demonſtrative of any thing of remarkable originality, is the work of Dr. Ruſt on the Egyptian Ophthalmy. His moſt important and intereſting obſervations relate to the appearance of ophthalmy in the garriſon at Mainz in 1818. The diſeaſe had been preſent in the army during the campaigns of 1813, 1814, and 1815; but it was not till the time above mentioned that it manifeſted itſelf in an alarming manner. Its prevalence occurred under the following circumſtances. It affected only the men of one regiment, and, for the moſt part, only ſome Pomeranian, Lower-Rheniſh, and Naſſau, recruits. This regiment made a very harraſſing march from the Rhine to Sileſia, and back again, in the autumn of 1817 and the ſpring of 1818. On its return, the men were crowded into a tranſport with ſeveral French invalids, amongſt whom were many who had loſt their ſight from ophthalmy. On the arrival of the regiment at Mainz, about a third part of the regiment were found to have the itch. After this was got rid of, ſeveral other cutaneous diſeaſes appeared, as ſcarlet fever, meaſles, varioloid diſeaſes, and nettle-raſh; and, on the decline of theſe, the affection of the eyes firſt appeared. It augmented in ſeverity from June to September 1818, when it continued nearly ſtationary, in regard to prevalence and ſeverity, till March and April 1819, when its extent became more confined; but its deſtructive agency was far from being ſuppreſſed until after the moſt ſtrict meaſures for preventing its infection had been reſorted to.

Whilſt the Pruſſian regiment at Mainz was ſuffering from this diſeaſe, the Auſtrian ſoldiers were entirely exempt from it, though they both lived under the ſame climate and performed ſimilar duty. But, whilſt this argument in favour of the propagation of the diſeaſe by contagion is brought forward, we muſt not neglect to notice thoſe which favour the opinion of its primary origin from caſual external circumſtances. The whole of the facts related by Dr. Ruſt ſupport the opinion of Dr. Vetch, that purulent ophthalmia originating from any common cauſes may become contagious; or, in other words, that a puriform ſecretion from the mucous membrane of the eye, from whatſoever cauſe, is capable of infecting, by contact, the mucous membrane of the eye of another perſon, and of thus producing a diſeaſe ſimilar to that from which it originated. It ſhould be conſidered that the diſeaſe firſt appeared in the recruits in the Pruſſian army; that the military diſcipline of the Pruſſian army is much more ſevere and harraſſing than that of the Auſtrian army; and that this ſeverity was further increaſed as the number of the ſick augmented. One part of the military diſcipline to which thoſe recruits were ſubmitted, was that of having the hair cut very cloſe over the whole of the upper part of the head, on their entry into the ranks, whilſt they adopted the practice of conſtantly wetting the back part of the head with beer and ſoap, for the purpoſe of making their hair grow *en queue*: and a very defective covering for the head was commonly worn. Theſe circumſtances may be conſidered quite ſufficient to produce a diſpoſition to ophthalmia, juſt in the way in which it was manifeſted. Dr. Ruſt arrived at the garriſon on the 5th of April, 1819. He immediately put in force the moſt effectual means for preventing the progreſs of the diſeaſe, ſuppoſing it to be communicated from one individual to another by contagion. The number of patients now decreaſed from month to month, till October, when the garriſon was relieved, and the diſeaſe was ſuppoſed to be wholly deſtroyed. From June 1818, to the end of April 1819, the number of patients amounted to 1146; from this time to September 1819, only 652 new caſes occurred; ſo that the whole number of patients was 1798, not including one regimental phyſician, two hoſpital ſurgeons, and twelve nurſes, who were affected with the diſeaſe.

The method of applying ſulphur in a gazeous form to the ſurface of the body, was firſt introduced by Dr. Galés of Paris. The reſult of the experiments and obſervations made on its employment, by a medical jury appointed for the purpoſe, was ſo ſatisfactory, that by order of government it was ſpeedily introduced into all the hoſpitals of France, and was generally recommended in practice by the phyſicians of that country. It conſiſts in applying the vapour ariſing from ignited ſulphur to the naked body of the patient, ſeated for that purpoſe in a ſort of wooden caſe, in the upper part of which there is an aperture for the head. To the circumference of this aperture a leather bag is attached, which is faſtened round the neck, and thus prevents the fumes of the ſulphur from reaching the eyes, noſe, or mouth. The effect of the fumigation is to produce, in the firſt inſtance, increaſed action, and ſubſequently moſt profuſe perſpiration; greater, indeed, than we have ever ſeen produced by any other means. Hence, it appears to be indicated, 1ſt, where quick and ſudden perſpiration is of benefit; and 2dly, where ſulphur appears to have a ſpecific action.

The ſulphureous fumigating baths were introduced into Germany by Dr. De Carro, of Vienna, whoſe name is already ennobled in the annals of humanity by the introduction of vaccination to the continent of Aſia. The apparatus conſiſts of a wooden caſe, ſomething like a pulpit, in which a grown perſon can ſit with eaſe up to the neck. This caſe is plaſtered internally. Its floor, formed by a ſtone of two or three inches in thickneſs, is raiſed ſo far above the ground as to require three ſteps to get into the caſe. Underneath are the parts neceſſary for producing the fumigation. The loweſt ſtory is the aſh-pit, the uppermoſt the hearth for the ſulphur, and the middle contains the fire. The uppermoſt diviſion communicates freely with the interior of the caſe, by means of holes bored in the ſtone floor of the caſe. A pipe conveys the ſmoke from the diviſion containing the fire into the chimney. Another pipe paſſes from the caſe into the chimney. This may be opened or ſhut by means of a valve; and, after the operation is concluded, it conveys what remains of the ſulphureous fumes into the chimney. From this ſketch of the apparatus, the method of uſing it is evident. The patient, perfectly naked, ſteps into the caſe, and ſeats himſelf on a chair, which may be raiſed or lowered at pleaſure. He places his feet upon a ſtool. Both the chair and ſtool are perforated with holes, to admit the free paſſage of the fumes to all parts of the body. The uppermoſt board, forming the head of the apparatus, is now let down, ſo that the patient is completely encloſed in the caſe, with the exception of the head. Proviſion is made for preventing the fumes acting on the eyes, or entering the mouth or noſe, as already mentioned.

There are various methods of applying the vapour to the face, when the diſeaſe has its ſeat there, the moſt ſimple of which is a flexible pipe, which communicates with the ſulphureous vapour. The patient remains in the bath half an hour, or at moſt an hour. About five minutes before the concluſion of the fumigation, the valve in the ſulphur-pipe is opened, and thus all unpleaſant ſmell is avoided on opening the door of the caſe. The patient now goes to bed for an hour or two.

The caſes in which the ſulphureous fumigation is chiefly uſed, are caſes of chronic rheumatiſm, pſora, lepra, and other cutaneous affections, where ſulphur is uſually found of advantage. In all of theſe the benefit derived is very ſtriking, and the ſhortneſs of the period neceſſary for the cure really aſtoniſhing. Some caſes of old chronic rheumatiſm have yielded completely in a few weeks to this remedy. One reaſon of the great ſucceſs attending Dr. De Carro's practice, was the judicious ſelection of caſes which he made, whereas many practitioners have employed theſe fumigations far too indiſcriminately, and then wondered at the failures which took place. The practice of ſulphureous fumigation has been made

made known to the north of Germany in a work by Dr. Karſten of Hanover, under the title of "Ueber die Kraetze, und deren bequemſte, ſchnell-wirkendeſte und ſicherſte Heilart, durch Baden in ſchwefelhaltigen Daempfen, und deſſen vortheilhafte Anwendung zur Behandlung chroniſcher Krankeiten der Haut und anderer Gebilde, nebſt Beſchreibung eines hierzu dienlichen Apparats, von Dr. Karſten, mit 2 Kupfern. Hanover, 1818."

The practice is now generally adopted in moſt parts of the continent, and has extended to Ruſſia and Poland. Dr. Aſſalini, of the Inſtitute of Sciences at Naples, has publiſhed "Medical Reſearches on Fumigations of Sulphur, Mercury, &c. Naples, 1820;" one object of which is, to deſcribe the improvements and additions which he has made in the conſtruction of the ſtoves employed for theſe purpoſes. Of theſe, the principal ſeems to be, the having rendered the machines more portable, and their uſe more economical, than thoſe propoſed by Galés, Darcet, and De Carro. He has added to his work numerous examples of the beneficial effects which have reſulted from their uſe in his own practice in private life, and in the great military hoſpital Del Sagramento at Naples. Although ſo recently introduced into that kingdom, it is at the preſent period very generally employed and recommended by the principal profeſſors in the capital and provinces. The author promiſes ſpeedily to produce a ſecond volume, with additional obſervations and experiments on fumigations and vapour-baths, together with two memoirs on the uſe of thermal vapour-baths, and on oily unctions with artificial fumigation, as a preventive from, and cure for, the diſeaſes produced by the marſhy effluvia commonly known under the name of *malaria*.

The remedies of which ſignor Aſſalini treats, appear to have received but little attention in this country, although the extent of their employment in France, particularly the ſulphureous fumigations in the treatment of cutaneous diſeaſes, have been long known, and their efficacy undiſputed. We are not aware of the exiſtence of any public inſtitution for this purpoſe in any part of the kingdom; and the few private ones which have been eſtabliſhed are limited in their operation, and far from being ſufficiently extended or perfect. In addition to this, where ſuch eſtabliſhments exiſt, the expenſes neceſſarily attendant upon their adminiſtration are, indeed, ſo great as almoſt wholly to exclude the lower claſſes of ſociety, for whom they are moſt frequently neceſſary, from the advantages to be derived from them.

Our country has always been diſtinguiſhed for its charitable inſtitutions, and at no period more ſo than the preſent. Without taking from the merits of thoſe which already exiſt, we are convinced that few meaſures would be more humane and beneficial to the community, than the formation of ſuch eſtabliſhments as we have ſpoken of, for the preſervation of health, and more particularly for the prevention and removal of cutaneous diſeaſes. We feel greatly aſſured, that ſupport and aſſiſtance from the public would be readily given, and that an effort, a commencement, only is wanting to ſecure the execution of an object ſo neceſſary and ſo advantageous.

We omitted to notice, in its proper place, the Univerſity and the Anatomical Muſeum of Straſburg. Of the Muſeum, an account, with a catalogue of the preparations, was publiſhed laſt year (1820), by Profeſſor J. F. Lobſtein.

This collection is divided into two principal ſections, one of which contains thoſe of the healthy, and the other thoſe of the diſeaſed, ſtructure of the human ſubject, and of animals. In the firſt, the organs are arranged with a view to their phyſiology, by ſyſtems, and according to their different functions. The human organs, followed by the correſponding organs of animals, are contained and claſſed in twenty compartments, which alſo include the preparations uſed for demonſtration in the courſes of anatomical and phyſiological lectures. In the ſecond, the organs, in a ſtate of diſeaſe, occupy eighteen compartments, and are diſtributed in an anatomical order, according to general ſyſtems, and according to the organs which belong to the functions of nutrition, relation, and reproduction.

The oſſeous ſyſtem may be ſtudied with a view to comparative anatomy, by the aſſiſtance of the entire ſkeletons of fifty-three different animals, fifty-ſeven ſkulls, and a great number of bones, of every ſpecies of animals. The collection of preparations which contributes to demonſtrate the ſtructure and formation of bones, is extremely complete. Among many of theſe, the external and internal perioſteum is beautifully injected. The fine injections of fœtal bones have alſo ſucceeded equally well.

The myological preparations are, at the ſame time, connected with the ſubject of angiology, as they have been made from injected ſubjects: by this means they have been rendered doubly inſtructive. In addition to theſe, here are others of the fœtus injected for the purpoſe of ſhowing their ſtructure. Theſe preparations, when viewed by the aſſiſtance of the microſcope, diſplay a net-work of blood veſſels ſuperior perhaps to thoſe in the collection of Prochaſka.

The preparations which relate to the function of digeſtion are various and extenſive. The alimentary canal of the human ſubject, from the commencement of the œſophagus to the anus, diſtended with air and dried, is compared with that of fourteen kinds of animals, prepared in the ſame way. The organs of digeſtion of man in particular, commencing with the ſalivary glands, are contraſted with the correſponding organs of different animals. The minute anatomy of theſe parts has not been neglected. The inteſtines are ſo completely injected, that the pupils can conceive a perfect idea of their villous coat, as it has been diſtended, and the papillæ erected by the reſin of the injection. Portions of the inteſtines of the fœtus, the veſſels of which have been injected with iſinglaſs, coloured white, are not inferior to the preparations of Lieberkuhn.

Twenty preparations of the lymphatic veſſels elucidate the receptaculum chyli and the thoracic duct, the right lymphatic trunk, the lacteals of the meſentery well injected, the lymphatics of the liver, the large plexuſes of the pelvis and vertebral column; the lymphatic veſſels of the lungs, thoſe which paſs behind the ſternum into the anterior part of the mediaſtinum, and the ſuperficial and deep-ſeated lymphatics of the upper and lower extremities. Though theſe preparations are ſufficient to give pupils an idea of the lymphatic veſſels in almoſt all parts of the body, the abſorbent ſyſtem is ſtill every year injected in the recent ſubject, during the anatomical lectures. The ſame is done with the other preparations of minute anatomy, angiological and neurological, and thoſe which relate to the organs of ſenſe.

The organs of reſpiration, after being examined in the human body, may be afterwards compared with the ſimilar organs of quadrupeds, amphibious animals, and fiſhes. The minute ſtructure of the lungs is rendered apparent, and eſpecially the diſpoſition of the bronchial veſicles, by preparations from the lungs of children. The larynx diſplays the ſuperior and inferior laryngeal nerves on both ſides, traced to their moſt minute branches. The thyroid gland is completely injected; and it is obſerved, that this is one of thoſe organs in which the injection, when urged into the arteries, returns moſt readily by the veins.

With reſpect to the nervous ſyſtem, here are perfect injections of the pia mater, and, in ſome inſtances, even the cortical ſubſtance of the brain has been reddened. The injections of the nerves are not inferior to thoſe repreſented by Reil, in his work, entitled Exercitationum Anatomicarum Faſciculus Primus, de Structura Nervorum. All the cerebral nerves, with their diſtributions,

are illuſtrated by ſeveral preparations. Numerous reſearches have been made upon the brain itſelf, the reſults of which were publiſhed in the third and fourth volumes of the Journal Complémentaire du Dictionnaire des Sciences Médicales. The ſections of the brain, made according to the views and proceſs of M. Lauth, are preſerved in acidulated water, which anſwers the purpoſe better than any other liquid.

The collection is equally rich in preparations of the organs of ſenſe. With reſpect to that of touch, we may ſafely ſay it is impoſſible to carry the injection of the ſkin farther than is done in theſe preparations: and that none can eaſily be found ſo inſtructive as thoſe which relate to the ſtructure of the negro-ſkin. The nerves of the tongue are traced to their minuteſt branches. The pituary membrane, ſubjected to maceration after injection, ſhows, in a very ſuperior manner, the net-work of ramifications on this membrane. Among the preparations of the eye, we may notice the injections of the veſſels of the choroid, of the retina, and of the canal of Fontana, by mercury, &c. The organ of hearing is illuſtrated by a very large number of preparations, and its moſt minute parts elucidated. As early as the year 1752, the old univerſity poſſeſſed a collection of ſixteen preparations of this organ, ſo beautifully arranged by hinges, and other mechanical means, that the various parts of the organ may be ſtudied both ſeparately and united, ſo as to ſhow their relation to each other. Theſe, the reſult of the great ingenuity of profector May, were preſented to the Royal Academy of Sciences at Paris; and the Academy, in the hiſtorical part of its Memoirs for the year 1734, has mentioned it in honourable terms. Theſe preparations, which they at preſent poſſeſs, have been ſince augmented by the addition of eighty-ſeven others, worthy of the originals.

The preparations which relate to the ſexual ſyſtem of the male and female, to pregnancy, parturition, and the products of conception, amount to 182 in number. In the injections of the teſticle with mercury, the fluid introduced into the deferens has paſſed into the ſeminiferous ſubſtance. In two ſpecimens they have ſucceeded in the almoſt entire development of the vas differens and epididymis. The injection of the blood-veſſels of the teſticle with iſinglaſs, coloured by cinnabar, has ſucceeded ſo well, that not only the pulp of it has been reddened, but, by the help of a magnifying-glaſs, a net-work of veſſels can be diſtinguiſhed upon the veſſels themſelves.

A ſeries of fifty fœtuſes ſhows their gradual increaſe, week by week, from the ſecond month, up to the full term of pregnancy. Six preparations ſhow the diſpoſition and development of the fœtal organs at the different periods of its life.

The ſecond ſection of this work, containing the *pathological anatomy*, forms a larger part of it than the preceding one; and we regret that our limits will not allow us to give ſo complete an account of its contents as we could wiſh. We muſt, therefore, confine ourſelves to noticing a few of its moſt intereſting objects.

Under the article of calculi, are mentioned ſome of very unuſual ſize from the maxillary duct. The collection of horſe-bezoar (inteſtinal calculi) is alſo remarkable; the largeſt weighs nine pounds and a half. The biliary calculi are arranged according to the claſſification of Fourcroy: no claſs eſtabliſhed by that chemiſt is wanting. The urinary calculi comprehend thirty-eight ſeries, a number of which, broken, or ſawn, diſplay their laminated ſtructure and the different colours of their ſtrata correſponding to the three principal elements compoſing them; viz. uric acid, phoſphate of lime, and oxalate of lime. Proſtatic calculi, which are ſomewhat rare, are to be ſeen diſpoſed in regular ſeries, or in a circular arrangement, in the excretory ducts of that gland. Calculi from veins, which the author calls *phlebolithes*, have been carefully collected and examined; and a coloured repreſentation, which the author conſiders unique, made of their laminated ſtructure.

Under the article *caries*, a cranium is mentioned, which is perforated with apertures, in the form of a ſieve, by a venereal affection. The patient from whom it was taken, was treated with mercury, and even now (as in 1758 when this preparation excited the attention of the curious) globules of mercury are ſeen in the little ſinus, and ulcers in the internal ſurface of the cranium. This fact, obſerved by Fallopius and others, had been denied in modern times, till ſome experiments made at Tubingen in 1808, eſtabliſhed its truth. In a ſpecimen of caries of the pelvis, the oſſa pubis et iſchii are entirely deſtroyed, except the portion forming the ſymphyſis of the former, and that which contributes to the formation of the acetabulum of the latter.

M. Lobſtein obſerves, that it is not yet agreed what meaning is to be attached to the term *ſpina ventoſa*. If ſwelling of the bone in its whole thickneſs, and a ſponginess of its texture, ſuch as reſults from cells of different dimenſions, may conſtitute ſpina ventoſa; if the cells are filled with fluids of various kinds; if there are oſſeous excreſcences, either on the external ſurface, or within the above cells, the muſeum contains ſpecimens of this diſorganization; particularly in the os humeri, tibia, and fibula.

The laſt form of the diſeaſe of bone noticed, is that in which large maſſes of oſſeous matter entirely diſappear, and no traces of them are found, except inſulated fragments floating in an abundance of mucilaginous matter. The author firſt noticed this diſeaſe in the ribs, and deſcribed it with other analogous examples in the "Rapports ſur les Travaux exécutés à l'Amphithéâtre d'Anatomie." Since the publication of that, he has obſerved it a ſecond time on the ribs and pelvis of the ſame individual. The ſacrum and oſſa innominata were covered with a thick perioſteum, more moiſt than uſual; in detaching it, the compact external table of the bones could be at once removed: a reticular tiſſue was then ſeen with larger interſtices, which were filled with a ſubſtance in colour and conſiſtence very like currant-jelly. This diſeaſe, in the opinion of M. Lobſtein, conſiſts in a ſponginess of the bone, accompanied by a ſecretion of an albumino-mucous matter. In the fluid of the numerous cyſts, which ſupplied the place of the oſſeous matter deſtroyed, portions of bone, rendered thin and porous, were ſeen floating like half-diſſolved ſugar. The contiguous portions of bone had the ſame ſpongy appearance.

In ſpeaking of the organic changes of *muſcles*, their converſion into fat, to which the term Myodémie is given, is ſaid to have been obſerved in two inſtances. In another the ſemi-membranoſi alone had undergone this change. After ſome remarks on the ſympathetic coincidence in the deficiences and diſeaſes of the muſcles of the two ſides and extremities of the body, the author relates a caſe in which the biceps of each arm, and no other part, was found in a ſtate of gangrene, in a woman who died in child-bed.

The morbid changes, &c. of the vaſcular ſyſtem, are contained in the next chapter, from which we ſhall only mention a rare diſtribution of the aorta: its arch divides into two branches, which, by their reunion, form a ſpace, and through this paſs the trachea and the œſophagus. The irregularity is deſcribed by Hommel, in the Commerc. Lit. Noricum. 1777.

The remaining chapters are devoted to the pathological anatomy of the thoracic organs, thoſe of digeſtion, of the urinary ſyſtem, nervous and generative ſyſtems. Like the reſt of the book, they are made up of a maſs of valuable and intereſting facts, ſtated with the utmoſt ſimplicity and clearneſs. Laſt of all is placed a Catalogue of the Preparations of this ſelect yet extenſive Muſeum. The whole number of them amounts at preſent to 3286, of which 1977 relate to phyſiological, and 1309 to pathological, anatomy. The Muſeum is open to the public

once every week; ſtudents have acceſs to it daily; and, with a liberality ſtill more worthy of praiſe and of imitation, foreigners are admitted at all hours, and at the firſt application. It is with aſtoniſhment we learn, that only ſixteen years have been ſpent in the accumulation of this admirable collection: for, in 1804, there were only 212 preparations. The very complete Muſeum of Berlin, coſt its founder, profeſſor Walter, fifty-four years in its collection; but it contains not more than 2268 preparations.

Three hundred bodies are annually at the diſpoſal of the faculty of Straſbourg. Such noble encouragement and opportunities of obſervation; the co-operation of the profeſſors and the practitioners of the town, who tranſmit, as to a common centre, the reſult of their particular pathological examinations; the rare and curious objects which flock from the neighbouring country; the intelligence and zeal of the profectors and ſtudents; all theſe circumſtances combined, lead us to expect from this quarter ſtill greater contributions to medical ſcience.

Since we have travelled out of Germany; and got again into France, we ſhall detain the reader a few minutes while we deſcribe the preſent ſtate of the obſtetrical art in that kingdom; which we are enabled to do by the very recent publication (1821) of the "Pratique des Accouchemens," by a real mid*wife*, Madame Lachapelle, chief operator at the Lying-in Hoſpital at Paris.

This volume is one to which we have nothing ſimilar in this country. It is the production of a female practitioner, placed by public authority in a moſt important official ſituation; and is no leſs deſerving of notice from the rare occurrence of ſuch publications, than from the juſt views and accurate criticiſms on the ſtate of the ſcience on which it treats. But theſe are ſubjects on which it is not at preſent our intention to dwell, as we are inclined rather to take the opportunity of pointing out the ſtate of public inſtruction in this ſcience in France, and to contraſt it with the deficiency in this point, which all muſt admit and lament as exiſting in this country.

From time immemorial, the only aſylum afforded by the city of Paris to puerperal women, was a miſerable ward in the Hôtel-Dieu; a principal midwife, with five or ſix pupils, whoſe ſtudies laſted but for three months, ill ſufficed for the number of births which occurred. The place was ſtill more inadequate; the women admitted were heaped together, and commonly ſeveral lay at the ſame time in one bed. Theſe inconveniences were of ſo ſerious a nature as to attract the attention of the government. In the year 4 of the Republic (1797), the National Convention decided on building a houſe for the particular purpoſe of receiving parturient women. Madame Lachapelle, in conjunction with her mother, the principal midwife of the Hôtel-Dieu, was charged with the direction of the ſervice of the new inſtitution. The diſpoſitions for the arrangement and order of the whole eſtabliſhment were formed in concert; and it is thus that the plan originally laid down has been more extenſively applied. The number of pupils as midwives has ſince gone on increaſing, as well as the number of individuals admitted. The former at preſent amount to 130 annually. This increaſe, as well as the organization of the ſchool, was owing to M. Chaptal, then miniſter. M. Baudelocque was then made profeſſor, and aſſiſted to render the work more perfect. M. Dubois, who ſucceeded him, has preſerved the order adopted by his predeceſſor, which we proceed to deſcribe.

The pupils admitted at the School of Midwifery are expected to employ themſelves as well with the relief of the patients as with their own perſonal inſtruction: ſuch, in fact, is the principal object in view. This neceſſity forces them to a practical ſtudy, to which, in particular, they are indebted for their acknowledged ſuperiority over the pupils of every other ſchool. All paſs a whole year at the hoſpital; and about a fourth part of their number twice this period, ſerving in the ſecond year to direct the new pupils. The newly-arrived pupils are ſeparated into as many diviſions as there remain old pupils who double the period of their ſtay. Theſe laſt direct the diviſion entruſted to them, aſſiſt at ſimple labours, and point out to their companions the particularities of examination, &c.

The patients admitted are firſt examined by the principal midwife, who rejects or retains them according to circumſtances. The period fixed is the end of the eighth month. Simple deliveries are all performed by the pupils, in the preſence of the diviſion, and under the direction of the elder one, who ſerves as chief. Each pupil has the ſubſequent care of the woman whom ſhe has delivered. On the occurrence of the leaſt difficulty, the principal midwife is called in. If the uſe of inſtruments ſhould be required, it is ſhe who operates; if the delivery be difficult, although the hand alone ſuffices, ſhe ſtill has the charge of it; but eaſy manual deliveries are terminated, under her inſpection, by one of the old pupils, ſo that almoſt all have, before the end of their ſecond year, performed an artificial delivery. Very complicated caſes, ſuch as require the uſe of a cutting inſtrument, call for the preſence of the profeſſor.

Peritonitis too often prevails in the wards: a hoſt of other diſeaſes may alſo attack parturient women. It is then that, after being carried to the infirmary, they are entruſted to the care of the experienced and learned profeſſor Chauſſier, principal phyſician. Under his inſpection, ſeveral female pupils note daily, and with moſt ſcrupulous exactneſs, the ſymptoms, periods, termination of the diſeaſes, and the effects of remedies; they thus become accuſtomed to recognize danger, to prevent it, and, if not to remove it, at leaſt to have recourſe early to the aſſiſtance of medicine. Three times in the week the profeſſor explains the theory of the ſcience of midwifery. A lecture is given every day by the principal midwife; and a ſimilar one by Mademoiſelle Hucherard, for eight years acquainted with the principles of the art, and honoured with the title of "principal pupil," who alſo exerciſes the others on the model, in the uſe and application of inſtruments. Amongſt the old pupils, thoſe who have moſt facility in expreſſing themſelves, and capacity for inſtruction, are charged with giving repetitions to the new comers, of the lectures of the profeſſor, the midwife, and principal pupil. Amidſt all theſe attentions to the principal object, the acquiſition of acceſſory knowledge is not neglected. Under the direction of the principal phyſician, the apothecary lays down to the pupils the general principles of botany, and makes them acquainted with the moſt important plants and drugs. In the ſame manner the ſtudent in medicine attached to the inſtitution makes ſome demonſtrations on general anatomy, on that of the viſcera, on the principal functions, on the muſcles of the abdomen, and, laſtly, on vaccination and venæſection. For theſe two operations the inſtructions are not ſolely theoretical; the pupils bleed and vaccinate as often as there is an opportunity, but always in the preſence of the ſtudent in medicine. Such are the means of inſtruction preſented to the pupils in midwifery; the wiſdom of the adminiſtration has added uſeful encouragements. At the end of each ſcholaſtic year, ſeveral prizes are given by competition, on ſubjects relating to the ſcience of midwifery; the principal is a golden medal: prizes are alſo given for clinical vigilance, the obſervation of patients, the ſtudy of botany, and for vaccination.

It is a circumſtance perhaps only to be underſtood by the conſideration of the inconſiſtency of human proceedings, that, while laws and regulations were early deviſed for the protection of the public from the pretenſions of the ignorant and unprincipled in the practice of medicine and ſurgery, midwifery, a ſcience connected as it is with the tendereſt feelings and beſt intereſts of ſociety, ſhould be left in the hands of the loweſt and moſt uninformed people,

people, at leaſt as far as it regards the great maſs of the public in every country. Nor has this deluſion been confined merely to the careleſs and indifferent obſerver; even thoſe whom their abilities might have been expected to have exempted them from the errors of common minds, ſeem but too often to have thought, that information on difficult and complicated ſubjects might be acquired, as it were, intuitively; and that mechanical unobſerving experience might ſupply the defect of early and well-grounded inſtruction. It needs but little either of intellect or inquiry, to ſee at once the fallacy and abſurdity of ſuch an idea.

We are aware that at the preſent period, in this country, a conſiderable portion of the male practitioners in midwifery, are individuals whoſe *compulſory* profeſſional education may be fairly ſuppoſed to render them adequate to the performance of the duties they undertake; but it is notorious that ſuch is not the caſe with the females, on whoſe care and ſkill the lives or the future comfort of women in the lower claſſes of life, and in remote parts of the country, are ſo completely dependent. Nor can it be unknown, that in every part of the kingdom, even in the metropolis, no ſecurity exiſts againſt the ignorance of thoſe who may chooſe to enter upon the practice of this moſt important branch of the healing art; that an acquaintance with, or courſe of inſtruction in, its principles, forms no part of the qualifications required by the three corporate bodies, whoſe members and licentiates form the greater part of private practitioners in England. Nay, on the contrary, at leaſt two of theſe are more diſpoſed to diſcourage than to countenance the extenſion of this diviſion of practice among their members.

After an attentive conſideration of the difficulties and the inconveniences we have alluded to, it ſurely requires no argument to convince every unintereſted individual, whether profeſſional or otherwiſe, of the neceſſity for ſome regulation of this branch of the profeſſion, and of the important advantages which would accrue to the public from the organization of a claſs of *female practitioners*, well qualified for the performance of the duties they are intended to diſcharge. To the inſtitution of ſuch a claſs in this country, we can ſee no well-founded or diſintereſted objection; and it muſt be allowed that nothing ſeems better adapted to attain the object in view than the ſyſtem which has received ſo ample a trial in France, and of which we have given an account. Of this at leaſt we feel convinced, that a trial only is required to exhibit its excellence, and enſure its adoption. Should ſuch a plan be ever put in execution, it would doubtleſs be moſt advantageous to combine its employment, as has been done in France, with the internal management of the lying-in inſtitutions already in exiſtence, eſpecially in the metropolis. But here we muſt check ourſelves, as it muſt be confeſſed, that it is much more eaſy to proclaim the exiſtence of defects than to apply appropriate remedies, and as it is far from being our intention to aſſume a taſk that we hope to ſee in more competent hands.

Greece and Turkey.—In turning to the conſideration of *Greece*, the land of heroiſm and claſſic recollections, we find that 3000 years have glided over without any improvement in medicine beyond the practice of the Father of Medicine. Indeed in many inſtances we might almoſt wiſh that the practice of Hippocrates only was followed, without variation or *improvement*; but the phyſicians of Greece and of Turkey are much occupied in diſcuſſing the theories of Brown or of Boerhaave; and, though occaſionally a flaſh of ancient fire and of the true philoſophy of the priſtine Hellenian has animated the Greeks, yet the major part are contented with theſe vain and fruitleſs enquiries. This ſtate will not probably laſt long: the deſpotic government of the Turks may be conſidered as the cauſe of the long ſupineneſs of the Greeks; and, whether the ſtruggle for their independence be ſucceſsful or not, a ſpirit of emulation and enquiry exiſts at preſent in that nation, which cannot fail of producing much advantage to philoſophy.

Of the mode of viſiting and treating patients in *Turkey*, an amuſing account is given by Dr. Neale, late phyſician to the Britiſh embaſſy at Conſtantinople.

After adverting to the belief of the Turks in predeſtination, Dr. N. proceeds thus. "Still, fataliſm and apathy have their limits; and the proud infidel, in the hour of ſickneſs, does not diſdain to invoke the aſſiſtance of the *Giaour* to delay the approach of death. Of this I had a memorable inſtance within a few days after my arrival at Terapia, when, very unexpectedly, I received a meſſage from the emperor Selim the Third, to viſit his mother the ſultana Validè. Mr. Piſani, the ſenior dragoman (interpreter), was the bearer of this requeſt; and the following morning I ſet off by water for the ſeraglio, accompanied by one of the junior dragomans. We were put aſhore at a quay near Baktchi Capouſſi, where we found a boſtanji in waiting, to conduct us to the houſe of the principal court-phyſician, who lived in a narrow ſtreet adjoining the wall of the ſeraglio. On arriving there, we were informed that he had already gone to ſee his patient, having left inſtructions that we ſhould follow him, which we did, entering the gardens by the little white gate near the chapel of St. Irene. We paſſed a guard-houſe of boſtanjies on our left, and then proceeded under an avenue of lofty cypreſs-trees, towards a ſecond guard-houſe, whence we were conducted to a detached pavilion, in which we found the Hekim Baſha, or Turkiſh phyſician, Mahmoud Effendi; a Greek phyſician, named Polychronon; the Kiſlar Agaſſi, a hideous Ethiopian, the chief of the black eunuchs; the Hazni Vekili, alſo a black eunuch, keeper of the privy purſe; and ſome derviſes and muftis. After being introduced, and going through the uſual routine of pipes, coffee, ſherbet, and ſweetmeats, Polychronon, converſing in Latin, entered into a detailed ſtatement of the malady with which the ſultana was afflicted, namely, an inveterate quartan ague, of upwards of eighteen months' ſtanding. From this ſhe had recovered more than once; but had relapſed as often, owing, in part, to her own want of due caution, and to the officious interference of a ſet of muftis who beſet her, and forced upon her large draughts of iced water, in which they immerſed taliſmans, aſſuring her that they would eſtabliſh her convaleſcence; but, on the contrary, theſe draughts invariably brought back the cold fits of her ague. Upon the laſt relapſe, ſome days before I ſaw her, ſhe had, during the cold paroxyſm, been ſuddenly bereft, in her lower extremities, of all power of motion and ſenſe of feeling; and it was upon this point, and ſome others alſo, that my opinion was requeſted. Indeed I was to decide, as I found, between three of her phyſicians who called themſelves *Boerhaavians*, and four others who profeſſed themſelves ſtrict *Brownonians*, as to the expediency of preſcribing a cathartic medicine; the former preſſing the abſolute neceſſity of ſuch a remedy after five days' conſtipation, and the latter moſt fooliſhly declaring it to be perfectly inadmiſſible, according to their interpretation of the doctrine of Brown. This being premiſed, we all accompanied the Kiſlar Agaſſi to an adjoining kioſk, in which was the ſultana. After exchanging my ſhoes at the door for a pair of yellow ſlippers, we entered the royal apartments. On a mattreſs, in the middle of the floor, was extended a figure covered with a ſilk quilting, richly embroidered. A female figure veiled was kneeling at the ſide of her pillows, with her back towards the door of entrance; and the Kiſlar Agaſſi beckoned to me to kneel down by her ſide, and examine the pulſe of the ſultana. Having complied with this requeſt, I expreſſed a wiſh to ſee her tongue and countenance; but that I was given to underſtand could not be permitted, as I muſt obtain that information from the report of the chief phyſician. The moſt profound ſilence was obſerved in the apartment, the eunuchs and phyſicians converſing only by ſigns. The Hazni Vekili

then took me by the arm, and turned me gently round, with my face towards the door of the entrance, over which was a gilded lattice, concealing the emperor, who had placed himſelf there to witneſs the viſit. Our ſtay in the room did not exceed fifteen or twenty minutes. The four large windows were ſhaded externally by gilded lattices, and the intervening pannels were covered with mirrors and arabeſque tapeſtry. The divan, which encircled the chamber, was veiled with crimſon cloth, richly embroidered with gold, ſurrounded with cuſhions of the ſame deſcription; and the floor was covered with a ſuperb Perſian carpet. On our return to the firſt pavilion, I, of courſe, coincided with the Boerhaavians, and wrote a preſcription to that effect. Indeed, had ſhe been a princeſs of any other European court, it is probable that a large bleeding would have been decided upon; but, from the ignorance and prejudice of her attendants, I found it impoſſible to convince them of its neceſſity; and on conſidering that the miſtakes, real or imaginary, of the Turkiſh court-phyſicians, are frequently viſited by the bow-ſtring, I had but little inclination to bring the lives of my colleagues into farther jeopardy. The Hekim-Bachi and Hazni Vekili therefore carried my preſcription, and interpreted it to the ſultan, who, in return, ſent back a complimentary meſſage, and a purſe containing one hundred and fifty ſequins."

In caſe our readers ſhould feel intereſted in the fate of the patient, we muſt add, that the ſultana ſunk under her illneſs in the courſe of a week: but her age was ſeventy-two; and her ſon, far from giving way to the barbarous practice of puniſhing the court-phyſician, ſignified to him that the event was evidently in the courſe of nature, and ſhould make no alteration in the confidence which he enjoyed. This prince, deſerving of a better fate, was the unfortunate Selim who loſt his life by an inſurrection of the Janiſſaries in 1807.

But at length we have better news to communicate, and ſuch as will be highly gratifying to our readers. For we think that all who intereſt themſelves in the progreſs of ſcience, and more particularly in that of medicine, cannot but feel pleaſure in learning that in Turkey, a part of the world where knowledge has hitherto made the moſt inconſiderable advancement, where every thing is under the dominion of prejudice, and the moſt beneficial ſuggeſtions are oppoſed with the moſt obſtinate animoſity, the government has lately cauſed to be compoſed and printed in the vernacular language, the firſt work on anatomy and medicine which has been produced by the preſs at Conſtantinople. Whether we conſider the averſion entertained by the Turks for the moſt uſeful knowledge which does not accord with the ſpirit of the Koran, or which is derived from Chriſtians; or their implicit obedience to the oulèmas, or prieſts, whoſe intereſt and policy have uniformly prompted them as much as poſſible to enſlave and paralyze the national mind; this revolution in the opinions of Muſſulmen appears in an equal degree extraordinary.

The only ſtep which the Turks have taken in civilization for the laſt century has been the adoption of printing, (firſt introduced at Conſtantinople ſo lately as 1726.) but this improvement was faſt loſing its beneficial effects till the reign of the unfortunate Selim III. juſt mentioned, who ſomewhat revived the declining ſtate of dawning literature. But the prejudices and religious ſcruples againſt every kind of repreſentation of human figures; the religion which forbids the contact of blood, as a pollution; the law againſt the opening of bodies; and, laſtly, the belief in predeſtination, which ranks improvidence and indifference to the accidents of life among religious virtues; all theſe, by their combined operation, afforded, till the preſent time, inſurmountable barriers to the progreſs of anatomy and ſurgery. From all theſe obſtacles then, the work of which we are about to give an account, cannot fail to excite general attention, and to conſtitute an epoch in the hiſtory of the Ottoman Empire.

This volume, printed at Conſtantinople in the Turkiſh language, contains about 300 folio pages; and, what is more particularly worthy of notice, it is accompanied by fifty-ſix indifferently-engraved plates, in which the human figure, and the various objects of anatomy, are depicted. The greater part of it has been copied by the author, Châni-Zadeh Mehemmed-Ata-Oullah, from foreign productions of a ſimilar nature. According to ſome communications made to M. Bianchi by a perſon lately arrived at Paris from Conſtantinople, this Muſſulman muſt be the ſon of an old and principal phyſician of the government, whom his father ſent to Italy for the purpoſe of proſecuting his ſtudies, and who at his return immediately engaged himſelf in writing on anatomy and ſurgery.

The principal phyſician of government, called in the Turkiſh language *Hékim Baſha*, arrives at his dignity after having filled the office of cadi, or judge; and is choſen from the religious or judicial officers. It is only when he has arrived at the end of his career, and at the rank to which all his colleagues may aſpire, that he is nominated as the chief phyſician of the empire, without having undergone any medical education which could entitle him to the office. He has, therefore, at the ſame time to fulfil the duties of his other employment, and to direct his attention to the ſtudy of medicine and ſurgery, a circumſtance which will enable us to judge of his neceſſarily-limited acquaintance with the knowledge required for the exerciſe of his new profeſſion; though he is ex-officio at the head of the medical department in the empire; as the phyſicians, ſurgeons, and druggiſts, ſubject to the Grand Signior, are nominated by the principal phyſician of government, a ſource from which he derives a conſiderable revenue.

M. Bianchi obſerves that, notwithſtanding the prejudices, or rather the ſuperſtitious reſpect, of the nation for ancient cuſtoms, many individuals are to be found among the public officers, who have a ſufficient degree of intelligence to induce them to countenance improvements calculated for the general good. He was more particularly led to make this remark, at the time of the plague in the year 1811-12, when he was commiſſioned by the French conſul to tranſlate into Turkiſh the inſtructions contained in the work of Guyton-Morveau, on the means of deſtroying the infectious properties of air by the aid of chlorine. The tranſlation was put into the hands of the governor of Smyrna, and was received with equal pleaſure and gratitude. The method was not only at once adopted by him, both as an antidote againſt infection, and a means of purifying contaminated apartments and goods, but he alſo ordered its adoption by all the members of his family, at that time engaged in the principal adminiſtrations of Smyrna, as well as by the Greek and Armenian communities of the ſame city. However ſatisfactory and beneficial the plan may be, it is at preſent highly probable, that the tragical death of the governor, which took place in 1817, by order of the Grand Signior, and the diſgrace of all his family, will plunge into oblivion not only the plan itſelf, but alſo the ſalutary effects by which it was followed; a reſult which is inevitable in a nation, among whom inſtruction and information are not general, and men, diſpoſed to protect the intereſts of ſcience, have only an ephemeral exiſtence.

It is very much to be wiſhed, that this firſt appearance of a taſte for medicine and ſurgery, by becoming more general in the Eaſt, may produce phyſicians in that part of the world, who would be better calculated than the preſent race, to aſſume the guardianſhip of the public health; for, with the exception of ſome foreigners at Conſtantinople, and the other towns of the Levant, who acquit themſelves with reputation in their profeſſion, the whole empire is infeſted with a mob of charlatans and adventurers, who are conſtantly committing devaſtations on mankind by the exerciſe of a profeſſion, of the firſt elements even of which they know nothing.

The work of Châni-Zadeh, in the opinion of M. Bianchi, is written in a ſtyle which is clear, conciſe, and elevated: moſt of the technical expreſſions have been borrowed from the Arabic, though ſometimes, and eſpecially in the anatomical deſcription, the author has retained the Greek or Latin word employed in the original ſource from whence he derived his information.

The following extracts, which M. Bianchi has tranſlated from the text of the author's firſt preface, contain ſome intereſting details on the arrangement of the book, the nature of its contents, and the motives which induced the ſultan Mahmoud to permit its publication by an expreſs edict. The author of this notice believes that the work of which he has given the outline may be of utility to thoſe who have an idea of practiſing medicine or ſurgery in any part of the Levant. The ſingularity of the Oriental expreſſion, and the rhodomontade ſtyle of the following extract, will perhaps render its peruſal not unintereſting, more particularly as the production is of very recent date; we are, therefore, induced to give it in its entire ſtate, as a curioſity in medical literature.

"Medicine and anatomy are elementary ſciences, and the objects of general ſtudy. They fall within the cognizance of philoſophers, literati, and the miniſters of religion. Not only learned men and people of ſound judgment acknowledge that the aim of theſe ſciences is the diſcovery of truth, but from the remoteſt antiquity they have always been conſidered, by the higheſt authorities, as conſtituting a branch of valuable and honourable knowledge. The advantages which reſult from their cultivation are not confined to the human race, but, from the united teſtimony of the learned, their beneficent influence embraces all animated nature. The benefits of modern medicine are moſt obvious; and anatomy, founded on accuracy and attention, has arrived at ſuch a degree of perfection, that every thing which now concerns the treatment of internal maladies, the dreſſing of wounds and ulcers, and the cure of infirmities, is, by an admirable diſpoſition derived from the rules of art, diveſted of doubt and exempt from danger.

"In conformity to theſe conſiderations, Khamſei Chani-Zadeh has depoſed at the foot of the ſupreme throne the three following books, bound into one volume.

"The excellent Judge, he who is the regulator of the laws of the ſtate, the Plato of the Empire and of the Khalifat, the ſovereign to whom fate has revealed ſcience and wiſdom, the Sultan of Sultans, endowed with the wiſdom of Solomon, the monarch whoſe glory recals the time of Coſroes, the King of Kings, inveſted with the power of the age of Djemchid, the Sultan, the Son of a Sultan, the intrepid Sultan Mahmoud; Khan, the ſon of the glorious Sultan Abdul-Hamid-Khan, (may the ſun of his power never ceaſe to illuminate the courſe of his victories and glorious enterpriſes!) his Majeſty our Lord, having at length condeſcended, during many days, to examine and to make profound obſervations, with juſtice and diſcernment, on all the truths of the above-mentioned book, acknowledged that, independently of the great benefit which would be derived from it to the Ottoman empire (the duration of which is eternal), and alſo to Muſſulmen, it had never yet been preceded by any work, the advantage of which could be at all compared with it; and that, as ſuch, it was worthy of being conſidered among the precious and innumerable productions which have rendered his fortunate reign illuſtrious. His majeſty, from all theſe conſiderations of general good, attached the greateſt importance to the circumſtance of the printing and publication of the work under his ſupreme auſpices. This determination came opportunely to juſtify the precept, 'That Kings are inſpired.'

"The figures neceſſary for the work having been arranged and corrected by the author, who procured an edict marked with the ſigns of wiſdom and happineſs, from the execution of which the work was to be printed at the imperial preſs; from this inſtant, the old and well-attached ſervant of the ſultan, he who was brought up in purity and ſincerity, and under the ſhadow of the phœnix protector of his highneſs, one of the guards of the archives, and prefect of the imperial preſs, Eſſeïd Abdul Rahim, after having recited the Biſmillah, (*'Biſmillâh errahmân errahîm;* In the name of the merciful and compaſſionate God,') immediately commenced the work. But what was purely the reſult of the miraculous power of his majeſty is, that, without the neceſſity of having recourſe to foreign means, by the aſſiſtance of Allah, and by uniting the numerous artiſans to be found in Conſtantinople, the neceſſary figures were engraved on fifty-ſix plates of copper. On the other hand, the daily corrections of the author cauſed the printing of the work to be ſoon terminated. At length, thanks to God, who knows all things, in the month of April, 1820, the book was entirely completed and delivered to the binder. It muſt be acknowledged that, from the uſeful facts it contains, the other productions which have rendered the reign of his majeſty illuſtrious cannot be compared to it. Doubtleſs it has procured for his majeſty's ſlave, the author, under the ſhadow of his majeſty's power, the numerous rewards with which his highneſs has condeſcended to honour him.

"May the Deity, whoſe power is infinite, be, till the day of the laſt judgment, the ſupport of our lord and maſter the Emperor of Muſſulmen; and may he, for their benefit, perpetuate our ſovereign's power, and prolong his precious life. Such are the wiſhes which I form in honour of the Prince of Prophets."

Immediately after this unique preface, a table of the contents of the three volumes is given. This table is followed by a ſecond preface, conſiſting of little elſe than a repetition of what had already been ſaid by the author. We are there informed that the production had been before preſented to the ſultan Mahmoud in the year 1815-16, under the title of the "Mirror of the Objects in Human Anatomy." The author concludes by obſerving, that, among the cauſes which have contributed to the publication of the work, may be enumerated the reproach, made by many perſons, of ignorance in the phyſicians of the empire with regard to the new doctrines in anatomy and medicine.

As to the works of the ancients on medicine, and particularly of the Arabians, they are perfectly known to the Turks, ſince they are to be found in all the public libraries. Toderini, in his time, reckoned more than a hundred volumes in the library of St. Sophia, independently of the works of Avicenna and Averoes. They have tranſlated the works of Hippocrates, Andromachus, Rufus, Galen, Dioſcorides, and the moſt celebrated maſters of Greece. The works of European phyſicians are alſo not unknown to them; for, in the library of Raguib, pacha at Conſtantinople, there is a tranſlation of the works of Sydenham; and it is well known that, under Muſtapha III. the friend and protector of Ottoman literature, a tranſlation of the Aphoriſms of Boerhaave was produced; but, till the preſent time, no work on medicine or ſurgery had been printed.

The firſt volume of Châni-Zadeh's book contains all that relates to *anatomy*, and the explanation of the fifty-ſix plates, which, as well as all that he has written, appear to have been taken, in part, from the Italian tranſlations of the works of Bertin and Palfin. The ſecond volume is on the corporeal and intellectual faculties of man, or *phyſiology*. The third is on the nature of diſeaſes and the employment of remedies, conſtituting *noſology* and *therapeutics*. This is preceded by two prefaces and an introduction: the firſt preface contains only a ſeries of quotations from the Koran on the utility of medicine, eulogiums on the ſovereign, and apologies of the author for the errors which may have inſinuated themſelves into his production.

It is principally with the view of aſſiſting thoſe who are ſtudying

ſtudying medicine, that the author, Châni-Zadeh, reſolved to compoſe his work on the rules of ſcience, the benefit of which he conſiders infinite. He therefore particularly recommends the repeated peruſal of it, in the order in which the articles occur, as the beſt means of avoiding error and forgetfulneſs. As the doſes of medicines have been determined from the period of infancy to that of manhood, he notices the neceſſity, in their adminiſtration, of conſidering the age, ſex, and ſtrength, of the patient, as well as the nature of the climate. It is uſeleſs, he thinks, to collect a great variety of remedies for the ſame diſeaſe, in order to indulge the caprices of patients; for moſt of the complicated preparations are to be found in "The Provincial" and other treatiſes on Materia Medica. At the end of the work there is a liſt of various applications, with a reference to all thoſe complaints for which they are neceſſary. Independently of medical men, the author ſolicits the attention of thoſe perſons who may peruſe his work, to dedicate the ſame proportional attention to the ſeveral articles as he devoted to their compoſition. As the work is intended equally for thoſe out of the medical profeſſion, its technical abbreviations may be paſſed over when they are not intelligible; but, in general, only ſimple phraſes have been employed in ſubjects relating to general utility. The author diſclaims the preſumptuous thought, that the advantages of his book will extend to the whole world; though he, at the ſame time, flatters himſelf that it will be uſeful to ſome individuals. For admitting, ſays he, that a phyſician in poſſeſſion of the work had no other merit than that of underſtanding it, he would not be capable of doing ſo much good as an accompliſhed medical man. The latter would always be ſuperior to him, from his practical knowledge; but, on the other hand, practice alone is inadequate to conſtitute a learned profeſſional character; whatever may have been his diſpoſition or opportunities, a profound ſtudy of books will be equally neceſſary. Of theſe aſſertions, he conſiders that the preſent work furniſhes numerous ſatisfactory proofs. In all inſtances he deſires, as the recompenſe of his labour, not only the glory of having ſerved his country, but alſo the ſatisfactory conviction of his having contributed, by his unremitted efforts, to the benefit of mankind.

After the ſecond preface comes the author's Introduction to Therapeutics, the arrangement of which partakes of that of other works on the ſame ſubject: the third and laſt book concludes with a Pharmacopœia in Arabic and Turkiſh, containing 319 formula, applicable to all ſorts of diſeaſes.

Abridgment of the General Table of Contents.—Book I. Anatomy. Part 1. Oſteology; Part 2. Myology; Part 3. Splanchnology; Part 4. Angeology and Neurology.

Book II. Phyſiology; comprehending Natural Faculties, divided into 22 articles.—Corporeal Faculties, in 21 articles.—Of Inſtinct, or the Animal Faculty, 13 articles.—Of Diſeaſes in general.—Of the Nature of Diſeaſes.—The Analogy of Diſeaſes, divided into 8 articles.—On Averſions produced by different Cauſes.—On the Signs or Characters of Diſeaſes.

Book III. Noſology and Therapeutics; comprehending 208 folio pages, and 55 articles, on ſeparate Diſeaſes.

Vaccination is treated of, as M. Bianchi ſays, in an intereſting manner, conſidering that the author is a Muſſulman. He dwells particularly on the importance of the diſcovery, and inſiſts on its advantages over inoculation, which had been long known among the Arabians. He ſays, on this occaſion, that ſmall-pox, though before unknown, penetrated into Turkey at the conqueſt of Egypt by Selim I. The hiſtory of vaccination is given from the work of Dr. Caran (De Caro), a German phyſician, who, according to M. Bianchi, firſt introduced vaccination into the Eaſt. The author notices alſo the experiments made in vaccination, in the year 1800, at the palace of lord Elgin, at that time the Britiſh ambaſſador at Conſtantinople, as well as thoſe inſtituted at Vienna, in the preſence of the emperor of Auſtria, and the encouragements afforded by this ſovereign, who cauſed his own children to be vaccinated. He quotes entire paſſages from the different treatiſes on vaccination by Drs. Ranque, Laurens, Maudine, and Guillotin: he more particularly recommends the work of the latter to thoſe who are willing to be convinced of the benefits of vaccination. The ſubject is terminated with a concluſion, which is entirely original, on the mode of performing vaccination, and what is neceſſary in the operation, of which the principal periods and complications are deſcribed. The vaccine lymph is obſerved not to be always peculiar to cows, and to be portable. He alſo informs us, that which was firſt obtained at Conſtantinople came from America, England, and other countries; but that it is alſo to be procured in the village of Aïaz Aga, in the neighbourhood of Kiadkhaneh, in the environs of Conſtantinople; and that from the laſt ſource many thouſand perſons have been vaccinated.

M. Bianchi informs us, that there have long exiſted, at Conſtantinople, hoſpitals for ſick Muſſulmen, which are called by the Turks *Tab'-y-Khaneh*. The greater number of the imperial moſques have ſuch eſtabliſhments annexed to them, but the moſt conſiderable are thoſe of the ſultan Bayezid Selim and ſultan Suleyman. The following temples have alſo inſtitutions of the ſame nature; viz. Khaſſeki Djamy, Tſchinili Djamy, Mihrmahſultane, Djamiſi, and Kilidj-Aly-Pacha Djamiſi; as well as the Selimie, at Scutari. There are alſo aſylums where patients, reclining on ſofas, are dieted in a careful manner, as in hoſpitals properly ſo called; but the aſſiſtance of medicine is entirely neglected. From the word *Nev Idjad*, or New Creation, M. Bianchi was led to ſuppoſe that the author, Châni-Zadeh, alluded to eſtabliſhments founded by the late ſultan: but, as Bianchi himſelf had witneſſed the dilapidated condition of all the hoſpitals, after the death of the above ſovereign, and as he quitted the Levant in the year 1815, he thought proper to procure the moſt recent information as to the ſtate of them. He was accordingly favoured with a communication from Dr. Maugin, phyſician of the French hoſpital at Pera, in the ſuburbs of Conſtantinople, which is chiefly devoted to the habitations of Europeans. As it contains many ſatisfactory details of the actual ſtate of the charitable inſtitutions of Conſtantinople, we ſhall inſert the greater part of it.

"Sir; I ſend you the information which you requeſted on the ſtate of the hoſpitals and druggiſts' ſhops of Conſtantinople, at the time of my departure; as well as of every thing which concerns the progreſs of medical ſcience among Muſſulmen.

"In the reign of the ſultan Selim, two ſchools were inſtituted at the Arſenal, one for the inſtruction of pupils in mathematics and nautical ſcience, another for the teaching of medicine and ſurgery. The firſt of them was under the direction of M. Brun, a French engineer; the ſecond under that of M. Gripili, who is of Greek deſcent. Both theſe inſtitutions flouriſhed as long as the ſultan reigned, and while his meritorious favourite, the pacha Huſſein, lived; but the death of this admiral, and the dethronement of the ſultan, have involved in oblivion both the noble eſtabliſhments.

"Barracks were alſo conſtructed at the ſame time at Scutari, in the faubourg of Pera; thoſe of the arſenal and of Topkhana were reſtored, and another was erected at Levent-Tchiftlik; ſo that each was provided with its hoſpital. They were all well furniſhed, but particularly thoſe of Scutari and Levant-Tchiftlik; there being an European phyſician, and a ſhop for medicines, at each of them. At preſent no traces of ſuch places are to be ſeen: the barracks and hoſpitals have been burnt, from the ſpirit of inſubordination on the part of the Janiſſaries, at the time of the revolution of Muſtapha Baraïktar, in November 1808.

"The hoſpitals of the Arſenal, of Topkhana, and the faubourg of Pera, are now nothing more than chambers of

of barracks, where the ſoldier who is ill expires of the plague, or any other complaint, unleſs nature is ſucceſsful in the conteſt. There are two or three quackiſh practitioners, almoſt dying of hunger, to whom the *Miri*, or public treaſury, allows forty or fifty piaſtres per month, (25 or 30s.) in order that it may be ſaid that there are titled phyſicians at the places. They go much leſs with the view of treating their patients' diſeaſes, than with that of treating themſelves with wine and brandy, which they invariably preſcribe for every diſorder.

"When the Turkiſh fleet is put into commiſſion, the diſorder is ſomewhat leſs; but there is a conſiderable increaſe of expenſe, particularly for the medicine-cheſts, which the phyſician cauſes to be prepared at ſome druggiſt's ſhop in Conſtantinople. On this occaſion, it is a matter of ſpeculation between the two parties, who have a perfect underſtanding with each other, and charge a great price for an inconſiderable number of medicines. But cuſtom demands that each veſſel ſhould be provided with its medicine-cheſt, and much economy could not with propriety be inſtituted in ſuch inſtances. But to what utility can all this tend, either on land, or at ſea, when well-qualified medical men are adequately recompenſed for their attendance on the ſick on-board the admiral's ſhip alone?

"At Conſtantinople there are at preſent only hoſpitals for the reception of thoſe affected with the plague, and for patients ſuffering either under external or internal diſeaſes which are not of a contagious nature. The French government has two: one at Galata, for complaints of an ordinary kind; the other in the faubourg of Pera, for ſuch of their unfortunate countrymen as are attacked by peſtilential diſeaſes. The Greeks have three great hoſpitals, of which two are devoted to the plague. The Latins have, in the faubourg of Pera, but a ſingle hoſpital, which is deſtined equally for the relief of thoſe ſuffering with the plague and with other diſeaſes. Theſe are all the hoſpitals which now exiſt at Conſtantinople: it muſt be acknowledged that, while ſuch eſtabliſhments do honour to humanity, the individuals entruſted with the direction of thoſe for the plague are accuſtomed to engage in ſpeculations, no leſs barbarous than inſolent, on what each patient is likely to leave them: for it is a well-known fact, that they regard themſelves as the univerſal legatees of all the unfortunate objects that are brought there, and that the death of the patients is the more certain if they are ſo unlucky as to poſſeſs any money or jewels. In addition to ſuch villainy, they have the audacity to ſend for ſale, at the bazars of Galata and Conſtantinople, the ſpoils of their ill-fated victims.

"No druggiſt's ſhop in Conſtantinople is directed by a Turk: moſt of them belong to Greeks, a few to Armenians, and ſome to Europeans. As this profeſſion requires previous ſtudy, the Turks, who have no academies nor faculties of medicine, and who never travel to gain information, feel their incompetency to undertake the ſuperintendance of ſuch eſtabliſhments.

"It was in the month of June 1820, that I quitted Conſtantinople; and ſince ſaw with much pleaſure, and a lively intereſt, the work which you ſhowed me. The great progreſs juſt made by the Turks, in the publication of this production, by order of the ſultan Mahmoud himſelf, at once proves that the ſovereign prefers diſcountenancing the prevailing prejudices, and that he is in poſſeſſion of ſufficient power to ſilence fanaticiſm, which would not have failed to advance loud remonſtrances againſt the impiety of repreſenting human figures: but ſuch complaints might have been anſwered by the aſſurance that the plates were not executed with trifling or futile views.

"If reaſon ſhould ever gain the aſcendancy among theſe people, the ſultan will eſtabliſh hoſpitals, and cauſe lazarettos to be conſtructed at Proti, an iſland oppoſite the capital, in order to arreſt, at the port of Conſtantinople, the ſcourge which annually decimates the Ottoman empire. I have the honour to be, &c. MAUGIN.—Paris, April 1821."

GENERAL PATHOLOGY.

IN the preſent philoſophic age, it appears needleſs to diſcuſs the propriety and neceſſity of being guided by reaſon in our pathological inveſtigations. Very few profeſſional gentlemen will now be found ſtrictly empirical; and thoſe few are among the leaſt honoured and leaſt deſerving in our profeſſion. There is ſomething in the human mind ſo prone to enquire into the cauſe why, and the reaſon wherefore, that the verieſt empiric in the practice of phyſic will never be contented with attaching himſelf to facts, as he profeſſes, without regard to inferential reaſoning. There is ſomething ſo gratifying to one's love of ſcience, ſomething which ſo evidently leads to better information, even in the vagueſt explanation of natural phenomena, that we cannot be ſurpriſed that it has been attempted in all ages.

Yet, in the courſe of our hiſtory of medicine, we have had frequent occaſion to ſhow how fatal has been the reſult of too much theory. Independently, however, of the circumſtance that what is injurious to the progreſs of ſcience in its infant ſtate, may ceaſe to become ſo when it is more advanced, we have found hitherto no ſyſtem of medicine which has ſufficiently accounted for *all* morbid phenomena, or in which many huge gaps and deficiencies have not been filled up by gratuitous aſſertions.

In the infant ſtate of medicine there can be no doubt that theory often exerted a moſt decided influence on that ſcience. But the paucity of facts, the data whence the theories of the ancients were framed, were the cauſe of their frequent errors. They were like labourers attempting to build a lofty palace with a few ſtones. In our own time, however, we have ſo far advanced in the accumulation of facts, that, though much remains to be done, we are compelled in ſome meaſure to generalize and ſyſtematize our knowledge, which elſe would become too burthenſome for memory. To follow up our ſimile, we may be ſaid in our own time to be in poſſeſſion of materials ſufficient for building a ſtable edifice; and hence we may now look forward to the eſtabliſhment of a ſyſtem which, to uſe the arrogant expreſſions of Darwin "may not moulder, like the ſtructures already erected, into the ſand of which they were compoſed, but which may ſtand unimpaired like the Newtonian Philoſophy, a rock amid the waſte of ages."

We ſhall not pauſe here to enquire into the utility of ſyſtems of medicine. Our periodical medical publications have lately raiſed much uproar againſt ſyſtems. It muſt be obvious to every one, however, that a ſeries of dry inſulated facts, or of reaſonings applicable only to a limited number of phenomena, can never be ſufficiently remembered, or indeed perfectly known. Provided, therefore, we wander not into the mazes of hypotheſis, provided our analogies are not forced, or our claſſifications likely to lead to erroneous methods of practice, it muſt be allowed that we are advancing our knowledge, clearing away many erroneous notions, and reconciling many contradictory opinions, by taking general and extended views of diſeaſe. See vol. xvii. p. 245.

We have ſaid that the knowledge of the ſtructure and functions of man ſhould precede the ſtudy of pathology. Of the animal ſtructure we have given an ample account in the firſt volume of our work, under the article ANATOMY; of the ſecond we propoſe to treat under the article PHYSIOLOGY. In the mean time, the more clearly to develope the opinions we have adopted, it will be neceſſary to give a ſhort ſketch of the economy of man, and of the moſt prominent ſyſtems and moſt important ſtructures which belong to his organization, the better to underſtand in what diſeaſe a deviation from this ſtate conſiſts.

In the organization of man, then, the firſt ſyſtem to be

conſidered is the *nervous*. It conſiſts of the cranial brain, the ſpinal marrow, nerves, and ganglia. By means of this ſyſtem, all mental emotions are communicated to the other parts of the animal frame, and, through its medium, all external impreſſions are communicated to the mind. We obſerve likewiſe a *fibrous* ſtructure of different kinds in various parts; as muſcular, oſſeous, &c. the moſt general and important of which are the *muſcular* ones. To theſe is added a fundamental *cellular* ſtructure, which appears to connect all parts of the other ſyſtems together; and which has various appearances in regard to diverſity of ſubſtance, and indeed in regard to the ſecretions derived from it. The union of theſe three ſyſtems takes place in various modes: in ſome caſes in tubes, or on membranes, &c. &c. and the more remarkable of theſe uniſons may be aptly divided into the digeſtive, reſpiratory, ſanguiferous, ſecernent, and abſorbent, ſyſtems; and this phyſiological diviſion we have taken as the baſis of our arrangement, which agrees with the excellent one lately made by Dr. Good, in his Phyſiological Syſtem of Noſology.

Many objections have been made however to all the preſent arrangements; the moſt important of which is, that, by allowing the attention of the medical practitioner to be excluſively directed to one ſyſtem or to one organ, it prevents that due attention being paid to morbid catenations, which the practice of phyſic imperiouſly demands. There is nothing, however, in the nature of noſology which renders this error a venial one. It muſt be allowed that morbid impreſſions are generally primarily made on one particular tiſſue or organ; and it muſt be allowed too, that a ſyſtem which is ſecondarily affected, often ſuffers the moſt ſeverely; or that the ſyſtem ſecondarily affected may be the moſt important to life, and hence our attention ſhould be chiefly directed towards it. We will however venture to aſſert, that whoever has aſſiduouſly ſtudied the ſtructure of parts and their phyſiology, cannot fall into the error of confining his attention to one part of the animal economy to the excluſion of the reſt.

To render this more plain, we ſhall proceed with ſome further account of the action of the different ſyſtems above mentioned upon each other. If the animal frame were ſo conſtructed that no inteſtinal motion was neceſſary for the continuance of its external actions, we could readily ſuppoſe it poſſible that the nerves would be unaffected by any change in the muſcular ſyſtem, and the latter might produce its functions without any impreſſion from the former. But, when we ſee, that the cerebral functions can only be continued while blood, poſſeſſing certain properties and component parts, circulates according to given laws through its ſubſtance; and when we conſider that the muſcular ſyſtem can be called into action only by the nervous ſyſtem, either directly by means of nerves, or indirectly by fluids, deriving ſome of their properties from the nerves; then we cannot fail to have the moſt certain conviction of the action of the one on the other.

It is extremely difficult to know at what part to begin firſt, when ſpeaking of actions which are thus always dependent one on the other, and which are always in a circle. We take, however, the heart; and, ſuppoſing it of a fibrous fundamental ſtructure, and ſupplied with blood and nerves, we proceed to conſider its action. A cavity of the heart called the left ventricle, having received a certain ſupply of blood, propels it by contraction into the aorta, and from it into the ſmaller arterial branches. Theſe branches further aſſiſt the motion of the blood by contracting their circumference, the power of contraction being in an inverſe ratio to the diameter of the tubes. The terminations of arteries are further aſſiſted in propelling the blood by the property of capillary attraction; *veins* reſtore the fluid to the heart in a direct ſtream, altered however in its properties; for veſſels called *ſecernents* have, by means of an affinity exiſting between their coats and certain parts of blood, removed ſome parts of that fluid; and other veſſels, called *abſorbents*, have reſtored a portion of other component parts previouſly ſecreted from the blood, or received from without. The moſt obvious change undergone during this circulation is a change in the colour of the blood; this however is reſtored by ſecond circulation produced by the other cavities of the heart, and is called the *pulmonary* proceſs. In this circulation the blood appears to be indirectly applied to atmoſpheric air, and hence to acquire a principle which reſtores its colour. But this proceſs is under the immediate influence of the nervous ſyſtem, and is diſcontinued when the action of that ſyſtem is ſuſpended. After this proceſs has taken place, the blood is reſtored in its priſtine ſtate to the heart. The changes which ſecretion and abſorption effect in the blood are of courſe depravation of its elements on the one hand, and reproduction on the other. *Secretion* has been defined "a proceſs which ſeparates from the blood ſubſtances which are not found in that fluid." This propoſition, as it ſtands, is ſo abſurd, that we ſhall take no pains to confute it. Secretion is better explained by ſuppoſing that it deprives the blood of certain of its elements, and combines them in a manner different from that in which they previouſly exiſted in that fluid; and further, that our chemical analyſis is not ſufficiently accurate to detect the elements (ſtrictly ſpeaking) of this re-compoſition.

The number of the various ſecretions is too great to be here detailed. Some of them are re-abſorbed, and ſome paſs from the body by various outlets. Previous to theſe circumſtances, however, their progreſs is retarded, and their nature changed, by ſubſtances called *glands*. The *abſorbents* receive theſe ſecretions from the whole fundamental or cellular ſtructure; they receive the fluid previouſly ſecreted from the blood; they further receive from certain expanſions of the fundamental or cellular ſtructure extraneous bodies. Theſe are, the ſkin, the lining of the pulmonary air-cavities, and the alimentary canal. The abſorption from the ſkin is in general probably ſmall; though, when internal abſorption is deficient, cutaneous abſorption is no doubt increaſed. Of the pulmonary cavities the foreign matter abſorbed is derived from the air. The nature of this abſorbed matter is not preciſely known: It is indiſpenſably neceſſary, however, to the performance of life. But, the greateſt portion of extraneous matter is abſorbed from the alimentary canal. The whole of this canal is perhaps an abſorbing as well as ſecreting ſurface; a peculiar portion of it is however much more active than the reſt; and this portion is placed ſo far down, that the foreign bodies received have had time to ſuffer the changes induced by the ſecretions poured into the canal, and thereby to have its nutritive part ſeparated from that excrementitious maſs. The great extent of this expanſion, its numerous ſecretions, the cloſe relation it holds with the nervous, its intimate relation with the vaſcular, ſyſtem, and by their means indirectly with every part of the body, render it perhaps the moſt frequent medium of general diſturbance in the human frame; and hence it may with great propriety be conſidered in the firſt part of our pathological diſquiſitions.

The view we have taken of the human frame clearly indicates the impoſſibility of ever forming a noſology in the old and reſtricted uſe of the term; that is, an arrangement of diſeaſes founded on the aſſumption that an individual part or a ſeparate ſtructure can be diſordered without involving the reciprocal action of various other parts. When the phyſician, therefore, finds fever arranged under the claſs Hæmatica, he is not to ſuppoſe that we are diſinclined to admit the important part which the nervous ſyſtem has in this diſeaſe; and ſo on of many other orders, genera, and ſpecies.

In this place we muſt recur to our article Nosology, in order to offer ſome apology to our readers for neglecting to redeem our promiſe of uſing Cullen's ſyſtem. We truſt this promiſe will be deemed better "honoured in the breach than in the obſervance," when it is conſidered, that many errors had been complained of in Cullen's

arrangement, even from its firſt publication; and that, ſince that period, phyſiology and pathology have made ſo much progreſs, that they may literally be ſaid to be revolutionized. Nor is the ſyſtem we have adopted to be conſidered as a crude ſpeculation, unmatured by experience, or unſanctioned by general aſſent. It is founded on the cleareſt and moſt comprehenſive views of the animal economy; and its projector was entirely free from that fatal error of moſt new ſyſtem-makers, that of deſpiſing the labours of his predeceſſors in the ſame path. On the contrary, he has availed himſelf of all that had been done before him by Sauvages, Pinel, Linnæus, Cullen, Vogel, and many others; and has added the information which long ſtudy and experience had furniſhed him with. A ſtronger reaſon than all theſe, which has induced us to employ Dr. Good's noſology, is its claſſical and correct nomenclature. Our medical technicology abounds in the moſt barbarous and abſurd appellations; which, ſo far from having any meaning, or affording any account of the nature or appearance of diſeaſe, often ſerves only to perpetuate ſome ancient and ridiculous notion. Often derived from the oriental languages, half latiniſed, they have been long cenſured by claſſical phyſicians; and ſome alterations have accordingly been made from time to time. But it was reſerved for Dr. Good entirely to alter the medical nomenclature, and at once to ſimplify and adorn a very dry and uninviting ſubject. We may further remark, that Dr. Good's work is patroniſed by the heads of the medical profeſſion in England.

We ſhall now give an outline of the different ſyſtems, or claſſifications, of diſeaſes, which have ſucceſſively prevailed; and the few remarks we ſhall make as we go on, will, we think, furniſh additional reaſons for the courſe we mean to adopt, of forming the great body of our article upon the ſyſtem of Dr. Good.

Dr. Good himſelf very judiciouſly obſerves, that no art or ſcience can be acquired, for none can be clearly treated of or communicated, without arrangement. All noſological works, therefore, poſſeſſing any value, have an arrangement, or method as it is called, of ſome kind or other.

The ſimpleſt arrangement, if it be in any way worthy of the name, is the *alphabetic*, of which, in the preſent day, we have many copious examples, highly valuable as works of eaſy reference, though ſcarcely entitled to rank under the character of ſyſtematic arrangement. To this claſſification belongs the very excellent and important work of Dr. Heberden.—Another modification which has been had recourſe to, is that of *the duration of diſeaſes*, as divided into acute and chronic; it is a modification of conſiderable antiquity, and has deſcended to us in the works of Aretæus, and of Cælius Aurelianus.—A third modification has conſiſted in taking the *anatomy* of the animal frame as a ground-work for diviſions; and conſequently in aſſorting diſeaſes, as has been done by Jonſton, Sennertus, and Morgagni, (and ſince recommended by Dr. Mead in his Medical Precepts and Cautions,) into thoſe of the head, cheſt, belly, limbs, and almoſt every other part.—A fourth invention has fixed upon the ſuppoſed *cauſes* of diſeaſes as a baſis of diſtribution; and to this has been applied the epithet *etiological*, from the Greek term αιτια, a cauſe; it has acquired more popularity than any of the preceding, and was eſpecially embraced by the ſchools of Boerhaave, Riverius, and Hoffman.—Sometimes a mixed modification has been attempted, as in the noſology of Dr. Macbride, who takes *extent* for his firſt two general diviſions of diſeaſes, as being univerſal or local; *ſex* for his third; and the age of *infancy* for his fourth and laſt.—And ſometimes, and far more generally of late years, the noſological ſyſtem has been built upon the *diſtinctive ſymptoms* of diſeaſes; the peculiar marks by which they identify themſelves, and, ſo to ſpeak, become individualized: and ſuch is the principle adopted by Sauvages, Linnæus, Cullen, and all the moſt celebrated noſologiſts of recent times.

This laſt is, in effect, the only method in any degree worthy of attention; for it is the only one that will generally hold true to itſelf, or on which we can place any dependance. Of the ſeat of diſeaſes we often know but very little; of their cauſes far oftener ſtill leſs; but there are certain marks or characters in the uſual progreſs of moſt diſeaſes which uniformly accompany and diſtinguiſh them, and to which, therefore, the epithet *pathognomic* has been correctly applied. It is not, indeed, to be contended that theſe diſtinctive ſigns are as conſtant and determinate as many of the diſtinctive ſigns that occur in zoology or botany. So complicated is the animal machinery, ſo perpetually alterable and altered by habit, climate, idioſyncraſy, and the many accidental circumſtances by which life is diverſified, that the general rule muſt admit of a variety of exceptions; and is here, perhaps, rather than any-where elſe, beſt eſtabliſhed by ſuch exceptions. Yet, after all, every diſtinct diſeaſe, occur where it may, and under what peculiarity of conſtitution it may, proves ſo generally true to its own courſe, and is ſo generally attended by its own train of ſymptoms, or "co-incidents," (which is the literal rendering of *ſymptoms*,) that he who ſteadily attends to theſe will not often be greatly deceived; "and if he ſhould be, (ſays Dr. Good,) he can find no other guide to ſet him right."

Plater may be regarded as the morning-ſtar that firſt glimmered in the hemiſphere of ſymptomatology, as Servetus was in that of the circulation of the blood. The light of both was feeble and tremulous; but it twinkled in the midſt of darkneſs, and led on to the brightneſs of day. His work, entitled Praxis Medica, in which he gives an imperfect ſketch of a ſymptomatic plan of noſology, was publiſhed in 1602. Sydenham, if he did not avail himſelf of it, was actuated by the ſame quickening ſpirit; for his various treatiſes and epiſtles, publiſhed for the moſt part miſcellaneouſly, are a practical comment upon Plater's principle, and ſeem chiefly to have ſtirred up the well-ſtored and comprehenſive mind of Sauvages, who was peculiarly attached to Sydenham's opinions and practice, whom he is continually praiſing, and whom he diſtinguiſhes by the name of "Anglus Hippocrates," to that full illuſtration of the ſymptomatic method which has given form and being to almoſt every attempt that has ſince appeared upon the ſubject.

Sauvages firſt publiſhed the outlines of his plan in 1731, in a duodecimo volume, under the title of "Nouvelles Claſſes de Maladies," after having ſubmitted his intention to the judgment of Boerhaave. This precurſory ſketch deſcended no lower than to the diviſion of genera; but, having been encouraged to perſevere, he laboured on the ſpecies, and introduced them in their proper ſucceſſion into a new and more extenſive edition of his work, publiſhed in 1763, in five volumes octavo; and, continuing his exertions yet further in the ſame vineyard, he put his finiſhing hand to the great taſk he had undertaken by preparing a ſtill more complete and final edition, which he did not live to publiſh, but which was given to the world ſhortly after his death, in 1768, in two large volumes quarto.

The "Noſologia Methodica," for ſuch is the title of M. de Sauvages's work, is, indeed, an Herculean labour. It conſiſts, in its lateſt and moſt perfect form, of three diſtinct arrangements, a ſymptomatical, an etiological, and an anatomical, ſo as to accommodate itſelf to the taſte of the old ſchool as well as of the new. The ſymptomatical, to which the others are profeſſedly ſubordinate, is by far the moſt extenſively elucidated; and compriſes ten claſſes, (each introduced by an elaborate pathological ſynopſis,) upwards of forty orders, more than three hundred genera, and an almoſt innumerable hoſt of ſpecies. "Quel nombre prodigieux d'ennemis!" exclaims M. de Ratte, alluding to this vaſt muſter, in his eulogy on the author, delivered before the Royal Society of Sciences in Montpellier; or rather alluding

ding to the ſomewhat ſmaller muſter of the preceding edition, for the laſt was not then publiſhed. We have yet, however, to add the varieties, which under ſeveral ſpecies are not few; and to bear in mind, that to every variety, ſpecies, and genus, as far as their relative characters will allow, is allotted a definition, liſt of ſynonyms, hiſtory, diagnoſis, prognoſis, and mode of cure; with, frequently, an exemplification of caſes, and a brief ſtatement of the peculiar opinions of other writers, before we can fairly appreciate the entire maſs of matter with which the volumes of M. de Sauvages abound. He ſeems, indeed, to have been deſirous of collecting materials of every kind and quality from every quarter to which a market was open; and of following up every deviation from health into all its poſſible as well as its actual ſhades and ramifications, ſo that no man might have to add a ſyllable to his work after him. It is not very ſurpriſing, therefore, that a work thus conſtituted and conducted ſhould be conſiderably too diffuſe. This is its leading error; yet it is a venial one, and was by no means deſtitute of advantage at the time of its commiſſion; for the very amplitude the work evinces rendered it, when firſt completed, a ſort of noſological bazar, to which every one might have recourſe who was in purſuit of this new branch of ſtudy; and where he might accommodate himſelf with whatever articles he ſtood in need of.

To the time of Cullen the general outline or claſſific arrangement of Sauvages was left without much diſturbance; for, although the order of ſucceſſion was changed, and changed differently in every new attempt, the names, in a few inſtances diverſified, and occaſionally ſome addition made to the number, ſtill the ten Sauvageſian claſſes were ſubſtantially retained and adhered to. Theſe claſſes are as follow:

I. *Vitia*, Cutaneous Diſeaſes.
II. *Febres*, Fevers.
III. *Phlegmaſiæ*, Inflammatory Fevers.
IV. *Spaſmi*, Convulſive Diſeaſes.
V. *Anhelationes*, Difficult Reſpiration.
VI. *Debilitates*, Debilities.
VII. *Dolores*, Local Pains.
VIII. *Veſaniæ*, Defects of Judgment.
IX. *Fluxus*, Fluxes.
X. *Cachexiæ*, General Debility.

The ten claſſes compriſe forty-four orders, three hundred and fifteen genera, and about two thouſand five hundred ſpecies; being rather more than an average of eight to each genus.

In *Linnæus*, while the above claſſes remain ſubſtantially the ſame, their order of ſucceſſion is varied, the names conſiderably altered, apparently from a preference of Latin to Greek terms, (as in the uſe of MENTALES for Veſaniæ, MOTORII for Spaſmi, and DEFORMES for Cachexiæ;) and the liſt of claſſes is increaſed to eleven, by advancing the Exanthematicæ of Sauvages, which in him occurs as an order of PHLEGMASIÆ, to the rank of a diſtinct claſs; while the claſs VITIA, with which Sauvages opens, is by Linnæus thruſt to the end of the ſeries; which at length will appear as follows:

Exanthematici, Eruptions.
Critici, Common Fevers.
Phlogiſtici, Inflammatory Fevers.
Dolores, Painful Diſeaſes.
Mentales, Loſs of Judgment.
Quietales, Loſs of Motion.
Motorii, Involuntary Motions.
Suppreſſorii, Obſtructions.
Evacuatorii, Evacuations.
Deformes, Changes in the Solids.
Vitia, Changes in the Surface.

The Sauvageſian genera are not much interfered with in reſpect to number. Upon the whole they are rather extended, and amount to 326. The generic names, however, are occaſionally altered, and the definitions, which are formed by an almoſt conſtant reference from one genus to another, are neceſſarily drawn up in very different terms, in order to quadrate with ſuch a change. Some degree of abbreviation is unqueſtionably hereby produced, which is always deſirable when accompanied with perſpicuity. But there are few caſes in which the author has not preferred the definitions of Sauvages, though frequently too diffuſe; for the perpetual aim at brevity in Linnæus leaves him too general where he has not occaſion to refer to other diſeaſes, and too perplexed and intricate where he has.

The great object of *Vogel* was to ſupply what he conceived to be omiſſions on the part of Sauvages: and hence he gives a muſter of not leſs than 560 genera, being nearly double the number of his great prototype. But, to accompliſh this, he has been compelled to elevate to the rank of genera a great multitude of affections which ought only to be contemplated as ſpecies, many of which are merely ſymptomatic of other diſeaſes, and not a few, as Riſus, Fletus, Suſpirium, Clamor, (ſome of them, indeed, derived from Linnæus,) which have no claim to be regarded as diſeaſes at all. In his claſſific arrangement, while he takes Sauvages for his guide, he changes the line of ſucceſſion as conſiderably as, though in a different manner from, Linnæus. He degrades the Exanthematici of the latter from a claſſific poſt, and introduces them, as well as the Phlegmaſiæ of Sauvages, as mere orders under his claſs FEBRES. He unites into one claſs the Anhelationes and Debilitates of Sauvages under the name of ADYNAMIÆ; and, having thus reduced the number of the Sauvageſian claſſes to nine, he raiſes them to eleven by the creation of two new claſſes, which he calls HYPERCÆSTHESES, and DEFORMITATES; the former, properly enough, ſeparating Sauvages's "moroſities of the ſtomach" from genuine "mental diſorders," and the latter including external deformities of a prominent character. We ſhall enumerate his claſſes according to his own arrangement in the year 1764, as follows:

Febres, Fevers.
Profluvia, Evacuations.
Epiſcheſes, Suppreſſions.
Dolores, Pains.
Spaſmi, Spaſms.
Adynamiæ, Debilities.
Hyperæſtheſes, Depraved Senſations.
Cachexiæ, General Debility.
Paranoiæ, Aberrations of Mind.
Vitia, Superficial Deformities.
Deformitates, Solid Deformities.

His definitions are peculiarly conciſe, but convey too frequently nothing more than general and indiſtinct ideas: while his new-created terms are peculiarly long and cacophonous, as in the words Hypoſpadiæos, Dionyſiſcus, and Hyperartertiſcus. For his ſpecies and varieties, or rather thoſe he has not elevated to a higher rank, he ſeems, like Linnæus, to have depended, for the moſt part, upon Sauvages.

The ſyſtem of *Sagar* makes leſs deviation from that of Sauvages than either of the preceding; and may be regarded rather as an enlargement than a re-modification of it. In various reſpects, indeed, it alters the ſeries of ſucceſſion, but it retains the name of every claſs; though it increaſes the number from ten to thirteen, by advancing the Sauvageſian orders of PLAGÆ and EXANTHEMATICÆ to the rank of claſſes, and by introducing a new claſs denominated SUPPRESSIONES, deſigned to correſpond with a conſiderable part, though not the whole, of the Suppreſſorii of Linnæus, as Linnæus intended this laſt to correſpond with a conſiderable part, though not the whole, of the Anhelationes of Sauvages. Sagar's Noſology was publiſhed in 1776. His claſſes are—

Vitia, Cutaneous Diſeaſes.
Plagæ, Wounds.
Cachexiæ, General Diſeaſe.
Dolores, Pains.
Fluxus, Fluxes.
Suppreſſiones, Suppreſſions.
Spaſmi, Spaſms.
Anhelationes, Defective Reſpiration.
Debilitates, Debilities.
Exanthemata, Eruptions.
Phlegmaſiæ, Inflammations.
Febres, Fevers.
Veſaniæ, Madneſs.

Sagar's

Sagar's definitions are moſtly taken with little variation from Sauvages; but are rendered intolerably long by confounding Sauvages's generic characters with his generic deſcriptions, and running the two together: ſo that, inſtead of eighteen or twenty words, which is, perhaps, the utmoſt that ought to be allowed, and more than the Linnæan canons permit in botany, we have ſometimes upwards of a hundred, filling an entire page, as in *rubeola*, whoſe definition, if ſo it may be called, extends to a hundred and ten lines; and in *aphtha*, which employs a hundred and thirteen. He is leſs redundant in the number of his genera than Vogel, though he makes a boaſt of having extended them to 351. It would have been better for him, as Cullen obſerves, to have boaſted of having exerciſed, in an equal degree, his power of compreſſion. The ſyſtem of Sagar is rendered more complete than either Vogel's or Linnæus's by being filled up with his ſpecies. Theſe, however, are deduced, with occaſional alterations, from Sauvages, and exhibit the ſame verboſity as his genera.

The main object which *Cullen* propoſed to himſelf, and a more important he could not lay down, was that of brevity and ſimplicity; and the Sauvageſian claſſification (for Sagar's was not then before the public) offended in both reſpects. He determined, therefore, upon changing it, and re-caſting the ſyſtem from its commencement. Inſtead of ten claſſes, he conceived that four might ſuffice, formed, as he propoſed to form them, of a caliber capacious enough to ſwallow up all the reſt. He moulded his four claſſes accordingly, and diſtinguiſhed them by the names of

Pyrexiæ, Febrile Diſorders.	*Cachexiæ*, General Diſorder.
Neuroſes, Diſorders of the Nerves.	*Locales*, Local Diſeaſes.

Influenced throughout the whole of his reform by the ſame ſpirit of ſimplicity and concentration, he reduced the forty-four orders of Sauvages to twenty, and his three hundred and fifteen genera to one hundred and fifty-one. He next carried his pruning hook into the field of ſpecies; ſome he found to be repetitions of the ſame diſeaſe occurring under different genera, and others mere ſymptoms of other diſorders, inſtead of diſtinct or idiopathic affections; all which were ſteadily lopped off; and, in this manner, the reduction in the ſpecies bore an equal proportion to that in the genera. The genera and ſpecies that remained were next enliſted into his own ſervice, moſtly with the reſpective names aſſigned them by Sauvages, though the definitions were generally re-compoſed, and apparently modelled in conſonance with the reformer's own practical obſervations.

Thus completed and fit for uſe, the new ſyſtem was firſt ſtarted in the largeſt medical ſchool of Europe, its author preſiding at the head of it. It is not, therefore, ſurpriſing, that it ſhould inſtantly have ruſhed into popularity, and become a ſubject of general approbation. Yet it did not ſtand in need of this adventitious ſupport to introduce it to public favour. Its aim at ſimplicity, as well in extent as in arrangement, was noble, and beſpoke correct views and a comprehenſive mind; it promiſed a deſirable facility to the ſtudent, and a chaſte finiſh to the architecture of the noſological temple. The author ſhowed evidently that he had laboured his attempt in no ordinary degree; and many of his definitions diſcovered a maſtery that had never before been exemplified: pictures painted to the life, and of proper dimenſions.

To this extent of praiſe Dr. Cullen is fairly entitled. That his ſyſtem, nevertheleſs, has faults, and inſurmountable ones, it would be abſurd to deny; for they meet us at the very outſet, and run through the whole of its texture and conſtitution. Dr. Good notices the errors and inconveniences of the ſyſtem under the three following heads: 1. Defective arrangement. 2. Want of diſcrimination between genera and ſpecies. 3. Looſeneſs of diſtinctive character in the laſt general diviſion, or claſs. We ſhall have occaſion to notice only the firſt and laſt of theſe heads.

Of the four claſſes adopted by Dr. Cullen, the firſt two, PYREXIÆ and NEUROSES, have conſiderable merit, and this merit is excluſively his own. Each term ſuggeſts to the mind at once a peculiar group of diſeaſes, of ſufficient range for a leading diviſion, and occupies a province poſſeſſing a ſort of natural outline, or *arrondiſſement*, as the French chorographers denominate it; in which, if the boundary occaſionally fail or loſe itſelf in the adjoining provinces, it is eaſily ſupplied by the hand of art. At times, indeed, it ſeems difficult, under ſuch a ſyſtem, not to overſtep the natural boundary imported by theſe terms in their common uſe, and, like the late ruler of France, to give in many parts a broader and an altogether artificial outline by the invaſion of adjoining diſtricts; and, from the paucity of his claſſes, Dr. Cullen has frequently found himſelf compelled to ſuch a tranſgreſſion, and has afforded us a palpable inſtance of it in the very claſs with which he commences; for the tribe of Hemorrhages, which forms one of its orders, have no direct catenation with any idea ſuggeſted by *pyrexy* in the common uſe of the term; they require coercion to bring them into a ſtate of union; and, what is ſtill worſe, Dr. Cullen, with all the force he could employ, has found himſelf incapable of coercing more than one half of them; and, conſequently, has been obliged to leave the other half behind, or rather to baniſh them for contumacy to the extreme region of his fourth claſs. So that in his ſyſtem they exhibit a wide and lamentable divorce, and afford a ſtriking and perpetual memorial of the tyranny which pervades it in ſpite of its attractive exterior.

Still, however, the firſt two claſſes are ſubſtantially good; and have in ſome ſhape or other been copied by almoſt every ſucceeding noſologiſt. The third claſs has alſo a claim to attention, though the term CACHEXIÆ, by which it is denominated, has been uſed, and ſtill continues to be uſed, in ſenſes ſo extremely different by different writers, that it by no means ſuggeſts to the mind a connected group of diſeaſes, with the ſame readineſs as Pyrexiæ or Neuroſes. As a claſs, indeed, the diviſion of Cachexiæ occurs in all the preceding writers, with the exception of Linnæus; and ſo far Dr. Cullen can plead authority; in Linnæus it is reduced to a genus; and in Vogel it is given, with ſingular impreciſion, both as a claſs and a genus, diſtinguiſhed by a mere difference of number. Under every writer, however, the term is employed in a various ſenſe; ſometimes importing depraved external colour alone; ſometimes depraved colour and form; ſometimes depraved colour, form, and ſize; and ſometimes, as in Cullen's definition, depraved habit of the whole or a great part of the body, without any notice whatever of the preceding qualities.

But by far the moſt faulty and incorrigible part of Dr. Cullen's arrangement conſiſts in his laſt diviſion, or claſs, LOCALES. It has no ſcientific relation to the preceding claſſes, no parallel or appoſition with them. To have brought it into any ſuch kind of bearing, the whole of the former ſhould have been denominated conjunctively UNIVERSALES, as has been done by Dr. Macbride. But this would have deſtroyed the general caſting of the arrangement, and have produced a diviſion which was not wanted, and perhaps does not exiſt. It muſt be obvious to the ſlighteſt obſerver, that the ſole object of this claſs is to form an appendix to the three preceding, for the purpoſe of receiving, like the Cryptogamia of the botanical ſyſtem, ſuch genera as the foregoing claſſes could not be brought to include. From its name and capacity, however, it is altogether inadequate to its intention; and, while the term ſtands inſulated and without relation to its fellow-terms, its intrinſic and eſſential idea (that of particular "part or place") creates an inſurmountable bar to the reception of a great proportion of the genera which it is directly intended to compriſe.

Of theſe diſeaſes, therefore, Cullen has been obliged

to give a liſt at the end of his Synopſis, under the title of "Catalogus Morborum a nobis omiſſorum, quos omiſſiſſe fortaſſis non oportebat;" and has thought himſelf called upon to offer an apology in his Prolegomena. "Theſe omiſſions," ſays he, "I confeſs and regret; but various reaſons operated to the omiſſion of ſome diſeaſes. 1. In the firſt place it muſt be acknowledged that ſeveral utterly eſcaped our attention. 2. Next, there are others, *ſufficiently known, for which a fit place cannot be found in our ſyſtem.* 3. And, laſtly, there are others whoſe hiſtory among medical writers is ſo imperfect, that no fit place or character can be aſſigned to them."

It is the ſecond of theſe apologies, which we have printed in Italics, that has determined us in the courſe we have adopted, of rejecting the ſyſtem altogether. Time and ſtricter attention may overcome the evils to which both the others relate. But the utter *want of fit places for well-known diſeaſes* in a noſological ſyſtem, and this too, in the opinion of the author of the ſyſtem, is a defect from which no time or labour can ever relieve it.

Since, therefore, the diſtinguiſhed reputation of Dr. Cullen was incapable of ſecuring to his noſological ſyſtem the popularity with which it was at firſt greeted; we need not wonder if a hoſt of learned rivals, few of whom however have humiliated him by their competitions, ſhould, in different parts of Europe, have endeavoured to offer ſchemes big with the fair promiſe of realiſing the noble object he had in view, and free from the defects he has exhibited. Theſe rival attempts may be ſummed up in a few words: for ſuch is the difficulty of the ſubject, that none of them have been eminently ſucceſsful; while the greater part have dropped from the cradle into the grave.

The chief foreign competitors are Selle, Plouquet, and Pinel.—*Selle* is rather a monogrammiſt, to borrow a term from the vocabulary of natural hiſtory, than a writer on general noſology. His firſt attempt was confined to the province of fevers alone, and appeared at Halle in 1770, under the title of "Methodi Febrium naturalis Rudimenta:" and it was only to an enlarged edition of this, publiſhed at Berlin in 1786, that he ſubjoined a ſpecimen of his general claſſes. They are altogether theoretical; and, as he has not accompanied them with their reſpective genera, it would be ſuperfluous to copy the claſſification. The cloudineſs that hangs over his diviſion of fevers leaves us without regret that he did not complete his entire ſcheme. It may be ſufficient, perhaps, to obſerve, that in his "Methodical Pyretology," rheumatiſm, catarrh, and exanthems, are included under a ſingle genus.

The "Outlines" of *Plouquet* furniſh a ſyſtem that wanders leſs into theory; but which is far too complicated, and certainly not without its nebuloſity. It was publiſhed at Tubingen in 1791, in four volumes octavo, under the following title: "Delineatio Syſtematis Noſologiæ naturæ accommodati." It is ſingularly diſtinguiſhed by the author's fondneſs for long crabbed words. He made a far better preſent to the public a few years afterwards in his "*Initia Bibliothecæ Medico-practicæ, et Chirurgiæ realis*; or Hints towards a Medical and Chirurgical Library," extending to ſeven volumes quarto, in the order of an alphabetical arrangement.

To *Pinel*, as to Selle, we are indebted for both a monographic and a general attempt. The firſt is his well-known "Traité Medico-Philoſophique ſur l'Aliénation Mentale;" the diviſions of which are clear, and the remarks of high practical importance. The preſent writer will be found to have availed himſelf, as far as poſſible, of the advantages which this excellent treatiſe affords, under the article INSANITY, vol. xi. He has not, however, been able to make the ſame uſe of M. Pinel's "Philoſophical Noſography." It is too refined for popular uſe, and too indiſtinct for practical benefit. The claſſes are as follow: 1. Fevers. 2. Inflammations. 3. Active Hæmorrhages. 4. Neuroſes. 5. Lymphatic Diſeaſes. 6. An indeterminate claſs for the reception of diſorders which cannot be received into the preceding claſſes, or whoſe characters yet remain to be aſcertained. This laſt diviſion evinces a woeful want of ſkill, and is perhaps more reprehenſible than the LOCALES of Dr. Cullen. M. Pinel has, moreover, betrayed a ſingular itch for changing eſtabliſhed terms which, in many caſes, require no change whatever; and ſuperſeding them by others which are neither more true to correct theory, nor more euphonous to a correct ear. As examples we may notice, that inflammatory fever is here denominated *angi-ſtenic*; bilious fever, *meningo-gaſtric*; putrid, *adynamic*; malignant, *ataxic*.

In turning our attention to our own country, we ſhall perceive that the firſt attempt to improve on Cullen's ſyſtem was hazarded by Dr. *Macbride*. It was publiſhed as early as 1772, and conſiſts of nothing more than a noſological table, embracing indeed the diviſions of genera and ſpecies (except in the order of Veſaniæ, which is left imperfect, from an indetermination in the author's mind upon this ſubject), but totally void of definitions. It is the opinion of Dr. Good, that this unfiniſhed ſketch is well worthy of attention, and has not had ſufficient juſtice rendered to it. Its chief failure conſiſts in the nature of its claſſes or primary diviſions. Theſe conſiſt of four; UNIVERSAL DISEASES, LOCAL, SEXUAL, and INFANTILE. The ſecond, or local claſs, is evidently derived from Dr. Cullen, though the term is employed in a ſtricter ſenſe: and the formation of a claſs of Univerſal Diſeaſes follows naturally, and indeed neceſſarily, from the inſtitution of a claſs of Local. A preciſe line of diſtinction, however, can never be drawn by the moſt delicate hand; and it is obvious to every one, that the employment of other claſſes after theſe, whatever be their names, ranges, or attributes, muſt be abſurd; for the terms Univerſal and Local neceſſarily include every diſeaſe in nature, and leave no other diſtinctive claſs to be added. Yet Dr. Macbride appears to have exhibited as nice a ſkill in the arrangement of his genera and ſpecies, as he has want of ſkill in his primary outline. There is a clearneſs, a neatneſs, and ſimplicity, which, ſays Dr. Good, "I have endeavoured to avail myſelf of, wherever the ſtructure of my own ſyſtem would allow, and which I have often left with regret where it would not." Nothing can more effectually ſhow the good taſte and liberality of Dr. Cullen, than his Latin tranſlation and introduction of the firſt and moſt extenſive claſs of Macbride's Table into the laſt edition of his Synopſis, for the purpoſe of compariſon with his own arrangement, as well as with the ſyſtems of thoſe to whom he was moſt indebted.

Another Table of Diſeaſes, diſtributed under a different ſyſtematic arrangement, was publiſhed not many years after, by Dr. *Crichton*; and, like the preceding, unaccompanied with definitions of any kind. Its claſſes are eight, conſiſting of Cullen's four, with the addition of four others, for the purpoſe of accommodating thoſe genera which are chiefly under a ſtate of reſtraint in the Cullenian method; and to which he has given the names of HÆMORRHAGIÆ, FLUXUS, INTUMESCENTIÆ, and EPISCHESES. This aſſuredly offers ſome improvement; but the retained claſs LOCALES is ſubject to the common objections againſt it; and in the ſubdiviſions of this claſs Dr. Crichton has no reaſon to boaſt of being more ſucceſsful than his predeceſſors. He ſeems ſenſible, indeed, of the difficulty, and appears to ſhrink from it; for in the fourth, fifth, and ſixth, orders of the local claſs, entitled Prolapſus, Luxatio, and Tumores, he has withheld his ſpecies; and in the three enſuing orders, entitled Vulnus, Ulcus, and Fractura, he has equally withheld his genera. For the moſt part his generic and ſpecific diſtinctions exhibit far leſs preciſion than thoſe of Dr. Macbride, whilſt he has moſt unaccountably reſtored the ſymptomatic ſpecies of diſeaſes which Cullen laboured ſo meritoriouſly to ſuppreſs. It is ſomewhat ſingular, therefore, that Dr. Crichton ſhould have beſt ſucceeded where Dr. Macbride principally failed, and chiefly failed where Macbride has been moſt ſucceſsful.

Dr.

Dr. *Darwin's* ſyſtem of noſology, publiſhed indeed ſome years before Dr. Crichton's, is founded, not on ſymptoms, but on theory. The author of Zoonomia was a man of great genius, daring imagination, and extenſive reading. See p. 43. Unfortunately for him, he was perpetually ſtung with a deſire of diſtinguiſhing himſelf by ſeeing things, weighing things, and combining them, in a manner different from every one elſe. All his works give proof of this; and ſhow evidently that he would at any time rather think wrong with himſelf than think right with other people. His noſological ſyſtem is founded upon his phyſiological principles; which, ſtripped of extraneous matter, may be told in few words, ſo far as they are applicable to the preſent ſubject. The *brain*, as a collective organ, is the fountain of life and ſenſation, and ſends forth fibres of different kinds and for different purpoſes; which are excited, and communicate perceptions to the organ whence they originate, by four different claſſes of ſtimuli, thoſe of ſimple irritation, of ſenſation, of volition, and of aſſociation; every part of the animal frame having a greater or leſs degree of influence upon every other part, and operating this influence by the medium of ſympathy; in conſequence of which, Dr. Darwin was deſirous that his own theory ſhould take the name of the ſympathetic. "Every *idea*," ſays he, "is a contraction, or motion, or *configuration of the fibres* which conſtitute the immediate organ of ſenſe;" and hence it ſeems difficult for the friends of Dr. Darwin to repel the charge, that ideas, under this explanation, muſt be material ſubſtances. Health he contemplated as conſiſting in the natural correſpondence, and degree of correſpondence, of the various organs of the body to their reſpective ſtimuli, and diſeaſe as an *effect* produced by any, even the ſlighteſt, deviation from ſuch correſpondence *in any part*. Hence every ſuch *effect*, in his opinion, conſtituted a diſeaſe; and what is commonly ſo denominated, and which conſiſts of a combination of ſymptoms, as a fever or a colic, he regarded as a group or bundle of diſeaſes; a ſort of Pandora's box, where they muſter their ſecret or collective ſtrength, and whence they iſſue ſimultaneouſly. In forming his noſological arrangement, he made theſe *effects*, and the *parts* or *organs* in which they manifeſt themſelves, conſtitute his genera and ſpecies; while he derived his claſſes and orders from their proximate (or rather what upon his theory are ſuppoſed to be their proximate) cauſes, and the peculiar characters which theſe cauſes exhibit; the number of the claſſes being four, derived as may be eaſily conjectured from the four ſources of ſtimulation juſt referred to. "I have taken," ſays Dr. Darwin, "the *proximate cauſe* for the claſſic character. The characters of the orders are taken from the exceſs, or deficiency, or retrograde action, or other *properties*, of the proximate cauſe. The genus is generally derived from the proximate *effect*. And the ſpecies generally from the *locality* of the diſeaſe in the ſyſtem."

By *proximate cauſe*, however, Dr. Darwin does not mean what is generally underſtood by this phraſe, namely, the moſt ſtriking or characteriſtic ſymptom of a diſeaſe; but what ſhould *ſeem* to be the proximate cauſe upon his own *theory*, and which in every inſtance *muſt* be a different and often a directly oppoſite thing. Thus in nictitation, the *proximate cauſe*, in the common ſenſe of the term, is a "rapid and vibrating motion of the eye-lid," which ought, therefore, to conſtitute the character of the diſorder. In the vocabulary of Dr. Darwin, however, this, inſtead of being the proximate *cauſe*, is the proximate *effect*; while his *proximate* cauſe is "increaſed irritation," which is the *remote* cauſe, as the phraſe is commonly explained. We are not now inquiring which is the more correct uſe of the terms cauſe and effect, but only pointing out the variance and the confuſion that hence neceſſarily enſue. The perplexity hereby produced muſt have been an effectual bar, had there been no other, to Dr. Darwin's ſyſtem ever becoming popular. Unfortunately there are many others, and of as formidable an aſpect. The entire baſis is theoretical; in ſeveral parts viſionary: the whole *may*, therefore, prove hereafter to be unfounded; a conſiderable portion of it evidently *is* unfounded at preſent. But the direct death-warrant of the ſyſtem conſiſts in his making every ſingle proximate *effect* (in common language proximate *cauſe*, or ſymptom) a diſtinct diſeaſe; for, as the ſame proximate effect, or ſymptom, may be produced by ſeveral, or by each, of what Darwin calls proximate cauſes, and which conſtitute his claſſes, it follows that the very ſame ſpecies or ſpecific diſeaſe muſt in ſuch caſes belong equally to ſome order or other of ſeveral or of all the claſſes of his ſyſtem. And ſuch, to the ſtudent's embarraſſment and ſurpriſe, he will find upon examination to be the real fact. Thus while Variola (ſmall-pox) is arranged under cl. ii. ord. 1. gen iii. Eruptio Variolæ (ſmall-pox eruption) occurs under cl. iv. ord. 1. gen. ii. So Hydrophobia appears firſt in i. 3. i. and afterwards in iii. 1. 1. Diabetes in i. 3. ii. and again in iv. 3. 1. Palpitation of the heart in i. 2. i. and again in i. 3. iii. being twice in the ſame claſs: and ſo of many others.

Such perplexity ſets all the ordinary laws of method at defiance; yet it is eaſily accounted for from the nature of the primary diviſions. While, to make the ſyſtem ſtill more defective and incapable of practical uſe, its author has given us neither his ſpecific nor his generic definitions, excepting, indeed, occaſionally; confining himſelf entirely to his Latin and Engliſh names; and ſending us for their *deſcriptions* to "the Noſologia Methodica of Sauvages, and the Synopſis Noſologiæ of Dr. Cullen, and the authors to which they refer." But ſuch an appeal can be of no poſſible ſervice: the diſeaſes in Darwin's ſyſtem do not run parallel with thoſe referred to, and the deſcriptions will ſcarcely in any inſtance apply.

In the very excellent Medical Dictionary of Dr. *Parr*, which has now been about twelve years before the public, the reader will find, under the article NOSOLOGY, a ſyſtematic arrangement of diſeaſes which ought by no means to paſs without notice.

In laying down the outline of his ſyſtem, Dr. Parr had his eye chiefly directed to the noſological method of Selle, and the botanical method of Juſſieu. It follows, therefore, that his primary diviſion would conſiſt not of *claſſes*, but of what he intended to be *natural orders*, or families. Theſe orders are twelve, whoſe names are taken from the claſſes or orders of Sauvages or Cullen, with the exception of one, SUPPRESSORII, which is borrowed from Linnæus.

Here again, therefore, we have a great and noble aim, whatever be the ſucceſs of its accompliſhment. But, as a *natural ſyſtem*, even in botany, is to the preſent hour, and perhaps always will be, a theoretical rather than a practical idea, there ſeems very little expectation that it can ever be realiſed in medicine. On the part, therefore, of Dr. Parr, the attempt was a bold one; and his arrangement will ſhow that, if he has not been altogether ſucceſsful, he has exhibited a very conſiderable degree of ingenuity. This arrangement is as follows:

Pyrexiæ, Fevers.	*Adynamiæ*, Debilities.
Phlegmaſiæ, Inflammations.	*Paranoiæ*, Alienations.
Eruptiones, Eruptions.	*Cachexiæ*, General Diſorder.
Profluviæ, Fluxes.	*Intumeſcentiæ*, Tumours.
Suppreſſorii, Suppreſſions.	*Ectopiæ*, Protruſions.
Spaſmi, Spaſms.	*Plagæ*, Wounds.

Between moſt of theſe we can trace, in the ſeries of their deſcent, a verbal connexion; and between ſeveral of them a connexion of a more ſubſtantial kind. It holds nominally in the firſt three orders, but ſeems to ſlip from us in the three that follow; and is occaſionally recovered in the remaining. Yet, when we examine the genera and ſpecies of the reſpective orders, we ſhall find the connexion is too commonly nothing more than verbal. PHLEGMASIÆ has a manifeſt relation to PYREXIÆ; but in Cæliaca, Leucorrhœa, Leucorrhois, (diſcharge of white mucus

mucus from the anus,) which are diſeaſes of the former order, the connexion is entirely loſt: nor will it, perhaps, meet with general approbation that theſe, together with Gonorrhœa (uſed in the vulgar ſenſe of the term), Cyſtirrhœa, and Phthiſis, ſhould be united with Coryza and Dyſentery, under one common genus, to which is given the name of *Catarrhus*. This, however, is a genus upon which Dr. Parr peculiarly prided himſelf, and upon which he unqueſtionably beſtowed very great pains. In like manner the order ERUPTIONES ſeems at firſt to claim a near affinity with PHLEGMASIÆ; and in the genus Exanthema it does ſo ſubſtantially, for here we can trace diſtinctly ſomething of that febrile, or, to ſpeak more correctly, pyrectic diatheſis, which unites theſe two orders with the order PYREXIÆ. But in the mere cutaneous eruptions, here collected into one genus, named *Efflorescentia*, the line of union becomes ſo fine and filmy as to be altogether inviſible. Were we to purſue this prying indagation, we ſhould ſoon arrive at breaks far wider and more obvious. It would perhaps be difficult to find four diſeaſes more diſcrepant from each other than Dyſpepſia, Amentia, Amauroſis, and Ageneſia. They ſeem to have no one common property with each other. Dr. Parr, however, has contrived to make them all ſpecies of a ſingle genus, to which he has given the name of *Anepithymia*, and which he has defined, "a diminution of power in the different functions;" a character ſufficiently ſweeping to cover at leaſt half the diſeaſes that man inherits; for exceſs and diminution of power may eaſily be made to embrace the whole; and *are* made to do ſo under the Brunonian theory. Yet, notwithſtanding this licentious generalization, and aim at a natural arrangement, the diſeaſes of the external ſenſes, which ſeem to have a pretty cloſe proximity with each other, are partly ſcattered at conſiderable diſtances over the entire ſyſtem, and partly, as in the inſtances of Caligo, Dyſopia, Paracuſis, Anoſmia, Ageuſtia, and Anæſtheſia, are in the unfortunate ſituation of Dr. Cullen's "Catalogus morborum à nobis omiſſorum;" and, from forgetfulneſs or ſome other cauſe, have no place allotted them in any ſection of the ſyſtem.

There is, nevertheleſs, much in Dr. Parr's ſyſtem that is highly meritorious. The diſtinctions of the different diviſions are ſcientifically laid down; and, except that the genera are occaſionally too extenſive, accurately maintained. Dr. Parr gives the following ſhort explanation of his own ſyſtem: "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."

Dr. *Young's* "Introduction to Medical Literature, including a Syſtem of Practical Noſology," though limited to a ſingle octavo, ranges through an entire courſe of medical education, anatomical, pathological, therapeutical, and chemical, as well as noſological; whilſt in the laſt department it is drawn up with a ſomewhat different view, and is more ſtrictly limited to the pale of the medical profeſſion. The arrangement of Dr. Young, while eſſentially diſtinct from that of Dr. Good, will be found perhaps to make the neareſt approach to it of any that has hitherto appeared. In wanting the diviſion of orders to two of its claſſes, it is ſcientifically defective; but its ſyſtematic boundaries are as clearly ſeen, and as preciſely maintained, as thoſe of Dr. Parr. Yet its chief merit, perhaps, conſiſts in offering to the ſtudent a maſterly guidance, through the whole of his profeſſional tuition, to the beſt authorities and ſources of information; in this reſpect anſwering the purpoſe of Plouquet's ſeven quarto volumes, with a great ſaving of expenſe, a prodigious ſaving of time, and by a far nearer and pleaſanter pathway.

A glance has already been given at a few limited noſological arrangements, by writers who have confined their attention to a ſingle family or group of diſeaſes, detached for this purpoſe from the reſt; and to this deſcription of works Dr. Good has applied the name of *monograms*. To the names of Selle, Pinel, and Crichton, it is neceſſary to add, under this view of the ſubject, thoſe of Plenck, Willan, Bateman, Abernethy, and Granville.

Dr. *Plenck*, of Baden, is the author of two diſtinct treatiſes of this kind; the one a methodical arrangement of the "Diſeaſes of the Eyes;" and the other of "Cutaneous Diſeaſes." In the former he follows the order of anatomy in the diſtribution of his primary diviſions, beginning with the eye-brows, and deſcending from without inwards till he cloſes with the retina. In the latter, which conſiſts of claſſes, genera, and ſpecies, without the interpoſition of orders, he employs a looſer line of ſucceſſion; though the general idea ſeems to be that of advancing from the ſlighter to the more prominent elevations of the ſkin, commencing with MACULÆ, and proceeding to EXCRESCENTIÆ; the remaining claſſes conſiſting of CUTANEOUS ULCERS, WOUNDS and INSECTS, DISEASES OF THE NAILS and of the HAIR. He is a more induſtrious than diſcriminative writer, as the reader will perhaps readily concede, when informed that he has arranged, defined, and followed, through their progreſs and mode of treatment, a hundred and nineteen genera, compriſing very nearly ſix hundred ſpecies, or diſtinct diſeaſes of the eyes, the genus amauroſis alone extending to twenty ſpecies; and one hundred and fifteen genera, including nearly ſix hundred ſpecies, or diſtinct diſeaſes of the ſkin.

Yet compreſſion, and a more ſcientific arrangement, would make either of Dr. Plenck's attempts a valuable work; and Dr. *Willan* has the merit of having performed this friendly office to the latter of the two, in his book on "Cutaneous Diſeaſes;" and at the ſame time of having added ſo much valuable matter of his own, as to entitle it to the claim of being ſtrictly an original performance. The diſtinctive characters of papula, puſtule, veſicle, bleb (bulla), ſcale, and cruſt, are well given and maintained by the former; but the latter has expreſſed them more neatly, and has added many diſtinctions which the former does not afford; whilſt he has drawn his literary and practical hiſtory, and treatment of the diſeaſes diſcuſſed, from very different ſources; and, as far as might be, from his own perſonal obſervations. That Dr. Willan did not live to finiſh this valuable work muſt be regretted by every one who has the welfare of medicine at heart; but the able and judicious manner in which it has been brought to a cloſe by Dr. *Bateman* has ſerved in no ſmall degree to abate the general diſappointment. Had Dr. Willan lived to complete the direct object of his purſuit, and then extended his views to the whole circle of diſeaſes, he muſt have greatly modified his firſt and more reſtricted ſyſtem before he could have incorporated it in the larger plan. As it is, indeed, it ſtands in need of no ſmall degree of modification to clothe it with all the perfection it deſerves; for ſeveral of his orders would make better genera; almoſt all his genera are decided ſpecies, while his ſpecies are ſeldom more than varieties, and are in many caſes ſo denominated by himſelf. In this reſpect he might have taken a good leſſon from Dr. Young, Dr. Parr, or Dr. Macbride; as he might alſo from the two former in giving the eſſential character of each diſeaſe antecedently to the admirable deſcription with which it is followed up.

The name of Mr. *Abernethy* is here mentioned in reference to his methodical "Claſſification of Tumours." This claſſification is ſtrictly ſymptomatic, the characters being derived, as they ought ever to be, as much as poſſible, from ſenſible phenomena.

The laſt *monogram* we have to notice is a "Claſſification of the Diſeaſes of Children," by Dr. Granville, principal phyſician to the Royal Infirmary for Sick Children; and detailed by him in the London Medical Journal for December

cember laſt (1820), of which work he is at preſent the editor.

Dr. G. in his addreſs to the then editor, obſerves, "You muſt have been ſtruck, in common with every other practitioner of this or any other country, with the ſingular circumſtance of no regular claſſification of infantile diſeaſes having ever been propoſed by the ſeveral eminent authors who have written on that particular branch of medicine; and you will probably agree with me, that no-where is the neceſſity of ſuch a claſſification likely to be more felt than in an extenſive inſtitution directed ſolely to the alleviation of thoſe diſeaſes, where daily and numerous occaſions muſt occur for its uſe. In the Infirmary to which I have had the honour of being appointed principal medical officer, it would ſcarcely have been poſſible for the phyſicians and ſurgeons belonging to it to have preſerved any degree of uniformity in the medical records of that inſtitution, had we relied on the uſual routine only, of entering the names of patients without any very preciſe and uniform deſignation of their complaints. It became, therefore, neceſſary to eſtabliſh ſomething like a Synopſis, by the help of which, as if with the uſe of a common language, we might become intelligible, not only to each other but alſo to the profeſſion in general; the members of which may hereafter wiſh to refer, for many uſeful ſubjects of information, to the regiſters of the Royal Infirmary.

"How far the preſent attempt to form ſuch a Synopſis may ſucceed in removing the difficulties which, like thoſe experienced in general practice before any noſological arrangement of diſeaſes had been eſtabliſhed, muſt be felt in the conſideration of infantile complaints, I leave my colleagues and the public to decide. I have no pretenſions on the ſubject, and I give my preſent ſpeculation as a mere attempt; happy if it ſerve to ſtimulate more competent perſons to fill up the chaſm which has hitherto exiſted in noſological ſcience. The names of Heberden, Roſen, Capuron, Burns, and Underwood, not to mention ſeveral others, muſt be familiar to thoſe who have paid particular attention to the diſeaſes of children. The deſcriptive obſervations and practical remarks of theſe eminent men leave ſcarcely any thing to be wiſhed for; yet it muſt be admitted that, had thoſe deſcriptions and remarks followed ſome ſpecific arrangement, the facilities for their ſtudy and their retention would have been greater than they now are.

"The plan of the preſent claſſification is as follows: I have, in the firſt place, conſidered all deviations from healthy action or healthy ſtructure in children, as having either begun with their fetal life and formation, or developed themſelves at the moment, and in conſequence, of parturition. Theſe, therefore, form a firſt great diviſion, very diſtinct from that of any other complaint which may afflict a child ſubſequently to its birth and up to the adult age. To this firſt great diviſion, I have applied the denomination of *Morbi Congeniti*, and I have neceſſarily been obliged to make two claſſes of it; in the former of which I have placed all diſeaſes or deviations from healthy ſtructure previous to, and conſequently independent of, parturition; while in the ſecond thoſe congenital diſeaſes have been arranged which are connected with, or dependent on, parturition. The diſeaſes embraced by the firſt of theſe two claſſes of the firſt great diviſion are by far more numerous than thoſe of the ſecond claſs; and, in order to facilitate their recollection, they have been ſubdivided into ten orders, each order containing an unequal number of genera, in all forty-five. Two orders only are contained in the ſecond claſs: 1, topical; 2, univerſal; each being ſubdivided into five genera.

"Having thus diſpoſed of all the diſeaſes which, from their being coeval with the patient, form a well-defined and diſtinct diviſion, it remained for me to arrange all thoſe deviations from health which are known to occur ſubſequently to birth and as late as the adult age, whether peculiar to the period of time that lies between theſe two epochs, or likely to affect children in common with perſons more advanced in years. Theſe two conſiderations gave riſe to a ſecond great diviſion, which I have deſignated by the name of *Morbi Subſequentes*, as quite diſtinct from thoſe which formed the ſubject of the preceding remarks." This ſecond great ſection is divided into four claſſes, and each claſs into two orders; the genera are 96, which added to 55 in the firſt grand diviſion, make a ſum of 151 *genera* of diſeaſes with which children are afflicted. How numerous the particular *ſpecies* may be we are left to conjecture, as the author ſays, "I have not extended my conſideration to either ſpecies or varieties, as this would have carried me too far."

This Synopſis has been printed on a card, for the convenience of ſtudents. Omitting the names of the genera, the claſſification will appear as follows:

I. MORBI CONGENITI.

Claſs I. ATOCICA. Congenital Diſeaſes independent of Parturition.
- Order 1. *Atreſis.* Natural openings imperforate.
- 2. *Colliſis.* Unnatural adheſions.
- 3. *Diazeuxis.* Unnatural ſeparations.
- 4. *Elatoſis.* Defective organization.
- 5. *Periſſeuzis.* Superfluous organization.
- 6. *Hydrops.* Unnatural accumulation of fluids.
- 7. *Ectopiæ.* Diſplacements.
- 8. *Aſſymetria.* Anti-ſymmetrical conformation.
- 9. *Paræſtheſis.* Defective action of ſenſes.
- 10. *Metrocelis.* Marks.

Claſs II. TOCICA. Congenital Diſeaſes dependent on Parturition.
- Order 1. *Topici.* Partial.
- 2. *Univerſales.* General.

II. MORBI SUBSEQUENTES.

Claſs I. ZOTICA. Morbid Alterations of the preſervative Functions.
- Order 1. *Pneumatici.* Affecting reſpiration.
- 2. *Hæmatici.* Affecting circulation.

Claſs II. AUXITICA. Morbid Alterations of the augmentive Functions.
- Order 1. *Cæliaci.* Affecting digeſtion.
- 2. *Lymphatici.* Affecting abſorption.

Claſs III. APOCRITICA. Morbid alterations in the ſegregating Functions.
- Order 1. *Eccritici.* Affecting ſecretion and excretion.
- 2. *Dermatici.* Affecting exhalation.

Claſs IV. ÆSTHETICA. Morbid Alterations of the ſenſitive Functions.
- Order 1. *Neurotici.* Affecting ſenſation.
- 2. *Myotici.* Affecting voluntary motion.

We hail the eſtabliſhment of an Infirmary for Sick Children, as likely to form a new era in favour of the riſing generation; for we cannot doubt that it will have its effect in improving a branch of medical practice, of which it is not too much to ſay, that it has hitherto been unaccountably neglected. "In no department of our profeſſion (ſays Dr. Reid) does the practice of it appear ſo cruelly abſurd as in the miſmanagement of infants. I once ventured to obſerve, that, of the caſes of mortality in the earlier months of our exiſtence, no ſmall proportion conſiſts of thoſe who have ſunk under the oppreſſion of pharmaceutical filth. More infantile ſubjects in this metropolis are perhaps diurnally deſtroyed by the mortar and peſtle, than, in the ancient Bethlehem, fell victims in one day to the Herodian maſſacre. I plead guilty to the charge of raſhneſs and hyperbole, which were brought againſt this remark when firſt publiſhed; but I wiſh that the years of experience, which have ſince intervened, had convinced me that the remark was altogether deſtitute of foundation. When we contemplate a church-yard, the earth of which is compoſed in great meaſure of the bodies of infants, it is natural for us to fancy, but ſurely it is

not reaſonable for us to believe, that thoſe beings were born for no other purpoſe than to die; or that it is within the deſign of nature that the pangs of production on the part of the mother ſhould, on that of her offspring, be almoſt immediately ſucceeded by the ſtruggle of diſſolution. Fault muſt exiſt ſomewhere: it cannot be in the providence of God; it muſt therefore attach to the improvidence and indiſcretion of man. Conſequences as fatal originate from ignorance as from crime. Infanticide, when perpetrated under the impulſe of maternal deſperation, or in the agony of anticipated diſgrace, is a ſubject of aſtoniſhment and horror; but, if a helpleſs victim be *drugged* to death, or poiſoned by the forced ingurgitation of nauſeous and eſſentially-noxious potions, we lament the reſult merely, without thinking about the means which inevitably led to its occurrence. Conſcience feels little concern in caſes of medicinal murder. The too-ordinary habit of jeſting upon theſe ſubjects in convivial or familiar converſation, has an unhappy tendency to harden the heart, and inclines us to regard, with an inhuman and indecorous levity, thoſe dark and horrible cataſtrophes which too frequently ariſe from profeſſional ignorance or miſtake." Eſſays on Hypochondriaſis; 2d edit. 1821.

Some other ſyſtems of inferior importance have appeared in different countries, eſpecially in Germany. We paſs over them, however; and, diſmiſſing this unintereſting branch of our ſcience, retrace our ſteps to conſider the moſt important of the modes in which diſeaſe, or a change from the phenomena of healthy action, may ariſe.

An inquiry into the abſtract principles of diſeaſe is a ſubject of acknowledged difficulty. The very definition of the word *diſeaſe* involves more trouble than might at firſt ſeem apparent, and is indeed a matter about which there exiſts much difference of opinion. We content ourſelves, therefore, with the uſe of the laconic definition, that diſeaſe is *the abſence of health*, acknowledging, however, that this deſcription involves the definition of what health is. But the latter queſtion is anſwered by Phyſiology, a ſcience with which the pathologiſt is ſuppoſed to be previouſly acquainted.

We do not propoſe to enter into a conſideration of the minute and remote cauſes of diſeaſe. It would not perhaps be difficult to ſhow, that the firſt changes which take place in the various ſtructures muſt operate by their relation with the vital properties. This, of courſe, applies principally to thoſe cauſes which produce what is called the *predispoſition* to diſeaſe. A *predispoſing cauſe* is that which renders the body liable to be attacked by diſeaſe, or to be acted upon by an exciting cauſe; for the operation of an exciting cauſe alone is generally not ſufficient to produce diſeaſe. Thus ſeveral perſons may be expoſed at the ſame time to the ſame external agents, e. g. to cold and moiſture: in ſome, theſe agents will excite diſeaſe; on others they will act with impunity. In the former perſons, ſome circumſtances muſt have exiſted which rendered them liable to receive thoſe morbid impreſſions; in the latter, no ſuch predispoſition was preſent. Again, ſome of thoſe, whom the exciting cauſes affected, may ſuffer one kind of diſeaſe, and others a different one; thus, one individual may be afflicted with rheumatiſm, another with catarrh, a third with dyſentery, and ſo on; facts implying the exiſtence of ſome peculiar condition of the body, or of the organs reſpectively attacked, which is juſtly deemed a *predispoſing cauſe* of the particular malady which may have occurred. In ſome inſtances, the *predispoſition* is obvious and well underſtood: thus one attack of rheumatiſm, pleuriſy, or any inflammatory diſorder, generally renders the body more liable to ſuffer a ſecond: a peculiar formation of the cheſt, combined with a fair and delicate ſkin, with dark eyes, lively ſpirits, &c. implies a tendency to be affected with pulmonary conſumption: and a plethoric habit, large head, ſhort neck, very florid complexion, &c. threatens the acceſſion of apoplexy. In ſuch circumſtances the kinds of exciting cauſes, which ought to be peculiarly avoided, are manifeſt; and by a careful attention to this ſuggeſtion, the diſeaſes, with which the individuals are menaced, may be often avoided.

The *exciting* is the next mode of remote cauſation, and is of courſe an agent which operates for the moſt part by the relation it holds with the *predispoſing cauſe*. The exciting cauſes of diſeaſe have given riſe to many and various hypotheſes. Hippocrates ſuppoſed that diet and air were the externals whence diſeaſe was principally derived; and certainly, as theſe are the pabula vitæ, as they conſtitute the *repair* neceſſary to our exiſtence, an unuſual ſtate of them muſt produce a correſponding change in the ſenſations and functions of our bodies. We can only therefore add to theſe exciting cauſes, *mental impreſſions* and exceſſive action, or the reverſe, of certain organs. But there are ſome exciting cauſes ſo very generally affecting mankind as to lead us to ſuppoſe that they operate independently of any ſtate of predispoſition; as the poiſon of ſyphilis, ſmall-pox, rabies, &c. Though even theſe diſeaſes do not ſeem uninfluenced by the ſtate of conſtitution, as they exiſt in various degrees of intenſity in different individuals.

As theſe exciting cauſes of diſeaſe can come only from without, they muſt operate in the firſt inſtance through the medium of thoſe parts by which man is related with the external world. Theſe are the organs of ſenſe, and thoſe unions of the three fundamental ſtructures which have been denominated *the alimentary canal*, *the pulmonary cavity*, and *the cutaneous expanſion*. As theſe three ſtructures are all aſſimilation or abſorption, and at the ſame time abundantly ſupplied with nerves, they muſt communicate morbid impreſſions, either, 1ſt, by aſſimilating ſubſtances of an improper nature; of which we have frequent inſtances in the reception of poiſons, &c. into the blood, in the tranſmiſſion of the marſh miaſmata, or the contagion of fevers, &c. or 2dly, by tranſmitting nervous impreſſions to the brain, and inducing diſorder of that organ, and the nervous ſyſtem generally. Each of theſe modes may, according as predispoſing cauſes are in exiſtence, produce local diſeaſe, or diſturbance of general functions.

But it is very obvious, that, however firmly theſe notions may be eſtabliſhed, we advance but a very little way in attaining a knowledge of exciting cauſes. For, ſo various are the modes by which externals may operate, ſo many inſcrutable and various properties belong to food, and ſtill more to air, and ſo numerous muſt be the derangements produced by nervous excitation, that the attempt to trace the laws of theſe cauſes will for ever remain inefficient.

The operation of the ſenſes can of courſe only induce diſorder of the brain and nervous ſyſtem by exhauſting its energies; whether that exhauſtion be produced by excitement of the brain generally, or of its particular parts; or, on the other hand, by the depreſſion of them.

To illuſtrate theſe principles, we will ſuppoſe a patient afflicted with a ſtate of the liver *predispoſed* to diſeaſe. Is mental emotion by exceſſive grief, that is to ſay, is the production and tranſmiſſion of nervous energy, diſturbed by the inordinate action of the brain? the proceſs of ſecretion in the liver will be obſtructed; and thus induce ſimple local plethora, perhaps the ſimpleſt form of diſeaſe. On the other hand, diſeaſe may occur in the *predispoſed* liver by the immediate application of an improper material received into the blood, and acting as an unuſual ſtimulus to the contractile power of the capillary veſſels of the liver; hence, in the ſame way, impeding ſecretion, &c.

Of the application, however, of theſe doctrines, we ſhall have occaſion to give very frequent illuſtration in the pathology of particular diſeaſes. We have now to conſider the nature of what is called the *proximate cauſe* of diſeaſe. The preciſe meaning attached to this term is, that it deſignates an *action* of the *body*, in contra-diſtinction to ſtates of impreſſions which conſtitute remote cauſes.

cauſes. The proximate cauſes, therefore, of diſeaſes, muſt be almoſt as numerous as the diſeaſes themſelves; and hence they will form part of the pathological diſcuſſion we ſhall enter into with regard to each different malady. In this place, however, it will be proper to offer ſome remarks concerning the local origin of diſeaſe. That diſeaſe may, and indeed generally does, ariſe from loſs of the balance of action between one part and the ſyſtem at large, ſeems indiſputably proved. How far, however, this part may proceed in diſeaſed action without influencing the general health, is another and an important conſideration. Having lately met with ſome remarks on this head by Mr. Pring, we have tranſcribed them from his "Indications," on account of the cloſe reaſoning with which he has illuſtrated the ſubject.

"There are but few (perhaps not any) examples of diſeaſe which is confined wholly to one part. There are many inſtances of diſeaſe of one part, in which the organic ſyſtem elſewhere does not perceptibly ſuffer: but theſe are attended with pain or diſordered motion, which is ſufficient to prove an extenſion of the diſeaſed ſtate. In the organic ſyſtem, however, a perſon may have an ulcer in the leg, or a tumour upon the ſhoulder, or an herpetic diſeaſe upon ſome ſpot of the ſkin, or a ſtricture of the urethra, &c. without any ſenſible derangement of the ſame ſyſtem elſewhere. But even in theſe inſtances we cannot prove that the change is entirely local, unleſs it may be ſhown, 1ſt, that the natural condition of the ſeat is not a dependent one, by which diſorder might originate in another ſphere; and, 2d, ſuppoſing the diſeaſe to originate in its apparent ſeat, that no other is ſo connected with it as to participate in its modifications. But, if it is poſſible that any part ſhould poſſeſs only an aſſimilating life, that no other part is dependent upon it, and that the condition of diſeaſe does not open any new or preternatural relation, then it is poſſible that the aſſimilating life of ſuch part may become excluſively diſeaſed.

"It happens however in moſt inſtances of diſeaſe, that this ſtate prevails in more than one ſeat. In ſuch inſtances theſe two alternatives are to be diſcriminated: 1ſt, Whether the diſeaſes occupying different ſeats are not independent of each other? 2d, Whether the primary *produces* the ſecondary diſeaſe?

"If in the courſe of a fever an abſceſs ſhould form in one axilla, and a week afterwards an abſceſs ſhould form in one groin; if the eruption of the ſmall-pox ſhould appear firſt in the face, and then be extended over the whole body; if a tubercle ſhould form in the liver, and a month afterwards a vomica ſhould burſt in the lungs; if a venereal ulcer ſhould form in the throat, and ſix weeks afterwards a node on the tibia; we ſhould ſcarcely in theſe (and there are many ſuch) caſes aſſert that the diſeaſe occupying the firſt ſeat was the cauſe of the diſeaſe occupying the ſecond.

"But, if one half of the body ſhould be paralyzed by the rupture of a blood-veſſel of the brain; if vomiting ſhould ſucceed to a blow on the head; if diſordered reſpiration ſhould ſucceed to the operation of a cauſe of preſſure on the brain; if atrophy ſhould ſucceed to diſeaſe of the meſenteric glands; if the ſecretion of a gland ſhould be ſuſpended during an inflammation of it; if convulſions ſhould ſucceed the irritation of a nerve; if paralyſis of the ſphincter of the bladder ſhould ſucceed to an injury of the ſpine, &c.—we have no heſitation in theſe caſes in affirming that the primary is the cauſe of the ſecondary affection, becauſe we know that the healthy ſtate of the properties engaged in the ſecondary, acknowledge the *regular dependent relation* with thoſe engaged in the primary ſeat of affection.

"Again, if vomiting ſhould ſucceed the formation (or introduction) of a calculus in the gall-duct, or to the paſſing of a calculus along the ureter; or if a pain in the ſhoulder ſhould ſucceed an inflammation ſet up in the liver; or if hernia humoralis ſhould ſucceed to an affection of the urethra, perhaps produced by an injection; or if tetanus ſhould follow a punctured or lacerated wound; or if pain in the breaſts ſhould ſucceed conception, &c.—we have in theſe caſes no heſitation in ſaying, that the ſecondary is *produced* by the primary change.

"Theſe are examples of the claſſes of related diſeaſe. Diſeaſe of one part, or one ſtate of diſeaſe, might produce another; 1ſt, by diſturbing an habitual dependence; and, 2d, by the influence of an *occaſional* cauſe. The firſt is illuſtrated above; as if an injury of the brain ſhould paralyze nerves whoſe functions are dependent upon the brain, or as if reſpiration ſhould become laborious, or perhaps ceaſe, by the operation of any cauſe of preſſure upon the brain, &c. The ſecond is illuſtrated in thoſe other examples, in which a relation is exhibited under circumſtances of diſeaſe, which was not manifeſted as one of dependence for a natural office, during health.

"The affection of a dependent ſeat in conſequence of a diſordered ſtate of the ſeat from whence its functional properties are derived, is by no means a regular occurrence. We know that there might be a violent pain in the head, a throbbing of all its veſſels, as if the whole brain was violently diſordered, and yet the function of reſpiration, which depends upon the brain, may be but little or not at all interrupted; at the ſame time, a ſlight preſſure upon the brain ſhall impair or prevent theſe dependent functions. The reaſon is, that properties are not indifferently related with any cauſe of diſorder; but their relations are preciſe; as, properties of the brain animate the organs of reſpiration, theſe properties related with the agency of preſſure, not related with cauſes merely producing pain or even inflammation; the dependent function, impaired by the former, becauſe the former is related with the properties engaged in the dependence; not related with the latter, becauſe, although they produce a certain affection of the ſeat of the properties which animate the reſpiratory organs, they do not produce a change in the nature and relation of theſe properties, to expect which would be like expecting that paralyſis of nerves ſhould not occur from preſſure upon a part of the brain, becauſe it ſtill retains ſome properties of life.

"It has been ſtated that related diſeaſe happens in two ways, which may here be repeated: 1ſt, by diſturbing an habitual relation of the *regular dependent kind*; 2d, by a new relation which is opened between parts not before connected by intercourſe of function, in conſequence of a new condition which one of them has aſſumed: it has been ſtated (and examples given) that diſeaſe might occupy a ſucceſſion of ſeats without the exiſtence of any cauſative relation between them. It is neceſſary, before we proceed any further, to inquire after the method of diſtinguiſhing between diſeaſes which, though occurring in a ſeries, are independent of each other, and thoſe in which the ſubſequent is produced by the preceding diſeaſe.

"In making this diſtinction we are liable to frequent error: the only grounds of the diſtinction, however, are as follow. Mere ſucceſſion, as has before been inſiſted, can never prove cauſation: but it indicates cauſation, from the analogy of ſucceſſion to thoſe palpable inſtances of cauſation in which the dependence of the effect upon the aſſigned cauſe may be proved by the reſult of analyſis and of ſyntheſis; of taking away (or withholding), and of combining, the cauſes. Succeſſion then, upon this ground of analogy, which has been more fully explained, may *indicate* cauſation; and yet we do not ſuffer every inſtance of ſucceſſion to ſuggeſt ever ſo faintly an inference of cauſation.

"The ſucceſſion of an effect to its true cauſe is *invariable*: from analogy in this reſpect, we infer poſitively the operation of a cauſe in all inſtances of *invariable ſucceſſion*; thus, day and night *invariably* ſucceed the preſence or abſence of the ſun. But we preſume ſtill further upon this analogy; we infer the operation of a *cauſe*, when the ſucceſſion of the ſame conſequence to the ſame antecedent is *frequent*, but not *invariable*; thus, an ounce and a half

half of laudanum taken into the ſtomach will commonly, but not always, produce death; we have no heſitation in aſſigning the laudanum as the *cauſe* of death, in thoſe inſtances in which death takes place, notwithſtanding there are other inſtances where the obvious circumſtances are alike, in which it is not followed by death. *Invariable ſucceſſion* bears ſo ſtrong an analogy to cauſation, that we ſcarcely ſuſpect the poſſibility of our being deceived in an inference grounded upon it; and yet we do ſometimes make a falſe inference founded upon paſt invariable ſucceſſion, as is proved by additional, or ſubſequent, experience. *Frequent* ſucceſſion of like to like, bears an analogy to the *invariable*, and upon this analogy we found an inference of cauſation: the point of analogy is between the *frequent* and the *invariable*, conſequently the analogy muſt be eſtabliſhed or preſumed upon, in proportion to our experience of the frequency of the ſucceſſion of like conſequences to like antecedents. Theſe grounds of the inference of a cauſe, as is juſt ſtated, are imperfect, and muſt admit frequent error; for we cannot define what number of ſucceſſions of like conſequences to like antecedents, are an adequate number to prove cauſation. Hence then, although we infer cauſation from ſucceſſion, we are obliged to confeſs that we can do this only in certain caſes; before we can admit the truth of an inference of cauſation, we muſt have had an experience of a ſufficient frequency of a like ſucceſſion. Different men will hold different opinions with regard to what conſtitutes a *ſufficient frequency*; and the want of a poſſible definition in this matter admits a great diverſity of opinion upon important points, and gives room for the diſtinction of cloſe and looſe reaſoners. But, when once we have had experience of what is conſidered a ſufficient frequency of like ſucceſſion, we then infer ſome difference (where it is not perceptible) in caſes in which the ſame conſequences do not ſucceed the ſame antecedents. In ſuch inſtances, we balance an account between like and diſſimilar ſucceſſion; and we *aſſign a cauſe* only where the *frequency* of the ſame ſucceſſion (approaching to the *invariable*) exceeds that of the exceptions. Thus, (not to quit our ſubject,) if the exhibition of a particular medicine ſhould be followed by recovery from phthiſis pulmonalis in one inſtance, this ſucceſſion would, where men are diſpoſed to catch at ſtraws, indicate a poſſible cauſation; if the ſame event ſucceeded to its exhibition in ten inſtances, its credit would be better ſupported; if in a hundred, better ſtill. If it ſhould ſucceed in five and fail in five, we ſhould heſitate perhaps to aſſign it as the cauſe of recovery in the firſt five; if afterwards it ſhould fail in fifty caſes, we ſhould ſay that in the five in which it was followed by recovery the cure was owing to *other cauſes*. If it ſhould ſucceed in a hundred and fail in fifty, we ſhould then perhaps judge the hundred to amount to an adequate number to eſtabliſh the relation of the medicine, as a *cauſe* of recovery; while we ſhould explain its failure in the other fifty, by ſuppoſing ſome diverſity of circumſtances, by which its relation as a cauſe was modified, to have prevailed. The concluſion amounts to this: We infer that a ſecondary is produced by a primary diſeaſe, upon an experience of a frequent ſucceſſion of the one to the other, provided at the ſame time that our experience furniſhes us with no ſtronger analogies to ſenſible cauſation, by which we are rather juſtified in conſidering them diſtinct." Pring, ch. iv.

This ſucceſſion of diſeaſed actions in many diſeaſes produces a curative effect; and the contemplation of this fact is what has cauſed ſo many errors to be committed in practice in regard to the operation of *nature*. Seeing that the conſtitutional diſturbance produced a reſtoration of health in local diſeaſes, Hippocrates, and thouſands ſince his time, have been led to the adoption of that inert practice emphatically termed the "*Medicine expectante*." It has always been a popular doctrine, and it is one that carries a great deal of plauſibility in the face of it, that the main object and the ſum total of the powers of medicine, conſiſt in aiding the natural efforts of the conſtitution for the removal of diſeaſes. But this propoſition requires conſiderable qualification. If it be merely meant, that medicine can only operate through the medium of the powers or energies of the living body, and that, independently of theſe vital energies, medicine has no operation, the poſition is a *truiſm* which cannot be queſtioned. But, if it be meant that the ſole power and object of the medical art are limited to the furthering of all morbid excitement, and to the removal of obſtacles to the completion of the purpoſes of that excitement; i. e. to aſſiſting the efforts of nature, or guarding them from interruptions; the aſſertion appears to be altogether gratuitous, and nothing leſs than an abuſe of language. In the firſt place, it is founded on the aſſumption, that all diſeaſed action is ſalutary; which the effects of numerous diſeaſes directly contradict, and which has no better foundation than two other gratuitous aſſumptions, namely, the exiſtence of a morbid ferment in the blood, and of an *archeus*, or rational ſoul, governing all the operations of the animal economy. But, ſecondly, admitting the ſalutary tendency of diſeaſed actions, conſidered as the efforts of nature, by what ſigns are we to interpret her intentions, or to diſcover when ſhe requires aſſiſtance, and when reſtraint? On this point the greateſt practical errors are likely to be committed, and have, in fact, been conſtantly and extenſively committed, by thoſe humoral pathologiſts, who have preſumed upon their knowledge of the intentions of Nature.

Another popular and general opinion ariſing from the obſervance of this ſucceſſion of diſeaſed actions, and connected likewiſe with the humoral pathology, is the doctrine of *metaſtaſis*, or tranſpoſition. It is found, that, on the diſappearance of an eruption of the ſkin, inflammation of ſome of the viſcera often takes place; and again, that the cure of gout in the extremities ſometimes produces very formidable effects on the brain. Hence it was ſuppoſed, that there was an abſolute tranſlation of fluid to the part ſecondarily affected. On this ſubject, however, as we again find ſome matter of an important nature in Mr. Pring, we ſhall make another extract.

"That certain diſeaſes are related with each other in the way of cauſe and effect, is a remark which is contemporary with the earlieſt records of medical obſervation. It is alſo a piece of information *popular* with all claſſes, that the cure of one diſeaſe, whether ſpontaneous or by art, is ſometimes followed by the occurrence of another. Thus, it is common to expect a favourable change of ſome internal diſeaſe upon the occurrence of a cutaneous eruption; thus, alſo, it has fallen under the obſervation of the ignorant and unprofeſſional, that a cutaneous diſeaſe, cured by external applications, often produces viſceral diſeaſe. The language of the vulgar in the firſt of theſe caſes is, that the internal diſeaſe is *coming out*; in the ſecond, that the diſeaſe of the ſkin is *thrown in*, or ſettled upon the lungs for inſtance. To all phyſicians the claſs of facts here adverted to is well known; they have been made the ſubject of expreſs treatiſes, and have been remarked upon in every age, and explained according to the prevailing pathology of the times. But the profeſſors of medicine have of late been rather ſceptical with reſpect to the aſſigned agency of the phenomena in queſtion, though it is not improbable that their exception was taken rather againſt the doctrine of humours, &c. by which the phenomena were explained, than againſt the more modeſt inferences which they might be allowed to furniſh. To all phyſicians of the preſent day the claſs of facts, deſignated as thoſe of *related diſeaſe*, is well known: by ſome, theſe facts are not ſuffered to furniſh an inference of a relation, that is, they are conſidered independent of each other; others admit the relation, and explain it in the language of the vulgar; others ſay that one diſeaſe, inſtead of falling or being thrown upon another part, is *converted* into a diſeaſe

of another part: ſome phyſicians admitting the claſs of facts, and admitting alſo the inference of a relation, believe that the examples are very rare; others are inclined to think them *univerſal;* aye, and to allow them only one tendency, although they might tend to fifty, or five hundred, different effects. It will appear from this account that the exiſtence of related diſeaſe has been long known, that the knowledge of it has become popular, and conſequently there is no novelty in the ſtatement of the fact. If we would improve our knowledge with reſpect to ſuch diſeaſes, it muſt be, not by ignorantly generalizing a ſingle limited claſs, but by a juſt analyſis of its laws, by an inquiry into its nature, its frequency, and by an accurate diſcrimination of its inſtances. The firſt ſubdiviſion which we have propoſed of this claſs is that of related ſecondary diſeaſe, tending to cure the primary.

"Perhaps the moſt unequivocal examples of related ſecondary diſeaſe, tending to cure that which occurs in a primary ſeat, are thoſe of metaſtaſis. A perſon might have pneumonia clearly characterized by its ſymptoms: the ſymptoms of this local diſeaſe on a ſudden ſhall ceaſe, and the ſubject become immediately affected with phrenitis, which ſhall be followed by death within eight-and-forty hours. Theſe occurrences may be confirmed after death by diſſection (quod vidimus teſtamur). If we inquire into the cauſation in this example, there are thoſe to whom the whole proceſs is perfectly clear, who will reply, the inflammation left the lungs and went to the brain; was it then the *ſame inflammation?* and, if ſo, what was the object of its journey, or why did the inflammation take it into its head to travel? To analyze a little more curiouſly:

"Inflammation exiſts in the lungs: why does it ceaſe in the lungs? either from that progreſſive cauſation (which has been deſcribed) taking place in the lungs, or from a progreſſive cauſation taking place elſewhere, by which a relation is opened between the ſeat of ſuch progreſſive change and the properties engaged in the diſeaſe of the lungs, the end of which relation is, that diſeaſe is eſtabliſhed in a ſecondary, and ceaſes in the primary ſeat. The evidence in this caſe, derived from the order of ſucceſſion, is, that the diſeaſe in the lungs, being the antecedent, is alſo the cauſe of the diſeaſe in the brain which ſucceeds to it; in other words, the properties conſtituting inflammation of the lungs leave this ſeat, and are transferred to the brain. But, if the pneumonia is the antecedent to the phrenitis, what is the antecedent to the metaſtaſis? or why does a diſeaſe leave a ſeat in which it is eſtabliſhed? The alternatives which muſt form the anſwer to this queſtion are ſuggeſted above: either a change takes place in the properties of the lungs, by which they no longer admit the ſtate of inflammation, which is then aſſumed by ſome other viſcus, already in a prediſpoſed ſtate to take up inflammation upon the ceſſation of it in another ſeat; or elſe the brain (continuing our example) aſſumes a ſtate which is ſo related with the properties engaged in the inflammation of the lungs, as to produce a ceſſation of the inflammatory condition in this ſeat. From this view it is obvious, that the ſenſible ſucceſſion is inadequate to determine the cauſation; for the brain may be the firſt to aſſume a change, by which it cures the diſeaſe in the lungs; or the diſeaſe may ceaſe in the lungs, from cauſation proceeding in this ſeat, and be aſſumed by the brain, or any other ſeat which is prediſpoſed to this reſult, under the relations which obtain upon the ceſſation of a diſeaſe in a ſeat which it had hitherto occupied.

"The alternatives here ſuggeſted muſt obtain in every caſe in which the primary ceaſes upon the occurrence of the ſecondary diſeaſe, but they do not neceſſarily obtain in all caſes of related diſeaſe: thus we ſay dentition diſorders the bowels; this is a caſe of ſimple ſucceſſion, which, by analogies before explained, we infer to be alſo one of cauſation. If, upon the occurrence of diſorder of the bowels, the proceſs of dentition were ſuſpended, we ſhould then have to determine whether the change preparatory to the metaſtaſis took place in the bowels or in the maxillary nerves. The progreſs of conſumption might be ſuſpended upon the occurrence of pregnancy; here conſumption, as a related ſtate, preceded pregnancy, yet we know, as the cauſe in this inſtance is palpable, that the ſeat of that change which produced the mataſtaſis was the uterus, or ſecondary related ſeat. Thus alſo the catamenia may be checked by an expoſure to cold, which will produce rheumatiſm; the change preparatory to, or cauſative of, the metaſtaſis, is here alſo in the ſecondary ſeat. From theſe and many ſimilar examples, we may perhaps conclude very generally, that the primary diſeaſe in metaſtaſis does not produce the ſecondary, but that the metaſtaſis itſelf is determined by a change which takes place in the ſecondary ſeat.

"Related diſeaſe, according to our reduced diviſion, is of two kinds: 1ſt, as when a primary diſeaſe ceaſes upon the occurrence of a ſecondary; and, 2d, as when a ſecondary merely ſucceeds to a primary diſeaſe. The former inſtances have been expreſſed by the word *metaſtaſis*, which implies that the diſeaſe leaves one ſeat and goes to another: this, however, is a conjecture without proof, for an *inflammation* of the eye may be cured by a ſpontaneous diarrhœa; if the identical properties of the primary diſeaſe went to the ſeat of the ſecondary, theſe properties, being thoſe of inflammation, ſhould produce inflammation of the bowels rather than a diarrhœa, which rarely occurs in inflammation of the bowels. If the identical diſeaſe of a primary is in metaſtaſis tranſferred to a ſecondary ſeat, as *the character of the ſecondary is commonly very different from that of the primary diſeaſe*, it is neceſſary to infer that the identical nature of the primary diſeaſe is liable to be modified by peculiarities which belong to the ſecondary ſeat.

"This firſt claſs of related diſeaſe, then, viz. that in which a primary ceaſes upon the occurrence of a ſecondary diſeaſe, may be called *ſubſtitution* of diſeaſe; which merely expreſſes the fact that one diſeaſe has taken place, while another has ceaſed: the word 'vicarious,' which is familiar in medicine, expreſſes the ſame thing. The ſecond claſs of related diſeaſe, viz. that in which the primary does not ceaſe upon the occurrence of the ſecondary, may be called related extenſion of diſeaſe (the cauſative relation being in both caſes aſſumed upon the grounds before ſtated).

"The examples of ſubſtituted diſeaſe are very numerous; and it is upon this experience of their frequency that the relation of cauſe and effect in ſome or other of its modes comes to be inferred to ſubſiſt very generally between them. We cannot, however, upon this point compel belief. Although the examples of ſubſtituted diſeaſe are very numerous, they are not ſufficiently regular to admit a claſſification of thoſe primary diſeaſes which are likely to be cured (to beg an expreſſion) by the occurrence of ſecondary ones. We can rarely, (owing to this irregularity) perhaps we can in no caſe, *anticipate* the cure of a primary diſeaſe by a ſecondary one; that is, we cannot pronounce that a certain ſecondary diſeaſe will ſucceed to the primary, and that the latter will then ceaſe. We more frequently expect the *ceſſation* of a primary diſeaſe, when the ſymptoms of a ſecondary one, of the tendency of which we have had experience, do actually appear, than we anticipate a ſubſtitution of diſeaſe, while the exiſting ſymptoms occupy excluſively the primary ſeat. There is, however, an exception to this remark, when the ſame ſecondary has been ſubſtituted for the ſame primary diſeaſe, in one or more inſtances." Pring, ch. v.

Diſmiſſing the conſideration of theſe abſtruſe and obſcure ſubjects, we next proceed to conſider the *ſymptoms* of diſeaſes; a ſubject of the firſt moment, and one which deſerves the moſt unremitting obſervation; for, though the *cauſe* of the diſeaſe may be obſcure, and though its laws

laws may be inſcrutable, painful ſenſations and diſordered functions are but too apparent. The great difficulty, therefore, which attends the ſtudy of ſymptomatology, is not to perceive ſymptoms, but their congeries or catenations; and to obſerve what are really the primary ſymptoms, and what are *ſympathetic*, or ſecondary: for it is on theſe obſervations that the diſtinguiſhing of one diſeaſe from another depends. It was in this branch of pathology, in the *diagnoſis*, that Hippocrates and Sydenham arrived at ſo great a degree of perfection. Indeed, in the writings of the former phyſician, we find ſo excellent a ſyſtem of diagnoſis, that we may even now turn to the ſtudy of it with great advantage. We have enumerated ſome of the leading rules of Hippocrates's ſymptomatology; rules which enabled him to diſcriminate diſeaſes with great exactneſs, ignorant as he was of the knowledge of phyſiology, ignorant even of all that regarded the *pulſe* except its moſt violent actions. Of late, a return to theſe rules has been inculcated by one of the firſt practical phyſicians of the age we live in, Dr. Marſhall Hall: he has ſhown, that, though we had ſo far deviated from the rules of Hippocrates as no longer to mention them, yet that all ſcientific phyſicians had made the minuteſt obſervations on the phenomena of diſeaſe in their own minds, and had even fixed the identity of many complaints from the conviction theſe minute circumſtances produced, without however attempting to analyze the appearances on which this conviction reſted. To ſupply this analyſis has been the object of Dr. Hall; and it muſt be confeſſed he has done it in the completeſt manner. To explain his meaning more clearly, we ſhall quote a few lines from him. He obſerves that there is in practical medicine a circumſtance of the firſt importance, the *recognition of a diſeaſe*. The general appearance of a patient, the peculiar modification, the particular combination, and mutual influence, of the ſymptoms, give a *general* character to the whole diſeaſe, which is recognized and felt by the phyſician of experience and obſervation. "Every practitioner of medicine is continually engaged in the buſineſs of diagnoſis as the very groundwork of his profeſſional duties; and I fear the ſoundeſt and moſt enlightened are in the daily habit of acting upon views that they would be at a loſs to deſcribe, and have not time to analyze." This paſſage is quoted from the letter of a phyſician at once learned and experienced. It alludes diſtinctly to that general ſource of diagnoſis conſtituted by the combination of all the circumſtances of a diſeaſe. Dr. Hall adds, that he has had repeated opportunity of obſerving an eminent phyſician, on approaching a patient, and that even during ſleep, expreſs his ſentiment reſpecting the nature of the affection and condition of the patient; the juſtice of which time and the event have verified. This circumſtance firſt convinced him that there was ſomething in the *general* aſpect and appearance of diſeaſes, on which the experienced phyſician founds a diagnoſis, and which it would be of the greateſt utility to analyze and deſcribe.

Diagnoſis, or the ſtudy of ſymptoms, is founded on the obſervance of various phenomena; the *external appearance*, the *ſenſations*, and the *impaired functions*, of the patient; not to ſpeak of the more remote circumſtances, which ſhould never be forgotten as the probable cauſe of the diſeaſe; the liability to certain diſeaſes from age, ſex, temperament, &c. the effect of medicines, &c. With regard, then, to the *appearances* of the patient, the firſt and moſt obvious is the countenance; the countenance is principally compoſed and derives its expreſſion from the action of the muſcles; as the muſcles are capable of rapid contractions, are numerouſly ſupplied with nerves, are the agents which particularly manifeſt the ſtate of the mind, it is evidently a part in which morbid changes, either in the circulatory, muſcular, or nervous, ſyſtem, will become apparent: hence it indicates many important circumſtances to the eye of the practitioner. Dr. Hall obſerves that the following particulars are to be noticed with regard to the face. 1. The colour, general or partial. 2. Tumidity or ſhrinking; general or partial. 3. Fulneſs or emaciation. 4. Action or inaction of the muſcles; general or partial, continued or occaſional, irregular or ſpaſmodic. 5. The circulation. 6. Dryneſs or moiſture; general or partial. 7. The temperature. 8. Particular features. 9. General expreſſion.

The acute author juſtly directs our attention, however, to the previous ſtudy of the natural ſtate of the countenance under various circumſtances. He has directed us to conſider the delicate and tumid ſtate of complexion in the *infant*, the ſmallneſs of its features, the abundance of cellular tiſſue, the ſmall development of the facial muſcles, their unmarked degree of expreſſion, the larger and fuller ſize of the eyes, the ſmallneſs of the features generally. In *youth*, he ſhows that their ſtates become gradually changed, and approach more nearly to the appearance of the adult countenance. He ſays, however, that it is the nature and force of the circulation, and the condition of the cellular membrane, which impart the character to the countenance of youth. The circulation is ſtrong and arterial; the cellular membrane injected, firm, and elaſtic. It is at this period and under theſe circumſtances, that the tumidity and ſhrinking, obſerved in the different forms and ſtages of fever, and the changes from fulneſs to emaciation, in certain organic diſeaſes, are moſt remarkable. The *adult* countenance is remarked to have a greater development of the muſcular ſyſtem, and the various expreſſions of pain, anxiety, &c. are extremely well defined. The diſorder of the circulatory ſyſtem, as indicated by redneſs, lividity, or pallor, is likewiſe well defined. In *old age*, on the contrary, the leanneſs, the flaccidity of the face, the want of colour, &c. are to be noticed. *Sex* further influences the countenance. In the female, the muſcular ſyſtem is leſs developed, the cellular more ſo. In the ſtates of conception, of the firſt month of pregnancy, during the flow of the catamenia, a peculiar tumidity and enlargement of the features is obſervable. In advanced pregnancy, on the other hand, we often ſee thinneſs, anxiety, and uneaſineſs, viſible in different degrees in the female viſage.

The *temperament* falls next under conſideration, as its principal characteriſtics are manifeſted in the face. *Mental emotion*, too, ſhould not be forgotten. Its influence is ſometimes exerted on the muſcular ſyſtem, ſometimes on the circulation, and ſometimes on particular features. Seriouſneſs, gaiety, moroſeneſs, are characterized by their particular effects on the countenance, produced principally by means of the muſcular ſyſtem. Continued and deep thought cauſes this ſyſtem to be affected with an unuſual degree of contraction. Expectation and ſurpriſe induce a relaxation of the muſcles. Anger, ſhame, fear, affect the circulation principally; the firſt moves the blood upwards, and ſuffuſes the forehead; ſhame diffuſes a bluſh over the cheeks; fear renders the countenance pale and ſhrunk, and induces dryneſs of the tongue. Joy and grief equally occaſion a flow of tears. Enthuſiaſm animates the countenance as it does the breaſt; deſpondency depreſſes the expreſſion, as it makes the heart beat more feebly. External cauſes often influence the countenance in a manner that it is neceſſary to be appriſed of, in order to prevent an erroneous diagnoſis. The immediate effect of bodily exertion and of external heat is to ſuffuſe the countenance; expoſure to cold contracts the features, and frequently induces an appearance of lividity. Repletion of the ſtomach occaſions an appearance of heavineſs and of propenſity to ſleep, with a degree of ſuffuſion over the face. Want induces an oppoſite effect, an appearence of mental and bodily depreſſion. Wine ſuffuſes the eyes and face, and, according to its quantity, enlivens or obliterates the expreſſion.

The next part which falls under our contemplation in diagnoſis

diagnoſis is the GENERAL SURFACE, in which the following circumſtances are to be attended to; viz. 1. The ſurface in general; as to colour, tumidity, or ſhrinking of the integuments; œdema or anaſarca, corpulency or emaciation, roughneſs or ſmoothneſs of the ſkin, dryneſs or moiſture of the ſkin, and temperature. 2. The hands and feet in particular. 3. The elementary cutaneous affections.

And here again the circumſtances of age, ſex, and temperament, are to be noticed with the ſame minuteneſs as in regard to the face. That part of the cutaneous expanſion which envelopes the *tongue* has always been noticed as an important indication of the exiſtence of diſeaſe. It ſhould be viewed with regard to, 1. Its moiſture or dryneſs, whether general or partial. 2. Its being with or without fur, clean or loaded, ſwollen or indented. 3. The enlargement or diſappearance of its papillæ. 4. Its colour. 5. How protruded. 6. The internal mouth in general, and the taſte and breath, ſhould likewiſe be examined.

The *attitude* in diſeaſe is next to be conſidered. This ſubject compriſes a view of, 1. The poſition. 2. Changes of poſition. 3. The caution obſerved in moving; or the oppoſite ſtate of writhing, or of jactitation. 4. The ſtate or effects of muſcular action; and the ſtate of muſcular power or debility.

The healthy poſture of infants during ſleep is various. The young infant uſually lies on its back, often with its hands and arms raiſed above its head, or laid upon its cheſt, or ſpread open, and with its lower extremities drawn upwards. When it is laid on its ſide, the upper and lower limbs are ſtill placed in a ſtate of complete flexion and relaxation. The poſture uſually remains unchanged, unleſs the infant be diſturbed by external objects of ſenſe, internal emotions, or diſeaſe.

In the healthy and undiſturbed ſleep of adult perſons, the uſual poſture is that on one ſide, the body being frequently inclined rather to the prone than to the ſupine poſition. The head and ſhoulders are generally ſomewhat raiſed, and, together with the thorax, bent gently forwards. The thighs and legs are in a ſtate of eaſy flexion. The poſition is apt to be changed from time to time, the perſon lying on one or other ſide alternately.

The attitude, motions, and manner, are conſiderably influenced by the temperament, the degree of bodily ſtrength, by the ſtate of the mental operations, and by the paſſions. In a ſtate of great debility, whether from age or diſeaſe, the body uniformly falls into the ſupine poſition; and the recovery of the uſual poſition of the ſide is always a ſign of returning ſtrength.

Theſe, then, are the morbid appearances which are to be regarded in ſymptomatology. As to the ſecond head of morbid ſymptoms, uneaſy or painful ſenſations, they are the moſt frequent concomitants and ſigns of all diſeaſes. Few diſeaſes are free at leaſt from uneaſineſs: for, as there is a degree of pleaſurable feeling belonging to the healthful action of all the organs of the body; ſo, when theſe are interrupted and diſturbed, the ſick man ſuffers pain, anxiety, and various diſagreeable ſenſations. Beſides the various modifications of pain which we deſcribe by comparing them with the ſenſations produced by different cauſes, ſuch as a burning, ſtinging, ſtabbing, gnawing, pain; a ſhooting, throbbing, binding, pain, and ſo forth; itching, tingling, a ſenſe of laſſitude, of torpor, or numbneſs, of ſtupor, of heat, of cold, of weight, naufea, giddineſs, faintneſs, ringing in the ears, and a multitude of uneaſy feelings, indicate the varieties of diſeaſe. Sometimes the ſeverity of theſe feelings conſtitutes the principal part of the diſeaſe; and they agitate and diſtreſs or terrify the patient ſo much, that they become more dreadful than even the apprehenſion of death; indeed, in many caſes, theſe painful ſenſations are by no means deſtitute of danger, from whatever cauſe they originate, as they may wear out the powers of life by their inceſſant irritation.

The third means of diagnoſis is the conſideration of impeded or deranged functions. This is a ſubject of the greateſt uſe in practical medicine; for, as the knowledge of healthy function is the grand deſideratum in all our inveſtigations of the animal frame, ſo a knowledge of their derangements may be conſidered the principal part of the ſtudy of diſeaſe. Theſe derangements often conſtitute individual diſeaſe; often, on the other hand, they are indicative of general or remote diſeaſe. It is for the latter purpoſe that we now conſider them; and it need hardly be remarked that the two previous methods of diagnoſis which we have conſidered, are, in a great meaſure, ſubſervient to this. In regard to derangement of the *digeſtive function*, independently of the examination of the tongue, breath, &c. before enumerated, we have to conſider, firſtly, the function of the pharynx and œſophagus, as it affects deglutition. Secondly, Of the ſtomach; and herein of the appetite, thirſt, hiccup, eructation, naufea, vomiting, and the matters rejected. Thirdly, Of the bowels; as conſtipation, diarrhœa, teneſmus, involuntary ſtools, flatulency, borborigma, diſtention; the ſtate of the fæces; diſcharges of mucus, blood, or pus.

The function of *reſpiration* is next in order; and this ſubject compriſes a view of, 1. The mode of reſpiration. 2. The effect of a full inſpiration. 3. The kinds of cough and of expectoration. 4. Sneezing, gaping, &c. 5. The ſtate of the voice. 6. The phenomena manifeſted by the ſtethoſcope, and the pulſation of the heart.

In the *circulatory ſyſtem*, the moſt important diagnoſtic appearances are to be noticed with peculiar care. That alternate dilatation and contraction of the arteries, which is called the *pulſe*, is the chief mean by which we are guided in aſcertaining the nature of acute diſeaſes. The following diviſions of this phenomena have been made. The *ſlow* pulſe, the *quick* pulſe, the *ſoft* pulſe, the *hard* pulſe, the *intermitting* pulſe, and the *full* pulſe. Many other varieties have been enumerated by different authors, by Galen, Bordeu, Nihel, Bellini, and Maſſaria; but they are entirely fanciful.

Before we proceed to deſcribe the varieties of the pulſe, it will be neceſſary to ſpeak of the many diſcrepancies it exhibits in health. Theſe anomalies had not eſcaped the penetrating eye of Celſus. He aptly obſerves, "Venis enim maxime credimus, fallaciſſimæ rei; quia ſæpe iſtæ leniores celerioreſve ſunt, et ætate, et ſexu, et corporum natura: ſæpe eas concitat et reſolvit ſol, et balneum, et exercitatio, et metus, et ira, et quilibet alius animi affectus: adeo ut, cum primum medicus venit, ſolicitudo, ægri dubitantis, quomodo illi ſe habere videatur, eas moveat. Ob quam cauſam, periti medici eſt, non protinus ut venit, apprehendere manu brachium; ſed primum reſidere hilari vultu, percontarique, quemadmodum ſe habeat: et ſi quis ejus metus eſt, eum probabili ſermone lenire; tum deinde ejus corpori manum admovere. Quas venas autem conſpectus medici movet, quam facile mille res turbant!" Lib. iii. cap. 6. In our own time, Dr. Falconer has paid much attention to theſe circumſtances; and has ſhown that, before we can derive any information from the pulſe, it will be neceſſary to obſerve the varieties which exiſt in its natural ſtandard, and alſo the changes to which it is ſubjected by common cauſes. The ſtandard natural pulſe has been variouſly eſtimated: perhaps the exacteſt computation is that which reckons 73 beats in the ſpace of a minute. The pulſe is generally, however, quicker than this in women, in perſons of ſanguineous temperament, and in young children. The increaſe of pulſe in women appeared to be in the ratio of one ſeventh more than in man. As to children, according to Dr. Heberden, "the pulſe of a healthy infant aſleep on the day of its birth is between 130 and 140 in one minute: and the mean rate for the firſt month is 120; for during this time the artery often beats as frequently as it does the firſt day, and I have never found it beat ſlower than 108. During the

firſt

firſt year, the limits may be fixed at 108 and 120. For the ſecond year at 90 and 100. For the third year at 80 and 108. The ſame will very nearly ſerve for the fourth, fifth, and ſixth, years. In the ſeventh year, the pulſations will be ſometimes ſo few as 72, though generally more." From the twelfth year, then, except that the pulſations are much more eaſily quickened by illneſs or any other cauſe, they differ but little from thoſe of a healthy adult, the range of which Dr. Heberden ſtates to be from a little below 60 to a little above 80 in a minute. From an average of five-and-twenty boys, obſerved by Floyer, between the ages of twelve and ſixteen, the pulſe was about 83; in all of them above 80. With regard to the diminution of pulſe which has been ſaid to be obſervable in the decline of life, Dr. Falconer is diſpoſed to believe, though not very confident in his opinion, "that the pulſe in a healthy perſon becomes gradually ſlower from about forty-five years of age to about ſixty, after which period it begins again to grow quicker, and to become, as ſeveral other circumſtances in the ſyſtem do alſo, more reſembling that of children. But to this," he adds, "there are undoubtedly many exceptions."

It has been generally ſuppoſed that ſtature had a great influence on the pulſe; and Senac, from obſervations made on a hundred men in the royal guards, deduced the following eſtimate of pulſes in proportion to ſtature: namely, at two feet, pulſe 90; at four feet, pulſe 80; at five feet, pulſe 70; and at ſix feet, pulſe 60. Dr. Bryan Robinſon has likewiſe made a computation, but it differs from Senac's; and, upon the whole, this point does not ſeem to be ſatisfactorily aſcertained. Haller eſpecially mentions, in oppoſition to this opinion, that the Swiſs people, who are generally tall, have quick pulſes; and further inſtances the fact, that he was himſelf ſix feet high, and that his own pulſe beat 78 in a minute.

The pulſe is moreover influenced by the time of day. In the morning the pulſe is generally ſloweſt, and becomes accelerated towards evening. This is moſt remarkable in perſons in whom a high degree of nervous ſenſibility is apparent. The principal cauſes which accelerate the pulſe are food, exertion of every kind, (even ſpeaking or ſtanding,) warmth, the paſſions of hope, joy, and anger; and ſometimes, the reaction which ſupervenes to ſudden ſhocks and impreſſions on the nervous ſyſtem. On the other hand, the pulſe is depreſſed by abſtinence, ſleep, fear, anxiety, and grief; and by certain degrees of cold. But the operation of all theſe cauſes is ſubject to great variation, and is often counteracted by the influence of oppoſite agents.

In feeling the pulſe, the degree of *quickneſs* is of courſe eaſily determined by a ſtop-watch; the degree of *force* is eſtimated by the reſiſtance which the artery oppoſes when compreſſed by the finger. In order to aſcertain this reſiſtance, the pulſe ſhould be ſtrongly compreſſed by three of the fingers until no pulſation is experienced; after which, by gradually relaxing the fingers, we ſhall aſcertain its proportion with a tolerable accuracy. It is to be remarked, however, that the obeſity of certain perſons alters this circumſtance; for not only is it more difficult to feel the degree of reſiſtance of the veſſel when covered with a thick layer of fat, but fat perſons have likewiſe ſlower pulſes than lean ones. Another diſtinction of the pulſe is taken from its *hardneſs*: this term is uſed to imply a peculiar ſudden vibration, like the ſenſation communicated by the tenſe cord or wire of a muſical inſtrument. "Some books," Dr. Heberden remarks, "ſpeak of *intermitting* pulſes as dangerous ſigns, but I think without reaſon; for ſuch trivial cauſes will occaſion them, that they are not worth regarding in any illneſs, unleſs joined with other bad ſigns of more moment. They are not uncommon in health, and are perceived by a peculiar feel at the heart by the perſons themſelves every time the pulſe intermits." We have generally conſidered theſe intermitting pulſes as of dyſpeptic origin, and have ſeen them removed, in fevers, by a purge. Where the pulſe intermits, and is very unequal in its beats, and there is at the ſame time palpitation of the heart, oppreſſion of the breathing, lividity of countenance, or other ſerious ſymptoms, then the intermiſſion is probably one among the ſigns of ſome affection of the heart; but in ordinary caſes, occurring with ſymptoms of indigeſtion, or ſlight feveriſhneſs, it is perfectly void of danger. It is curious, indeed, that irregularities of the pulſe are ſometimes habitual, and diſappear only with good health. Dr. Heberden ſays, "many perſons will likewiſe have unequal pulſes without any other ſign of ill health. I have met with two, who, in their beſt health, always had pulſes very unequal, both in their ſtrength and the ſpaces between them; and, upon their growing ill, their pulſes conſtantly became regular; and it was a never-failing ſign of their recovery, when their arteries began again to beat in their uſual irregular manner." The writer of this article can add to theſe, an inſtance of an old lady of his acquaintance in whom the ſame appearances as recorded by Dr. Heberden are very ſtrikingly marked.

The propriety of theſe diviſions was formerly much queſtioned, as implying an unneceſſary and frivolous degree of minuteneſs; but it ſeems ſcarcely worth while to make any remark on this ſubject, as their neceſſity is now generally admitted, and is eaſily proved by the grand criterion of medical theory—its practice. It muſt be admitted, however, after all, that the pulſe, as Celſus ſays, is "fallaciſſima res;" and it is only by regarding it in conjunction with the other modes of diagnoſis that we are enabled to make practical uſe of its various phenomena.

The circulating ſyſtem preſents further points of conſideration in regard to morbid changes in the blood. Theſe alterations are little underſtood. It is probable that many exiſt of great importance, which are nevertheleſs not cognizable to our ſenſes. The moſt obvious change in the blood is that which conſtitutes what is called *fizy* or *inflammatory blood*. It takes the former name from a tough buff-coloured coat which forms on its ſurface after coagulation, and which, according to Hewſon, conſiſts of albumen and a portion of fibrine; and the latter, from its being peculiar for the moſt part to inflammatory diſeaſes. Changes of leſs magnitude have been obſerved in various other diſeaſes; as a peculiar blackneſs in the blood of ſcorbutic patients, the want of red colour in, and the dilute quality of, the blood in ſome ſtages of dropſical and chlorotic affection, &c. But we forbear to enter into any further notice of this ſubject at preſent. The reader may conſult, for more particular information on this head, the works of Hewſon, Fourcroy, and Thackrah.

The ſtate of the *excernent ſyſtem* is principally examined by analyſis of the excreted ſubſtances; as of the urine, ſweat, uterine diſcharge, &c. but in many inſtances the inveſtigation of theſe ſubſtances is very obſcure.

The laſt ſyſtem which remains to be noticed as affording certain information in reſpect to diagnoſis, is the *nervous*. The operation of the five ſenſes, the elevated or depreſſed ſtate of the ſpirits, the ratiocinative and imaginative functions, afford notice of the degree of danger of ſome maladies in a moſt certain manner; and hence deſerve to be ſtudied with diligence and attention.

We now proceed to ſpeak of THERAPEUTICS, that branch of medicine to which all the other branches ſtand in relation only as auxiliaries; auxiliaries, it muſt be confeſſed however, the attainment of which is abſolutely neceſſary ere we can practiſe this branch in a philoſophic manner. Unfortunately this truth has till lately been unknown. The long, the tedious, and (to untutored minds) the unintereſting, path of anatomical reſearch, of obſervation, of experiment, and of cautious deduction, ſuits not the taſte of mankind in general. Hence they have attempted to cure their infirmities by ſhorter and pleaſanter methods; and hence, even now, the wonder-working ſpecific claims unmerited attention; and the therapeutical

therapeutical branch of medicine is purged of fewer of its ancient errors than any other of the pathological ſciences.

The removal of diſeaſe may be effected by various agents. The firſt, the moſt obvious, and indeed the only ones of which the modus operandi is clearly underſtood, are thoſe which act according to the common laws of matter. Theſe agents are few in number: they conſiſt of the ſurgical operations; of thoſe ſubſtances which operate chemically, as ſolvents of ſtones in the bladder, clyſters diſſolving ſcybala, &c. The ſecond are thoſe which act on the various parts of the animal ſyſtem by means of relation with the vital properties. But, as theſe properties are little underſtood, it is very evident that we cannot trace with any accuracy their relation with medicinal ſubſtances. Hence much of the therapeutical branch of medicine reſts on inferences of a very looſe and uncertain character. The action of moſt of the articles of the *materia* may be ſuppoſed to affect principally the contractility of fibres or of veſſels. Thoſe which increaſe the action of that power are called *ſtimulants*; thoſe which diminiſh it, *ſedatives*; and medicines producing viſible effects on the ſenſibility of the nervous ſyſtem are called *narcotics*.

The difficulty now to be overcome is to claſs the numerous ſubſtances of the *materia medica* under each of theſe heads; a difficulty at preſent inſurmountable; for not only we do not know but the impaired ſtate of ſenſibility may ariſe from altered action of the contractile forces, or that thoſe forces may not be influenced originally by the altered ſenſibility; but, further, we require a long ſeries of experiments to be inſtituted ere we can admit into our claſſification one half of the drugs contained in our Pharmacopœia. For this reaſon, deeming it more conſonant with true philoſophy to confeſs our ignorance than to perpetuate erroneous doctrines, it is our intention, when we come to that part of our article which more particularly relates to medicines and their doſes, to adopt the ſimple order of the alphabet. And indeed, the pompous arrangements of the materia medica into claſſes and orders, with other ſubdiviſions, are now derided by the faculty. Some medicines poſſeſs very different powers, ſo that their proper places are not eaſily aſcertained. They muſt therefore be repeated under different heads; and it is evident how many repetitions ſuch arrangements muſt occaſion; ſince, when an article is properly placed, an increaſed doſe of the ſame would often carry it into another diviſion, and the ſame drug will have a different effect in different caſes or ſtates of diſeaſe. At p. 44, we have given the outline of Darwin's arrangement, which is the moſt conciſe; but it does not ſatisfy our minds. Kirby's Tables contain 18 claſſes, each, of courſe, divided into at leaſt three ſections, to include animal, vegetable, and foſſile, ſubſtances; and Dr. Cullen has 23 claſſes, which are theſe:

Aſtringents.	Diluents.	Sialogogues.
Tonics.	Attenuants.	Expectorants.
Emollients.	Inſpiſſants.	Emetics.
Corroſives.	Demulcents.	Cathartics.
Stimulants.	Antacids.	Diuretics.
Narcotics.	Antalkalines.	Diaphoretics.
Refrigerants.	Antiſeptics.	Menagogues.
Antiſpaſmodics.	Errhines.	

Of thoſe who have copied Dr. Cullen's arrangement with ſome modification, there is perhaps none that deſerves more attention than the anonymous author of the "Theſaurus Medicaminum," and a "Practical Synopſis of the Materia Alimentaria and Materia Medica." This author diſtributes the articles of the materia medica into 12 claſſes. 1. Evacuants, compriſing errhines, ſialagogues, expectorants, emetics, cathartics, diuretics, diaphoretics, emmenagogues. 2. Emollients, compriſing diluents and emulcents. 3. Abſorbents. 4. Refrigerants. 5. Antiſeptics. 6. Aſtringents. 7. Tonics. 8. Stimulants. 9. Antiſpaſmodics. 10. Narcotics. 11. Anthelmintics; and 12. Heteroclites; this laſt being formed to include thoſe articles that could not properly be reduced under the former heads.

Mr. Murray's arrangement, which is very ingenious, is founded principally on the doctrine of *univerſal ſtimulus*, and he thus explains the principles on which it is eſtabliſhed. "Thoſe ſtimulants, which exert a general action on the ſyſtem, may firſt be conſidered. Of theſe there are two well-marked ſubdiviſions, the diffuſible and the permanent; the former correſponding to the uſual claſſes of narcotics and antiſpaſmodics; the latter, including likewiſe two claſſes, tonics and aſtringents. In theſe there is a gradual tranſition paſſing into the one from the other, from the moſt diffuſible and leaſt durable ſtimulus, to the moſt ſlow and permanent in its action. The next general diviſion is that compriſing local ſtimulants; ſuch are the claſſes of emetics, cathartics, expectorants, ſialagogues, errhines, and epiſpaſtics. Theſe all occaſion evacuation of one kind or other; and their effects are in general to be aſcribed, not to any operation exerted on the whole ſyſtem, but to changes of action induced in particular parts. After theſe, thoſe few medicines may be conſidered whoſe action is merely mechanical or chemical. To the former belong diluents, demulcents, and emollients. Anthelmintics may perhaps be referred with propriety to the ſame diviſion. To the latter, or thoſe which act chemically, belong antacids or abſorbents, lithontriptics, eſcharotics, and perhaps refrigerants. Under theſe claſſes may be comprehended all thoſe ſubſtances capable of producing ſalutary changes in the human ſyſtem. Several claſſes are indeed excluded which have ſometimes been admitted; but theſe have been rejected, either as not being ſufficiently preciſe or comprehenſive, or as being eſtabliſhed only on erroneous theory." Murray's Elements.

Mr. Murray's arrangement will beſt be underſtood from his own Table.

A. General Stimulants.		
	a. Diffuſible.	Narcotics.
		Antiſpaſmodics.
	b. Permanent.	Tonics.
		Aſtringents.
B. Local Stimulants.		Emetics.
		Cathartics.
		Emmenagogues.
		Diuretics.
		Diaphoretics.
		Expectorants.
		Sialagogues.
		Errhines.
		Epiſpaſtics.
C. Chemical Remedies.		Refrigerants.
		Antacids.
		Lithontriptics.
		Eſcharotics.
D. Mechanical Remedies.		Anthelmintics.
		Demulcents.
		Diluents.
		Emollients.

Dr. Parr alters the arrangement of Dr. Cullen's claſſes, and increaſes them to 26, as below:

Emetics.	Refrigerants.	Antalkalines.
Cathartics.	Antiſpaſmodics.	Antiſeptics.
Diaphoretics.	Tonics.	Emollients.
Diuretics.	Sedatives.	Corroſives.
Expectorants.	Attenuants.	Aſtringents.
Errhines.	Inſpiſſants.	Antidotes.
Sialagogues.	Alterants.	Lithontriptics.
Emmenagogues.	Demulcents.	Anthelmintics.
Stimulants.	Antacids.	

Whilſt Dr. Cullen's claſſification has been thought too diffuſe, and Dr. Darwin's much too contracted, and adapted merely to his own exceptionable ſyſtem of noſology, Dr. Kirby, in his ſmall tract, entitled "Tables of the Materia Medica," has inſerted ſeventeen claſſes, which are, upon the whole, judiciouſly ſelected; and his arrangement has been adopted by moſt of thoſe modern writers who are of opinion that the materia medica are ſo numerous as to require a *methodus*. The claſſification is as follows; and, as hinted before, every claſs is ſubdivided, as far as poſſible, into an animal, a vegetable, and a mineral, ſection.

Claſs I. EMETICS.—Emetics are ſuch medicines as are calculated to excite vomiting, and thus diſcharge the contents of the ſtomach.

II. EXPECTORANTS.—Thoſe medicines are called expectorants, that are employed to promote the excretion of pus or mucus from the windpipe and lungs. In general they are emetics given in ſmaller doſes, though there are ſeveral medicines, eſpecially ſome of the gum-reſins, that are conſidered to act in this way, without any tendency to excite vomiting.

III. DIAPHORETICS.—Diaphoretics are thoſe remedies that are intended to promote, keep up, or reſtore, the excretion of perſpirable matter from the ſkin; and of theſe ſome act but feebly, and only increaſe the inſenſible perſpiration, while others act more powerfully, and, under favourable circumſtances, excite ſweating.

IV. DIURETICS.—Theſe are ſuch medicines as promote or increaſe the excretion of urine.

V. CATHARTICS.—Cathartics are thoſe medicines which promote or increaſe the evacuation of excrementitious matter, or of ſerous fluids, from the bowels.

VI. EMMENAGOGUES.—Medicines which are ſuppoſed to act on the womb, and to promote the diſcharge of the menſtrual flux; but it is more than doubted if any drugs whatever have that peculiar action.

VII. ERRHINES.—Thoſe medicines are termed errhines that are employed to promote an increaſed diſcharge of mucus from the noſtrils.

VIII. SIALAGOGUES.—Theſe are employed either to promote an increaſed flow of ſaliva, or to produce ſuch an action on the gums as ſhall indicate their having been received in ſufficient quantity into the circulation. Under the former diviſion are ranked ſeveral vegetable ſubſtances; under the latter are included only mercury and its preparations.

IX. EMOLLIENTS.—The medicines commonly called emollients conſiſt either of diluting liquors, formed of ſimple water; or certain vegetable infuſions; or mucilaginous and oily matters that have the mechanical property of defending the parts to which they are applied, from the action of acrimonious ſubſtances that paſs over them, or of ſoftening and relaxing the ſkin and other external parts. The firſt of theſe are commonly called *diluents*, the ſecond *demulcents*, and the third ſimply *emollients*.

X. REFRIGERANTS.—Under this term are comprehended thoſe remedies which are employed with a view to diminiſh the preternaturally increaſed heat that takes place in the body during fevers and ſeveral inflammatory affections.

XI. ASTRINGENTS.—Aſtringents are defined by Dr. Cullen to be ſuch ſubſtances as when applied to the human body produce a condenſation and contraction of the ſoft ſolids, and thereby increaſe their denſity and force of coheſion. If they are applied to longitudinal fibres, the contraction is made in the length of theſe; but, if applied to circular fibres, the diameters of the veſſels, or the cavities which theſe ſurround, are diminiſhed.

XII. TONICS.—Tonics are thoſe medicines which are ſuited to counteract debility, or to give ſtrength and energy to the moving fibres.

XIII. STIMULANTS.—Moſt of the articles of the Materia Medica might, in an extended ſenſe, be called *ſtimulants*; but this term is, by the general conſent of phyſicians, reſtrictively applied to thoſe medicines which poſſeſs the power of ſuſtaining or increaſing the vital energies; of raiſing and invigorating the action of the heart and arteries; and of reſtoring to the muſcular fibre, when affected with torpor, its loſt ſenſibility and power of motion.

XIV. ANTISPASMODICS.—Thoſe medicines which have been found by experience to put a ſtop to convulſive motions, or ſpaſmodic contractions of the muſcular fibres, are called *antiſpaſmodics*. Moſt of them are ſtimulants, ſome narcotics, and ſome are conſidered as ſpecific antiſpaſmodics.

XV. NARCOTICS.—This term has been uſually applied to thoſe remedies which are calculated to relieve pain and procure ſleep. They have alſo been termed *anodynes* and *hypnotics*; and moſt of them were formerly ranked in the claſs of ſedatives.

XVI. ANTHELMINTICS.—Thoſe medicines which are employed with a view to expel worms from the bowels, are called anthelmintics.

XVII. ABSORBENTS.—Medicines which are taken inwardly for drying-up or abſorbing any acid or redundant humours in the ſtomach or inteſtines. They are likewiſe applied outwardly to ulcers or ſores, with the ſame intention.

That each of theſe ſyſtems was framed by their authors in conſonance with their peculiar and erroneous theories is a ſufficient reaſon for their preſent diſmiſſal. Granting, however, that the effects of the ſubſtances thus claſſified were correctly detailed, it is very evident that moſt of the claſſes are eaſily reſolvable into the claſs of *ſtimulants*; for ſuppoſing that any medicines can produce expectoration, that proceſs can only be accompliſhed by ſtimulating the exhalent veſſels of the bronchial expanſion; and the ſame remark is applicable to moſt of the other claſſes above mentioned. With reſpect to ſtimulants, the moſt proper pathological diviſion appears to be according to the particular ſtructures on which they exert their effects. Of theſe the moſt general are purgatives, emetics, diuretics, and diaphoretics; not to mention emmenagogues and a hoſt of others, the ſeparate and independent action of which does not appear to be well known.

PURGATIVES.—Many errors have been committed in the adminiſtration of this uſeful claſs of ſubſtances. The heterogeneous mixtures which have been made of them, and their indiſcriminate application, ſufficiently prove that the phyſicians of the laſt century did not properly underſtand the uſe of them. To Dr. Hamilton and Mr. Abernethy we are indebted for pointing out the general and ſalutary effects produced by the exhibition of purgatives. Thoſe authors have clearly ſhown, that many nervous affections, and even chronic diſeaſes of the ſecreting and vaſcular functions, may be cured by theſe remedies. Dr. Hamilton's ſucceſs in treating febrile and hyſteric diſeaſes has been truly great; and Mr. Abernethy has demonſtrated their ſingular utility in local diſeaſes, as obſtinate ulcers, &c. Accordingly the benefit of cathartics is now very generally eſtimated; and we are perhaps in danger of falling into an error quite oppoſite to our predeceſſors, that of placing too much reliance on their uſe.

Sufficient attention however has not been paid to the particular action of different cathartics. Practitioners have been too much in the habit of preſcribing them indiſcriminately, without ſufficiently alluding to the effects which each drug is capable of producing on the different parts and ſtructures of the alimentary canal. Mr. A. Carliſle firſt directed the attention of his profeſſional brethren to this point. "Cathartics," he obſerves, "appear to operate in the following ways; viz. either by exciting the periſtaltic motion of the inteſtines to an unuſual degree, and thereby cauſing them to protrude their contents more quickly through the alimentary paſſage;

or by increaſing the fluidity of the alimentary maſs by ſubſtances which are obnoxious; or to induce theſe two effects. The firſt kind of cathartics probably act upon the muſcular fibres of the inteſtines, and the ſecond kind ſeem to act upon the vaſcular parts of the inteſtines. Some cathartics induce an unuſual flow of bile into the inteſtines; and in this reſpect they reſemble, in their modus operandi, the natural ſtimulus of the bowels, which is the bile. Other cathartics ſtimulate the exhalent veſſels of the inteſtinal membranes, and thereby give an exceſs of fluidity to the volume of their contents: or all theſe ſeveral modes of operation may be united by a ſuitable mixture of cathartic medicines. Again, ſome cathartics act eſpecially upon the ſtomach, and upon the upper portions of the inteſtinal tube; and others ſeem to ſtimulate particularly the lower and larger inteſtines. Some operate by emptying the bowels only, without diminiſhing the animal vigour; whilſt others ſink the ſtrength of the patient by emptying the ſanguineous ſyſtem at the time they hurry away the nutritious aliment."

With reſpect to the ſubſtances capable of producing the above-mentioned effects; the ingenious author is inclined to think that rhubarb acts almoſt excluſively on the ſtomach and on the large inteſtines; on the former organ eſpecially when combined with ipecacuanha. Mercurial ſalts (of which thoſe in moſt common uſe are the blue pill and calomel) operate in two ways: by inducing ſecretion of bile from the liver, and hence furniſhing the bowels with their natural ſtimulus to action, or by their direct effect on the coats of the larger inteſtines inducing ſecretion from the ſurfaces of thoſe organs. Mr. Carliſle ſuppoſes that the neutral ſalts act by exciting watery diſcharges; but the action of theſe ſubſtances is modified by the quantity of fluid in which they are taken, and by the previous condition of the alimentary canal; for they may be decompoſed by the morbid ſecretions. On this latter account Epſom ſalts are particularly recommended by this author, becauſe, even if decompoſed, their operation is ſtill enſured by the purgative quality of their baſe. In regard to the modification produced on the action of theſe ſalts by their dilution, it is a curious remark, that ſmall quantities of ſalts diſſolved in large quantities of water act with as much force, greater certainty, and leſs ſubſequent exhauſtion, than much larger quantities in ſmaller menſtrua. Caſtor oil may be conſidered as one of thoſe rare purgatives which act generally on the inteſtinal canal; perhaps by its viſcid oleaginous part on the ſuperior portion of that canal, and by its acrimonious reſin on the lower bowels. Its reſinous portion is ſuppoſed by this author to be particularly obnoxious to abſorption; and hence we may infer ariſes the certainty of its operation. Jalap is one of thoſe cathartics which ſeems to ſtimulate excluſively the periſtaltic action of the bowels, and is therefore of much uſe in evacuating them in acute diſeaſes. Scammony, gamboge, and elaterium, act moſtly on the muſcular parts of the bowels, and perhaps the nervous; but theſe effects, except in combination with other medicines, are very precarious. Aloes of Colocynth are generally ſuppoſed to act on the lower parts of the inteſtines; but that effect probably ariſes rather from the inſolution of thoſe ſubſtances until they arrive ſo far, than from their ſpecific action on thoſe parts.

It ſeems ſcarcely neceſſary to remark on the advantageous mode of uſing various ſorts of purgatives in conjunction, as that practice has very generally obtained, and is very ſucceſsfully applied to all kinds of medicinal ſubſtances.

Cathartics may be adminiſtered in the form of *clyſter*; and in many inſtances this method has great advantage over the ordinary method. The French employ "*lavements*" on almoſt all occaſions. They are chiefly uſeful in caſes in which the ſtomach is unable to retain, or would be injured by, irritating medicines; as in *gaſtritis*, or inflammation of the ſtomach, and in febrile complaints attended with extreme debility, eſpecially in the latter ſtages; ſince by this mode the contents of the lower parts of the inteſtines are ſimply evacuated, without any ſtimulus to the ſecreting veſſels, and with little or no irritation of the ſyſtem at large. It is alſo to be obſerved, that conſiderably larger doſes may be ſafely employed in this way. It is of advantage to employ ſome emollient ſubſtance, combined with the purgative, to defend the inteſtine in ſome meaſure againſt the acrimony of the medicine. Thus, if the electuary of ſenna is uſed, it may be conveniently rubbed up with a little oil; and the whole will then mix uniformly with milk or any other liquid. When clyſters are employed as purgatives, it muſt be remembered that they cannot paſs higher up than the valve of the colon, and conſequently that they can only act directly upon the large inteſtines. Therefore, they can ſeldom entirely ſupply the place of purgatives by the mouth, which paſs through and excite the whole inteſtinal canal; but they prove moſt uſeful auxiliaries, particularly in thoſe caſes of inteſtinal diſorder that are attended with much vomiting and irritability, where, beſides emptying the lower bowels, they act as topical fomentations, and very often induce eaſe and ſleep when other methods fail. In ſuch caſes, therefore, they ſhould be in pretty large quantity, not very ſtimulating, and as warm as the patient can bear them. As vermifuges, alſo, clyſters have a peculiar and local uſe, where the worms are lodged in the lower inteſtines; particularly as very highly ſtimulating medicines are often required to diſlodge theſe troubleſome animals, which, if given by the mouth, might produce a good deal of inconvenience and irritation.

The reader will clearly perceive how inſufficient theſe obſervations are, and how much the inveſtigation of the remote modus operandi of various purges ſtill remains a deſideratum. The ſubject, however, is confeſſedly ſurrounded with much difficulty; yet a ſeries of experiments might probably be deviſed to throw further light on this intereſting ſubject, which ſhould likewiſe extend to a much larger number of cathartics than thoſe we have hitherto conſidered.

EMETICS, or thoſe ſubſtances which operate a rejection of the contents of the ſtomach, are of various kinds. Moſt of the common poiſons are emetics; and many other ſubſtances, not deleterious in themſelves, do, when adminiſtered in exceſſive quantities, produce ſickneſs. Some diſputes have been made public concerning the action of theſe ſubſtances; ſome phyſiologiſts ſuppoſing that they produced their effect by ſtimulating the ſtomach to contraction, others that the abdominal and coſtal muſcles were the agents concerned, and which produced vomiting, the ſtomach performing no contraction. Many experiments have been made on this point; and the reſult renders it probable that both the abovementioned powers are concerned in the act of vomiting, and that the œſophageal part of the ſtomach is firſt acted on.

The uſe of emetics in what may be termed a reſtrained or limited degree is frequently attended with the moſt powerful effects. The ſenſation of *nauſea*, that ſenſation which occurs previous to the act of vomiting, is in the higheſt degree debilitating: it reduces the action of the heart, and is attended with very general ſecretion from the mucous expanſion of the noſe, eyes, fauces, air-cells, and ſtomach. Hence doſes of emetics capable of producing this effect and no more are uſed in acute diſeaſes: for it is worthy of notice, that beyond the above-mentioned point (that of nauſea), when vomiting ſucceeds, the ſyſtem appears *ſtimulated*, and the cerebral circulation increaſed. So that to produce nauſea, and to produce vomiting, is a very different matter, and worthy of particular attention.

The action of the urinary ſyſtem is increaſed by increaſing the natural *quantity* of fluids ſwallowed, or by the uſe of DIURETICS. The number of ſubſtances which have been praiſed by different writers, as poſſeſſed of diuretic

retic powers, or capable of ſtimulating the action of the kidneys, is very great, eſpecially from the vegetable world. Many of them, however, are very inefficacious; and it is the common imperfection of the whole of this claſs to be very uncertain in their operation: ſometimes the more feeble diuretics will ſucceed, when the ſtronger have failed; and often, after every variety of kind and combination has been tried, the ſecretion of urine remains unaltered. Digitalis, ſquill, mercury, and cryſtals of tartar, ſeparately or combined, are the moſt efficacious of the claſs; but the alkalies both fixed and volatile, ſome of the neutral ſalts, the nitrous ether, the terebinthates, &c. are by no means uſeleſs as auxiliaries. There is perhaps no claſs of medicines, in which a combination of two or more ſubſtances, poſſeſſing ſimilar powers, is ſo frequently important, as in that of the diuretics. Thus the uſe of potaſs, joined with bitter vegetables, is recommended by ſir John Pringle, as an efficacious medicine: and, as the alkaline ſubſtances may be often prevented, by purging, from reaching the kidneys, ſo their diuretic effect may be often more certainly ſecured by giving an opiate at the ſame time, according to the practice of Dr. Mead. A combination of the ſquill, with digitalis, and ſome of the leſs purgative preparations of mercury, as the common blue pill, is occaſionally very active in its diuretic operation; and, in children, or in old and feeble people, the union of the ſpirit of nitrous ether, or of other diuretic ſubſtances, with the bark, or other vegetable tonics, appears to be often very ſerviceable.

Diuretics, moreover, receive great additional power from perfect ſolution; and it was remarked by Cullen, that the union of diluents with theſe ſubſtances was productive of the beſt effects. Diuretics are moſt generally had recourſe to for the purpoſe of determining fluids to the kidneys which were liable to be effuſed; and indeed they have been ſuppoſed to act an important part in removing them when that proceſs had occurred. If the latter ſuppoſition be admitted, we muſt ſuppoſe that a diuretic poſſeſſes immediately the power of promoting abſorption; and of that we have no direct evidence. On the other hand, that diuretics can prevent the further accumulation of effuſions is a fact of which we have ſtrong inference, and which is accordant with the inexplicable law of *derivation* ſo generally obſerved.

Diaphoretics are thoſe ſubſtances which promote inſenſible perſpiration, or ſweat. Their modus operandi may be inferred to ariſe, either by direct application, or by nervous conſent. If diaphoretics are aſſimilated, paſs into the round of the circulation, and are applied directly to the cutaneous veſſels, they may produce increaſed contraction, or the reverſe: or otherwiſe, the powerful ſympathy obſerved between moſt parts of the mucous expanſions, and eſpecially between the ſtomach and ſkin, authoriſe us to believe, that the contraction or dilatation of the veſſels of the ſkin may be produced by nervous excitement, firſt impreſſed on the ſtomach, thence propagated to the nervous general communication, and laſtly to their veſſels; or, in other words, the effect may be produced by ſympathy.

The older practitioners took great pains with theſe medicines: the ſudorific plan of treatment was the fruitful ſource of miliary eruptions, and a variety of troubleſome complaints. The uſe of diaphoretics is at preſent much reſtricted, particularly thoſe which increaſe the general circulation.

There are two means, by which perſpiration may be induced, and the action of ſudorific medicines promoted; namely, by application to the ſkin, and ingeſta. When the ſkin is not in a ſtate unfavourable to perſpiration, the application of heat to the ſurface of the body, without any aſſiſtance from powers internally applied, is ſufficient to produce ſweating; and the application of cold, i. e. the abſtraction of the heat, can almoſt certainly prevent the ſame, though conſiderable powers are employed within. Thus ſweating may be obtained by the heat of the air, applied as in what is called the *dry bath*, or by increaſing the heat of the ſurface by previous warm bathing, or by accumulating the warm effluvia of the body itſelf upon its ſurface. This laſt may be done by covering up the body very cloſely with ſuch coverings as may both prevent the eſcape of the warm effluvia ariſing from them, and at the ſame time prevent the acceſs of external cold. But, farther to favour the diaphoretic action, a quantity of warm liquid may be taken into the ſtomach, which not only excites the general circulation, but particularly, by conſent of the veſſels on the ſurface of the body with the ſtomach, excites the action of thoſe veſſels which pour out ſweat. The uſe of warm liquids alone, eſpecially in the morning, while in bed, where there is a general diſpoſition to perſpiration, is in ſlight febrile caſes an ample ſudorific. Theſe two means, of covering up the body cloſely, and taking warm liquids into the ſtomach, are what we call the ſudorific regimen; which will often anſwer alone the purpoſe of exciting diaphoreſis; is often neceſſary to the operation of ſudorific medicines; and will always render their operation more complete and permanent. *Cullen's Mat. Med.* vol. ii.

The combination of opium with ſudorific medicines is valuable in two ways: the opium aids the operation of the ſudorific, on the one hand; and, on the other, the ſudorific, by determining to the ſkin, renders the anodyne effect of the opium more certain and complete, and prevents ſome of its unpleaſant influence on the head: for opium, given when the ſkin is dry, or not accompanied by perſpiration in the courſe of its operation, is very apt to occaſion reſtleſſneſs rather than ſleep, and to produce a ſlight approach to delirium, by its influence on the brain: hence the acknowledged value of the combination which is univerſally known by the name of *Dover's powder*, as a ſafe and active diaphoretic and anodyne; it conſiſts of opium combined with the diaphoretics, ipecacuanha, and ſulphate of potaſs.

Guaiacum too has been much praiſed for its ſudorific properties: Dr. Cullen conſidered it to be one of the moſt valuable of the ſtimulant diaphoretics, becauſe it affords a matter which paſſes more entirely to the extreme veſſels, and ſeems to ſtimulate the exhalents more in proportion than it does the heart and great arteries. By this means it is both a more ſafe and more effectual ſudorific than thoſe which ſtimulate the latter almoſt only: but acute rheumatiſm, or rheumatic fever, as it is called, is almoſt the only acute diſeaſe in which it can be recommended; and it is a diſeaſe in which the ſweating is ſpontaneouſly profuſe, and bears ſtimulants better than phlegmonous inflammations.

Emmenagogues.—It has not been thought neceſſary to treat particularly of emmenagogues, as they are moſt of them *general* ſtimulants, and are ſo uncertain in their action that they can ſcarcely be viewed as ſtimulators of the uterus in particular.

A few other minor diviſions, are alſo commonly made; as Errhines, which act on the mucous membrane of the noſe, &c. but theſe conſiſt of ſo very ſmall a number of the pharmacopœal articles, that the mention of the ſubſtances themſelves would be leſs tedious than their claſſification.

There are ſome articles in the materia medica which have been denominated *general ſtimulants*, from their effect on the ſyſtem at large. They are little uſed at preſent in the practice of phyſic, but were ſtrongly recommended by Brown, and conſequently came into very general approbation during the time that author's theories were triumphant. They obtained this diſtinction partly becauſe Brown was practically and individually acquainted with the healthy feelings they excited, but moſtly becauſe their uſe naturally grew out of his theory of debility and excitement before noticed.

Moſt of theſe ſubſtances appear to influence the body by means of the nervous ſyſtem; for the rapidity with which their action is elicited cannot allow us to ſuppoſe their

their abſorption, and local application to the circulating powers. This remark will likewiſe apply to many of the SEDATIVES; for, though theſe latter ſubſtances are for the moſt part abſorbed and carried into the circulation, and thus operate immediately on the contractile powers of veſſels, others exiſt of which the inſtantaneous action allows of no explanation except the ſuppoſition that they act on the nervous ſyſtem through the medium of the ſtomach. It is obvious however, that, ſtrictly ſpeaking, all medicines acting on the nervous ſyſtem ſhould be comprehended in another diviſion; but, as we before obſerved, the modus operandi of the reſpective articles in the materia medica is not ſufficiently eſtabliſhed to allow us to arrange them thus cloſely according to their effects.

We muſt obſerve, in this place, that many ſtimulants attended with diſcharges may indirectly produce ſedative effects by removing plethora; as purgatives, diuretics, &c. The eſtabliſhment of the oppoſite fact, viz. that ſome ſubſtances produce *directly* ſedative effects, is a grand feature in the new Italian doctrine, and in which that doctrine is oppoſed to the Brunonian theory, which, as we have before ſhown, ſuppoſed that all medicines were ſtimulants, and only produced debility by promoting diſcharges. This opinion is not to be diſmiſſed with quite ſo little ceremony as many parts of Brown's doctrines; for, though not admiſſible to its full extent, it is rational to conjecture that many ſubſtances do produce inaction of particular parts or organs by exceſſive ſtimulus on others, and thus that the claſs of direct ſedatives is very limited indeed.

The moſt powerful ſedative agent that we uſe in medicine is *Bleeding*. This operation is however ſcarcely capable of being arranged under any diviſion; for, in the firſt place, if the ſyſtem is gorged with blood, there can be no doubt that ſuch a ſtate may ariſe as will preclude the rapid action of the heart; and in this caſe, by diminiſhing the quantity of blood to be moved, the motive power remaining the ſame, the velocity will neceſſarily be increaſed. Thus, bleeding is a *ſtimulant*, on the other hand the rapidity of the heart's action is in certain ſtates *reduced*, or rendered ſlower, by bleeding. Thus, it is a *ſedative*. Again, ſyncope may be induced by bleeding; and, as this is dependent on diminiſhed circulation through the brain, the operation here holds relation with the nervous ſenſibility. And further, the emptineſs of the ſanguineous ſyſtem produces increaſed action in the *abſorptive* powers.

According, then, to the various ſtates of diſeaſe, this operation produces different effects, which are ſtill further varied by the time and manner of its performance. With regard to the *time*, this has great influence on the curative reſults. Thus in inflammations of all kinds, it is neceſſary to bleed in the early ſtages, leſt the continuance of that diſeaſe ſhould terminate in change of ſtructure, or at leaſt in permanent dilatation of veſſels. The manner of bleeding reſpects the abſtraction of blood from ſmall or large orifices, by frequently-repeated and ſmall, or by large and ſudden, evacuations. Topical bleeding is another mode of abſtracting blood which is uſefully employed in a great number of inflamed or excited parts, when previous exhauſtion or other cauſes preclude general bleeding. With regard to the mode of performing veneſection, arteriotomy, acupuncture, &c. ſee the article SURGERY.

The action of the abſorptive ſyſtem is increaſed with a view to the removal of many ſolid depoſitions, fluid ſecretions, and extraneous bodies, &c. Like the circulatory ſyſtem, it may have its contractile phenomena increaſed or diminiſhed. The firſt indication is attempted by mechanical preſſure, and by certain medicines called ſtimulants; and it ſeems further increaſed in direct proportion to the exhauſted ſtate of the heart and arteries. The ſecond change, or the diminution of the activity of abſorbents, is not found to attend with certainty the exhibition of particular drugs; but it is produced by various morbid alterations, by heat, by the defect of mechanical preſſure, and by the reduction of nervous ſenſibility.

To return however to the uſe of ſtimulants; *mechanical preſſure* is an agent which exerts great and general influence over the abſorbent ſyſtem. In their courſe through the extremities of the body, the abſorbents are compreſſed by the diſtenſion of the arteries, and during the contraction of muſcles; within the cavities of the abdomen and thorax, they are ſubjected to the preſſure of the ingeſta, of the diſtended air-cells of the lungs, the movements of the diaphragm, and of the reſpiratory and abdominal muſcles. Atmoſpherical preſſure, as well as the weight of clothes, &c. is likewiſe to be taken into eſtimation. It is obvious that, as abſorbents are furniſhed with valves which prevent the return of fluids towards their open mouths, *preſſure* muſt accelerate the flow of their contents towards their venous terminations.

It muſt here be remarked, that the effect of long-continued preſſure is probably two-fold; operating on the one hand to increaſe abſorption, on the other to prevent depoſition. Medicines which increaſe abſorption operate for the moſt part by increaſing contraction. But they may further, in ſome inſtances, render ſolid depoſitions leſs difficult of abſorption, by producing ſolution of their conſtituent parts. That an empty ſtate of the ſanguineous ſyſtem generally renders abſorption more active, is a fact which we ſhould be inclined to admit à priori; and it has received full confirmation from the well-known experiments of Majendie. It explains how purgatives, diuretics, &c. to which the older phyſicians attributed abſorptive powers, may really bring on abſorption, by cauſing depletion; and it further renders plain the circumſtance, that a great number of medicines do not manifeſt their ſalutary operation except in exhauſted depleted patients.

In our therapeutical indications, one of the moſt important is the imitation of nature in the production of oppoſite diſeaſes. That diſeaſe in one part or ſtructure of the body often ceaſes on its production in another, is, as we have before ſhown, a general law in pathology, ſubject however to many exceptions. It is in expectation of producing this ſalutary change that we uſe many of the moſt powerful ſtimulants. Thus bliſters, muſtard-cataplaſms, embrocations, moxa, &c. are employed with the intention of *converting* diſeaſes, i. e. of inducing action in a part not eſſential to life, for the purpoſe of removing it from one in which its dire effects are known and apparent. It is to be obſerved, however, that contra-irritation is a mean which can only be reſorted to with advantage in certain degrees of inflammation; for it is known that, in inflammations of the higheſt magnitude, bliſters, when applied before bleeding and evacuants have been premiſed, increaſe general irritation without alleviating topical diſturbance; and this holds good in regard to moſt other ſubſtances of the ſame claſs.

As appendices to the uſual and common remedies, we have to mention medical electricity, and the inhalation of gazeous fluids. Each of them has received an ephemeral and exceſſive degree of praiſe; and hence, like many of the ſurpriſing remedies perpetually ariſing, have fallen into undeſerved contempt.

The cure of the moſt violent and inveterate diſeaſes has been aſcribed to *electricity*. All that now remains certain with regard to it is, that it is a powerful ſtimulant, and one which is the more ſtrongly recommended, becauſe it can be applied to a variety of parts, when the common methods of ſtimulation cannot be employed. The mildeſt modes of uſing electricity are thoſe moſt in vogue at preſent, as its violent application is reprobated by the beſt practical writers. Its uſe in ſuſpended animation, in chronic glandular enlargements, in atony of the organs of generation, are well known.

Animal electricity, or Galvaniſm, is in ſome reſpects ſimilar to common electricity in its effects, and in others different; but, in a medical view, it has not anſwered the

expectations which at firſt were formed of its action. All thoſe animals which poſſeſs excitability are affected by Galvaniſm as they would be affected by any other violent ſtimulus; and, if the excitable part be at all muſcular, the fibres are vigorouſly contracted. This cauſes, in a living and conſcious animal, a ſenſation not unlike an electric ſhock. The ſhock is more like that of common electricity, as the plates of the battery are ſmaller and more numerous. When the plates are of very large ſurface, a ſort of vibratory motion is felt through the part, attended with a ſenſation of heat; and this, in a powerful battery, is felt ſo long as the connection is kept up. The beſt mode of taking the ſhock is firſt to moiſten the hands, or the part where the effect is to be applied; graſp in each hand a piece of metal, ſuch as two ſpoons, and touch each end of the battery with the other ends of the ſpoons at the ſame time. If it is intended to be applied to any other part, let two plates, of about two inches in diameter, be each attached to the wires coming from the battery, and let the plates be applied to ſome two parts: if the effect be too ſevere, let ſome inferior conductor be placed between the plate and the ſkin. Sir H. Davy found, that, when an animal ſubſtance was placed in the circuit of a galvanic battery, the different compounds contained in it were decompoſed. This was more eſpecially the caſe with the ſaline bodies contained in the animal fluids; the acids of the ſalts were found on the poſitive ſide of the battery, and the baſes of the ſalts on the negative. Should it be aſcertained that any redundancy of ſaline matter is the cauſe of diſeaſe, Galvaniſm might be employed with great ſucceſs in ſeparating thoſe bodies from the ſyſtem. See the article ELECTRICITY, vol. vi. p. 409, 445, & ſeq.

Pneumatic medicine, or the uſe of *gaſes* in the cure of various internal complaints, was very faſhionable at the time chemiſtry formed one of the moſt ardent purſuits of the French nation, and when they attempted to explain the vital properties according to the laws of oxygen, &c. And in this country, Beddoes, Rollo, Cruikſhank, and others, made many intereſting experiments and trials on this ſubject. Of late its uſe has declined. See OXYGEN, vol. xviii. p. 167.

The diverſified experiments of Sir H. Davy on the reſpiration of nitrous oxyde and ſome other gaſes, ſo intereſtingly deſcribed in his ſcientific reſearches in 1800, in a great meaſure diſſipated the general apprehenſions of fatality reſulting from the inhalation of compound gaſes, and ſatisfactorily demonſtrated that many of the aërial fluids, before conſidered as deſtructive to vitality, might be breathed with perfect ſafety.

The following caſe, ſhowing the beneficial effects of oxygen gas in reſtoring ſuſpended animation, occurred in the year 1814, in the laboratory of the Dublin Society, and excited conſiderable intereſt. It was communicated by Samuel Whitter, eſq. who made the experiment on himſelf. He introduces the account by obſerving that, when a mixture of carbonate of lime and zinc, or iron-filings, is expoſed to an intenſe heat, the peculiar gaſeous ſubſtance named carbonic oxyde is diſengaged, which has been ſtated to bear the ſame relation to carbonic acid that nitrous gas does to nitric acid. But agreeably to the ſtriking obſervations of Mr. Higgins, profeſſor of chemiſtry to the Dublin Society, in his work recently publiſhed, (wherein his claim to the diſcovery of the atomic ſyſtem is unequivocally eſtabliſhed,) it would appear that, in the combination of oxygen with different gaſes, it is the atom of oxygen only that is found multiplied, as is beautifully exemplified in all the metallic oxydes, acids, and gaſes. An apparent anomaly has been noticed with reſpect to nitrous oxyde, which the experiments of Mr. Higgins on the compoſition of nitrous gas tend to obviate, and ſanction a compariſon of the proportions of carbon and oxygen in carbonic oxyde with thoſe of azote and oxygen in nitrous oxyde, rather than the atomic coincidence of carbonic oxyde and nitrous gas. Carbonic oxyde was diſcovered and deſcribed by Mr. Cruikſhank in 1801; it is highly combuſtible, burning with a fine blue flame, but it is utterly incapable of ſupporting animal life.

"Deſirous of witneſſing the progreſſive effects of carbonic oxyde when freely reſpired, with a view to comparative analogy in reference to nitrous oxyde, I was tempted a few days ago to inhale a portion of it as copiouſly as poſſible. The conſequence had very nearly proved fatal to me. A conſiderable quantity of the gas having been carefully prepared by Mr. S. Wharmby, the very ingenious and able aſſiſtant to Mr. Profeſſor Higgins, a ſeries of experiments on its reſpiration were propoſed. Mr. Wharmby firſt noticed ſome points of reſemblance it bore to the nitrous oxyde, particularly the ſingularly ſweetiſh taſte; and, having made two or three inſpirations, was ſeized with a degree of convulſive tremor and giddineſs that nearly overpowered ſenſibility. Theſe violent effects were but tranſient, though conſiderable languor, head-ache, and debility, remained for many hours afterwards. Anxious to purſue the experiment ſtill further, I next made three or four hearty inſpirations of the gas, having firſt exhauſted my lungs of common air as completely as poſſible. The effects were an inconceivably ſudden deprivation of ſenſe and volition. I fell ſupine and motionleſs on the floor, and continued in a ſtate of total inſenſibility for nearly half an hour, apparently lifeleſs, pulſation being nearly extinct. Several medical gentlemen being preſent, various means were employed for my reſtoration, without ſucceſs; when the introduction of oxygen gas by compreſſion into the lungs was ſuggeſted, the effects of which may be fairly contraſted with thoſe of the carbonic oxyde. A very rapid return of animation enſued, though accompanied by convulſive agitations, exceſſive headache, and quick irregular pulſation, and, for ſome time after mental recovery, total blindneſs, extreme ſickneſs, and vertigo, with alternations of heat and ſhivering cold, were painfully experienced. Theſe unfavourable ſpaſms were ſucceeded by an unconquerable propenſity to ſleep, which, as might be expected, was broken and feveriſh. An emetic of tartarized antimony finally removed theſe alarming ſymptoms, and the only unpleaſant effects felt on the enſuing day were thoſe occaſioned by the fall.

"I very much regret that the confuſion ariſing from the idea of my death, ſo diſturbed the arrangement, that no accurate determination could afterwards be made, either of the quantity of gas reſpired, or the change it underwent in the proceſs; and the experiment is rather too hazardous for repetition. Nevertheleſs, the extraordinary efficacy of oxygen gas in caſes of ſuſpended animation produced by carbonic acid, choke-damps, and other ſuffocating gaſes, is fairly deducible, and I conceive cannot be too forcibly recommended to the faculty, in ſuch inſtances. I therefore ſincerely hope that the reſults of this experiment may be of practical utility in thoſe caſes, which are ſo frequently occurring, and are often ſo awfully fatal; it being the decided opinion of the profeſſional gentlemen preſent on this occaſion, that the free uſe of the oxygen gas was ſolely inſtrumental in reſtoring me to life.

"Mr. Higgins himſelf had nearly once fallen a victim to a ſimilar experiment with ſulphuretted hydrogen, the effects of which, after recovering from a death-like inſenſibility, were painful and oppreſſive for many days."

This very ſhort ſketch may appear ſcarcely a ſufficient account of GENERAL PATHOLOGY and THERAPEUTICS. The pathological reader will be immediately ſtruck with the omiſſion of all notice of Spaſm, of Inflammation and its conſequences, &c. But we have rather deemed it prudent to inveſtigate theſe ſubjects under their ſeparate heads, and have merely inſerted theſe obſervations as being of too general a character to be reduced under any of our diviſions. We therefore at once proceed to the

CLASSIFI-

CLASSIFICATION OF DISEASES,

According to the ſyſtem of Dr. MASON GOOD.

Claſs I. CŒLIACA. Diſeaſes of the Digeſtive Function.
Order 1. *Enterica.* Affecting the alimentary canal.
2. *Splanchnica.* Affecting the collatitious viſcera.

Claſs II. PNEUMATICA. Diſeaſes of the Reſpiratory Function.
Order 1. *Phonica.* Affecting the vocal avenues.
2. *Pneumonica.* Affecting the lungs, their membranes, or motive power.

Claſs III. HÆMATICA. Diſeaſes of the Sanguineous Function.
Order 1. *Pyrectica.* Fevers.
2. *Phlogotica.* Inflammations.
3. *Exanthematica.* Eruptive fevers.
4. *Dyſthetica.* Cachexies.

Claſs IV. NEUROTICA. Diſeaſes of the Nervous Function.
Order 1. *Phrenica.* Affecting the intellect.
2. *Æſthetica.* Affecting the ſenſation.
3. *Cinetica.* Affecting the muſcles.
4. *Syſtatica.* Affecting ſeveral or all the ſenſorial powers ſimultaneouſly.

Claſs V. GENETICA. Diſeaſes of the Sexual Function.
Order 1. *Cenotica.* Affecting the fluids.
2. *Orgaſtica.* Affecting the orgaſm.
3. *Carpotica.* Affecting the impregnation.

Claſs VI. ECCRITICA. Diſeaſes of the Excernent Function.
Order 1. *Meſotica.* Affecting the parenchyma.
2. *Catotica.* Affecting internal ſurfaces.
3. *Acrotica.* Affecting the external ſurface.

Claſs VII. TYCHICA. Fortuitous Leſions or Deformities.
Order 1. *Apalotica.* Affecting the ſoft parts.
2. *Stereotica.* Affecting the hard parts.
3. *Morphica.* Monſtroſities of birth.

CLASS I. CŒLIACA, [from the Gr. κοιλια, the belly.]

DISEASES of the DIGESTIVE ORGANS.

THERE is no claſs of diſeaſes which more imperiouſly demands the earneſt and attentive conſideration of the pathologiſt than this; and certainly there is no claſs of diſeaſes which has of late received more attention from the medical world. We have before remarked on the connexion which the alimentary canal holds with the reſt of the ſyſtem; and on the media through which this connexion is ſupported. We have ſhown, that, if the ſenſorial powers be diſturbed, the nervous productions which expand on the mucous membrane of the alimentary canal will have their office altered or ſuſpended, and deficient ſecretion will be the reſult: that, on the other hand, every part of the muſcular and nervous ſyſtems may be affected by the diſordered ſtate of the alimentary canal, ſince the impreſſions of the latter, conveyed to the brain, may affect, through it, all other parts. This reciprocal dependence and relation, then, we are quite willing to admit; but we have here to pauſe, and to conſider a doctrine which is founded on this relation, but which we are unwilling to admit. It is the doctrine, that the primary cauſe of diſeaſe reſts immediately in the ſtomach and bowels. Now it is very obvious, that, in tracing the origin of diſeaſes, the order of ſucceſſion obſerved by its ſymptoms is the only guide which we can adopt; and it requires little experience to prove that the ſucceſſion of ſymptoms affords in many diſeaſes direct contradiction to the doctrine above mentioned. For inſtance, the effect of ſtudious and ſedentary habits on the human frame, by inducing long and exceſſive action of the brain, is to exhauſt ſenſibility; hence the due tranſmiſſion of nervous power will be interrupted, and the ſecernent ſyſtem will be deranged in various ways. It is true, the ſtomach and bowels are generally the parts in which this derangement is principally made manifeſt; but this does not occur invariably. The ſecretion from many glands is ſometimes diſturbed, while the gaſtric and enteric fluids preſent no ſenſible change. Again; a blow on the head, though it frequently produces vomiting, yet that effect is not uniform. And again; in the effect of temperature, whether diminiſhed or increaſed, we are able to trace the order of ſucceſſion through the circulating to the nervous ſyſtem, without meeting with any implication of the digeſtive function in diſorder; and ſo on. That the alimentary canal is a medium through which morbid materia and impreſſions are conveyed to the reſt of the ſyſtem, we have before ſtated; yet ſuch conveyance may not derange theſe organs, but may produce ſecondary effects on other ſtructures; effects which may require remedies of a nature quite different from thoſe calculated to relieve ſtomachic or inteſtinal derangements. Strong objections too are in force againſt another part of the ſame doctrine, viz. that of conſidering the ſtomach as a *centre of ſympathy;* that is to ſay, when thoſe terms are uſed to expreſs a peculiar property of the ſtomach, a property different from what is obſervable in all mucous expanſions. For aſſuredly the ſize or intenſity of power in the nerves, will ſufficiently account for the ready and general ſympathy obſerved with regard to that organ, and other parts of the body, without reſorting to this gratuitous hypotheſis.

An argument is advanced in ſupport of the origin of diſeaſe in the ſtomach, which we are inclined to regard with greater reſpect than any of the reſt; namely, that the *cure* of many local and conſtitutional complaints is effected by means which procure copious ſecretion from the alimentary canal. We may obſerve, however, that, while we allow the fact, the hypotheſis which is founded on it need not be admitted. The alimentary canal may be conſidered (in a greater or leſs degree in its various parts) as the *emunctory* of the ſanguineous ſyſtem. Thus even the bile, beſides its uſe in the ſeparation of chyle, is carried downwards in large quantities with the fæces. The bowels, too, pour large quantities of fluids, which vary in their ſmell, colour, and conſiſtence; and, to a certain degree, without the health being affected. Hence ſecretion from theſe parts may act in various ways; either by removing certain ſtates of plethora, or by eliciting from the blood noxious particles. In this way, emetics thrown into the blood, are ſeparated from that fluid by the digeſting ſecretions, and produce vomiting. We are aware that this ſeems to approach, in ſome degree, to the *humoral pathology;* but it is now become admitted, that our pathological theoriſts have perhaps too cloſely diſcarded the explanation of diſeaſe which this doctrine afforded. The proximate cauſe muſt, indeed, be looked for in the action of the ſolids; but the medium through which diſeaſe is propagated is, undoubtedly, very often the blood. The violent effect produced by the injection of a ſmall quantity of air, or of other kinds of fluids, ſeems very direct confirmation of this opinion.

We muſt further remark, that the promulgators of theſe doctrines have overlooked the manner in which the derangements of the collatitious viſcera alter the ſtate of the ſtomach and bowels; an effect which takes place either by means of the application of morbid ſecretion, or by continuity of diſeaſed action. With regard to the remote cauſes of diſeaſe in the digeſtive organs, the following are ſtated by Dr. Nicholls in his Elements of Pathology. "The proceſs of digeſtion may be imperfectly performed, owing to a variety of cauſes; among which we may reckon,—Food of an improper quality, or in improper quantities; imperfect performance of the proceſs of maſtication, in which caſe the food will not be ſufficiently mingled with ſaliva, nor will it be ſufficiently broken down and divided; diminiſhed ſecretion of ſaliva, or diſcharge of that fluid from the mouth; increaſed ſecretion of ſaliva; diſeaſed ſtates of the fluids which flow into

into the fauces; an altered ſtate of the gaſtric or of the pancreatic juices; the preſence of an increaſed or diminiſhed quantity of theſe fluids; an altered ſtate of the bile; an inſufficient quantity of that fluid, whether ariſing from diminiſhed ſecretion, or from ſome obſtruction to its influx into the duodenum; the preſence of too great a quantity of bile; the flow of too great a quantity of that fluid into the ſtomach; diſeaſed condition of the ſtomach, whether conſiſting of ſimple plethora, of inflammation, diminiſhed capacity, inordinate diſtenſion, thickening of its coats, partial rupture, ulceration, or diſplacement; diſordered conditions of the cardiac or pyloric orifices; obſtructed ſtates of the inteſtines; hurried action of the bowels; increaſed ſecretion of enteric juice; diminiſhed or depraved ſecretion of that fluid; collections of fæces; worms; diminiſhed ſenſibility of the nerves of the ſtomach, whence may enſue diminiſhed ſecretion of gaſtric juice, and diminiſhed action of the muſcular fibres of that cavity; an interruption of the communication between the cerebral and the anti-cerebral extremities of thoſe nerves; increaſed ſenſibility of the nerves of the ſtomach, whence may enſue, increaſed ſecretion of gaſtric fluid, pain referred to the ſtomach, and the production of vomiting; altered ſtates of the cranial and ſpinal brain; deficiency of nervous power; long abſence of ſleep; an increaſe or a diminution of temperature, generally or locally; powerful ſenſations; paſſions, eſpecially thoſe of the depreſſing kind; powerful exertion of the faculties, &c. &c.

The firſt cauſe of diſeaſe, then, which we have to treat of, is the *food*. On this ſubject we propoſe to ſpeak ſomewhat fully, becauſe it regards one of the principal agents in therapeutics. The diſeaſed actions of the alimentary canal, of the collatitious viſcera, and laſtly of the ſtate of the nervous power, will conſtitute the next ſubjects of diſcuſſion.

That the natural food of man is equally the product of the animal and vegetable kingdom; that his digeſtive powers accommodate themſelves, in a certain degree, to various kinds of ſuſtenance; that, ceteris paribus, vegetables and water are capable of nouriſhing men of the moſt powerful muſcular and ſenſorial developments; and that the oppoſite practice is attended with equally good effects; are truths ſo generally admitted and firmly founded on the hiſtorical records of every country, that they need form no part of our preſent diſcuſſion. On the other hand, that the partially-refined and half-civilized ſtate in which we now live, our frequent meals, their quantity diſproportioned to our exerciſe, and the various combinations which the culinary art affords us, may be ſaid fully to counteract the uſeful and accommodating conſtitution with which we are endowed, are remarks ſo trite and familiar, that nothing but their importance, and the want of attention paid to them, excuſes our repetition of them. The diet of man requires a certain adaptation to the varieties of climate; and here *inſtinct*, (or, as ſome call it, *nature,*) untutored by education and refinement, ſeems the beſt guide; for we find moſt ſavages preferring in hot climates the vegetable ſuſtenance, in colder regions animal food: and this method of life experience proves to be moſt conducive to longevity and ſtrength. Not that we are very favourable to the mode of life called *natural*, being fully perſuaded that man's natural ſtate is that of the higheſt civilization, ſince to that he is continually tending; and hence we ſhould not have uſed this fact as an argument unleſs it had been ſupported by our own experience.

The ſubject of diet, in reference to our own climate, and in caſes of diſeaſe, has occupied very general attention; but the difficulty with which this ſubject is attended, precludes us from preſenting our readers with any philoſophical view of it; for moſt writers have been occupied with detailing the good or bad effects of particular ſubſtances, founded, it is to be feared, in too many inſtances, on partial views or individual feelings. Thus we are continually hearing, even from medical men, that ſuch a thing is eaſy of digeſtion, and another difficult, and ſo on; while our indiſcriminate application of theſe rules ſoon teaches their fallacy: it ſoon ſhows that what agrees with one perſon produces violent effects on another, and that different ſtates of diſorder in the ſtomach require regimen of very oppoſite powers.

In the natural and healthy ſtate of the body, we muſt regard in ſome meaſure the Hippocratic advice; not to carry our dietetic arrangements to a too great degree of refinement, becauſe any occaſional irregularity will produce the more unpleaſant effects; but at any rate the ſtate of health is beſt conſulted by partaking of few articles at a meal. The proportion of exerciſe, too, becomes a matter of conſideration; but inſtinct points out the true path; for, as leſs exerciſe is taken, leſs appetite is experienced. The habit of meeting our friends at meals, the variety of proviſions which kindneſs and hoſpitality preſent to and urge on us, are perhaps the moſt frequent cauſes why theſe inſtinctive calls are ſo ſeldom attended to. But, though to thoſe who take frequent exerciſe, this relaxation and enjoyment is productive of ſcarcely any inconvenience, yet it is ſeverely felt by the ſedentary and the ſtudious; and hence to the latter are rules and regulations more generally addreſſed.

It has been held of late years that *drinking* at meals is an unneceſſary, and indeed improper, cuſtom. This opinion receives ſupport from obſerving the habits of animals, few of which drink while digeſtion is going on in the ſtomach. In Greece, this cuſtom of dry feeding is ſaid to prevail; and Xenophon ſays, that the ancients did not drink till the repaſt was finiſhed. We have not ſufficient proofs to enable us to engage in proving or diſproving this dogma; but we may obſerve, that its application ſhould of courſe be ſomewhat regulated by habit and inclination, and by the nature of the food and the ſtate of the atmoſphere. In the Dictionnaire des Sciences Medicales, the ſentiments of Hallé and Nyſten on this ſubject are thus expreſſed: "La quantité de boiſſon à prendre pendant le repas doit être en proportion d'autant plus grande ou moindre, que les alimens eux-mêmes ſont plus ſecs ou plus humides; qu'ils ſe laiſſent plus ou moins aiſément pénétrer par les liquides ſalivaires et gaſtriques; qu'ils forment, par leur viſcoſité, une maſſe plus ou moins ténace; qu'ils ont plus ou moins la propriété de diſtendre l'eſtomac et d'y ſéjourner un certain temps. Les boiſſons doivent auſſi être priſes en quantité plus ou moins grande, ſuivant les conſtitutions individuelles qui, en raiſon de leur degré de ſéchereſſe ou d'humidité, préſentent des différences très-grandes relativement à la quantité et au degré de liquidité des ſucs ſalivaires et gaſtriques. Les perſonnes ſèches et bilieuſes, dont les organes ſont très-irritables et dont la chaleur propre eſt plus ardente, dont les évacuations inteſtinales ſont plus habituellement dures et ſèches, qui ſont ordinairement conſtipées, ont beſoin d'une plus grande quantité de liquides aqueux et frais. La proportion des boiſſons aux alimens doit enfin varier ſelon l'influence des ſaiſons et de l'état de l'atmoſphère. On peut cependant poſer en principe, 1°, qu'une quantité de boiſſon qui excède trop la meſure des beſoins naturels, énerve les digeſtions, et favoriſe les altérations ſpontanées des alimens qui ſéjournent dans l'eſtomac, ſurtout quand ce viſcère a peu activité; 2°, qu'une quantité de boiſſon inſuffiſante prolonge le ſéjour des alimens dans la cavité gaſtrique, et entretient le ſentiment de plénitude qui en eſt la ſuite. Mais il faut ſurtout, à cet égard, ſe mettre en garde contre l'habitude qui outrepaſſe plus ſouvent la meſure qu'elle ne reſte en-deçà; connaitre, par ſon expérience, quelle quantité de liquide eſt la plus favorable; ſavoir que la ſoif que donne l'uſage des ſubſtances ſèches, en épuiſant ſur-le champ les organes ſalivaires, n'eſt ſouvent que momentanée, et ſe diſſipe en peu d'inſtans par le renouvellement de la ſalive. Ces obſervations ſont importantes pour ceux dont les digeſtions ſont lentes,

imparfaites; pour ceux qui ſont ſujets aux aigreurs, et chez qui les fonctions de l'eſtomac ſont aiſément troublées par la ſuperfluité des liquides." (Tom. iii. p. 222.) It is ſuppoſed too, that the rapid drinking of fluid is leſs ſalubrious than gradually ſwallowing it, as the former practice tends to produce *diſtention* of the ſtomach; but of this diſtention we have no very unequivocal proof.

Of the bad effects of too great a quantity of food we have frequent inſtances, both in ſudden and chronic affections; and we have every reaſon to believe that mankind offend in general by taking *too much* food rather than by taking that of an improper quality. A neglect of attention to the *quantity* of the food, proportioned to the neceſſity of each individual, is ſooner or later followed by the moſt ſerious conſequences. To the ſtrong and robuſt inflammatory diſeaſes happen, and all ſuch as proceed from plenitude, as the gout, apoplexy, &c. To the more tender and delicate, it is the parent of a numerous progeny of diſtempers, affecting both body and mind; there is ſcarcely a malady that can be named which is not increaſed by exceſs of food, till the diſeaſe at length bids defiance even to temperance itſelf, and all preſcription. The *how much*, indeed, muſt be determined by every individual; but thoſe who are happy enough to abſtain at the firſt ſenſation of ſatiety, have made great progreſs in the art of maintaining ſuch a command of appetite, as, under moſt chronic indiſpoſitions, is one of the great aids of recovery; and, in health, is one of the ſureſt preſervatives againſt them.

To the delicate and valetudinary the conſideration of the *quantity* of the food is of ſtill more importance. They do not riſe from rich and varied repaſts with the ſame freedom from uneaſy ſenſations as the robuſt; they are affected with uneaſineſs, ſome in one way, ſome in another, by the unnatural load. And we often hear them complaining of the ill effects of this or of that particular kind of diet, when, perhaps, their ſufferings ariſe from the quantity of all, rather than from the diſagreement of any. What renders an attention to the quantity of food in invalids ſtill more neceſſary, is, that they are often ſubject to a falſe appetite; to a craving that does not ariſe from the demands of health, but from the morbid condition of the juices in the ſtomach, which prompts them to eat more, and more frequently, than nature requires. Hence it happens that ſuch people are often diſpoſed to take in much more than can be digeſted, to devour their food rather than eat it; by which means their ſufferings are increaſed, diſeaſe gains ground, defeats every purpoſe of the phyſician, and leads them into ſome permanent and incurable malady.

The *time* of eating is another grand conſideration. It is well aſcertained that a periodical action exiſts in the different ſecreting parts of the body; and that the ſtomach acts with different degrees of energy at different times, and according to fixed laws, can admit of no diſpute; for not only does its being only required to act at certain times indicate this, but the hunger we feel at the hour of repaſt, and its abſence after a ſhort time if not ſatisfied, afford further corroboration of it. The cuſtoms of various countries changes too in reſpect to time; and, provided the ſame periods are obſerved each day, this does not ſeem to influence our health in a great degree. Mr. Abernethy ſtates the proper interval between each meal at ſix hours, which reduces the meals to three in a day; and this ſeems to be the moſt judicious arrangement which can be made, and which has indeed been generally adopted among the affluent claſſes in this country, ſupper being for the moſt part diſcarded; or perhaps we ſhould rather ſay, that the meal of dinner has been diſcarded, and an early ſupper ſubſtituted. But two very moderate meals, at a ſuitable diſtance of time, would doubtleſs be digeſted with much more eaſe than one full meal, when the ſtomach has been debilitated by long faſting, and has ſuffered fatigue, together with the body at large, from the exertions of a long day. So that, as Dr. Fothergill has obſerved, "when people aſſure us they eat no ſuppers, from obſervation I am led to ſuſpect, that it would be better for them if they did, than to oppreſs nature with a cumbrous load that may be much more detrimental." This, indeed, ſeems to be pretty well underſtood with reſpect to invalids and convaleſcents, who are generally ſupplied with ſmall light meals at proper intervals, rather than have all their diet crowded into one late dinner.

We ſhall juſt inſert a general view of the more common ſubſtances uſed at meals, for the purpoſe of conſulting the health of thoſe perſons who, though not ill, find the gaſtric functions eaſily diſturbed. The general breakfaſt of people, from the higheſt to the loweſt, is tea, coffee, or chocolate. There are, of courſe, many exceptions; ſome for one reaſon, ſome for others, making choice of other ſubſtitutes, as their experience or opinions guide them. To theſe articles, bread of ſome kind, with more or leſs butter and ſugar, is commonly joined to make up the meal. From many inconteſtible proofs that butter in conſiderable quantities is injurious to conſtitutions not ſtrong, it is ſparingly uſed in many families. It is found by many to be very difficult of digeſtion, eſpecially when toaſted before the fire, or fried, as well as in ſauces. Many people, apparently robuſt, and whoſe organs of digeſtion are ſtrong, often find themſelves much diſordered by large quantities of butter. Nothing more ſpeedily and effectually gives the ſick head-ache, and ſometimes within a very few hours. After breakfaſt, if much toaſt and butter has been uſed, it begins with a ſingular kind of glimmering in the ſight, objects ſwiftly changing their apparent poſition; giddineſs then comes on, head-ache, and ſickneſs. An emetic, and warm water, ſoon waſh off the offending matter, and remove theſe diſorders. Theſe are circumſtances which very often happen to people who are inattentive to the quantity of butter they eat at breakfaſt. A moderate quantity of freſh butter, with bread expoſed as little to the fire as poſſible, or not at all, appears to be wholeſome, and is capable of becoming, with the other aliments, as ſoft and inoffenſive chyle, perhaps, as any part of our diet.

The ſame thing may perhaps be ſaid of coffee as of tea; the heat, the ſtrength, and the quantity, make it unwholeſome or otherwiſe. There are nations who almoſt live upon coffee, as others do on tea; and among neither are any diſeaſes prevalent that can juſtly be aſcribed to theſe ingredients in the common courſe of living. There are, however, individuals of peculiar conſtitution, in whom the Indian tea excites various unpleaſant ſymptoms, as head-ache, reſtleſſneſs, &c. and ſeveral Britiſh plants have been recommended as ſubſtitutes, and uſed with advantage. But Dr. Reid, in his Eſſay on Hypochondriaſis, ſays, "I am inclined to think that there are many caſes in which a taſte for tea ought to be encouraged rather than condemned. This taſte has a tendency to preclude the more prevalent, and after all more miſchievous, propenſity for vinous ſtimulation. Many perſons, diſtinguiſhed for their longevity, have been known to indulge habitually in the uſe of tea; which we may account for, not from its being in itſelf a wholeſome beverage, but from a fondneſs for it generally implying a diſtaſte for potations of a much more decidedly pernicious nature. Tea will produce, in ſome very irritable frames, an artificial ſtate reſembling intoxication; but it is a cloudleſs inebrity. Tea removes the film from an eye that has been obſcured by a groſs and ſtupifying intemperance, and tends to improve a ſuſceptibility to the true reliſh of ſocial and intellectual enjoyment." It ſhould be recollected, however, that every vegetable infuſion of this ſort, is but warm water, rendered more palatable by the aroma of the herbs ſo infuſed; and that there is little or no nutriment conveyed by them to the body, except what is contained in the ſmall portion of milk and ſugar added to them. Theſe liquors, then, ſhould be conſi-

dered as the mere beverage, by which the ſolid portion of the breakfaſt, the bread, &c. is to be diluted, and its digeſtion aſſiſted; and it would be adviſable for the delicate and valetudinary to curtail the liquid and augment the ſolid part of a meal, which is to ſupport them during the exertions of the day, rather than to fill the ſtomach with a diluent and narcotic liquid, at once failing to nouriſh the body, and depreſſing the action of the ſtomach, where little is taken beſides.

But the effects of improper conduct in reſpect to thoſe things which now conſtitute our breakfaſts are of little conſequence, compared to thoſe which ariſe from the well-covered table at *dinner*. The indulgences of breakfaſt ſupply but very few materials for deſtruction; but the repeated exceſſes at dinner are ſerious affairs. And although, as we have before ſtated, the quantity of food is the point to be principally regarded; yet the quality is by no means a matter of indifference to the valetudinary. The principal admonition which the late Dr. Heberden deemed it neceſſary to impreſs on the minds of delicate perſons and invalids, was to avoid all thoſe artificial ſtimulants of the appetite, which excite the deſire for food beyond the ſimple call of nature, and therefore beyond the natural powers of the ſtomach to digeſt. Such are all made diſhes, and condiments of the more poignant qualities; nor is variety of diſhes leſs pernicious, upon the ſame principle. It is probable that, in their nature, aromatic vegetable condiments, or ſpices, are leſs pernicious to the organs of digeſtion, than the various modifications of alcohol, or ſpirits; but the miſchief which they occaſion indirectly, by leading to exceſs, is unbounded. This exceſs is ſtill more pernicious, now that the hour of dinner is poſtponed to the evening; for the ſtomach is enfeebled by the long abſence of ſtimulus, and by ſympathizing in the fatigue of the body, ſo that its power of digeſting a copious and heterogeneous maſs is greatly diminiſhed. It is loaded, and diſtended, and oppreſſed; and the body, in its turn, ſuffers with the ſtomach. Hence, we ſee the fluſh of the countenance ſucceeding to a late and copious dinner; the indiſpoſition to any exertion, mental and corporeal; the general oppreſſion of the animal powers; the general ſenſation of heat; the hurried pulſe; dry or clammy tongue; and other ſymptoms of feveriſhneſs. It is moſt obvious, that the daily, or even frequent, repetition of ſuch a diſorder, (for it is, in fact, a morbid condition which is thus produced,) cannot be ſuffered, without injury to the conſtitution.

Some of the common articles of diet require a little attention. Bread, the ſtaff of life, is not the moſt eaſy of digeſtion; if taken in conſiderable quantity, very ſtrong organs are requiſite to convert it into nutriment, and more eſpecially when it is new, for then it is of a glutinous and heavy nature, and extremely difficult of ſolution. Caſes have been recorded, indeed, in which an immoderate quantity of freſh-baked bread proved the cauſe of death. (See London Med. Journal, vol. i. p. 333.) In weak ſtomachs a large proportion of ſtale bread is indigeſtible; it turns ſour, produces the heart-burn, flatulencies, and interrupts the perfect concoction of every thing elſe. On this principle, the neceſſity of paying much attention to this capital article of diet ought to be inculcated on valetudinarians in general; never to abſtain from it wholly, but to uſe it with moderation; to conſider it as one of thoſe things which, ſparingly uſed, is extremely neceſſary and beneficial: if otherwiſe, the fruitful ſource of many complaints, which are little ſuſpected from this cauſe.

In this country, animal food, of one kind or another, conſtitutes the chief part of our nouriſhment. That there are ſome kinds of more eaſy, ſome of harder, digeſtion, is well known to every one; ſo that it is unneceſſary here to particularize them. The young of animals is generally conſidered as more eaſily ſoluble than the old; but in ſtomachs diſpoſed to acidity, this does not appear to be the caſe. Animal food is rendered more digeſtible, by approaching to a ſtate of beginning putrefaction; hence, the fleſh of animals recently killed is leſs eaſy of digeſtion than that which has been kept for ſome time; and hence, alſo, the fleſh of an animal which has been hunted, or has uſed any violent exertions before death, is more tender and wholeſome than one which has been in confinement; for, after ſuch exertions, the muſcular or fleſhy parts are diſpoſed to go ſpeedily into a ſtate of putrefaction. It muſt not be forgotten, however, that this remark is applicable only to caſes where the ſtomach is quite healthy; there being every reaſon to believe, that, if any degree of gaſtritis is excited, putrifying meat would prove violently ſtimulating.

In reſpect to vegetables, the beſt rule is to uſe thoſe which beſt agree with each particular conſtitution. All the vegetables brought to table, which have been rendered ſoft by boiling, are readily digeſtible. The raw vegetables, uſed in ſalad, &c. are ſomewhat leſs ſo; but, unleſs where the ſtomach is much diſpoſed to aceſcency, they are generally wholeſome. "On this head," ſays Dr. Fothergill, "I have only one ſhort caution to give. Thoſe who think it neceſſary to pay any attention to their health at table, ſhould take care that the quantity of bread, and of meat, and of puddings, and of greens, ſhould not compoſe each of them a meal, as if ſome were only thrown in to make weight; but carefully to obſerve, that the ſum of all together do not exceed due bounds, or incroach upon the firſt feelings of ſatiety."

With reſpect to fruit, it is doubtleſs wholeſome in its ripe ſtate; eſpecially if taken in the forenoon, or inſtead of a meal. But, like other agreeable and nutritious ſubſtances, it muſt prove injurious, when added to the load of the ſtomach, after a plentiful meal.

Much might be ſaid about the comparative advantages of the different kinds of liquor uſed at table. The great object of drink at our meals is to dilute the aliment taken into the ſtomach, and thus render it more capable of digeſtion. It is too often, however, uſed for a very different purpoſe; namely, to ſtimulate an imperfect appetite, and to enable the ſtomach to receive with reliſh what, in its unſtimulated ſtate, it would loathe and reject. Inaſmuch, then, as drink is conducive to exceſs in eating, it is pernicious to take large and frequent draughts of any liquid during a meal. Dr. Fothergill has laid down a few ſimple rules in reſpect to drink. "The leſs quantity of fermented liquors we accuſtom ourſelves to the better. Abſtain from ſpirits of every kind, however diluted, as much as may be. Where mild well-brewed beer agrees, to keep to it as a beverage. Where water does not diſagree, to value the privilege, and continue it."

By thoſe who recommended drinking not *at*, but *after*, meals, the interval uſually fixed upon is about two or three hours; and we are moreover recommended by Mr. Abernethy to reſt for a conſiderable time after a meal, ſome experiments made on dogs having proved that the digeſtion of food in the ſtomach takes place moſt readily when the muſcular ſyſtem is in a ſtate of inaction. This has been objected to, however, by a Mr. Hare; but, as that gentleman has not tried the experiment over again, his objections are not valid. It ſeems to us, that the natural diſinclination to move which we all feel after partaking of food, and the frequent eructations, &c. which exerciſe produces when uſed during the ſame period, ſufficiently prove the correctneſs of Mr. Abernethy's opinions on this ſubject, without any appeal to experiment. The day, then, according to the view taken by the diſtinguiſhed gentleman juſt mentioned, will be thus divided: The early part of the morning is to be devoted to exerciſe. Half an hour's reſt being premiſed, breakfaſt is to be procured. Reſt again becomes neceſſary for two or three hours. Exerciſe again ſhould then be had recourſe to, until within half an hour before dinner, the latter period being as before devoted to quieſcence.

cence. The ſame round of employments to be continued until the third meal of the day, which is ſuppoſed to conſtitute the laſt. According to this arrangement, the intervals between breakfaſt and dinner, and between dinner and ſupper, (or tea,) will be each ſix hours. See Abernethy on the Conſtitutional Origin of Local Diſeaſes.

We have to give our ſmall tribute of encomium to this plan of life, being well aſſured by experience of its ſalutary and beneficial operation. It is very remarkable, but no leſs ſatisfactory, to find, that the habits which experience has proved to be moſt conducive to health, coincide completely with the practice founded on reaſoning; the trainers of our pugiliſts having long ſubmitted their pupils to rules very ſimilar to the dietetic ones juſt mentioned, and truly we can ſcarcely find any-where elſe ſuch ſtrong proofs of their propriety. A bloated drunken fellow, whoſe hours are perpetually occupied with debauch, and whoſe frame evidently betrays the baneful effects of intemperance, ſubjected to three months *training*, that is, to the influence of regular and powerful exerciſe, ſalubrious air, wholeſome and ſparing ſupplies of food, reſtricted in drink to water, and perhaps a few glaſſes of wine, becomes developed in his muſcular ſtructure to an aſtoniſhing ſize: he affords a ſtudy for the painter which almoſt equals the boaſted ſtatues of Italy; his ſkin acquires a fairneſs which might add beauty to our faſhionable females; and indeed the whoſe appearance of the man is changed "quanto ab illo Hectore."

In recommending, however, the above, we are aware, that they require much modification in their application to morbid ſtates, becauſe the digeſtive functions are influenced in various and in oppoſite modes, according to ſex, age, habits of body, and habits of life.

Though the reſults of chemical analyſis, in regard to the nutritious parts of our diet, do not furniſh much practical information, it may be proper to advert to them with a view to future generalization. The food of man conſiſts of ſeveral unchangeable principles, foreign to the buſineſs of nutrition, combined with others in which the nutritive power reſides. The latter varies in its characters and proportions. Mucilage, gelatine, gluten, albumen, fecula, fibrine, ſugar, and the baſe of oxalic acid, are the general modifications under which the nutritive ſubſtance preſents itſelf. Each of theſe varies according to the nature of the heterogeneous principles with which it is aſſociated.

In the numerous plants which do actually, or which might, ſerve for food, mucilage ſometimes exiſts alone, or mingled with extractive, colouring, acrid, bitter, or odorous, matters; or diluted with various proportions of water. It is often united with oxalic acid and ſugar; ſometimes with a very active volatile principle of a very acrid taſte and penetrating odour. Laſtly, it furniſhes the matter of gums and vegetable jellies; in one of which the nutritive principle is imperfectly formed, while in the other it is brought into a very ſmall volume. Gum tragacanth, ſeneca, cherry-gum, &c. are examples of this matter. It is no-where cultivated, nor even collected, for food; ſo that we might be apt to conſider it as incapable of affording any nouriſhment, if it were not known that the caravans croſſing the ſandy deſerts of Africa, over which they have brought gum ſeneca, have in many inſtances loſt their way, exhauſted their proviſions, and been obliged to live on this gum for many weeks, having nothing elſe but water alone, and a very ſparing ſupply of that. Mucilage is alſo contained in moſt vegetable juices, and in the ſtems and other parts of plants.

In the fleſh of animals which we uſe for food, the gelatine is united with fibrous, extractive, ſaline, and earthy, particles. It is mingled with fat, and with ſerous or lymphatic fluids. It is found in various degrees of tenacity and conſiſtence; in which it determines all the ſenſible differences of the white organs, which contain an abundance of gelatine. In a word, it forms the animal jellies. which conſtitute a mild, light, and wholeſome, food.

Vegetable gluten is always found combined with other ſubſtances ſoluble in water, without which it could not be diſſolved in, and blended with, our juices. It abounds in the gramina, where it is united with fecula, extractive principle, colouring matter, mucilage, and an earthy ſubſtance. The albumen of animal matters reſembles, in many points, the vegetable gluten. The whole white, and a great part of the yolk, of an egg, are a compoſition of albumen, and colouring and oily principles. The caſeous matter of milk is a modification of albumen: which, together with the principles of butter and ſugar, compoſes that ſoft emulſive liquor, ſo favourable to the conſtitution of infancy. The moſt nutritive plants are thoſe whoſe baſe and prevailing principle is the amylaceous fecula. It exiſts ſometimes completely pure, and free from extraneous admixture; ſometimes united with mucilage, oils, or gluten; ſometimes with ſugar, extractive or colouring matters; ſometimes with earthy, acid, or ſaline, principles; and very rarely with noxious or poiſonous matters. Wheat is compoſed of gelatinous matter and fecula. Theſe two principles, acted on by the fermentative proceſs, form bread, the nutritive qualities of which are not ſurpaſſed by any vegetable ſubſtance. It is ſo much the more proper for animalization, inaſmuch as the fermentation has already brought it into a ſtate fit for decompoſition.

The principle now alluded to, which conſtitutes the farinaceous matter of vegetables, is contained, perhaps, in the largeſt proportion, in rice; and wheat is the next to this. Other grains are only ſubſtitutes for theſe; except maize, which is eaſily cultivated, and contains much farinaceous matter. The legumina contain much of the ſame principle; as alſo nuts, and the ſeeds of the cucurbitaceæ and poppy, although not uſed for food. It exiſts, probably, in the ſtems of ſome plants, as the palmæ, from the expreſſed juice of which ſago is formed; in the roots of many claſſes, as the potatoe, yam, and pignut, in which it is very abundant.

The fibrine of the muſcles and blood partakes of the properties of gluten and fecula: it admits of a very ſpeedy aſſimilation, and exerts a more marked, rapid, and extenſive, influence on the ſtrength in general, than any other food; yet it reſiſts the digeſtive powers, when, deprived of gelatine or dried, it is reduced to a hard coriaceous ſubſtance. It forms a cloſe and firm, but delicate and diviſible, texture, in the muſcles of healthy animals, which form a light and ſucculent kind of food. An extractive colouring matter generally adheres to the fibrous ſubſtance; and the differences in its quantity or quality probably influence the appearance and nutritive powers of our various animal foods.

Sugar, and the oxalic baſe, which can hardly be ſeparated from it, are produced by both kingdoms. The vegetable acids are convertible into a ſugary ſubſtance, which beſtows on them whatever nutritive powers they may poſſeſs. Other acids, beſide the oxalic, are unfit for nouriſhment; and they only acquire that property by an admixture of the latter or of ſugar or mucilage. The ſame principles exiſt in various proportions in the fruits employed for food. The reſpective quantities of mucilage, ſugar, acid, and water, indicate how far they are ſuſceptible of digeſtion, and, conſequently, nouriſhing. Sugar exiſts in moſt vegetables; but is moſt abundant in the ſugar-cane, from which alone it is furniſhed to any great amount, in the ſugar-maple, and the beet-root. Excepting what is ſupplied from the vegetables above mentioned, and which hardly forms the food of any perſon, its ſources for the purpoſes of food are not very general, being confined principally to dates, grapes, figs, and ſome other fruits. Fruits indeed, in general, contain ſugar; many of them in ſufficient quantity to afford conſiderable nouriſhment. But the three ſpecies juſt enumerated are

thoſe

thoſe on which many individuals live almoſt entirely; the ſugar being nearly their only nouriſhment: this obſervation holds with regard to dates in ſome of the African tribes, grapes in ſome parts of Portugal and Spain, and figs in Greece and the Grecian iſlands.

Expreſſed oils, found in vegetables, are alſo capable of being digeſted; the ſeeds containing them, and eſpecially nuts, are in many inſtances the principal food of the inhabitants of a country, as cocoa-nuts in America and the Eaſt. Theſe ſeeds indeed contain farinaceous matter, but in too ſmall proportion to afford nouriſhment of itſelf. The oily animal fluids alſo afford nouriſhment; the moſt common ſource of theſe is the fat of meat and butter, but ſome of the Ruſſians and the Greenlanders drink with avidity ſpermaceti and train oil.

As rules for diet and exerciſe are attended to chiefly by valetudinarians and the aged, we ſhall notice a publication which appeared in the year 1758, called "The Old Man's Guide to Health and longer Life." The author very properly divides his old men into two regiments, the thin and the groſs, to each of which he preſcribes a different regimen; the following rule, however, being common to both; "Uſe no butter at breakfaſt, if you wiſh to preſerve an appetite for dinner; and, in proportion as you uſe more or leſs (butter), ſo will your feelings be." The author goes on; "The groſs old man ſhould take his exerciſe chiefly in the forenoon, with as little nouriſhment as poſſible; the thin old man ſhould have a light breakfaſt, but take his exerciſe after dinner. The thin old man cannot ſleep in the morning; the groſs man cannot riſe early, unleſs he ſleeps in the day-time."

The frequent notices in newſpapers of individual inſtances of extreme old age, as well living as dead, have led us to think that much uſeful information might be elicited from a narration of the moſt eſſential circumſtances and habits of life of thoſe who have thus ſo greatly exceeded the ordinary limits of human exiſtence; ſuch particulars, for inſtance, as quantity and quality of food; degrees of abſtinence and indulgence in animal or intellectual enjoyments; of exerciſe and labour, or of ſedentary inactivity; and laſtly, the proportions of health and ſickneſs. Now, although great uncertainty may ariſe in aſcertaining the accurate truth of many facts, through the traditionary nature of the ſources from whence they muſt be collected, yet, among thoſe who furniſh editors of newſpapers or other publications with caſes of long life, enough might be obtained, by any one intereſted in the ſubject, to throw great light on the at-preſent diſputed queſtion of *relative cauſes*, and might tend to eſtabliſh, at leaſt with greater probability than yet exiſts, the quantum of influence which the moral and habitual operations and regulations of the animal economy poſſeſs over the peculiar idioſyncracy of that economy itſelf. We are not, certainly, ſo ſanguine as to expect from any combination of facts, however numerous and well atteſted, that mankind will ever regain the art of living to Methuſelah's age; no, certainly not; thoſe were the days of miracle, long ſince found uſeleſs: but if, from a compariſon of a multiplicity of various and oppoſing truths, ſome certain general principles could be diſcovered, on which the preſervation of human life, and, what is ſtill infinitely of more importance than mere length of life, its healthful ſecurity from the afflictions of bodily diſeaſe and moral ſuffering, could be proved to depend; then, inſtead of merely exciting a momentary feeling of wonder, like the preſent barren ſtatement of the years an individual has held his being, ſuch a concentration of prominent circumſtances attendant on lengthened exiſtence would become the precurſor of a new era, both in the ſcience of medicine and in that of the happineſs and well-being of univerſal man. We are aware that the relater of any inſtance of longevity could do little more than collect the circumſtances connected with it: to combine and deduce muſt be the work of a mind in full poſſeſſion of the aggregate maſs of particulars, and qualified to draw inferences from them.

After diet and exerciſe, the remaining numerous cauſes of diſeaſe in the digeſtive organs reſolve themſelves for the moſt part into the effects of ſympathy with or dependance on the action of various other parts. The cerebral ſtructure forms one of the leading and moſt important. It were of little importance to ſpeak here of the numerous complaints incidental to men of ſtudious habits. It muſt be expected that, ſeeing that muſcular contraction acts a very important part in the human frame, and that the force of that action is increaſed (within certain limits) in proportion to its exerciſe, therefore indolence muſt be productive of hindrance to the due performance of vaſcular and abſorbent functions of the body. It is further to be conſidered that nervous influence is neceſſary to ſecretion; and on ſecretion the hunger, digeſtion, &c. may be ſaid to depend. Now, it is well known that the intenſe action of the brain in performing mental phenomena do eſſentially and ſometimes completely diſturb the tranſmiſſion of nervous influence. Of this we have the moſt frequent examples. Every one knows how often enthuſiaſts in ſcience are led to forget the preciſe hours of refreſhment, and how much the man of literature in this reſpect differs from the bon vivant. It would ſeem (to uſe a figurative expreſſion) that the brain was ſo abſorbed in the ſublimity of thought, that it had no time to perform its corporeal and coarſer functions. But of courſe theſe functions are requiſite in the higheſt degree, and the non-performance of them ſubjects the ſtudious man to difficult and uneaſy digeſtion; and ſhould therefore be encouraged by regular habits and by muſcular action.

On the other hand, the want of due action in the ratiocinative powers ſeems to allow increaſed nervous ſupply to the ſecreting organs. Thus many mentally-indolent perſons have voracious appetites; and indeed we cannot help thinking that the amazing digeſting powers manifeſted by our peaſantry (in the generality of whom we ſee correſponding inactivity of mind) depends in a great meaſure on the unexerciſed ſtate of the intellect. This propoſition it would be perhaps difficult to demonſtrate, becauſe the facts under conſideration may be explained on other grounds. It is worthy of remark, however, that we ſee none of this exceſſive deſire for food manifeſted by men who, engaged in occupations equally laborious and healthy as the ploughman's, are called upon moreover by neceſſity or ſtimulated by education to the exertion of their minds.

It has been aſſerted more than once, that abſtinence fits the mind for increaſed exertion. This notion can only be admitted with ſome reſtriction. To a great degree it is undoubtedly true, becauſe, according to our preſent methods of life, it may be reckoned that the generality of perſons are inclined to a plethoric ſtate of the veſſels of the head, and hence a low kind of living may, to a certain point, tend to revivify the exhauſted brain. This beneficial reſult may ariſe too from tranquillity being reſtored to the extenſive nervous expanſions of an irritated ſtomach, which propagated their morbid condition to the brain; or, again, it may prevent for a time the ſupply of noxious materia to the vaſcular ſyſtem of the brain. In the latter mode eſpecially it is probable its effect is very frequent; for there is ſtrong ground to conjecture that many mental diſorders ariſe from the laſt cauſe. The effect which the deranged liver produces on the brain can only be accounted for on the ſame ſuppoſition; i. e. that of abſorption and local application.

This agency of the liver on the head is corroborated by the reſpected teſtimony of Dr. James Johnſon. See his work "On the Diſeaſes of Tropical Climates," p. 189. He ſays, ſpeaking of hepatic derangements, "The whole of the literary world, from the poet in his garret to the learned preſident in his hall, feel more or leſs of its effects.

fects. This deficiency in the ſecretion of bile, the conſequence of mental exertion and corporeal inactivity, is evidently the *morbus eruditorum*, "which ſicklies o'er, with the pale caſt of thought," the countenances of the ſtudious, who waſte their hours and their health by the midnight lamp! To them I need not deſcribe the malady; they are too familiar with its various ſymptoms. But few of them are aware how far material cauſes can influence intellectual ideas. If I wiſh to exert, on any particular occaſion, the whole force of my memory, imagination, perception, and judgment, I know, from repeated experience, that by previouſly emulging the liver and its ducts, and carrying off all bilious colluvies from the alimentary canal, by mercurial purgatives, which alſo excite a briſker ſecretion in the chylo-poïetic viſcera, I am thereby enabled to avail myſelf of thoſe faculties above mentioned, to an infinitely greater extent than I otherwiſe could. This is no theoretical ſpeculation; it is a practical fact. It may help to explain the great inequality which we often obſerve in the brighteſt effuſions of fancy; and ſhew us why even the immortal Homer ſometimes nods."

The ſtomach is influenced by ſympathy with other parts to a very great degree: 1ſtly, by the ſtate of the ſkin; 2dly, and moſt materially, by the ſtate of the lungs; and, laſtly, by the ſtate of all the collatitious viſcera. Among theſe the moſt ſtriking is the liver. It is ſcarcely fair to infer, however, that affections of the alimentary canal are produced by the collatitious viſcera through the medium of the nervous ſyſtem; ſince the unnatural ſecretions poured into it by them may produce all the diſturbances we have occaſion to witneſs. From the nature of this ſtructure it is very evident, that each of its ſecondary proceſſes is dependant on the due performance of the primary ones. Thus the ſaliva cannot mix with the food in a proper manner until the teeth have performed their office; the ſtomach cannot act if any impediment exiſts in the pharynx; nutrition cannot take place if the action of the ſtomach is ſuſpended or materially depraved; and ſo on. Hence, then, the beſt mode of conſidering theſe diſeaſes is according to their anatomical relation to each other; ſo that diſeaſes of the teeth, ſaliva, pharynx, and ſo on, will form the order of our arrangement.

Before entering on them, however, we have a few remarks to make on ſome grand diviſions in regard to the pathology of the mucous membrane of the ſtomach and bowels. To theſe derangements the ſweeping term *indigeſtion* has by moſt writers been applied, with a view of comprehending the whole of this varying and numerous claſs. We are indebted to the continental writers for ſome very material elucidations of the nature of gaſtric affections. We find, in the work of Brouſſais eſpecially, a moſt able expoſition of the chronic inflammation of the ſtomach; a diſeaſe which had been greatly overlooked, and perhaps confounded with thoſe inexplicable modes of action which have been accounted for on the unſatisfactory aſſumptions of *want of tone*, *laxity*, *weakneſs*, or *delicacy*, of *ſtomach*, &c. It is to be doubted if the uſe of theſe vague expreſſions has not induced many to adopt the ſtimulating, the purgative, or the ſtomachic, plan, to the manifeſt injury of their patients, when cooling and unirritating meaſures were more appropriate. Gaſtritis, in the common ſignification, is certainly a diſeaſe of rare occurrence, and is as dangerous as rare; but this applies only to its moſt acute and violent form. Brouſſais has eſtabliſhed the fact, by repeated diſſection and obſervation, that this inflammation exiſts in various forms; that it is capable of going on to produce diſorganization of the mucous expanſion of the alimentary canal; that, on the other hand, it may produce ſymptoms and effects reſembling acute fevers. He has traced the gradual ſhades and gradations, from the violent and acute form of inflammation to which old noſologiſts have applied the word *gaſtritis*, down to thoſe troubleſome though ſlight appearances which we have been accuſtomed to call *indigeſtion*. The notion of a ſlight modification of gaſtritis had indeed been entertained by Cullen; for he ſpeaks of erythematic inflammation of the ſtomach; but it does not appear that this idea was ever followed up by him, or applied with any advantage to practice. With reſpect to the exiſtence of this affection, we ſhould, à priori, conclude that inflammation of the ſtomach would be a diſeaſe of frequent occurrence, becauſe that organ is often oppoſed to ſubſtances of a highly-irritating nature, becauſe its vaſcular ſyſtem is much developed, and becauſe it poſſeſſes a high degree of ſenſibility. Indeed we are inclined to think that many diſturbances in the alimentary canal may be traced to inflammation in the firſt inſtance, and that the ſtate of *atony* of the digeſtive apparatus is often the reſult of that previous over-action. To generaliſe thus would, however, in the preſent ſtate of our knowledge, be premature; for we ſhould know preciſely in what proportions the abſorbent, the vaſcular, or the nervous, ſyſtem, of this digeſtive tube, are implicated in diſeaſe, ere we could ſtate the ſweeping concluſion, that inflammation is the general forerunner of gaſtric diſturbance. Moreover many caſes will occur to the practical phyſician in which no inflammatory action was in the leaſt degree apparent.

Perhaps then the moſt appropriate arrangement will be into, 1. Chronic inflammation of the alimentary canal; 2. into diſturbed function of that canal ariſing from unknown modes of action; and, laſtly, into ſympathetic propagated diſeaſe ariſing from, or communicated to, other parts. It is with the ſecond only that we have now to do. The firſt, as being connected with general inflammation will be treated of under *gaſtritis*; and the third will receive frequent illuſtration in almoſt every diſeaſe in our catalogue. It is however of the utmoſt importance that the two ſtates of atony and excitement ſhould be well diſcriminated; and on that account we cannot avoid giving in this place a ſhort diagnoſis of the two kinds of diſeaſe.

Chronic gaſtritis differs from the ſimple functional diſturbance of the ſtomach, in that a ſenſe of pain (of various kinds however) is almoſt continually preſent, and that the ſenſorial functions and the pulmonary ſyſtem are more powerfully affected: the ſkin exhibits more of heat; in the early ſtages, the circulation is ſomewhat affected; thirſt and evening exacerbations are frequently preſent; and vomiting is ſeldom abſent. Moreover the ſympathetic irritations that ariſe from the irritation of the ſtomach, preſent more of an inflammatory character. It will eaſily be ſeen, that every one of theſe ſymptoms is equally preſent in various kinds of ſimple indigeſtion; but the connexion of the whole muſt be taken into conſideration. The excellent effects of cool drinks, &c. in allaying the diſeaſe, ſeems to preſent another diſcriminating point, ſince that effect is ſeldom experienced in ſimple indigeſtion.

The ſame cautions are practically neceſſary in treating the mere functional diſturbances of the lower parts of the alimentary canal, and chronic enteritis, colonitis, &c. but, as this is not the place to enter into diſcuſſions on inflammation, we merely point out the fact that diſcrimination is neceſſary in thoſe diſeaſes. The functional diſturbances of the alimentary canal are ſo numerous, and ſo anomalous in their character, that they almoſt baffle deſcription, and we ſhall meet with no order of diſeaſes in which our noſological arrangement is more imperfect than in this; for not only do many of the individual diſeaſes run into each other, but ſome of the ſpecies, we are inclined to think, are merely ſymptomatous. Cullen arranged theſe complaints in a very general way. Mr. Abernethy too, though he has written ſome of the beſt hiſtories of them which we have, did not attempt to claſſify or arrange the different kinds, though he expreſſed a hope that ſuch diſcrimination might afterwards be made. More recently, in the intereſting work

of Dr. Wilſon Philip on Indigeſtion, we meet with want of due arrangement. The genus *Limoſis* of the preſent ſyſtem will be made to comprehend moſt of theſe diſeaſes, though perhaps the ſubdiviſions are imperfect. We have not introduced any account of thoſe various diſorders which ariſe from, and are traceable to, derangement of theſe parts; for a diſeaſe cannot be much altered in its character by remote cauſes; and hence the terms *Dyſpeptic-Phthiſis*, cum multis aliis, ſeems miſapplied; not that we forget that complaints ariſing from indigeſtion are moſt frequently curable, but becauſe we hold it indiſpenſible to pay particular attention to the ſtate of the *laboratory* of the ſyſtem in every claſs of complaint.

The claſs Cœliaca is divided into two orders and ſeventeen genera.

Order I. ENTERICA, [from the Gr. εντερον, an entrail.] Diſorders affecting the Alimentary Canal.

This Order contains twelve Genera.

Genus I. *Odontia*, [from οδους, a tooth.] Pain or Derangement of the Teeth in their Sockets. This genus embraces ſeven ſpecies.

1. Odontia dentitionis, difficult or painful teething, is further divided into four varieties: α, lactantium; β, puerilis; γ, adultorum; δ, ſenum.

α. O. dentitionis lactantium is a diſeaſe well known, and of frequent occurrence. It is cauſed by the tenſe ſtate of gum covering the tooth; or, on the other hand, by the too-relaxed ſtate, which allows the tooth to puſh it up and preſs on the nerves, without producing abſorption. It ſeems, too, that conſtitutional diſturbance has a great ſhare, by rendering the nervous ſyſtem particularly ſenſible, in encreaſing the bad effects of dentition. Children of plethoric and irritable habits are peculiarly obnoxious to this complaint, as alſo thoſe in whom coſtiveneſs is preſent. It is remarked alſo, that rickety children cut their teeth at advanced periods, and with much difficulty; and it is popularly known that favourable dentition is indicative of future health.

The following are a few of the morbid ſymptoms of difficult teething; viz. Inflammatory ſwelling of the gums, tonſils, and parotid glands; redneſs of the eyes and cheeks; vomiting, griping pains, teneſmus, profuſe diarrhœa with green evacuations, and ſometimes obſtinate coſtiveneſs and retention of urine. Fever, accompanied with cough and other catarrhal affections, hiccough, univerſal or partial tetanus, convulſions, &c. are the ſymptoms by which, according to the eſtimate of ſeveral writers, nearly a third of children are deſtroyed in difficult dentition.

Theſe are the *common* ſymptoms of difficult dentition; but occaſionally *peculiar* ones ariſe, which not unfrequently ſubſide as ſoon as the tooth is cut; as, for inſtance, gutta roſacea, (Lorry, Tract. de Morb. Cutaneis, 1777. p. 411.) deafneſs; amaurotic blindneſs; enlargement of the knees; paralyſis; and lameneſs of one or both legs. (Paſch, Abhandlung aus der. Wundarzney von. den Zahnen, S. 25, 36.) Aphthæ of the mouth; an inflamed tubercle over the tooth which is about to be cut; ſuppuration, ulceration, and even ſloughing of the gums. Rachitis is alſo alleged to have its origin ſometimes from difficult dentition. But we ſhould rather ſuppoſe that in the laſt inſtance the cauſe had been miſtaken for the effect. The firſt ſymptoms are local, and appear to be accompanied with pain, as the child is reſtleſs, uneaſy, and rubs his gums, and carries every thing to his mouth. There are alſo generally inflammation, heat, and ſwelling of the gums, and an increaſed flow of ſaliva. A general ſtate of fever follows, which is ſometimes ſlight and ſometimes violent, and is very remarkable both for its ſudden riſe and declenſion; ſo that in the firſt hour of his illneſs the child ſhall be perfectly cool, in the ſecond fluſhed and burning hot, and in the third temperate again. The local ſymptoms which enſue in diſtant parts, are various and complicated; for the appearance they put on is in ſome degree determined by the nature of the parts which they affect.

It is to be recollected, that the ſymptoms of irritation from teething have often very cloſely reſembled inflammatory diſeaſe, eſpecially of the brain, ſo that practitioners ſhould in all caſes take particular notice of the ſtate of the teeth. The treatment of the diſeaſe is of courſe ſimple; namely, to keep the bowels open; in plethoric children to apply a few leeches behind the ears; when much irritability prevails, a narcotic of the leaſt ſtimulating kind, as hyoſciamus, may be given. But the moſt adviſable ſtep, in addition to the above, is to divide the gum over the tooth. The inciſion is to be made with the common inſtrument, well known by the name of the *gum-lancet*, which is far better for the purpoſe than an ordinary lancet, as that is apt to cut the tongue and lips, eſpecially when the child moves about much. The grinding teeth require a crucial inciſion: all the others a ſimple tranſverſe cut completely through the gum. The wound is then to be examined with the finger, in order to aſcertain that no tenſe fibre over the tooth continues undivided. In this country practitioners ſeldom apply any thing to the inciſion; but abroad, it is not uncommon to put to it a mixture of lemon-juice and honey. A premature inciſion of the gum ſoon cloſes again, and therefore does little ſervice; but it is improbable that the cicatrix, thus produced, can be any impediment afterwards to dentition, as many have imagined; for it is an eſtabliſhed fact, that cicatrices in general are more diſpoſed to ulcerate and be abſorbed, than the original parts of the body. Mr. Hunter, indeed, informs us, that he performed the operation above ten times upon the ſame teeth, where the diſeaſe had recurred as often, and every time with the abſolute removal of the ſymptoms. No idle apprehenſions ſhould therefore deter us from dividing the gum, where there is any chance of benefit from the proceeding. At the ſame time this is not recommended as a prophylactic meaſure, but as being proper only when illneſs, ſuſpected to ariſe from dentition, actually exiſts.

The uſe of hard applications, as biting the root of marſh-mallows, ſmooth corals, boars' tuſks, &c. render the gums callous; but more good might, perhaps, be derived, if ſubſtances with roughiſh ſurfaces were employed.

The anomalies which we remark in regard to the backwardneſs, or on the contrary unuſual forwardneſs, of dentition, do not ſeem worthy of notice in this place, becauſe they are ſcarcely within the reach of medical aſſiſtance: it is uſually remarked that healthy children cut their teeth early; while thoſe who are rickety, or otherwiſe affected with chronic complaints, are equally late in performing the ſame proceſs. The moſt common order of the firſt teething is as follows: In the ſixth or ſeventh month after birth, the firſt or *milk* teeth make their appearance through the gums. The two middle inciſores of the lower jaw are thoſe which moſt frequently firſt come out; and, in the courſe of a few weeks, they are generally followed by the two middle inciſor teeth of the upper jaw. At length, after ſome months more, the lateral inciſors and the canine teeth ſhow themſelves. The anterior molares, or front grinders, do not commonly paſs through the gums until the child is a twelvemonth old.

β. O. puerilis; and γ. O. adultorum. Theſe two varieties may be conſidered together. It ſeldom happens that much irritation is produced in theſe advanced terms of dentition. Occaſionally, indeed, the protruſion of the *dentes ſapientiæ*, or "teeth of wiſdom," in adults, is ſo long delayed, that, the jaw having ceaſed to enlarge, and being completely filled with the other teeth, the preſſure of the *wiſe teeth* on the coronoid proceſs when they ariſe from the upper, and on the ſuperior teeth when from the lower, produces a trifling inconvenience; but this is eaſily remedied by freely opening the gum, or by extracting theſe uſeleſs teeth.

The

The ſame variety, in regard to time of appearance, exiſts in the ſecond dentition as in the firſt. The common period is from eight or nine to thirteen years of age. Many caſes of three or more dentitions have been recorded on undoubted authority.

δ. O. ſenum. The reproduction of teeth in advanced age is another curious but well-authenticated fact. In general the teeth which appear at this period are irregular and uſeleſs. John Hunter, however, ſaw one caſe in which a complete ſet aroſe in both jaws. Dr. Good mentions two caſes in which a few ſtraggling teeth were cut at a very late period of life; and which were further remarkable on account of the patients recovering, the one her hearing, the other her ſight; ſenſes of which they had been for years partially deprived. For further caſes in which teeth were produced very late indeed, the reader may conſult Yſabern, Journ. de Med. tom. xxv. p. 316. Nitzſeh, Ephem. Erudit. Ann. 1666, p. 175. Ephem. Nat. Cur. Dec. 11. Ann. iii. Obſ. 15. and the Phil. Tranſ. vol. xxvii. 1713.

2. Odontia doloroſa, acute pain in the teeth or their ſockets. Dr. Good makes four varieties of this diſeaſe; viz. α, carioſa; β, catarrhalis; γ, nervorum; δ, ſympathetica.

α. It appears agreed by the moſt enlightened phyſiologiſts, that the internal part and fang of the teeth are vaſcular, while the enamel is an inorganic ſecretion. *Caries* therefore may ariſe from inflammation of the tooth giving riſe to abſorption of the ſubſtance and enamel; or the ſame proceſs may take place from chemical ſolvents applied externally. We ſhould be inclined to think that the former cauſe is the moſt common. The more remote cauſes of the inflammation of the teeth are various, and many of them inſcrutable. Heat and cold, which are tranſmitted readily through the enamel, are perhaps the moſt frequent. Diſordered ſecretion from the ſalivary glands are perhaps the moſt uſual cauſe of decompoſition of the enamel; for we cannot ſuppoſe that the ſubſtances we ſwallow, heterogeneous as they are, can produce much effect in paſſing ſo rapidly as they do through the mouth. It is ſcarcely neceſſary to remark that inflammation of the gums will generally communicate their morbid ſtate to the teeth. By whatever means, however, as Dr. Good ſays, a decay or caries of the teeth may be produced, it appears to operate in three different ways: ſometimes commencing in the internal cavity, and working its path outward; ſometimes outward, and working its path within; and ſometimes by a waſting of the enamel, and conſequent denudation of the bony part. The firſt is the leaſt common affection, and is diſcoverable by the appearance of the internal blackneſs through the external ſhell; the third is more common than the firſt, and the ſecond the moſt frequent of the whole; evincing, at its commencement, the appearance of an opake white ſpot through the enamel, which gradually crumbles away about the ſpot, and thus diſcloſes that part of the body of the tooth which forms the original ſeat of the diſeaſe, and which, by its continuance, converts the early ſpot into a hole, and at length deſtroys it altogether, or at leaſt down to its neck, unleſs the pain produced by its progreſs compel the patient to have it extracted before the diſeaſe advances thus far.

It is of no practical uſe to inſert the various remedies by which the pain ariſing from denudation of the nerves of the teeth has been attempted to be alleviated. They are for the moſt part of that nature which, by exceſſively ſtimulating the nerve, entirely deſtroys its ſenſibility. Hence, perhaps, the moſt efficacious are the ſtrong mineral acids, carefully applied by means of a pin or probe to the carious ſurface; but this requires that the gum, &c. ſhould not exhibit any marks of inflammation. Small degrees of caries, or ſlight fiſſures, may be relieved by filing, filling up with gold, &c. Of courſe, however, the only *radical* cure, where much caries is preſent, is to extract the tooth; for the mode of performing which ſee the article SURGERY.

If inflammation have not produced caries (and there is often violent and excruciating pain irreferrible to decayed teeth), lancing the gums freely, and attending to the ſympathetic action whence they derived their diſeaſes, e. g. diſordered gaſtric or uterine function, will often effect the cure. The inflammation often extends over the whole face, and is particularly diſtinguiſhed by the exaſperation of the pain which warm liquids give riſe to when applied internally. This is moſt effectually combated by cooling lotions and by purges. The ill effects of the uſe of the ſtimulating remedies in this kind of tooth-ache is exemplified ſtrongly by the following caſe, extracted from the London Medical Journal, vol. iii. communicated by Mr. Fowler, of Princes-ſtreet, Hanover Square. "A gentleman whom I attended, was afflicted with the tooth-ache in the firſt dens molaris. Being much alarmed at the idea of extraction, he applied to an old woman, who at that time was eſteemed famous for the cure of the tooth-ache without drawing. She had applied her noſtrum to the tooth twice within the ſpace of three days; and, on the fourth, he came to me, complaining of a ſore mouth, telling me where he had been to get relief, and that the liquid which had been uſed was very cauſtic. From the appearance of the violent inflammation, which had taken place from the diſeaſed tooth to the epiglottis, I adviſed him to conſult ſome medical gentleman of eminence *immediately*; with which advice, I am ſorry to ſay, he did not comply. Not hearing from him on the third day, I called (en paſſant), but he was too ill to be ſeen; a derangement of intellects had taken place. I called again four days afterwards, and was informed, that he had died raving on the preceding day. I had every reaſon to believe, that the fluid which had been inſerted into the tooth with a view of deſtroying the nerve, had produced this tragical end."

γ. Diſeaſe of the *nerves* of the teeth is perhaps the moſt troubleſome ſpecies of tooth-ache. The appearances it exhibits are anomalous; and the complaint is ſo frequently aſſociated with caries of the teeth, that its preciſe nature is often unknown until ſome of the teeth have been extracted without the leaſt alleviation. This affection ariſes from the ſame cauſe as other morbid affections of nerves; often from gaſtric, inteſtinal, or biliary, derangement; pregnancy, plethora, worms, &c. and is to be combated only by removing the cauſe, and by the uſe of remedies having the effect of allaying nervous irritation. As this affection ſeems, then, to ariſe from various cauſes, it is capable of comprehending the other varieties mentioned by Dr. Good. We ſhall have occaſion to ſpeak more at large on this ſubject when treating of NEUROTICA.

3. Odontia ſtuporis, or tooth-edge, has two varieties: α, à ſtridore; β, à acritutide. The former, which is aſſociated in a remarkable manner with peculiar imaginations, is the ſenſation we feel when the edges of two knives are rubbed acroſs, when we cut a cork, or rub our coat-ſleeves together. Dr. Good mentions the curious circumſtance, that a friend of his experienced this ſenſation in a remarkable degree from hearing a woman cry bullaces for ſale. It is perhaps difficult to explain this phenomenon. It is moſt probably ſomehow connected with ſympathetic action between the nerves of teeth and ear; unleſs we could admit the notion of Hagerup, that the nerves of the teeth are *auditory*, in which caſe this operation of harſh ſounds might readily be accounted for. As connected with this point, we beg the reader to notice the concluſion of our article DUMBNESS, vol. vi. p. 117.

β. The latter variety is produced by moſt chemical ſubſtances that can denude or diſſolve the enamel. It is felt at the *edge* of the teeth, perhaps on account of the thinneſs of the enamel at that part. Morbid ſecretions ejected from the ſtomach into the mouth frequently cauſe this unpleaſant ſenſation. Mechanical injuries, as gnaſhing the teeth, attrite the enamel likewiſe; and it is ſaid to be a ſymptom in rachitis, bilious diſorders, &c. The

removal

removal of the remote cauſe is of courſe the only plan of treatment. Warm liquors, and the chewing of almonds, have however been recommended.

4. Odontia deformis, deformity of the teeth, from error, ſhape, poſition, or number. The teeth ſometimes grow in a very irregular manner; as from the palate, underneath the tongue, or not upright in the gums. The latter circumſtance is a very general conſequence of neglecting to draw the firſt teeth of children on the appearance of the ſecond. It may be remedied, when in a trifling degree, by puſhing the tooth from time to time towards its proper ſituation; or, more permanently, by means of ſome mechanical contrivance, as ſilk thread or Bruner's machine. A metallic plate anſwers the purpoſe very well; its width ſhould be leſs than the height of the teeth; its breadth equal to three teeth; it is to be applied to the inſide of ſuch teeth as incline inwards, and to the outſides of thoſe which incline outwards; at the ends of the plate are two holes, through which the ſilk-threads, ſmeared with wax, are to be paſſed, and, after croſſing each other, are to be tied over the oblique tooth.

When the teeth are ſo far removed from the gums as to render theſe methods ineffectual, extraction is of courſe the only reſource. Albinus records an example, in which a tooth grew out of the maxillary proceſs below the orbit. It was concealed until it made its way out in this extraordinary ſituation. *Annot. Acad.* t. i. p. 54.

The teeth have ſometimes been obſerved inverted, their bodies being ſituated towards the jaw. *Pollich, Increm. Oſſium*, p. 25. *Albin.* c. 9. *Palfin*, c. 9.

Sometimes the teeth are placed too diſtant apart, ſo that between their crowns large interſpaces are left. Thus, in children three years of age, the crowns of the milk-teeth are ſo cloſe to each other, that they are laterally as it were in contact; but, in children ſeven years old, there are wide interſpaces between them. The reaſon of this is owing to the jaw increaſing in ſize, while the dimenſions of the teeth undergo no alteration. The ſecond or permanent teeth, on the other hand, (at leaſt the firſt twenty of them,) have larger bodies than the milk-ſet.

Frequently the tartar inſinuates itſelf between the crowns of the teeth, and occaſions a conſiderable ſeparation of them. We need ſcarcely obſerve, that the cure requires that the tartar ſhould be taken off, and the teeth reduced into their natural poſition.

The deformity of which we are now treating, is occaſionally aſcribable in adult ſubjects to the preternatural breadth of the jaw, in which circumſtance it is abſolutely incurable.

The teeth may be too crowded together, ſo that their crowns are laterally in contact. This defect may extend to ſome or all the teeth. The frequent conſequence is, that the lateral margins of theſe parts become carious. This deformity ariſes from the great width of the crowns of the teeth, and it may be aſcertained by ocular examination. In ſome inſtances, all the bodies of the teeth are preternaturally wide, in others only a certain number of them. It is cauſed likewiſe by the uncommon ſhortneſs of the jaw. It may be known by obſerving that the crowns of the teeth are not too large, and that the alveolary arches are ſtrikingly diminutive. The mode of cure conſiſts in filing off a little of the lateral edges of the teeth affected.

Sometimes the number of the teeth exceeds what is the uſual ſhare of the human ſpecies in general; and this particularly occurs whenever the number amounts to more than thirty-two. Columbus has ſeen thirty-three; Fauchart, thirty-three and thirty-four; Bourdet, thirty-ſix; and Ingraſſias thirty-ſix, including twenty-four grinders.

In ſome inſtances, the exceſſive number is owing to there being a double row of teeth. This malformation may happen to both jaws, or be confined to one. It has been noticed in both jaws by Munick, p. 144. Plinius, c. xi. p. 623. C. Bartholinus, p. 464, &c. Arnold met with a boy, fourteen years old, who had all together ſeventy-two teeth in his mouth. There was a double ſet of the inciſores, canine teeth, and three poſterior grinders; but the anterior grinders were triple: conſequently there were counted in each jaw eight inciſores, two canine on each ſide, and twelve molares. The inciſores were not arranged in an even double row; but each row ſeemed irregular, and its order as it were promiſcuous. The arrangement of the canine and grinding teeth was more regular. None of theſe teeth were affected with caries. *Obſ. Phyſ. Med.* p. 69. See alſo Hunter, p. 115, 199, for examples of a double row of teeth. Bloch, Medicinifche Bemurkungen, p. 19. Triple row, Neander, Phyſic, Part II. Numerous and confuſed rows, Eph. Nat. Cur. ann. iii. vii. viii.

5. Odontia edentula, or toothleſſneſs. This ſpecies conſiſts of four varieties. α, Peculiaris; from conſtitutional defect. β, A vi extrinſeca; from external violence. γ, A carie; from decay. δ, Senilium, from old age. In all theſe varieties, the affection ſeldom extends to the whole teeth, except in the caſe of old age. In the firſt, or that from conſtitutional defect, a few only in one or both jaws are left unprovided for; while ſometimes an effort to this purpoſe is commenced, but not carried to perfection. "In the head of a young ſubject which I examined," ſays Mr. J. Hunter, "I found that the two firſt inciſor teeth in the upper jaw had not cut the gum; nor had they any root or fang, excepting ſo much as was neceſſary to faſten them to the gum on their upper ſurface; and, on examining the jaw, I found there was no alveolar proceſs nor ſockets in that part." Nat. Hiſt. of the Human Teeth, p. 8. It is obvious that the only method of remedying this defect is by inſerting ſupplemental teeth; as to which ſee the article SURGERY.

6. Odontia incruſtans, tartar of the teeth. Tartar is an earthy cruſt, which adheres to the teeth. As it fills up the interſpaces of ſeveral of the teeth, and occupies their external ſurfaces, it is ſeldom obſerved upon their inſides. By the Greeks it was called *odontolithos*, from ὀδους, a tooth, and λιθος, a ſtone. By others it has been termed *tophus* vel *calculus* dentium.

With regard to the effects of the tartar, it diſplaces the teeth, and renders them looſe and painful; it alſo ſeparates the gums from the fangs, producing caries in the latter, and a bad ſmell in the breath. In reſpect to colour, the tartar of the teeth is of three kinds, namely, dark-brown, yellow, and black.

Since many perſons who never clean their teeth at all are not diſfigured with theſe depoſitions of tartar, it appears that a peculiar diſpoſing cauſe is neceſſary for the occurrence of the complaint. It is moſt likely that morbid ſtates of the ſaliva are the moſt frequent; for there are certain perſons, whoſe teeth are conſtantly incruſted with tartar, notwithſtanding they are in the continual habit of waſhing their teeth and mouths. Berdmore relates a ſurpriſing example of this ſort. A man, thirty-two years of age, had the teeth of each jaw coated with ſolid tartar, half an inch in thickneſs, both on the outſide and inſide of the teeth, and on the ſurface of the gums, ſo that the interſtices of the teeth were altogether inviſible. The gums were every-where puſhed off the teeth, and painful. The incruſtations upon the inciſor teeth were ſo thick, that the lower lip was rendered more prominent. During a fortnight, Berdmore removed every day ſome of the tartar from the teeth with an inſtrument, and at length employed a dentifrice and bruſh. The retracted gums were ſcarified, and thus made to adhere to the necks of the teeth. The patient was obliged to bruſh his gums and teeth three times a-day, partly with a view of preventing the new formation of tartar, and partly in order that the regeneration of the gums might be ſtill more promoted. But, although the patient ſtrictly followed this plan, his teeth and gums, in the courſe of half a year, became again covered with an extremely-thick coat of tartar. Berdmore was therefore under

under the neceſſity of recommending the uſe of a ſtiffer bruſh, and a dentifrice made of ſhells, for the purpoſe of removing the tartar.

With reſpect to the treatment of tartareous incruſtations of the teeth in general, it is eſſential to remove the tartar, and clean the teeth well every day. It is alſo needful to correct the ſtate of the ſalivary ſecretion.

Perſons who are in the habit of uſing acrid tinctures or powders which diſſolve the enamel, and make it porous, are frequently troubled with tartareous incruſtations. The cauſe being avoided, the mode of treatment is the ſame as in the preceding caſes.

This affection ſometimes arrives at ſuch a pitch, that ſeveral of the teeth become concreted together. See Euſtachius de Dent. cap. 2.

7. Odontia excreſcens. Varieties: α, ſpongioſa; β, extuberans.

α. O. ſpongioſa is taken to apply to the diſeaſe which has been ſo well deſcribed by Hunter as ſcurvy in the gums, from its identity with one of the ſymptoms of ſea-ſcurvy. It is not to be concluded however that the term is exactly correct, or that this ſymptom is always connected with a general ſcorbutic diatheſis; on the contrary, the above-mentioned author has often ſeen ſcurvy of the gums in perſons quite healthy, in patients afflicted with ſcrofula, and other complaints equally remote in their nature from ſcurvy. The primary ſymptoms of this complaint are thoſe of inflammation; viz. pain, redneſs, and turgeſcence. The gums bleed on the ſlighteſt injury; the tenderneſs is firſt obſervable on the edges; the ſmooth ſkin appears denuded on the latter parts; and often, particularly in the interſtices between the teeth, there ſhoot up irritable granulations. To this ſtate ulceration and abſorption ſupervene: the former proceſs is often ſo extenſively preſent as to denude all the teeth of each jaw; more commonly, however, it is confined to one part, at moſt to one jaw. It frequently happens in this caſe that the alveolar proceſs diſappears by abſorption, in which event there is always a very conſiderable diſcharge of matter from the inſide of the gum and alveolar proceſs, flowing out in the direction of the tooth. In many of theſe caſes, we find that, while the gums are ulcerating in one part, they are ſwelling and becoming ſpongy in another, and hanging looſe upon the teeth; and this often takes place when there is no-where any ulceration. At length the teeth become looſe, and in a few years drop out, one after the other, at ſhort intervals, until the perſon is rendered toothleſs. It is from this complaint that many perſons loſe their teeth at a very early period of life. Indeed moſt individuals are more or leſs ſubject to it; as the gums, in ſome part or another, although there be no ſymptoms of the diſeaſe, are likely to become preternaturally red, enlarged, and tender. Therefore, whenever a tendency to this diſeaſe is obſerved, great care ſhould be taken to apply ſuch means as will arreſt its progreſs.

The treatment of ſcurvy of the gums conſiſts in freely lancing them when in the inflamed or ſpongy ſtate. The uſe of aſtringent lotions too is after this of eſſential ſervice. Theſe ſtimuli to be varied according to the feelings of the patient. The moſt common are infuſion of roſes with the tincture of myrrh, decoction of bark, ſolutions of alum, arquebuſade-water, &c. In ſome caſes great benefit is derived from the uſe of ſea-water, and Mr. Fox obſerves, that he always recommends it to be uſed warm if the gums be tender. When the gums are exceedingly tender, and have any tendency to ulceration, Mr. Fox recommends waſhing the mouth very frequently with barley-water ſweetened with honey. In two or three days, if the ſoreneſs is diminiſhed, the lancet is to be cautiouſly uſed with the diluted tincture of myrrh as a waſh. When this treatment fails in making the edges of the gums heal, and they hang looſely about the necks of the teeth, Mr. Fox obſerves, that much good will be derived from the uſe of a ſolution of the argentum nitratum. He ſays, that, if the diſeaſe be only partial, the cauſtic ſhould be applied with a camel's-hair pencil dipped in the ſolution. This remedy is deſcribed as communicating a new action to the gums, and they generally get well in a ſhort time. Indeed, whenever the gums are very full, and diſcharge a good deal of offenſive matter, waſhing the mouth with a ſolution of lunar cauſtic is, according to Mr. Fox, a very excellent means of rendering the mouth ſweet and comfortable. This remedy, when applied to the ſore edges of the gums with a hair-pencil, may be uſed as ſtrong as in the proportion of a dram of the argentum to an ounce of diſtilled water; but, if the mouth is to be rinſed with it, not more than one grain of the cauſtic ſhould be put to two ounces of water, leſt, by being too ſtrong and getting into the throat, it ſhould occaſion an unpleaſant nauſea.

Perſons, who are often troubled with inflammation of the gums, ought to have them ſcarified whenever they become painful, or are more turgid than uſual. By the loſs of a ſmall quantity of blood, the affection is immediately relieved, and kept from committing the ravages which have been related. In ſcarifying the gums, the lancet ſhould be applied longitudinally to thoſe parts which are ſituated between the teeth, becauſe, if the gums are cut where they cover the fangs, they will ſhrink in healing, and leave the necks of the teeth expoſed. On the other hand, if the gums are lanced in the angles between the teeth, they will be drawn tighter in healing, and the teeth be eventually ſtrengthened. *For on the Diſeaſes of the Teeth.*

In addition to theſe meaſures, it will often be neceſſary to correct the ſtate of the conſtitution, when ſcorbutic or ſcrofulous appearances are preſent. Frequently, too, ſecretions from the alimentary canal ſhould be procured, for the purpoſe of removing irritation extending to the gums, as part of that ſtructure. It is to be remarked alſo, that the free ſcarification we have urged above ſhould be diſpenſed with in ſcrofulous caſes, ſince, according to the teſtimony of Hunter, they do harm in theſe caſes. This author ſpeaks favourably of ſea-bathing, and rinſing the mouth with ſea-water.

The next variety, β, O. extuberans, ſeems cloſely allied with the firſt, as a conſequence; unleſs indeed we admit the belief that in this the inflammation is attached to the bony ſtructure. However this be, the tooth affected in *gum-bile* is generally found ſwelled, or in advanced caſes abſorbed at its fang, while the ſubſtance of it remains ſound. Sometimes, on the other hand, it is ſuppoſed to originate from a diſeaſe in the ſocket, or jaw, which has no connexion with the tooth, and only affects it ſecondarily. Upon drawing ſuch teeth, ſays Mr. Hunter, they are generally found diſeaſed at or near the point, being there very rough and irregular, like ulcerating bones. The laſt kind of gum-biles may ariſe altogether from ſuch a cauſe, the appearance on the fang of the tooth being only an effect.

The ſame ſurgeon has explained, that theſe abſceſſes, whether ariſing from the teeth or the ſockets, always deſtroy the alveolar proceſſes on that ſide where the matter is diſcharged, on which account the tooth is rendered more or leſs looſe. This event may be ſeen in many ſkulls, and alſo frequently in the living ſubject; for, when the alveolar proceſs is deſtroyed on the outſide of the tooth, if the latter part be moved, the motion may be obſerved under the gum all along the fang. When theſe abſceſſes have burſt through the gums, they often cloſe up, and put on the appearance of being healed; but ſuch as diſcharge themſelves between the gums and teeth can never heal up, becauſe the gum cannot unite to the tooth. At certain periods, however, the diſcharge from them diminiſhes, owing to a ſubſidence of the ſuppuration; but, either expoſure to cold, or ſome other accidental cauſe, occaſioning a freſh inflammation, an increaſe of the ſuppuration is the conſequence; and either

the old orifice in the gum becomes opened again, or the diſcharge by the ſide of the tooth is augmented. In the latter caſe, Mr. Hunter believes, that the affection is leſs ſevere than in the former, in which freſh ulceration is required for the paſſage of the matter. Thus a gum-bile goes on for years, healing and opening alternately; the effect of which is, that the alveolar proceſſes are at length abſorbed, and the tooth gets looſer and looſer, till it either drops out, or is extracted. Moſt probably, in all ſuch caſes, ſays Mr. Hunter, the communication between the cavity of the tooth and the jaw is cut off; yet it keeps in part its lateral attachments, eſpecially when the gum graſps the tooth; but theſe attachments are leſs when the matter paſſes between the gum and the tooth; though ſome of them are ſtill retained, particularly on the ſide oppoſite to the paſſage for the matter.

With regard to the ſymptoms of gum-biles, thoſe which open through the gum may be diſtinguiſhed by a ſmall riſing between the arch of the gum and the attachment of the lip. Upon preſſing the gum at the ſide of this point, ſome matter will commonly be obſerved oozing out at the eminence. This eminence ſeldom ſubſides entirely; for even when there is no diſcharge, and the opening is healed over, a ſmall riſing may ſtill be perceived, which ſhows that the gum-bile has been there. Such gum-biles as diſcharge themſelves between the gum and the tooth are always diſcovered by preſſing the gum, whereby the matter is forced out, and is ſeen lying in the angle between the gum and the tooth.

A fungus will ſometimes ſhoot out of the orifice of a gum-bile, in conſequence of a luxuriant diſpoſition to form granulations on the inſide of the abſceſs, and the opening being backward to heal. In this caſe, the tooth acts as an extraneous body; and, by the ſecretion of matter, the abſceſs is prevented from healing. There is no difference in the treatment of gum-biles, whether they ariſe from a diſeaſed tooth, or a diſeaſe in the ſocket. When an abſceſs forms round the root of a tooth, the tooth, by loſing its connexion with the other parts, loſes every power of union, as it is not endowed with the power of granulating. Hence it becomes an extraneous body, or at leaſt acts here as one, and that of the worſt kind, which, ſays Mr. Hunter, it is not in the power of any operation in the machine to get rid of. In this caſe, therefore, the only cure is by the extraction of the tooth; and, as this is the laſt reſource, Mr. Hunter obſerves, that every thing ſhould be done to make the parts as eaſy under the diſeaſe as poſſible, ſo that this operation may be poſtponed.

When the abſceſs has burſt through the gum, Mr. Hunter adviſes us to keep the opening from cloſing, with a view of preventing future gatherings. He recommends enlarging the opening, and keeping it enlarged till all the inſide of the abſceſs is ſkinned over, or the aperture in the gum loſes the diſpoſition to cloſe up. This will in a great meaſure prevent any future formation of matter, or at leaſt whatever is formed will find a ready outlet, ſo that no accumulation can happen. The end of the fang, indeed, will be expoſed; but, under ſuch circumſtances, it will not be in a worſe ſituation than when ſoaked in matter. Mr. Hunter next remarks, that one method of doing this is to open the gum-biles by a crucial inciſion the full width of the abſceſs, and fill it with lint, which ſhould be dipped in lime-water, or a diluted ſolution of lunar cauſtic, made by diſſolving one drachm of the cauſtic in two ounces of diſtilled water; and the wound ſhould be dreſſed very frequently, as it is with difficulty that the dreſſing can be kept in. If this is not ſufficient to keep the wound open, it may be touched with the lunar cauſtic, ſo as to produce a ſlough; and the application may be repeated, if found neceſſary. Some difficulty is experienced in keeping on the dreſſings; but conſtant attention will make up for the inconvenience of ſituation. Mr. Hunter alſo ſpeaks in favour of touching the ſurface of the abſceſs with the lapis ſepticus, and keeping the lip from coming into contact with the part for one minute, within which ſpace of time the cauſtic will penetrate to the bottom. The ſurface of the bile ſhould be wiped as dry as poſſible, that the cauſtic may not do miſchief by ſpreading.

It has been a practice to extract the tooth, then file off any diſeaſed part of it, and immediately replace it. This method has often failed, in conſequence of the tooth being introduced into a diſeaſed jaw; but occaſionally it has ſucceeded.

When a gum-bile is formed on a back-tooth, the treatment, according to Mr. Hunter, need not be ſo nice as when the abſceſs is ſituated upon any of the fore-teeth, becauſe appearances are then of leſs conſequence. Therefore the gum may be ſlit down upon the fang through its whole length, from the opening of the gum-bile to its edge; which proceeding will prevent any future union, while the healing of all the cavity of the abſceſs will prevent any future collection of matter. The wound afterwards reſembles the hare-lip. Hence this practice is not adviſable when the place of the cut would be much in view, as when the abſceſs is ſituated upon any of the fore-teeth. In theſe caſes, when the granulations protrude from the ſmall opening, a cure may be effected in the manner above mentioned, or the granulations may be cut off with a knife or lancet. However, in general, a permanent cure cannot be thus effected, and the granulations riſe up again.

In conſequence of bad teeth, excreſcences alſo ariſe from the gum, near or in contact with the teeth which are diſeaſed. In general, ſuch growths may be eaſily removed with a knife, or any other cutting inſtrument which may be found moſt convenient. They will often riſe, in a day or two after the operation, as high as ever; but this newly-generated matter generally ſoon dies, and the diſeaſe terminates well. They frequently have ſo much of a cancerous appearance as to deter ſurgeons from meddling with them; but Mr. Hunter believed, that, when they ariſe at once from the gum, and appear to be the only diſeaſed part, they have no malignant diſpoſition. However, this great ſurgeon had ſeen them with very broad baſes when the whole could not be removed, and yet no bad conſequences reſulted from the partial removal of them. In a few years they often riſe again, by which means a great deal of trouble is occaſioned. The writer of this article has ſeen a caſe of this nature, in which the extent and rapid growth of the fungus rendered exciſion impracticable, very ſucceſsfully removed by tearing out, and the uſe of cauſtic.

The few remarks we have made on the ſubject of diſeaſes of the teeth and gums, clearly indicate the regulations which ſhould be adopted for the preſervation of theſe beautiful ſtructures; viz. by aboliſhing the uſe of all dentifrice capable either of mechanically detriting, or chemically diſſolving, the enamel, as well as of all alimentary ſubſtances which have the ſame effects; but at the ſame time of diligently removing, at leaſt once a-day, all ſordes from the mouth. Perhaps nothing conduces to the ſame purpoſe more than healthy action of the ſtomach; for the viſcid ſtate of the ſalivary ſecretions are well known when that organ is deranged; and we may further remark, that fine teeth are moſt uſually obſervable in thoſe who are free from gaſtric diſturbance; and that few animals are ſubject to decayed teeth in an equal proportion to our own race. As a popular notion is prevalent, that the uſe of ſugar is prejudicial to the teeth, it is proper in this place to contradict it as far as regards the circumſtance of its diſſolving the enamel; for general de Beaufort ate every day for forty years a pound of ſugar, and lived to the age of ſeventy. After death, his viſcera were found free from diſeaſe, and his teeth ſound. (Anecdotes de Médecine, tom. ii. p. 35.) Plenck put a healthy tooth into ſome ſyrup diluted with water, and kept it there two months, at the end of which time it was taken out, and found to have undergone no change.

(Doctrinâ

(Doctrinâ de Morb. Dentium, p. 52.) How far, however, this ſubſtance may indirectly hurt the teeth, by deranging the gaſtric functions, may admit of ſome diſcuſſion.

Genus II. *Ptyaliſmus*, [from πτύω, to ſpit.] Diſorders affecting the Salivary Glands. This genus contains three ſpecies.

1. Ptyaliſmus acutus, or ſalivation, has three varieties: α, hydrargyratus; β, ſympatheticus; γ, mellitus.

α. Ptyaliſmus hydrargyratus. This conſiſts in an increaſed ſecretion of ſaliva from an extreme action of the ſalivary glands. As an idiopathic diſeaſe, it is ſeldom ſeen, and even then not until it has aſſumed the chronic form. It more uſually makes its appearance in conſequence of irritation from mercury. Other ſubſtances, however, will produce it; but this is the moſt common, and the only one we are acquainted with which increaſes this ſecretion with certainty and preciſion. Formerly the uſe of mercury for the purpoſes of ſalivation was carried to ſo great an extent, that frequent ſloughings and ulcerations of the mouth were the conſequence. But, ſince it has been known that the degree of violence with which mercury is puſhed is far from increaſing its curative effects, we have not to record ſo many of thoſe frightful appearances.

The production of this diſeaſe is generally the work of the phyſician. With reſpect to the quantity of mercury neceſſary to produce it, the greateſt variation is obſervable. While, on the one hand, it is carried into the conſtitution without viſible effect for very long periods, or is carried off by ſweat, purging, &c. on the other, the moſt trifling doſes in different conſtitutions produce violent and alarming effects in a few days. The inſtances in which the patients have been inſenſible for long periods to large and frequently-repeated doſes of this medicine, will be familiar to moſt of our readers. The oppoſite ſtate of conſtitution is not perhaps ſo frequently met with; but even that is ſufficiently common. The uſual quantity of mercury required is about five grains of the blue pill, which contain a grain of mercury, to be repeated three times a-day; or, if calomel is employed, a grain night and morning at firſt, or two grains at night, guarded with a grain of opium, leſt it ſhould irritate the bowels, will be a proper doſe. If the ointment is preferred, half a dram of the ſtrong mercurial ointment may be rubbed in night and morning. In about a week or ten days, by either plan, the mouth will be ſlightly ſore in the majority of caſes; while, on the contrary, as we have before mentioned, caſes are not uncommon in which two or three ſmall doſes of mercury have produced copious ſalivation. In debilitated habits, three grains of calomel given in the doſe, or one grain on three ſucceeding nights, has been found to 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; or by the mercurial ointment employed to kill lice. In theſe caſes, the idioſyncracy of the patient ſeems to influence the effect; and, therefore, this ſhould be, if poſſible, aſcertained before mercury is exhibited in any conſiderable quantity.

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.

Of courſe this is not the proper place to diſcuſs the effects of mercury, or, generally ſpeaking, its adminiſtration; but, as far as regards the bringing on of ptyaliſm, we cannot help remarking, that, as its continuance is always unpleaſant, and ſometimes difficult of cure, a greater degree of care is required in its inſtitution than the generality of practitioners think proper to adopt. Under this impreſſion, we cannot do better than urge the rules of Dr. Hamilton on this ſubject; whoſe advice, however it may be thought by ſome to favour of unneceſſary minuteneſs, is nevertheleſs highly uſeful in many caſes, and has the advantage of erring on the right ſide in all.

"The firſt precaution to be adopted in this climate during a courſe of mercury, is confinement within doors, with a regulated temperature of the apartment. The utility and the neceſſity of this precaution muſt be ſo obvious, that it is unneceſſary to expatiate upon the ſubject. Not that it is meant that the patient ſhould be confined to an ill-ventilated room; for, on the contrary, a plentiful ſupply of freſh air is of eſſential utility. While the boldneſs with which Mr. Pearſon expoſes ſuch patients to cool dry open air may be well ſuited to perſons who have been immured in a crowded hoſpital with a mercurial atmoſphere, it certainly would be moſt prejudicial to the better ranks of ſociety in private practice.

"2dly. The diet ought to conſiſt of the mildeſt poſſible food, ſuch as preparations of milk and farinaceous matter, with weak animal mucilages. In ſhort, all ſtimulant food or drink of every deſcription, ought to be moſt ſcrupulouſly refrained from.

"3dly. If the individual be robuſt, fixteen or twenty ounces of blood ſhould be drawn from the arm before any preparation of mercury be exhibited. Where, from the delicacy of the patient, blood-letting cannot be adviſed, confinement within doors a week previous to beginning the mercury, and during that time one or more doſes of cooling phyſic ought to be taken.

"4thly. The mercury muſt not be given in ſuch quantity, or with ſuch activity, as to produce a ſudden effect upon the ſyſtem. This is certainly one of the moſt important practical improvements, ſuggeſted by Mr. Abernethy and others, and confirmed by the late experiments; for irreparable miſchief was often committed by the hurry with which the ſyſtem was loaded with mercury. If the other precautions be implicitly adopted, the more ſlowly the mercury is adminiſtered, the more certainly, and perhaps ſpeedily, will the primary ſores heal.

"5thly. Although, in particular caſes, ſome of the more active mercurial oxydes may be uſeful, the blue pill or the blue ointment furniſh in general the ſafeſt and mildeſt preparations of mercury.

"6thly. Salivation is to be guarded againſt by leſſening the doſe, or ſuſpending the medicine, whenever the braſſy taſte in the mouth is perceived. The ſame meaſures are to be purſued if any irritation of the bowels threatens.

"7thly. Some vegetable diluent ought to be drunk in large quantities, for the purpoſe principally of preventing the peculiar ſtate of the blood, which mercury is ſo apt to produce. The decoctions of ſarſaparilla, guaiacum, ſaſſafras, &c. anſwer this purpoſe; and perhaps they are all equally efficacious, if drank tepid, and in ſufficient quantity.

"8thly. It is extremely difficult to eſtabliſh any general rule for the duration of a mercurial courſe, as that muſt be regulated very much by the circumſtances of each particular caſe. From two to three months may perhaps be ſufficient in the majority of caſes.

"9thly. The daily uſe of the warm bath, where that can be conveniently commanded, is found particularly beneficial.

"10thly. If any irritable feelings occur while under the influence of mercury, the uſe of the medicine ſhould be inſtantly ſuſpended, and the moſt active meaſures for checking the progreſs of ſuch complaints ought to be carefully adopted. Preparations of camphor, of the ſpiritus ammoniæ aromaticus, of opium, of cicuta, &c. are ſeverally uſeful, according to the circumſtances of each caſe.

"11thly. After the mercurial courſe is finiſhed, the patient ought to remain within doors for at leaſt a fortnight, improving the diet, (though ſtill abſtaining from wine

wine and ſtimulating liquors,) and taking gentle exerciſe, progreſſively increaſing it according to the return of ſtrength.

"Laſtly. The flannel and woollen dreſs, in which thoſe under a courſe of mercury ſhould be, literally ſpeaking, encaſed, is to be changed daily; and, beſides the ordinary precautions of having thoſe articles of dreſs well waſhed, it is neceſſary that they be expoſed for at leaſt twenty-four hours to the open air, and afterwards to the influence of a large fire, before being again uſed."

Salivation is uſed as a curative means in lues, liver-complaints, in ſome fevers, &c. in our account of which we ſhall take further notice of it. It has been recommended, moreover, as a cure for phthiſis by Dr. Ruſh; and a caſe was publiſhed in the 3d volume of the London Medical and Phyſical Journal, ſtrongly corroborative of this treatment, by Dr. Peiffer. We may here remark that there is every reaſon to ſuppoſe that caſe, as well as ſeveral others recorded in ſupport of the ſame opinion, were not genuine phthiſis, but rather that form of pulmonary diſeaſe which ſupervenes on diſordered ſtates of the hepatic ſyſtem, and in which mercury undoubtedly exerts a ſalutary influence.

With regard to the treatment of mercurial ptyaliſm, it is generally remarked, that, as ſoon as the mercury ceaſes to be adminiſtered, the ſpitting ceaſes of itſelf. At all times, however, this does not take place; and accordingly we have many methods recommended by various authors for its removal. Thoſe moſt in repute are purgative medicines, opium, and ſulphur. If any mercury remains in the ſyſtem, theſe will ſometimes relieve; but theſe medicines are not all of equal efficacy. Mr. Hunter thinks purgatives uſeleſs, and Dr. Parr has not found them highly beneficial, though he thinks they ſometimes leſſen the diſcharge. Opium is 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 on 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 been employed but with little effect. 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; Alberti de Hydrargyroſi; and Hamilton on the Uſe and Abuſe of Mercurial Medicines.

As a critical diſcharge, ſalivation is for the moſt part ſalutary, and often terminates the diſeaſe that excites it. This is frequently the caſe in fevers; and the following inſtance is perhaps worth relating. A lady, aged twenty-four, and of a delicate conſtitution, was attacked with the typhus in the ſpring of 1788, under which ſhe gradually drooped for nearly three weeks. Dr. Good thought her in great danger; but on the twentieth day a ſudden and copious ptyaliſm ſupervened that evidently afforded her conſiderable relief. "This continued for upwards of a week, the daily ſecretion being never leſs than a pint, and twice not leſs than a pint and a quarter. Yet, inſtead of adding to her debility, it appeared to give freſh vigour to the ſyſtem: the digeſtive function reſumed its office; ſhe daily improved in ſtrength, and, on its ceſſation at the above period, was in a ſtate of convaleſcence."

We have numerous hiſtories in which it has proved equally ſerviceable about the acme of ſmall-pox; and the fluid of dropſies is ſaid to have been frequently diſcharged by this channel. An extraordinary inſtance of this is related by Dr. Huxham, in Phil. Tranſ. for 1724. vol. xxxiii. The patient was a man aged forty, of a ſpare bilious habit, who had an attack of jaundice, followed by a paroxyſm of colic, this laſt being produced by drinking too freely of cider. Among other medicines was given a bolus, containing a ſcruple of jalap, eight grains of calomel, and a grain of opium. Copious dejections followed, and a few hours afterwards the patient complained of pain and ſwelling in the fauces, ſpat up a little thick brown ſaliva, which was ſoon conſiderably increaſed in quantity, of a deep colour, reſembling greeniſh bile, though ſomewhat thinner. This flux of green and bilious ſaliva continued for about forty hours, during which time the quantity diſcharged amounted to four pints. The colour of the ſaliva then changed to yellow, like a ſolution of gamboge, with an increaſe rather than a diminution of the quantity. It continued of this colour for the ſpace of forty hours more, after which it gradually became pellucid, and the ſalivation ceaſed as ſuddenly as it came on. During the flow of the ſaliva, the teeth and fauces were as green as if they had been ſtained with verdigris, and the teeth retained the ſame colour for a fortnight after the ptyaliſm had ceaſed. The patient had a few years before been ſuddenly attacked by a ſpontaneous ſalivation, ſo exceſſive as to endanger his life. In the preſent inſtance, therefore, it is probable that the doſe of calomel co-operated with the peculiarity of the conſtitution in exciting the diſcharge: but, whatever was its cauſe, it proved critical both of the jaundice and the colic; for, from the moment it took place, the pain of the bowels ceaſed, and the greeniſh colour of the ſkin began to ſubſide, the urine being at the ſame time ſecreted more abundantly, and of a blackiſh hue.

A very remarkable caſe is related in the London Med. and Phyſ. Journal, vol. xxx. p. 37, by Dr. Yeats. The ſubject was a female, in whom a ptyaliſm was excited for the purpoſe of improving the ſtate of the menſtrual diſcharge. This attempt, however, brought on very great derangement of the digeſtive organs, manifeſted by immediate rejection of every kind of medicine or aliment, by acid gaſtric ſecretion, &c. The cure of this ſtate reſiſted every means ſuggeſted by the experience of Dr. Yeats, until he again induced ptyaliſm, when every unpleaſant ſymptom abated, and the patient gradually and perfectly recovered. Remarkable as this caſe appears, and difficult as it is to trace the mode of curation eſtabliſhed by the reſuſcitation of ptyaliſm, we perfectly coincide with Dr. Yeats in attributing the recovery of his patient to that proceſs. The reader will meet with ſome important remarks on this ſubject in the Med. Obſerv. and Enquiries, vol. iii. by Sylveſter and Dobſon, and by Bardſley in the Med. Reports.

ζ. Pt. ſympatheticus, or mouth-watering. A watering of the mouth experienced by ſome at the ſight or ſmell of food is an inſtance of its production by nervous influence. Its occurrence in fever and other complaints, where it ſeems to produce very ſalutary effects, ſhows that it ſometimes becomes ſpontaneouſly the ſeat of tranſlated or ſubſtituted diſeaſe. Mechanical preſſure, as is well known, excites very much the action of the ſalivary glands; as in chewing, ſucking, &c. It is on this principle that it has been recommended to roll a marble, or ſmall bullet, in the mouth, for the purpoſe of aſſuaging thirſt; the muſcular motion neceſſarily involved in this act, eliciting copious ſalivary ſecretion, and conſequent moiſtening of the fauces. Tobacco likewiſe, and all other local irritants, are capable of inducing this encreaſed ſecretion.

γ. Pt. mellitus, or ſweet ſpittle. This is generally connected with diſorder of the ſtomach: its remote cauſes are probably identical with thoſe of Diabetes mellitus. Dr. Good obſerves of it, that the ſecretion of ſweet or mawkiſh ſaliva is not only for the moſt part free, but accompanied with nauſea, and other ſymptoms of indigeſtion: and is probably what Sauvages intends by his firſt ſpecies, P. nauſeoſus, or à ſaburrâ nidoroſâ. It is relieved by magneſia and other abſorbents; but will often only yield to an emetic, followed by warm ſtomachics. It may be neceſſary, no doubt, to vary the treatment according

† Shipman's case of Mrs. Chandler.

cording to the nature of the gaſtric diſturbance. This affection is alſo occaſionally ſympathetic, as in dentition ſometimes occurs, and as a ſequel or criſis to various other affections.

2. Ptyaliſmus chronicus. When, from the cauſes we have detailed, an excited ſtate of the ſalivary glands has continued long, a chronic inflammation is ſet up, and altered and vitiated ſtates of the ſecretion take place. This naturally induces much derangement of the proceſs of digeſtion, and hence demands more particular attention. In addition to the conſtitutional remedies required in the acute ſtage of ptyaliſm, we are now called upon to adopt the application of topical remedies, for the purpoſe of altering the action of the ſecernents. Of theſe, acid and aſtringent gargles are the moſt uſeful. Bliſters behind the ears have alſo been found efficacious. Dr. Robertſon has detailed, in the London Medical and Phyſical Journal, vol. xxxiii. ſome caſes ſucceſsfully treated by the oxyde of biſmuth. In the London Medical Tranſactions, vol. ii. a curious caſe is mentioned, in which a very long-continued and troubleſome ptyaliſm was cured by chewing dry bread and ſwallowing it.

3. Ptyaliſmus iners, drivelling or ſlavering. This conſiſts in an involuntary and diſtreſſing flow of ſaliva from ſluggiſhneſs of deglutition or other cauſes, *without increaſed ſecretion*. It has three varieties: α, infantilis; β, ſenilis; γ, moriæ.

This affection is diſtinguiſhed from the other ſpecies of ptyaliſm by the circumſtance, that, while in the former increaſed ſecretion (ariſing either from an excitement or dilated ſtate of the ſecreting veſſels) is preſent, in this the redundancy of fluid owes its exiſtence to *diminiſhed abſorption*, and to the want of that almoſt continual deglutition by which this ſecretion is removed from the mouth.

The ſecond variety is particularly attendant on paralytic patients. This circumſtance is probably connected with the ſtate of the brain; an idea which obtains confirmation from the contemplation of the third variety, with which debility of underſtanding is thus curiouſly connected. To trace the relation which exiſts between theſe ſtates would form a ſubject of much intereſt and difficulty. As it does not appear however, that, in the preſent ſtate of our knowledge, this affection is under the control of the medical art, we ſhall wave all further diſcuſſion of the ſubject.

Genus III. *Dyſphagia*, [from δυς, bad or imperfect, and φαγω, to eat or ſwallow.] Pain or obſtruction in ſwallowing. This genus includes five ſpecies.

1. Dyſphagia conſtricta, or difficulty of ſwallowing from permanent diminution of the calibre of the œſophagus. This affection ariſes from a thickened ſtate of the mucous membrane, from induration of the ſame, from its acquiring a cartilaginous ſtructure, from oſſifications, excreſcences, ſcirrhous or calculous concretions, &c. It may be produced likewiſe by tumors preſſing on the canal, when theſe ariſe from neighbouring parts. Ulcers likewiſe, or other ſolutions of continuity, by deſtroying the play of the circular fibres, prevent or impede deglutition. Among other cauſes, Dr. Parr, in his Medical Dictionary, mentions the concretion of mucus, and ſupports it by the teſtimony of Hoffman. We need ſcarcely obſerve, that, from the nature of the œſophageal ſtructure, this circumſtance cannot occur, unleſs indeed the natural ſecretions are very much altered; an alteration which would imply previous diſeaſed action for a long period, and hence is unlikely to be removed by diluents and nitrous powders, as the above-mentioned author has recommended. The caſe in queſtion was probably one of the kind deſcribed by Dr. Baillie in his work on Morbid Anatomy, in which coagulated lymph was found in great quantity. The obſtruction of ſwallowing is moſt frequently cauſed by mechanical injury, as pins or other ſubſtances accidentally introduced.

From whichever of theſe numerous cauſes impeded deglutition may ariſe, the removal of the cauſe itſelf will be the firſt indication of cure. Hence, in all caſes where tumors in or around the pharynx exiſt, the removal or diminution of thoſe morbid accumulations muſt be attempted. This is, however, no very eaſy taſk, becauſe, in the firſt place, the kind of tumor or excreſcence is ſeldom to be diſcriminated when in the canal; and thoſe which ariſe externally, as bronchocele, &c. are often difficult of cure. In theſe caſes, while we uſe every endeavour to remove the diſeaſe according to particular indication, the patient muſt be ſupported with nouriſhing clyſters or with liquid aliment paſſed into the ſtomach by means of a flexible tube. By this contrivance, according to the teſtimony of Dr. Good, a lady was ſupported for twenty years.

Difficult as tumors of the œſophagus are to remove, we ſhould not neglect every probable means of relief; for ſometimes the breaking of an abſceſs and the diſcharge of its contents has been of great ſervice. In the Hiſtory of the Royal Medical Society in Paris for the year 1776, we are told, that a young lady, aged ſixteen years, after being troubled for about three months with a ſpaſmodic cough, began to have a difficulty of ſwallowing, which increaſed ſo faſt, that after a very ſhort time ſhe was incapable of taking any nouriſhment by the mouth, ſo that, for the ſpace of three months, life was ſupported ſolely by clyſters. Mercurial and other frictions were employed without effect. At length M. Macquart, reflecting on the caſe, and conjecturing that an encyſted tumour exiſted in the œſophagus, and that it might probably be now in a ſtate of ſuppuration, he reſolved to adminiſter ſome ſubſtance, which, by its weight, might occaſion a rupture of the ſac. For this purpoſe he preſcribed an ounce of crude mercury, mixed with the yolk of eggs, to be ſwallowed every three hours. This remedy was taken, and the patient, ſoon after ſhe had ſwallowed the ſecond doſe, brought up a conſiderable quantity of pus. From this moment ſhe was able to ſwallow broth, and by proper care recovered. An emetic, in caſes when complete ſtoppage does not happen, might be preſcribed with equal advantage. According to Dr. Parr, when ſcrofulous indurations happen about the œſophagus, the ungt. hydrargyri, rubbed on the neck over the induration, or ſmall doſes of calomel, have often been of ſingular efficacy, eſpecially if uſed early after the attack of the diſorder. If the caſe is of more conſiderable duration, he thinks the mercurials ſhould be given, ſo as to excite and ſupport a moderate ptyaliſm for ſome time.

Many are the contrivances for removing foreign bodies ſticking in the paſſage to the ſtomach; but it would often be better to leave the caſe to nature, than to irritate ſo tender a part, which muſt be the effect of ſuch attempts. If the ſubſtance can be reached with the fingers, or with the forceps, the extraction is eaſy. When pins, fiſh-bones, or ſimilar bodies, ſtick acroſs the gullet, ſome recommend a wire with its end turned up like a hook, to be paſſed below theſe bodies, and then turned ſo as to bring them up. Pins, and other ſharp bodies, when they have ſtuck in the throat, have been returned by ſwallowing a piece of tough meat tied to a ſtrong thread, and then pulled up again. If the detained body may more ſafely be puſhed down, the probang is a uſeful inſtrument. It hath frequently happened, that, though indigeſtible bodies have been ſwallowed, no inconvenience hath ariſen from them. (See Lond. Med. Tranſ. vol. iii. and Med. Muſeum, vol. ii.) If the bodies cannot be eaſily moved up or down, endeavours ſhould not be continued long, leſt inflammation come on. If the patient can ſwallow, a large draught of water may be taken, a practice the more neceſſary if the ſubſtance wedged in poſſeſs any great degree of ſolubility; or, if he cannot ſwallow, an aſſiſtant may inject ſome fluid into the gullet, which will ſometimes looſen the impacted body. When theſe endeavours fail, the patient muſt be treated as if labouring under an inflammatory diſeaſe; and the ſame

treatment will be required if an inflammation take place in the part, after the obſtructing body is removed. A proper degree of agitation has ſometimes ſucceeded in removing the obſtructing body better than inſtruments. Thus a blow on the back hath often forced up a ſubſtance that ſtuck in the gullet or windpipe. Pins, which have ſtuck in the gullet, have been diſcharged by riding on a horſe or in a carriage.

In the London Medical Obſervations and Inquiries, vol. iii. is an account of a ſmall fibre of a feather being ſwallowed, and extracted by means of a probang with a thread or two paſſing from one end to the other, and faſtened to the ſponges which were connected with each end of this inſtrument. For ſome more complicated methods of extracting theſe ſubſtances, ſee the article SURGERY.

Independently of the cauſes juſt mentioned, Dr. Baillie has obſerved, that the œſophagus is liable to ſtricture, produced by the contraction of its muſcular fibres at ſome particular part. This diſeaſe is moſt common in women whoſe conſtitutions are delicate, and much ſubject to nervous influence. When ſuch a diſeaſe is examined in the dead body, the œſophagus is found to be more or leſs contracted in ſome part of it, and it feels harder than uſual, as all muſcles do in a contracted ſtate. There is no appearance of diſeaſed ſtructure uſually combined with it; yet this contraction might lay the foundation of a permanent and even a fatal diſeaſe. The muſcular fibres of the œſophagus might ſo preſs on the inner membrane, as to excite inflammation in it, which might advance to ſuppuration, and would moſt probably terminate fatally.

A very unuſual ſtricture of the œſophagus has been noticed by the ſame author. It conſiſted in its inner membrane being puckered together, ſo as to form a narrowneſs of the canal at a particular part. The canal at that part was ſo narrow, as hardly to allow a common garden-pea to paſs. There was no appearance, however, of diſeaſed ſtructure in the inner membrane which was ſo contracted, and the muſcular part of the œſophagus ſurrounding it was perfectly ſound. This diſeaſe was very ſlow in its progreſs; for the perſon in whom it took place had been for many years affected with a difficulty of ſwallowing, and could only ſwallow ſubſtances of extremely ſmall ſize.

Theſe caſes have been much relieved by an attention to the ſtate of the ſtomach and inteſtines, though not ſo much ſo as in the ſpaſmodic affections we ſhall have occaſion preſently to notice. But we ſhall ſubjoin a caſe wherein a cure was very happily performed by mechanical means. It was communicated by Dr. Stevenſon, of Kegworth, to the Medical and Phyſical Journal, vol. viii.

"Mrs. Wagdin, Trent Lock, Derbyſhire, the ſubject of the ſubſequent communication, is forty years of age, of a thin ſpare habit, and irritable temperament. She dates the origin of her complaints from a violent attack of cynanche maligna near twelve years ago, to the contagion of which ſhe was expoſed almoſt immediately after her recovery from a ſevere parturition. The moſt prominent features of her diſorder from that period till the expiration of more than three years, were a ſlight though progreſſively-increaſed difficulty of ſwallowing, accompained with ſome degree of ſoreneſs, and an augmentation of the ſalival excretion. With a view to the palliation of theſe ſymptoms, ſhe was directed to have occaſional recourſe to aperients, leeches, bliſters, and gargles. By this time, however, the difficulty of deglutition had become ſo alarmingly exaſperated, that ſhe was no longer capable of ſwallowing ſolids, even of the magnitude of a pea. In this ſituation ſhe put herſelf under the direction of Dr. Smith, late of Nottingham, who preſcribed mercurials. A moſt ſevere ſalivation was the conſequence, under which ſhe laboured for the protracted ſpace of three months. By this method the ſymptoms were ſo conſiderably alleviated, that ſhe was capable once more of ſwallowing ſoft and well-comminuted ſolids. But, though thus reſcued from her impending fate, the *remedy* was productive of effects no leſs formidable. I allude to exceſſive debility, frequent ſyncope on the leaſt motion, colliquative ſweats, her ſyſtem being greatly emaciated, and a prey to hyſterical paroxyſms. By the aid of proper dietetical management, as the complaint it was vainly hoped was ſubdued, her attendants flattered themſelves ſhe might ſtill ſurvive even this ſevere conteſt. Alas! no ſooner were her drooping ſpirits reanimated by the ſenſible acquiſition of renovated vigour, than the fond expectations ſhe had cheriſhed became depreſſed by a viſible return of her former impediment to ſwallowing.

"During the laſt ſeven years, ſhe found herſelf reduced to the ſad neceſſity of ſupporting a miſerable exiſtence by means of liquid aliment, ſuch as ſoups, milk, &c. I ſaw her for the firſt time in the beginning of October, 1801. She had then a dejected emaciated appearance, a quick pulſe and other hectic ſymptoms, and was harraſſed by an almoſt inceſſant ptyaliſm, more particularly urgent during the earlier part of the day, at which time ſhe was always hoarſe. The breathing was much incommoded when ſhe reclined on a ſofa or bed, which concurred with the other ſymptoms in rendering her nights very reſtleſs. Her bowels were habitually inactive. There was not any external tumefaction of the thyroid gland, nor could the obſtructed part be obſerved by inſpecting the fauces.

"Dyſphagia, in this inveterate ſtage, has I believe hitherto almoſt invariably bidden defiance to the beſt-directed medical expedients; and the ſingularity of the caſe will, I truſt, be deemed a ſufficient apology for the minuteneſs of its deſcription. I propoſed to her, as a dernier reſort, to have recourſe to mechanical dilatation, a practice none of the faculty had before even ſuggeſted. Senſible that, if not ſpeedily relieved, ſhe muſt fall a victim to this relentleſs diſeaſe, ſhe agreed to ſubmit implicitly to any plan from the adoption of which the ſmalleſt proſpect of ſucceſs might rationally be anticipated.

"I firſt cautiouſly introduced a common bougie into the lower part of the pharynx. In this place, a powerful reſiſtance that occurred, and which occaſioned my inſtrument, on the application of ſomewhat forcible preſſure, to bend in various directions, ſeemed to confirm my theory of the nature of the diſeaſe. Thus foiled, I ventured to ſubſtitute a ſmall probang copiouſly charged with oil. It was not without ſteady and continued efforts that this operation was made to dilate the ſtricture. After having overcome this obſtacle, the inſtrument deſcended without much difficulty till it reached, I ſuppoſed, the lower portion of the œſophagus near the cardia, when a ſecond impediment announced the exiſtence of another ſtricture. The ſame meaſures however at length availed in enabling the probang alſo to force a paſſage through this contracted part, when it ſuddenly paſſed into the ſtomach. The inſtrument having been deliberately withdrawn, as ſoon as Mrs. W. had ſomewhat recovered from the irritation and fatigue produced by this, I gave her ſome gruel which ſtood ready, in order that ſhe might aſcertain, by ſipping leiſurely a ſmall quantity, whether any benefit had accrued from the operation. Upon attempting to ſwallow, ſhe found the former impediment removed, and continued drinking till ſhe had conſumed at leaſt half a pint of the liquid with the greateſt facility as to the power of deglutition, though of courſe ſome ſoreneſs muſt have exiſted. Apprehending that the paſſage would not, by the ſmall inſtrument employed, be ſufficiently dilated to admit of the ready ingurgitation of ſolids, the operation was repeated with a larger inſtrument three ſucceſſive times, a few days being ſuffered to intervene between each, in order that the topical pain might be allayed by the exhibition of oily linctuſes and aperients, and by fomentations. The fourth operation enabled her to ſwallow ſolids without experiencing the ſmalleſt inconvenience, a faculty ſhe ſtill continues to exerciſe in its fulleſt extent.

"As

"As a further teſtimony of the efficacy of mechanical means in the radical cure of this tremendous diſeaſe, permit me ſhortly to add, that the only daughter of the above-mentioned lady, aged twelve years, had from her earlieſt infancy, indeed from her birth, laboured under Dyſphagia conſtricta. Her conſtitution partakes much of the nervous irritability of her mother. The want of ſubſtantial food (for her exiſtence had been ſupported by the ſuction of liquid aliment alone) tended obviouſly to retard the phyſical evolution of her ſyſtem. The complete ſucceſs which had crowned my efforts in the caſe of Mrs. W. naturally created an anxious wiſh in the parents to have the ſame means reſorted to in the preſent inſtance; of the abſolute neceſſity of which my intelligent little patient was fully ſatisfied, and readily conſented to undergo the operation, from the ſanguine expectation of deriving equal benefit. It is with ſentiments of the greateſt ſatisfaction I am authoriſed to ſtate, that the expedient has proved altogether ſalutary and efficacious. The texture of her body, which previous to the operation had ever been extremely delicate, has acquired a wonderful degree of renovated vigour; and her ſpirits, formerly ſubject to great depreſſion, have obtained ſuch a healthy flow, that ſhe can now engage in juvenile amuſements with the greateſt cheerfulneſs and vivacity."

2. Dyſphagia atonica, or the difficulty of ſwallowing from debility of the muſcles concerned in that act, is perhaps chiefly diſtinguiſhed from the other ſpecies of this genus by the circumſtances, that the obſtruction ſeems continual, thus different from the ſpaſmodic; and that ſolids are more eaſily ſwallowed than liquids, which does not obtain in the firſt ſpecies noticed. It is often ſympathetic of a morbidly-diſtended ſtate of the muſcular coat of the ſtomach, dependent on the interruption of nervous influence. If even idiopathic, it ſhould be combated by gentle ſtimulants, among which bitters perhaps hold the moſt favoured rank. The moſt intereſting caſe in illuſtration of this diſeaſe with which we are acquainted, was publiſhed in the 3d volume of the Medical Obſervations. The part was preſerved in Dr. Hunter's collection. The pharynx was, in the caſe in queſtion, dilated at its lower extremity, into a pouch of conſiderable ſize, which paſſed behind the œſophagus. This pouch began to be formed in conſequence of a cherry-ſtone having reſted there for ſome time, which had made a kind of bed for itſelf. It remained in that ſituation for three days, and then was brought up by a violent fit of coughing. A part of the food always reſted afterwards in the cavity made by the cherry-ſtone, by which it was gradually enlarged. At length, in the courſe of about five years, the cavity was enlarged into a bag of a conſiderable ſize, ſufficient to contain ſeveral ounces of fluid. This bag paſſed down a good way behind the œſophagus, and the œſophagus neceſſarily acquired a valvular communication with it. In proportion as the bag enlarged, this valvular communication would become more and more complete, till at length every kind of food muſt have reſted in the bag, and could not paſs into the œſophagus. In this way the perſon was deſtroyed. The lower end of the pharynx is, perhaps, the only part of the canal where ſuch an accident could happen. The pharynx is not contracted gradually, ſo as to loſe itſelf inſenſibly in the œſophagus, but contracts itſelf rather ſuddenly at the lower end. Hence a little receſs is formed, in which an extraneous body may occaſionally reſt. This is neceſſarily at the poſterior part, ſo that, if the receſs ſhould be enlarged into a cavity, it muſt paſs behind the œſophagus.

Bliſters have been found of uſe in the paralytic ſtate of the muſcular fibres of the œſophagus; and electricity has been found ſucceſsful, with the occaſional ſtimulus of the probang. The latter means we ſhould ſtrongly recommend.

3. Dyſphagia globoſa, the globus hyſtericus of Darwin, and the nervous quinſey of Heberden, is a difficulty of ſwallowing from wind in the ſtomach, ſpaſmodically compreſſed into the feeling of a ball aſcending into the œſophagus, and producing a ſenſe of ſtrangulation. Irritation of the nerves appears to be always connected with it. This may be produced, in its firſt origin, by the many and various cauſes acting on the nervous extremities. In the womb and the alimentary canal, the majority of theſe cauſes are applied; while in many inſtances the brain itſelf is primarily and immediately acted on by mental emotion, and propagates through the nervous ſyſtem its diſturbed ſtate. According, then, to the ſtructure from the diſeaſed action of which this phenomenon is derived, it is accompanied by the ſymptoms peculiar to diſorders of that ſtructure. Hence the variety of appearances connected with this diſeaſe bid defiance to arrangement, and ſimulate, in their proteiform and varying character, many of the moſt ſerious maladies; and hence our plan of cure muſt vary according as the ſtomach, the brain, or the uterine ſyſtem, is primarily affected.

As far, however, as regards the globus hyſtericus itſelf, we cannot conſider it as any thing but a ſymptom of the irritation before deſcribed. We give our noſologiſt's own reaſon for inſerting it, which it will be ſeen does not at all impugn our opinion. He ſays; "This (Dyſphagia globoſa) is by no means a mere ſymptom of hyſteria, as is often ſuppoſed; for it as frequently occurs under the influence of various paſſions, as grief, fear, and anger; and is a frequent attendant upon the hypochondriacal diatheſis. It is, however, for the moſt part, a ſympathetic affection, concatenating with the ſtate of the ſtomach." In ſpeaking of Dyſpepſia and Hyſteria, we ſhall detail this ſubject in full: for the preſent we may remark, that, for the removal of the mere ſymptom, ſtimulants of the ſtomach are the moſt appropriate palliatives.

4. Dyſphagia uvuloſa, or ſwallowing impeded by elongation of the uvula. This may ariſe from ſimple relaxation, from inflammation, or ulceration. It is attended with uneaſineſs and difficulty in ſwallowing, cough, nauſea, commonly a continual ſpitting, ſometimes a difficulty of breathing, and a ſtammering or faulty articulation. There are two varieties, differing as they ariſe from inflammation or from relaxation. In the firſt, the uvula is ſwelled, hot, acutely painful, of a red or livid colour, and falls down in an altered form. Sometimes ſuppuration comes on, and the difficulty both of ſwallowing and breathing is more conſiderable than in the ſubſequent variety. When this complaint is very violent, there is apparent danger of ſtrangulation. It is cured by bleeding and purging; gargling with ſubaſtringent liquids, and ſometimes ſcarification. In the ſecond variety, the uvula, preſerving its natural colour, is relaxed, elongated, pale, or œdematous.

It is remarkable that, on ſome occaſions, the irritation ariſing from this elongation of the uvula is only felt when the mucous membrane of the ſtomach and fauces is in an irritable ſtate. A medical man applied to an eminent lecturer on ſurgery for the purpoſe of having a portion of the uvula taken off. The lecturer, who had on ſome former caſe remarked the fact juſt noticed, eluded the performance of the operation for ſome days, and during that time directed opening medicines, &c. to be taken; the conſequence of which was, that the patient felt in a little while no inconvenience from his elongated uvula, although on examination no diminution of its ſize was apparent. The treatment of the relaxed uvula conſiſts in the uſe of ſtimulating and aſtringent gargles, and the correction of morbid ſtates of the mucous membrane of the alimentary canal. When theſe meaſures are unſucceſsful, the extirpation of a portion of the uvula is adviſable; for which, ſee SURGERY.

5. Dyſphagia linguoſa, ſwallowing obſtructed or troubleſome from magnitude or protruſion of the tongue. This ſpecies has two varieties: α, exertoria; β, ranula.

In α exertoria, the tongue is protruded, often with enlargement of its ſubſtance. As an idiopathic and curable

rable affection, it is manifeſted moſt frequently in children. It happens ſometimes immediately after birth; at others in the firſt years of infancy. In both caſes this deformity, be it from birth or accidental, degenerates gradually, when it is not remedied in its beginning, into an habitual diſeaſe, which increaſes with age; and many have been afflicted with this deformity for life. An author of the ſixth century, Gaſpar Peucer, is the firſt who has ſaid he had ſeen children come into the world with the tongue out of the mouth, and "hanging on the chin, like that of a calf recently ſlain." Such is his expreſſion. He conſidered this vicious conformation as a phenomenon, in ſome meaſure foreign to the art; as an incurable monſtroſity. The ſame caſe has been obſerved, with a little more exactneſs, by Zacchias; this phyſician ſpeaks of having ſeen, in 1628, at Rome, a new-born child, very ſtrong and well formed, who had the tongue out of the mouth, the length at leaſt of three fingers breadth; it was a little wider and a little thicker than it uſually is at that age; when the child moved it, and drew it in, one could judge how much it exceeded the opening of the mouth. Nevertheleſs, it ſucked pretty well, provided the nurſe's nipple was large and elongated; for it could not execute the ſame function with another nurſe, whoſe nipple was ſhort and thin. Arrived at the age of about fourteen months, it ate and drank pretty freely, although it had, night and day, a portion of the tongue out of the mouth; it began even to pronounce ſome words, when it died, without Zacchias having known the cauſe of its death.

The firſt appearance of the diſeaſe is generally ſoon after birth, though inſtances (ſee the Memoir of Citizen Laſſus in the firſt volume of the National Inſtitute of Science and Arts in France) are not wanting to ſhow that the diſeaſe has exiſted before birth. In either caſe, however, the point of the tongue tumefies, is prolonged by little and little out of the mouth, till it is found extending even upon the chin. Suffering the child to ſuck much increaſes this elongation; and, in proportion as the tongue extends and tumefies, it draws with it, by its weight, the os hyoides and the ſuperior part of the larynx, which contributes to render deglutition ſtill more difficult. The continual and very-abundant effuſion of ſaliva, which is no longer retained in the mouth, induces thirſt and dryneſs of the throat; the inciſive and canine teeth of the lower jaw are thrown forward, and partly quit their alveoli; the tongue, rubbing againſt theſe diſplaced and worn teeth, excoriates and bleeds; the lower jaw always hangs down, and projects a little forward; the under lip reverſes, and projects; the ſuperior edge of the lower jaw is hollowed by degrees in its middle, deprived at length of teeth by the preſſure and motion of the tongue, which forms there a kind of furrow to lodge itſelf; in fine, this organ, at times more, at others leſs, tumefied, hangs conſtantly out of the mouth. Such are the ſymptoms which characteriſe this diſeaſe when it is inveterate; at the ſame time, it does not abſolutely prevent ſpeech and deglutition; but the ſound of the voice is harſh, and deglutition is always more or leſs reſtricted.

The firſt attempts which were made to cure this diſeaſe were by amputating the protruded part of the tongue; and the fear of hæmorrhage alone reſtrained the hands of the ſurgeons of the fifteenth century. It ſeems that we have no occaſion for this violent practice; for it has been ſhown by Laſſus, in the Memoir above mentioned, on the cleareſt grounds, that, in nine caſes out of ten, the protruded tongue is reduceable by gradual preſſure, and that a bandage ſo placed as to keep the mouth ſhut will generally be ſufficient to cure the diſeaſe. This, however, can only apply to thoſe caſes in which ſimple congeſtion or inflammation is preſent, in conſequence of the return of blood being prevented by the unnatural poſition of the organ. Of courſe, when degenerations of ſtructure have occurred, the morbid enlargements will require the application of ligatures or extirpation with the knife. See SURGERY.

β. D. ranula, is an intumeſcence under the tongue, named from its ſituation in the venæ raninæ, or perhaps from its altering the voice of the patient. This tumour is ſeated on either ſide of the frænum. It is round, of a greyiſh colour like an hydatid, ſoft, compreſſible, indolent, and, in the early ſtage, almoſt tranſparent. At firſt it is of about the ſame ſize as a nut or a cherry; but by degrees its volume becomes much more conſiderable. This alſo is very frequently met with in young children: its occurrence in adults is more uncommon. It conſiſts of a ſucceſſive dilatation of the excretory tube of the ſubmaxillary or elſe of the ſublingual gland, the orifice of which duct is by ſome cauſe or another ſtopped up, or obliterated; ſo that the confined ſaliva accumulates, becomes viſcid, and ceaſes to flow in the uſual manner. In proportion as the ranula increaſes, the incipient ſtate of it having been neglected, its enlarged ſize raiſes up the tongue, and forces it backward; the conſequence of which is, that maſtication, deglutition, and reſpiration, are obſtructed. The voice becomes indiſtinct and hoarſe; the motion of the tongue is reſtrained: it cannot be put out of the mouth. By degrees, the inciſor and canine teeth of the lower jaw are looſened; the layer of muſcles, compoſing the lower parietes of the mouth, is depreſſed; and the ſwelling, having attained a conſiderable ſize, makes a very manifeſt prominence beneath the chin. In this advanced ſtage, that is to ſay, when it has exiſted ten or twelve years, as practitioners occaſionally ſee inſtances of, the appearance of the ſwelling is quite altered from what it originally was. The tumour is now hard, elaſtic, painful, and ulcerated: it is as large as a turkey's egg, and not ſituated at the ſide of the frænum, but anteriorly under the tongue, to which it is cloſely adherent. The mouth emits a very fetid ſmell; and the breathing is ſo much obſtructed, that the patient, through fear of ſuffocating, is obliged to lie with his mouth wide open, when he goes to ſleep.

While a ranula is recent, the fluid which it contains is a viſcid ſaliva, reſembling the white of egg, but ſometimes of rather a yellow colour. In time it is gradually changed, becoming turbid and puriform; and, in certain inſtances, ſoft, friable, greyiſh, concretions, from the ſize of a pea to that of an almond, commonly called ſalivary calculi, are found in the kind of cyſt, which is produced by the dilatation of the ſalivary duct. Theſe calculi eſſentially conſiſt of a large proportion of the phoſphate of lime, united with a mucilaginous ſubſtance.

The tumour is often of a ſcrofulous kind, and contains a thick purulent matter. 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. They are with great difficulty diſperſed or brought to ſuppuration, and generally require the knife for their removal. And indeed it has been aſſerted on reſpectable authority, that a ranula, whether recent or inveterate, cannot be cured except by a ſurgical operation. See SURGERY.

The ſpecies is found occaſionally as a ſymptom in bronchocele and other cauſes of external preſſure.

Genus IV. *Dipſoſis*, [from διψαω, to be thirſty.] Morbid thirſt; the deſire for drinking exceſſive or impaired. This genus contains two ſpecies.

1. Dipſoſis avens, conſtant thirſt with acidity of the fauces. This ſpecies is generally found in fevers, fluxes, dropſy, &c. Many caſes are on record in which this affection has reached an aſtoniſhing height. There are ſome authentic records which ſeem to ſhow that it is an idiopathic diſeaſe. See the London Medical Journal, vol. iii. a caſe by Dr. Dyce; and vol. iv. of the ſame work, the caſes of Dr. Domeier and Tuaam Peaal. In theſe, aridity of the fauces and pharynx, the probable

cauſe of thirſt, was preſent, excepting the laſt, almoſt without conſtitutional diſturbance.

The beſt treatment appears to be to evacuate the bowels, and the uſe of mineral acids. Of courſe, when the diſeaſe is traceable, and we have little doubt that it is ſo in all, to exceſſive depletion by ſweat, urine, &c. to nervous derangement, inflammation of the ſtomach, or any other diſeaſed ſtate, the correction of that ſtate demands our firſt conſideration. For an aſtoniſhing caſe, in which two hundred pints of wine, and the ſame of water, were drunk daily, ſee the Eph. Nat. Cur. cent. vii. and for another, in which eighty meaſures of liquid were taken in daily, ſee Binninger in the Act. Helvet. vii. p. 16.

2. Dipſoſis expers, or conſtant want of thirſt. Cullen was of opinion, that this always indicated an affection of the ſenſorium commune. Sauvages, however, relates two caſes of patients in whom it formed an original diſeaſe: the one a learned and excellent member of the academy of Toulouſe, who never thirſted, and paſſed whole months without drinking in the hotteſt part of the ſummer; the other a woman, who for forty days abſtained altogether from drinking, not having had the ſmalleſt deſire, and who was nevertheleſs of a warm and iraſcible temperament. See another caſe that continued for ſome years, in the Ephem. Nat. Cur. cent. v. and vi.

Genus V. *Limoſis*, [from λιμος, hunger.] Morbid Appetite; i. e. exceſſive or depraved. The following are the ſeven ſpecies, with their varieties.

1. Limoſis avens, inſatiable craving for food. We have three varieties of this ſpecies.

α. L. ſyncoptica, from a feeling of faintneſs and inanition. This diſorder, we believe, is ſeldom idiopathic: it more frequently depends on very general gaſtric diſturbance, and is certainly connected with deficient action of the abſorbents. In the Phil. Tranſ. vol. xliii. 1745, is a ſingular caſe related by Dr. Mortimer, of a boy twelve years old, who, from a feeling of inanition, had ſo ſtrong a craving, that he would gnaw his own fleſh when not ſupplied with food. When awake, he was conſtantly devouring, though whatever he ſwallowed was ſoon afterwards rejected. The food given him conſiſted of bread, meat, beer, milk, water, butter, cheeſe, ſugar, treacle, puddings, pies, fruits, broth, potatoes; and of theſe he ſwallowed in ſix ſucceſſive days 384lbs. 2 oz. avoirdupois, being 64lbs. a-day on an average. The diſeaſe continued for a-year.

It is occaſionally produced by worms. See a curious caſe of Dr. Burroughs, Phil. Tranſ. xxii. 1700; in which the patient from this affection was rendered capable of devouring an ordinary leg of mutton at a meal for ſeveral days together, and fed greedily alſo on ſow-thiſtles and other coarſe plants. Voracity is, however, by no means an unfrequent ſymptom in worms.

β. L. helluonum, from habitual indulgence in large and frequent meals. Habit, induced by idleneſs, is undoubtedly the moſt frequent cauſe of gluttony. The unoccupied perſon perpetually eats, unleſs diſeaſe impedes this ſenſual gratification. Sometimes, however, it ſeems that an idioſyncracy of a peculiar nature diſpoſes to exceſſive appetite. In a caſe we ſhall preſently quote, not only the father, but nine ſons, were remarkable for the voracioufneſs of their appetite. This affection can ſcarcely be called a diſeaſe; for, without entering into any diſcuſſion on the cauſe of hunger, we may remark that that ſenſation evidently depends on ſome action of the ſtomach. Whatever that may be, if it is increaſed without pain or derangement of the digeſtive or any other function, it is evident that we have no more reaſon for calling this a diſeaſe than the great ſtrength which we remark in ſome men, and which evidently depends on exceſſive power of the muſcles. Hence it appears how abſurd thoſe attempts muſt be which have been made to remove this idioſyncracy by acids, opium, &c. in a word by any treatment but the moral. The unfortunate individuals afflicted with this propenſity are ſeldom ſo robuſt as thoſe of more moderate appetite; and they ſeldom, according to the teſtimony of M. Percy, live beyond the age of forty years. In moſt of the caſes on record, the ſkin appears to be the part whence the ſurplus of proviſion is thrown off; the ſtools and urine being commonly in the ordinary proportion.

It would be improper, in a work of this ſort, to paſs over the moſt remarkable caſe we are acquainted with; although, from its frequent quotation, it is probably known to moſt of our medical readers.

The caſe is that of the famous *Tarare*, who was known to all Paris, and who died at Verſailles about the year 1800, at the age of twenty-ſix years. M. le Baron Percy, who ſaw Tarare, and who made ſome inveſtigations reſpecting this ſingular perſonage, has given us the hiſtory of him, in a very curious Memoir on Polyphagy. At ſeventeen years of age, Tarare weighed only one hundred pounds; and was already able to eat, in twenty-four hours, a quarter of a bullock of that weight. Having left his parents when very young, (he was of the environs of Lyons,) ſometimes begging, ſometimes ſtealing, to obtain ſubſiſtence, he attached himſelf to one of the mountebank ſhows on the boulevards. One time, on the ſtage, he defied the public to ſatiate him; and ate in a few minutes a pannier-full of apples, furniſhed by one of the ſpectators; he ſwallowed flints, corks, and all that was preſented to him. At the commencement of the war Tarare entered into the army; he ſerved all the young men in eaſy circumſtances in the company, did all their jobs for them, and ate up the rations they left for him. Famine nevertheleſs gained upon him; he fell ſick, and was taken to the military hoſpital at Soultz. On the day of his entry he received a quadruple allowance: he devoured the food refuſed by the other patients, and the ſcraps about the kitchen; but his hunger could not thus be appeaſed. He got into the apothecary's room, and there ate the poultices, and every thing he could ſeize. "Let a perſon imagine," ſays M. Percy, "all that domeſtic and wild animals, the moſt filthy and ravenous, are capable of devouring; and they may form ſome idea of the appetite, as well as the wants, of Tarare." He would eat dogs and cats. One day, in the preſence of the chief phyſician of the army, Dr. Lorence, he ſeized by the neck and paws a large living cat, tore open its belly with his teeth, ſucked its blood, and devoured it, leaving no part of it but the bare ſkeleton; half an hour afterwards he threw up the hairs of the cat, juſt as birds of prey and other carnivorous animals do. Tarare liked the fleſh of ſerpents; he managed them familiarly, and ate alive the largeſt ſnakes, without leaving any part of them. He ſwallowed a large eel alive, without chewing it; but we thought we perceived him cruſh its head between his teeth. He ate, in a few inſtants, the dinner prepared for fifteen German labourers: this repaſt was compoſed of four bowls of curdled milk, and two enormous hard puddings. After this, the belly of Tarare, commonly lank and wrinkled, was diſtended like a balloon: he went away, and ſlept until the next day, and was not incommoded by it. M. Comville, the ſurgeon-major of the hoſpital where Tarare then was, made him ſwallow a wooden caſe, encloſing a ſheet of white paper: he voided it the following day by the anus, and the paper was uninjured. The general-in-chief had him brought before him; and, after having devoured in his preſence nearly thirty pounds of raw liver and lights, Tarare again ſwallowed the wooden caſe, in which was placed a letter to a French officer, who was a priſoner to the enemy. Tarare ſet out, was taken, flogged, impriſoned; voided the wooden caſe, which he had retained thirty hours, and had the addreſs to ſwallow it again, to conceal the knowledge of its contents from the enemy.

They tried to cure him of this inſatiable hunger, by the

uſe of acids, preparations of opium, and pills of tobacco; but nothing diminiſhed his appetite and his gluttony. He went about the ſlaughter-houſes and bye-places, to diſpute with dogs and wolves the moſt diſguſting aliments. The ſervants of the hoſpital ſurpriſed him drinking the blood of patients who had been bled, and in the dead-room devouring the bodies. A child fourteen months old diſappeared ſuddenly; fearful ſuſpicions fell on Tarare; they drove him from the hoſpital. M. Percy loſt ſight of him for four years: at the end of this time he ſaw Tarare at the civil hoſpital at Verſailles, where he was periſhing in a tabid ſtate. This diſeaſe had put a ſtop to his gluttonous appetite. He at length died in a ſtate of conſumption, and worn out by a purulent and fetid diarrhœa, which announced a general ſuppuration of the viſcera of the abdominal cavity. His body, as ſoon as he was dead, became a prey to an horrible corruption. The entrails were putrefied, confounded together, and immerſed in pus: the liver was exceſſively large, void of conſiſtence, and in a putreſcent ſtate; the gall-bladder was of conſiderable magnitude; the ſtomach, in a lax ſtate, and having ulcerated patches diſperſed about it, covered almoſt the whole of the abdominal region. The ſtench of the body was ſo inſupportable, that M. Teſſier, chief ſurgeon of the hoſpital, could not carry his inveſtigation to any further extent.

Tarare was of a middle-ſized ſtature; his habit of body was weak and ſlender; he was not of a ferocious ſpirit; his look was timid; the little hair he had preſerved, although very young, was very fair, and extremely fine. His cheeks were ſallow, and furrowed by long and deep wrinkles: on diſtending them, he could hold in them as many as a dozen eggs or apples. His mouth was very large; he had hardly any lips; he had all his teeth; the molares were much worn, and the colour of their enamel ſtreaked like marble; the ſpace between the jaws, when they were fully ſeparated, meaſured about four inches: in this ſtate, with the head inclined backwards, the mouth and œſophagus formed a rectilinear canal, into which a cylinder of a foot in circumference could be introduced without touching the palate. Tarare, ſays M. Percy, was conſtantly covered with ſweat; and from his body, always burning hot, a vapour aroſe, ſenſible to the ſight, and ſtill more ſo to the ſmell. He often ſtank to ſuch a degree, that he could not be endured within the diſtance of twenty paces. He was ſubject to a flux from the bowels; and his dejections were fetid beyond all conception. When he had not eaten copiouſly within a ſhort time, the ſkin of his belly would wrap almoſt round his body. When he was well ſatiated with food, the vapour from his body increaſed, his cheeks and his eyes became of a vivid red; a brutal ſomnolence, and a ſort of hebitude, came over him while he digeſted. He was in this ſtate troubled with noiſy belchings; and made, in moving his jaw, ſome motions like thoſe of deglutition. M. Percy never ſaw in him any ſigns of rumination. Tarare was almoſt devoid of force and of ideas. When he had eaten to a moderate extent, and his hunger only appeaſed, he was quick and active; he was heavy and ſleepy only when he had eaten to exceſs.

Another caſe, very ſimilar to the above, was brought into view about the ſame time at Liverpool that the firſt was at Paris; and the ſubject of it was alſo a ſoldier in the French ſervice. This caſe is recorded in the article HUNGER, vol. ix.

Theſe are our modern inſtances. A few ancient ones, to which ſome of our readers may perhaps not give full credit, are related under the word GLUTTONY, vol. viii.

The writer of the article Medicine in the Ency. Brit. has obſerved, that the pylorus being too large has ſometimes cauſed this diſeaſe. We need not remark on the abſurdity of this ſuppoſition; becauſe every thing we know of theſe caſes evidently ſhows that the digeſtion of food is properly performed, a fact quite incompatible with the idea that the pylorus lets the food paſs too quickly. In that caſe, indeed, the food would paſs almoſt unchanged, and the ſtools would of courſe be unnatural, and in large quantity; appearances actually the reverſe of thoſe we have detailed. It is but juſtice, however, to ſtate, that in lientery, a diſeaſe in which much food is taken, this conformation has been diſcovered.

γ. L. exhauſtorum, or voracity from exhauſtion, as in the event of long abſtinence, fevers, or exceſſive diſcharge. This can only be conſidered as a natural phenomenon rendered more manifeſt by its exciting cauſes being longer or more intenſely applied. It affords us an opportunity of remarking on the danger of gratifying the appetite to its full extent after long abſtinence, from whatever cauſe it may be produced. After long faſting, indeed, ſo many have been the fatal inſtances that have occurred from a full meal, that it is now popularly known and guarded againſt. After recovery from fevers and other exhauſting affections, in which for a long period little or no ſuſtenance has been taken, the ſame rule ſhould in a minor degree be retained; but this regulation is not practiſed even by our profeſſional brethren, who are often found to preſcribe tonics and ſtimulants on the recovery of patients from febrile affections. The ſame regard to quality is perhaps equally eſſential; but, as the dietetic arrangements of convaleſcents will be fully treated of, and as no very great errors are commonly committed on this head, we ſhall paſs it over, leaving as a general direction, the precept of Horace—

Nil niſi lene decet
Vacuis committere venis.

2. Limoſis expers; loſs or want of appetite, without any other apparent affection of the ſtomach. This is the genus Anorexia of Sauvages, Linnæus, Vogel, Sagar, and Cullen. Sauvages has thirteen ſpecies, which would here rank as varieties, but which, as Cullen juſtly obſerves, belong rather to the genus (in the preſent ſyſtem, ſpecies) of dyſpepſy. The following have perhaps a fair claim to be noticed.

α. L. defeſſorum; from too great fatigue, or the expectation being worn out by delay.

β. L. pathematica; from violent paſſion or other abſorption of the mind. This is chiefly produced by ſevere grief, terror, ardent deſire of obtaining an object of purſuit, or religious enthuſiaſm. Of the firſt we have an intereſting caſe by Dr. Eccles, in the Edinburgh Medical Eſſays for 1720, of a young lady about ſixteen years of age, who, in conſequence of the ſudden death of an indulgent father, was thrown into a ſtate of tetanus, or rigidity of all the muſcles of the body, and eſpecially of thoſe of deglutition, accompanied with a total loſs of deſire for food, as well as incapacity of ſwallowing it, for two long and diſtinct periods of time: in the firſt inſtance for thirty-four, and in the ſecond, which occurred ſhortly afterwards, for fifty-four, days; "all which time (obſerves the writer) of her firſt and ſecond faſtings, ſhe declared ſhe had no ſenſe of hunger or thirſt; and, when they were over, ſhe had not loſt much of her fleſh." Sauvages alludes to a ſimilar effect produced by religious mania, and nymphomania. Noſol. ii. p. 805.

γ. L. protracta; enabling the ſyſtem to ſuſtain almoſt total abſtinence for a long and indefinite time without faintneſs. As gluttony, or a deſire to be perpetually eating, may be acquired by habit, ſo may faſting. The appetite of hunger ſeems, from various caſes, almoſt as capable of being triumphed over as other appetites, and the body of being nouriſhed by a very trifling quantity of food, and for many weeks, perhaps months, even by water alone. See Marcardier in Journal de Medecine, tom. xxxiii. Schenck, lib. iii. obſ. 39. Waldſchmid, Diſſ. de his qui diu vivunt ſine alimento.

One of the beſt-known and beſt-marked examples in our own day, is that of Anne Moore of Tutbury. She was ſufficiently aſcertained to be a groſs impoſtor, in pretending to be able to live *without any food whatever:* but

but ſhe ſeems, from long habit, to have loſt all pleaſurable deſire for food, and to have been capable of ſubſiſting upon very ſimple liquids alone. She was at firſt induced to this habit by an extreme difficulty of deglution; and ſhe at length carried the habit ſo far as, *by deception*, eaſily to excite a general belief that ſhe never ſwallowed any thing either liquid or ſolid. The intelligent committee, who ſo laudably formed themſelves into a watch to determine the ſtate of the fact, by a conſtant attendance upon her perſon for a month, ſufficiently proved that ſhe could not live for ten days without ſwallowing ſome portion of liquid. In their report they tell us, that "on the eighth day ſhe was exceedingly diſtreſſed," her pulſe had increaſed till it had amounted to 145 ſtrokes in a minute; and "ſo far was ſhe reduced on the ninth day, that ſhe became in danger of expiring;" while a few hours afterwards, when ſhe was compelled to confeſs the impoſture ſhe had practiſed, "the pulſe at one wriſt had entirely ceaſed, and the other ſeemed drawn to a thread." Yet "on the whole," ſay the committee, "though this woman is a baſe impoſtor with reſpect to her pretence of *total* abſtinence from all food whatever, liquid or ſolid, yet *ſhe can, perhaps, endure the privation of ſolid food longer than any other perſon.* It is thought by thoſe *beſt acquainted with her*, that ſhe exiſted on a mere trifle, and that from hence came the temptation to ſay that ſhe did not take any thing. If, therefore, any of her friends could have conveyed a bottle of water to her, unſeen by the watch, and ſhe could have occaſionally drunk of it, little doubt is entertained that ſhe would have gone through the month's trial with credit. The daughter ſays, that her mother's principal food is tea; and there is reaſon to believe this to be true." Full Expoſure of Anne Moore, the pretended faſting woman of Tutbury.

The caſe of Mary Thomas, a poor Welchwoman of Merionethſhire, reſembles in ſome points that of Anne Moore, but is ſtill more extraordinary, becauſe her morbid ſtate was much ſeverer; and had been of longer duration, comprehending the greater portion of a century. And it occurred about the ſame time; as Mr. James Ward, a royal academician, publiſhed "Some Account" of both theſe extraordinary women, "accompanied with Portraits and illuſtrative Etchings," (1813.) for he viſited them as an artiſt. From his narrative it appears, "that Mary Thomas has exiſted between ſeventy and eighty years almoſt without food; and certainly, according to evidence that does not appear in any way objectionable, for ten whole years, without the leaſt particle of nutriment of any kind or form paſſing her lips, and without ſhowing any ſenſibility or knowledge of external events; and has had, in that time, no excrementitious diſcharges from the inteſtines or urinary bladder. In 1812 this woman was ſtill living; and, from the extraordinary tenacity to life which ſhe evidently poſſeſſes, under circumſtances that would have abridged the days of any other human creature, though now 80 years old, ſhe may, perhaps, long enough ſurvive to have her hiſtory more explicitly detailed, and the facts connected with her peculiar ſtate decidedly unfolded." This expectation was, however, defeated by the death of Mary Thomas during the year in which this account was written.

On enquiring into the hiſtory of this caſe, a fact has ariſen of ſome importance. Mr. Pennant, whoſe reputation for every thing excellent is ſtill freſh in our minds, ſaw Mary Thomas in the year 1770; and his relation agrees ſo much with Mr. Ward's, that they mutually ſupport each other, and give a degree of credibility to an otherwiſe incredible caſe.

The great attention which was beſtowed by the philoſophical world on the above caſes, together with the ſpirit of inquiry which ſtill exiſts as to the poſſibility of ſubſiſting without food, has induced us to make the following extracts from a paper in the Harleian Miſcellany as being perhaps not without ſome degree of intereſt. The title of the paper is, "A Diſcourſe upon prodigious Abſtinence; occaſioned by the Twelvemonth's Faſting of Martha Taylor, the famed Derbyſhire Damſel: proving that, without any Miracle, the Texture of Human Bodies may be ſo altered, that Life may be long continued without the ſupplies of Meat and Drink. By John Reynolds. Humbly offered to the Royal Society. London: Printed for Nevil Summons, at the ſign of the Three Crowns, near Holbourn Conduit; and for Dorman Newman, at the Surgeons Arms in Little Britain. 1669." Quarto, containing 37 pages, beſides the Title and Dedication. *Harl. Miſcell.* vol. iv. p. 43.

The exordium, conſiſting of a collection of ſimilar inſtances, bears ſtrong teſtimony of ſuch occaſional deviations from the courſe of nature; and we muſt confeſs, although at a loſs to account for it, we are by no means to diſregard ſuch a maſs of evidence, ſince many other facts leſs palpable to the community at large, and much leſs ſuſceptible of proof, are believed, although equally inexplicable. Credulity and incredulity are alike the offspring of unreflecting habits. Too great a pliability on the one ſide, and too much inflexibility on the other, are obſtacles that will always interrupt the way to truth. That pen, however, as our author ſays, "certainly drops blaſphemy, that dares to raze the ſacred records; and that uncharitableneſs which preſumes to write falſehood upon all human teſtimonies: they that aſſent to nothing not confirmed by authority, are unfit to converſe in human ſocieties; for how can I expect that anybody ſhould believe me, whilſt I myſelf will believe nobody? It is an argument of an empty brain, to preſume to comprehend all things, and thereupon to reject thoſe things from an exiſtence in their world that have not their ſcience in its intellectuals.

"Moſt certain it is, that Moſes faſted forty days and as many nights, whilſt he abode in the burning mount; Elijah went as long in the ſtrength of a meal; and no leſs was the faſt of the holy Jeſus. St. Auſtin reports, that, in his time, one ſurvived forty days faſting. The learned Fernelius ſaith, he ſaw a pregnant women that lived two months without meat or drink. Zacutus Luſitanus reports, that at Venice there lived a man that faſted forty days; another there forty-ſix days; and from Longius and Fontius (two conſiderable writers,) another full three years; and that with juſt ſtature, good habit, free countenance, and youthful wit. The famous Sennertus is copious in ſuch ſtories: he relates from Sigiſmundus and Citeſius, a perſon he ſaith worthy of credit, that the people of Leucomoria, inhabiting ſome mountains in Muſcovy, do every year die, in a ſort, (or rather ſleep or freeze,) like frogs or ſwallows, on November 27, and ſo continue in that rigid ſtate; the humour, diſtilling from their noſtrils, is preſently condenſed by the ambient cold, much like to icicles, by which thoſe potent pores are precluded, and the moſt endangered brain fortified againſt the fatal aſſaults of brumal extremities. The ſame Sennertus rehearſes a ſtory of a virgin at Padua, from Vigun-tia, profeſſor there, who, anno 1598, was afflicted with a fever, then a tumor, then arthritic pains, and pains in the ventricle and whole abdomen; then with vomiting and nauſeating of food, till at laſt ſhe could take no food for two months; then, after another fit of vomiting, purging, and bleeding, ſhe faſted eight months; and, after a little uſe of food, ſhe faſted two months more. And, to be ſhort, he ſtories it of three perſons that faſted each two years, one three years, another four, one ſeven, another fifteen, another eighteen, and one twenty; yea, one twenty-nine, another thirty, another thirty-ſix, and one forty years. Famous is the ſtory, perhaps fiction, being poetical, of Epimenides, (whoſe words St. Paul is thought to cite in his Epiſtle to Titus,) whom ſome report to have ſlept ſeventeen years, ſome ſeventy-ſeven years, together. But enough of ſtory: thoſe that are deſirous to read more, are referred to Marcellus Donat. lib. iv. de Med. Hiſt. Mirab. c. 12. Schenk, lib. iv. Obſerv. Guaguinus, lib. iii. Hiſt. Franc. Petrarch, lib. iii. de Mirabel, c. 22. Portius

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de Hiſt. Puellæ German. Uſpergenſis in Chron. Lentulus in Hiſt. Admir. Apol. Berius, lib. de Vini Nutritione. Bozius, lib. xi. c. 4. de ſignis Eccl. Fulgorius, lib. i. c. 6. Lepæus, lib. ix. Hiſt. Scot. Fovorinus apud Gellium, lib. xvi. c. 3. and eſpecially Licetus, who wrote a particular tract to ſolve the phenomena of this prodigy.

"But, further to ſatisfy theſe incredulous perſons, it is affirmed that ſome of theſe abſtinents have been watched by the moſt wakeful eyes and jealous ears, to detect their fraud, if guilty of any; as was that maid that refuſed all food, except only water, for three years, by Bucoldianus, with whom ſhe abode for twelve days, at the command of Ferdinand the emperor; ſo that Apollonia Schrejerana was taken by the ſenate of Bern, and put into the hoſpital of that town, and there watched till they were ſatisfied of the truth of her total abſtinence."

Moſt of theſe caſes are certainly too unnatural to attempt to refute, however gravely they may have been aſſerted. Uſeleſs, therefore, as the taſk would be to diſprove what nobody would believe, as well as to combat with arguments the exiſtence of what has been ſaid to be ſeen, believed, and ſworn to, it would be equally unjuſt to doubt the authenticity of the whole. The caſe which the author himſelf has related, bears ſtrong teſtimony of the poſſibility of the human body ſubſiſting under privations of food for a number of days, if we do not give credit for the full time he has repreſented. This abſtinent, he ſays, "is one Martha Taylor, a young damſel born of mean parentage, inhabiting not far from Bakewell in Derbyſhire; who, receiving a blow on the back from a miller, became a priſoner to her bed for ſeveral days; which being expired, ſhe obtained ſome enlargement for a time, but by increaſing diſtempers was quickly remanded to her bed-priſon again; where continuing ſome time, ſhe found, at laſt, a defect in her gula, and quickly after a dejection of appetite; ſo that, about the 22d of December, anno 1667, ſhe began to abſtain from all ſolid food, and ſo hath continued, (except ſomething ſo ſmall, at the ſeldom ebbings of her diſtemper, as is altogether inconſiderable,) till within a fortnight before the date hereof, which amounts to thirteen months and upwards; as alſo from all other ſorts, both of meats and drinks, except now and then a few drops of the ſyrup of ſtewed prunes, water, and ſugar, or the juice of a roaſted raiſin, &c. but theſe repaſts are uſed ſo ſeldom and in ſuch very ſmall quantities, as are prodigiouſly inſufficient for ſuſtenation: ſhe evacuates nothing by urine or ſtool; ſhe ſpits not, that I can hear of, but her lips are often dry, for which cauſe ſhe takes water and ſugar with a feather, or ſome other liquids; but the palms of her hands are often moiſt, her countenance freſh and lively, her voice clear and audible; in diſcourſe ſhe is free; her belly flapped to her back-bone, ſo that it may be felt through her inteſtines, whence a great cavity is admitted from the cartilago enſiformis to the navel; and, though her upper parts be leſs emaciated, (though much too,) yet her lower parts are very languid, and unapt for motion, and the ſkin thereof defiled with a dry pruriginous ſcurf, for which, of late, they have waſhed them with milk; ſhe ſleeps ſo ſparingly, that once ſhe continued five weeks waking. Leſt ſhe ſhould prove a cheat, ſhe hath been diligently watched by phyſicians, ſurgeons, and other perſons, (for at leaſt a fortnight together,) by the appointment of the noble earl of Devonſhire, as is already publiſhed by Mr. Robins, B. of D. that is, ballad maker of Derby; whoſe ballad, they ſay, doth much excel his book. Likewiſe ſeveral other perſons, at other times, have been pleaſed to watch for their own ſatisfaction, who, detecting no fraud, have given the account above mentioned."

It was obſerved by Dr. Henderſon, from Magn. Gabr. Block. that all examples of extraordinary faſting have been confined to the female ſex. This is another confirmation of the remark. Men, however, under circumſtances of neceſſity, have been enabled to endure ſevere privations, even under conſiderable bodily exertions. The crew of Bligh, and the hiſtory of many other navigators, give full teſtimony of the powers that exiſt in mankind when their natural ſupport has been materially reduced, and alſo totally taken away. The following particulars are collected from a note in Dr. Good's Noſology, to which we have been already ſo much indebted.

Four men were preſerved in a mine, from which, in conſequence of an accident, they were incapable of being extricated for twenty-four days, without other food than water. *Phil. Tranſ.* 1684.—A boy, fifteen years of age, ſaid to have lived three years without *eating or drinking*, with fever occaſionally; after this period he recovered tolerable health, excepting the uſe of one of his limbs, but even then took very little food. *Id.* 1720. by Patrick Blair.—A man, ſaid to have lived eighteen years on water, with occaſionally a little clarified whey; and locked up for twenty days in cloſe confinement, with water alone, to prove whether there were any impoſition: meagre, and ſuppoſed to have no evacuations; but in good health, and purſued huſbandry. *Id.* 1742.—A woman, from epileptic fits when a girl of fifteen, took to her bed, loſt her appetite, and was attacked with lock-jaw, which, with a few ſhort intervals, continued for four years: was on two or three occaſions induced to take a little water, and her mouth was at times moiſtened with wetted linen through a cavity in her teeth, from two of them having been broken in an attempt to force the mouth open; but ſwallowed nothing elſe. After this period, began gradually to recover from the tetanus, but had no deſire for food; and twelve years from the attack, when able to walk upright, took no more food than ſufficient for an infant of two years of age. Had no egeſta, but when ingeſta, which were proportioned to each other, but ſometimes a dewy ſoftneſs on her ſkin. *Dr. Mackenzie in Phil. Tranſ.* vol. lxvii. 1777. This caſe is authenticated by numerous witneſſes of high reſpectability, and is entitled to peculiar attention. —Caſe of a woman, who loſt all deſire of taking food by a fall from her horſe into water during her firſt menſtruation at the age of eighteen: for fifty years ſcarcely ever took ſolids, her chief food being whey in the ſummer, and milk, milk and water, or pure water, in the winter: had frequent retchings, which were cured by ſmoaking tobacco: for the ſpace of ſixteen years had only one ſtool annually, in the month of March, reſembling a globulet of ſheep-dung: menſtruation never recurred, but occaſional vomitings of blood. *Edin. Med. Eſſ.* vol. vi.

3. Limoſis pica, appetite for improper and indigeſtible ſubſtances. We have two varieties of this ſpecies.

α. L. inſulſa, which ariſes from want of taſte or diſcrimination, as in infants and idiots.

β. L. perverſa. This ariſes from corrupted taſte or indulgence. It is often founded on the abſurd notion that eating chalk, acids, &c. will produce a fair ſkin. This variety anſwers to the malacia, μαλαχια, of the Greek authors. When ariſing from theſe cauſes, chaſtiſement or advice can only be had recourſe to, and medical treatment is out of the queſtion. It is to be doubted, however, whether mere mental impreſſion ever induces this complaint. It is more reaſonable to ſuppoſe that the morbid ſtate of the ſtomach is the cauſe; and, in fact, we ſcarcely ever meet with a caſe of pica in which the gaſtric ſecretion is not much altered. Looking to more remote cauſes, uterine diſorder appears often to influence the nervous ſyſtem in the firſt inſtance, and the ſtomach ſecondarily. In the early ſtages of pregnancy, and in chlorotic ſubjects, the diſeaſe is moſt generally found; and hence ſome writers have ſuppoſed uterine irritation to be the ſole cauſe of pica. But this is certainly not the caſe; for we ſometimes meet with the complaint in boys; and in the Weſt-India iſlands the negroes are often ſubject to it. It is rendered remarkable in the latter inſtance by *dirt* being the ſubſtance taken. It ſeems that regular habits of diet have frequently cured the negroes of this dirt-eating, without the aid of medicine. (See Bryan

Edwards's Hiſtory of the Weſt India Iſlands.) It has been ſuppoſed that the prevalence of an acid in the ſtomach occaſioned the demand for earthy and abſorbent ſubſtances in pica: but many of the ſubſtances, taken in different inſtances, are not poſſeſſed of any antacid qualities. The diſorder is very frequently beyond the power of medicine to relieve in a direct way. In the caſe of pregnancy, it commonly ceaſes altogether about the fourth month, and has been relieved by blood-letting in ſtrong and plethoric women: but in chlorotic girls it is only removed by the courſe of medicine which removes the morbid ſtate of the habit in general, and reſtores the natural diſcharge where that was ſuſpended. In inſtances where it attacks men, or women in whom the uterine functions are healthy, it ſhould be treated on the common principles of Dyſpepſia.

It is aſtoniſhing to note the various diſguſting and indigeſtible articles ſwallowed by the patients of this diſeaſe: chalk, aſhes, coals, ſoot, pitch, cinders, &c. have each been taken in ſome caſes. But among the moſt unnatural taſtes evinced under this affection, though we do not agree with Dr. Good in calling it "one of the moſt common," is that for ſwallowing knives. In our own country it has occaſionally occurred; (ſee KNIFE-EATER, vol. xi. p. 784.) but Plouquet, Init. Bibl. art. Pantophagus, has collected examples from almoſt all the different ſtates of Germany and the neighbouring principalities, Baſle, Pruſſia, Prague, and different parts of Ruſſia. Another curious propenſity is that of ſwallowing glaſs, of which alſo the inſtances are numerous. But theſe, as well as eating hair (Breſl. Sammlung, 1719.) and ordure (Borell. Obſ. cent. iv.) muſt rather be conſidered as inſtances of folly and bravado, than of taſte. Not ſo, however, the

γ. L. pica naſi, a name given by Cohauſen to the immoderate and habitual taking of ſnuff, a filthy depravity common to both ſexes; and which, after being confined for fifty years, in this country, to the old women of the old French ſchool, has been revived by the dandies of the preſent day. It has not yet reached the ladies; and ſo we hope it may end where it has begun, with the moſt contemptible part of the creation. *Pica naſi* ſeems a whimſical term; but Cohauſen has choſen to treat this habit as a diſeaſe, and has written an expreſs treatiſe concerning it. The word *pica*, in general, denotes an abſurd and unnatural appetite; and the deſire of taking the powder of tobacco in this manner is called a diſtempered appetite of the part into which it is taken, that is, the noſe. The conſequences of the taking ſnuff immoderately, are, that the ſenſe of ſmelling is either entirely deſtroyed, or at leaſt greatly impaired: for the nervous tubercles of the noſtrils, being continually vellicated by this powder, are by degrees clogged up, or wholly deſtroyed; and the ſenſible membrane, which lines the noſtrils, is rendered callous, and wholly unfit for the diſcharge of its office in ſmelling. The voice is next affected by this powder; for it cauſes a ſort of aſtriction at the bottom of the noſe, which affects the palate, and conſequently the ſpeech; this gives the perſon who takes it a continual deſire of taking more and more, to rid himſelf of that ſtoppage.

As we are treating of morbid longing, it may not be improper to mention, that many perſons recovering from febrile affections experience a particular deſire for articles of food which we ſhould, à priori, be inclined to think highly prejudicial, and conſequently to deny them the enjoyment of. But experience has ſhown, that in this caſe the inſtinct may be often ſafely indulged: a rule to be admitted, however, with much caution and reſtriction.

4. Limoſis cardialgia. This and the two following ſpecies we find it impoſſible to conſider in any other light than as ſymptoms of indigeſtion. We ſhall therefore give but a brief account of them. Cardialgia has three varieties: α, mordens; ζ, ſyncopalis; γ, ſputatoria.

α. L. mordens is that painful ſenſation of heat and acrimony about the ſuperior orifice of the ſtomach, which, from the vicinity of its ſeat to the heart, is popularly called *heart-burn*. It is produced by the irritation of acid matter in the ſtomach, which riſes to the upper orifice, ſometimes by eructation into the œſophagus and throat, and is ſometimes completely ejected by vomiting. That this irritating matter is of an *acid* nature, is evinced by the taſte; and it has even been ſeen to produce an effervеſcence on falling on a marble hearth, according to Dr. Darwin. When vomited, or raiſed by eructation, it is ſometimes ſo intenſely ſour as to abrade the mouth and throat; and, in general, it produces a ſenſation in theſe parts ſimilar to that which exiſts in the ſtomach.

The production of this acid may ariſe from two ſources. If the gaſtric powers are ſo deficient that they cannot within a certain time digeſt the food, and propel it from the ſtomach, fermentation will take place, and acid will be generated. A better explanation ſeems to be, that the acid is ſecreted, that it is gaſtric juice changed from its natural ſtate. That this is the caſe ſeems probable, becauſe acid eructation is often felt ſo ſoon after a meal, that it is impoſſible acid could be generated by fermentation; and moreover we have known eructations poſſeſſing the higheſt degrees of acidity to paſs from a patient whom we had confined for many days to an animal diet. The palliative remedies are alkalies. Dr. Darwin remarks, that, as the ſaliva ſwallowed along with our food prevents its fermentation, according to the experiments of Pringle and Macbride, conſiderable relief is ſometimes found by chewing parched wheat or maſtic, or a lock of wool, frequently in a day, when the pain occurs, and by ſwallowing the ſaliva thus effuſed.

ζ. L. ſyncopalis. This appears to differ from the laſt only in this, that the production of the acid is attended with ſo peculiar an effect on the nerves of the ſtomach, that feelings of extreme weakneſs and ſyncope are experienced. The pain, too, which in the firſt variety is felt in the upper extremity of the ſtomach chiefly, is extended in this to the lower part of the ſame organ.

γ. L. ſputatoria, or water braſh; the pyroſis of Cullen. It is a burning pain extending over the epigaſtrium, with an eructation of watery fluid, uſually inſipid, ſometimes acid. This diſeaſe comes on in paroxyſms, which uſually happen in the morning and forenoon when the ſtomach is empty. The firſt ſymptom is a pain at the pit of the ſtomach, with a ſenſe of conſtriction, as if the ſtomach were drawn towards the back: the pain is increaſed by raiſing the body into an erect poſture, and therefore the patient bends himſelf forward. This pain is often extremely ſevere, with a ſenſe of burning; and, the fluid continues to be brought up for ſome time, and does not immediately give relief to the pain which preceded it; but at length it terminates the pain, and the fit ceaſes. Theſe paroxyſms come on without any evident cauſe, nor is the origin of the diſeaſe always to be imputed to any particular ſort of diet. It ſeldom, if ever, attacks thoſe people who uſe freſh animal food daily; but appears to be moſt common among thoſe who live almoſt entirely upon tea, milk, potatoes, and farinaceous ſubſtances. It is much more common in women than in men; ſometimes it attacks pregnant women, and often thoſe who labour under leucorrhœa. It ſeldom occurs in any one before the age of puberty, or in thoſe who are conſiderably advanced in life: when it has once taken place, it is very prone to recur occaſionally for a long time afterwards. It is more common in Scotland than in this country, and chiefly affects the lower claſſes of the people. The paroxyſm is moſt effectually relieved by anodynes, eſpecially opium, hyoſciamus, and conium; and with leſs certainty by other ſtimulants and antiſpaſmodics, as ſulphuric ether, ammonia, and the tincture of guaiacum. Theſe remedies, however, do not materially contribute to prevent the recurrence of the diſeaſe.

5. Limoſis flatus, or flatulence, is the generation of air in the inteſtinal canal, which, like the production of

acid, can have only two ſources; viz. either from the chemical changes which the food undergoes in conſequence of deficient ſecretion, or from the altered ſtate of the ſecretions themſelves; for there is little doubt that air may be ſecreted, as Mr. Hunter firſt ſuggeſted. There are three varieties of this complaint: α, borborygmus; β, eructatio; γ, crepitus.

α. The firſt variety of flatus is indicated by a ſenſe of uneaſineſs, with a rumbling or gurgling noiſe in the belly. It is ſometimes very diſtreſſing, ſince it draws the attention of by-ſtanders; and is not uncommon in young women, about the age of puberty. "I attended a young lady about ſixteen," ſays Dr. Darwin, "who was in other reſpects feeble, whoſe bowels almoſt inceſſantly made a gurgling noiſe ſo loud as to be heard at a conſiderable diſtance, and to attract the notice of all who were near her. As this noiſe never ceaſed a minute together for many hours in a day, it could not be produced by the uniform deſcent of water, and aſcent of air through it; but there muſt have been alternately a retrograde movement of a part of the bowel, which muſt again have puſhed up the water above the air; or which might raiſe a part of the bowel, in which the fluid was lodged, alternately above and below another portion of it, as might happen in ſome of the curvatures of the ſmaller inteſtines, the air in which might be moved backward and forward like the air-bubble in a glaſs level." Dr. Darwin recommends "ten corns of black pepper ſwallowed whole after dinner, that its effects may be ſlower and more permanent," in the borborygmi of young women. We have ſeen them ſuſpended by any ſubſtance, taken into the ſtomach, as a piece of dry biſcuit, which, by the way, the late Dr. Buchan conſidered "as one of the beſt carminative medicines," and recommends it in all complaints of the ſtomach, ariſing from flatulence and indigeſtion. Theſe diſorders are often particularly troubleſome when the ſtomach is nearly empty; and perhaps the operation of a biſcuit taken at ſuch times is merely that of relieving this temporary vacuity, which any other light aliment would equally effect.

β. The ſecond variety, eructatio, is of courſe produced by the action of the muſcular fibres of the ſtomach on the contained food. When this ſymptom does not take place, and wind is pent up in the ſtomach, it produces all the diſtreſſing conſequences which are attendant on great diſtention of that organ. In ſome inſtances great pain of the ſtomach is excited, either by the ſimple extenſion of the fibres, or by partial ſpaſmodic contractions; great anxiety and oppreſſion are felt in the cheſt; the reſpiration becomes laborious and difficult, with a ſenſe of ſuffocation; and the heart intermits in its action, giving riſe to intermiſſion of the pulſe, or is excited to violent palpitations. Theſe ſymptoms are generally alleviated by the diſcharge of wind by eructation: this alleviation, however, is only temporary; for the flatus again accumulates, and re-produces the ſame effects. The generation of air in the ſtomach, in leſs degrees, is an ordinary concomitant of indigeſtion; but it generally paſſes off readily. Some people, indeed, acquire a habit of voluntary eructation, which, Dr. Darwin ſays, augments the malady. He obſerves, "that, when people voluntarily eject the fixed air from their ſtomachs, the fermentation of the aliment goes on the faſter; for ſtopping the veſſels which contain new wines retards their fermentation, and opening them again accelerates it; hence, where the digeſtion is impaired, and the ſtomach ſomewhat diſtended with air, it is better to reſtrain than to encourage eructations, except the quantity makes it neceſſary." (Zoonomia, Claſs 1. 3. 1.) It has been ſuggeſted, but, we think, incorrectly, that, in the repeated voluntary attempts to diſpel wind from the ſtomach, which are often continued for ſome length of time, the atmoſpheric air is often actually *ſwallowed*, and the diſagreeable ſenſation of diſtention thus augmented.

For the *relief* of flatulence, (the radical cure, as we have already obſerved, can only be effected by curing the dyſpepſia,) a number of medicines have been deviſed, from a very early period of time, eſpecially ſuch as are comprehended under the appellation of *carminatives*. Theſe are generally ſubſtances poſſeſſing ſtrong ſenſible qualities, which render them inſtantaneouſly ſtimulant to the nervous ſyſtem; and, by ſuddenly exciting the muſcular coat of the ſtomach to action, enable it to overcome the diſtenſion, and diſpel the diſtending gas. The aromatic vegetables, containing much eſſential oil, ſuch as juniper-berries, the ſeeds of aniſe, carraway, and coriander, the roots of ginger and zedoary, and the waters diſtilled from theſe, are among the moſt eſteemed carminatives. To theſe may be added other ſtimulant and antiſpaſmodic medicines; ſuch as aſſafœtida, and other ſtrong-ſmelling gums; volatile alkali; opium, ether, &c. Warm fomentation externally to the region of the ſtomach has been recommended by Dr. Darwin, and other external remedies were employed by Dr. Whytt; eſpecially frictions on the region of the ſtomach, with liniments compoſed of the warm oils; ſuch as the expreſſed oil of mace, oil of mint, &c. and alſo the application of large plaſters to the belly, made with the ſtimulating gums and gum-reſins.

γ. L. crepitus, is a term uſed to expreſs the expulſion of wind *ab ano*. We confeſs ourſelves totally at a loſs to conceive why this expreſſion was introduced into a ſyſtem of noſology.

6. Limoſis emeſis, rejection of the contents of the ſtomach, or tendency to reject. This affection ſeems the ſimpleſt form of gaſtric diſturbance. It is generally the immediate conſequence of diminiſhed nervous influence. Thus, blows on the head, injury of the nerves, or ſympathy with diſeaſed viſcera, readily excite it. It has three varieties, which are only different degrees of the ſame action; and that action is, as we have ſaid before, only a ſymptom of other diſeaſes. The firſt variety,

α. L. nauſea, or loathing, is the mere ſenſation of ſickneſs without vomiting. The cauſes of nauſea are numerous. We ſhall mention the moſt frequent one, viz. diſordered digeſtion, under that head.

The brain is ſeldom materially affected by any ſerious irritation or derangement, without deranging the ſtomach by ſympathy: thus, ſickneſs at the ſtomach is a common ſymptom of every degree of local injury of the head, in which preſſure or concuſſion of the brain is occaſioned; it accompanies inflammation of the brain and its membranes, the preſſure of water in the ventricles, or of other morbid effuſion or growth within the cranium; as well as the oppoſite ſtate or inanition of the veſſels of the brain, as in ſyncope, or after great loſſes of blood. The other organs, with which the ſtomach is often ſympathetically deranged, and ſickened, are chiefly the kidneys and the uterus. Thus nauſea is a common concomitant of inflammation in the kidneys, or of the irritation of gravel or of a ſtone lodged in theſe organs, and becomes one of the diagnoſtic marks by which diſeaſe in the kidneys is diſtinguiſhed from other painful affections of the loins. Sympathetic nauſea is alſo a frequent concomitant of uterine irritation or diſorder; thus it is one of the moſt frequent ſymptoms of the beginning diſtention of the uterus in pregnancy, and accompanies inflammation and other painful conditions of that organ. The influence of the mind alone is likewiſe capable of exciting nauſea, and even its ultimate degree, vomiting. The ſight, or even the deſcription or imagination, of loathſome and offenſive objects and actions, will produce this effect on the ſtomach of many individuals of refined habits, or who are unaccuſtomed to ſuch objects.

It is not eaſy to account for that variety of ſickneſs, which is produced by certain kinds of motion of the body, ſuch as ſwinging, whirling, and the undulating motion of a ſhip at ſea. It ſeems, however, to be referrible principally to the ſympathetic connexion between the ſtomach and brain; i. e. to the vertigo or dizzineſs produced in the latter, through the medium of the organs of viſion, by theſe

unuſual motions. Sickneſs and vertigo are mutually productive of each other, like ſome other affections of the head and ſtomach. When the ſtomach is rendered ſick by wine or nauſeous drugs, a giddineſs is perceived, even with cloſed eyes, and *vice verſâ*. Dr. Darwin mentions a ſtriking fact illuſtrative of the effect of this dizzineſs, produced through the organs of ſight, in bringing on and preventing ſeaſickneſs. "In an open boat paſſing from Leith to Kinghorn in Scotland, a ſudden change of wind ſhook the undiſtended ſail, and ſtopt our boat; from this unuſual movement the paſſengers all vomited except myſelf. I obſerved, that the undulation of the ſhip, and the inſtability of all viſible objects, inclined me ſtrongly to be ſick; and this continued or increaſed when I cloſed my eyes, but, as often as I bent my attention with energy on the management and mechaniſm of the ropes and ſails, the ſickneſs ceaſed; and recurred again as often as I relaxed this attention." (Zoonomia, ſect. xx.) Similar nauſea, though leſs in degree, is commonly an attendant on the vertigo produced by looking from a high tower, or attempting to croſs a narrow path, unſupported, over a deep chaſm.

As this is ſo evidently a mere ſymptom of diſeaſe, the treatment of it embraces a large field of diſcuſſion, varying according to its ætiology. As a palliative, effervеſcing draughts, or, when acid only is preſent, alkalies are ſerviceable. It is to be obſerved, that the practice of reſorting to emetics on all occaſions of nauſea, is injudicious; and probably aggravates the evil tenfold, by augmenting the irritability and feebleneſs of the ſtomach, and thus laying the foundation for permanent imbecility in that important organ.

β. L. vomituria, retching, or an ineffectual effort to vomit. In this ſymptom the patient, by a voluntary act, endeavours to reject the load which oppreſſes him; but, the ſympathetic action between the ſtomach and the involuntary muſcles concerned in this act not being ſufficiently in force, its performance is reſtrained.

γ. Vomitus, vomiting, or rejection from the ſtomach. The act of vomiting is produced by the ſame cauſes as nauſea, though they exiſt in greater degree. The ſame palliatives are in uſe.

Among other affections analogous to this, muſt be noticed *rumination*. It is known to be a natural and voluntary act in animals which have a plurality of ſtomachs, as the ox, ſheep, deer, goat, and camel; (ſee vol. xiv. p. 236.) but unnatural and very rare in the human ſubject. Yet it is by no means a diſeaſe, but rather a peculiar conſtitution of the œſophagus; and thoſe who have this faculty "have declared," ſays Blumenbach, "that they had a real enjoyment in it; and that with them, as with the claſs pecora, it was a voluntary act."

In exhibiting the hiſtory of our knowledge upon this ſubject, it is a matter of difficulty to determine whether it was known to the ancients, and, if known, in what light they viewed the affection; for it is evident, that we cannot, with juſtice, call it a diſeaſe, ſeeing that its poſſeſſors do not conſider it ſuch, from its being, on the contrary, rather attended with conſiderable enjoyment. If we conſider the habits and boundleſs luxury of the civilized among the ancients, the manner in which the ſtomach was unloaded of a previous meal, in order to re-enter upon a ſecond gratification of the palate, among the Grecian and Roman gourmands, in their reſpective eras of luxury, it may be eaſily inferred that ſuch an affection as that we are now employed to deſcribe, would have been conſidered a moſt delightful ſource of animal gratification; and certainly would not have been the leſs indulged, nor would the enjoyment have been diminiſhed, had a ſimilar opinion been entertained by their phyſicians as was propagated by honeſt Fabricius ab Aquapendente, that the poſſeſſor was endowed with a double ſtomach, and that the other beſtial concomitants might, in proceſs of time, be expected, either in themſeves or their more beſtial deſcendants.

Galen, who had ample opportunities of obſervation among the many inſtances of indigeſtion he muſt have met with in the luxurious court of the Antonines, does not give the hiſtory of a ſingle caſe; and, amid the various ſtomach-aches and affections of Marcus Aurelius, which, it would appear, both puzzled the brain and excited the anxiety of this prince of phyſicians, ſo as to make him afraid that a glaſs of ſpiced wine might be too hazardous a remedy for the good emperor, the faculty of regurgitating his meals for a ſecond maſtication, appears not to have entered into the number.

Fabricius ab Aquapendente furniſhes two of the earlieſt inſtances of human rumination. The firſt is of a nobleman, in whom it generally took place an hour after his meals; which, whether ſolid or fluid, were always returned, in order to undergo a ſecond maſtication. Fabricius thought it proper to mention that the father of this individual had a horn growing from his forehead; and, with great good faith, adds, "ex quo forte datur nobis intelligi, parentis ſemen aliquam habuiſſe cum cornugeris animalibus, neque mirum fuiſſe genitum filium ſimile, quid a parente contraxiſſe:" that, although the ſon did not inherit his father's horns, yet he poſſeſſed the accompanying faculty of rumination.

The ſecond inſtance with which Fabricius has favoured us, was in a monk, who, although poſſeſſed of a moſt ravenous appetite, died of maraſmus. This monk was poſſeſſed of ſtill higher beſtial attributes; for Fabricius deſcribes him as having his forehead loaded with two horns; and Johannes Burgowerrus, who viſited this monk in the company of Joh. Prevotius and Thos. Minadous, wrote a Diſſertation on this intereſting individual, and afforded Fabricius with the particulars which are inſerted in his works. Burgower alſo adds, that the brother of this monk was alſo adorned with two budding horns, "Duorum cornum veſtigia geſtaſſe," as a *ſtriking* feature of family-likeneſs; or, as this author will have it, "Quod enim fratris erat, id monacho ruminanti ſimul gratis impetiunt." But this illuſtrious individual did not ruminate, unhappily for the argument of Thos. Bartholinus, who, from theſe two individual inſtances, haſtens to the concluſion, (in his *Treatiſe de Unicornu*, cap. 2.) from the obvious analogy of the *cornugeræ pecudes*, that all human ruminants are poſſeſſed of horns; and alſo avers, that a double ſtomach will always be found on diſſection.

Sennertus furniſhes another hiſtory of a man of forty, who poſſeſſed this faculty from a child. He finds no difficulty in accounting for its occurrence, when he learnt that, when a child, this individual had loſt his mother, and had been fed during his non-age with the milk warm from the cow. He accordingly ſoberly concludes, that he ſucked it in with his nurſe's milk!

Philip Salmuth furniſhes us with another inſtance of human rumination. It always took place in this individual about a quarter of an hour after having left table. He always ate ravenouſly, and ſwallowed his food almoſt without any previous maſtication.

John Faber Lynceus (in Expoſitione Hiſtor. Nardi Anthonii Recchi, p. 630.) gives an inſtance of moſt obſtinate rumination in a highly-reſpectable German, who, even when ſeated over his cups with his friends, was always obliged to retire about half an hour after the meal into a remote corner of the apartment, and then ruminate the ingeſta, undiſturbedly and as quickly as poſſible; which having done, he enjoyed uninterruptedly the ſociety of his friends. Having been aſked how he became obliged to indulge this propenſity, he anſwered that from a boy he had been ſubject to acid eructations; that, after having reached his thirtieth year, he found it impoſſible to reſiſt admitting into his mouth the food that conſtantly regurgitated from his ſtomach. And, being farther interrogated whether the ſecond maſtication of his food could poſſibly afford him any gratification, "Indeed," he replied, "it is ſweeter than honey, and accompanied by a more delightful reliſh."

This

This affection might be ſaid to be in the family of this honeſt German; for he was bleſſed with two grown ſons: the older, of twenty-four years, alſo poſſeſſed this delightful faculty, but had it more under control than the father, as he could prevent it altogether when in company. The younger could not.

G. H. Velchius adduces another example, in an inhabitant of London; who, in the fortieth year of his age, and of ſound health, always returned his food, in order to undergo a ſlower and more deliberate maſtication. Rumination moſtly took place in this individual from an hour to two hours after a meal; but even at the remoter period it ſtill preſerved a pleaſant taſte, and was without any degree of acidity.

In an inſtance adduced by Daniel Ludovicus (in the Ephemerides Nat. Cur. anno ix. and x.) that occurred in a young woman, this act was not performed with the uſual pleaſure, and the returned food poſſeſſed a more diſagreeable taſte than that which accompanies the more perfect caſes of this affection. Bitters and ſtomachic purgatives did not prevent its occurrence, which however was not always regular in its appearance; and, although carthartics and emetics prevented it for a ſhort period, it ſoon returned.

John Conrad Pyer (Merycologia, cap. vi.) mentions a caſe in a fatuitous young man; alſo its occurrence in a ruſtic in Swiſſerland; and in a woman in the neighbouring town. He ſagely endeavours to prove, from the circumſtance of thoſe individuals being ruſtics and cowherds, that the frequent ſight of the ruminating proceſs had impreſſed their brains with a ſimilar propenſity, which, although imperceptible in its progreſs, had nevertheleſs ripened into maturity.

Slare (in an early volume of the Phil. Tranſ.) mentions the caſe of a Briſtol man, who appears to have poſſeſſed this faculty in its perfection. This individual not only ruminated the ſolid ingeſta, but alſo fluids, as milk and ſoups. There was, however, one imperfection connected with this caſe, as it relates to the ſtate of this man's ſtomach during his meals; that the victuals ſeemed ſcarcely to deſcend into the ſtomach, but to lie in the lower part of the throat. However, the portion of the meals firſt taken was firſt ruminated.

In a caſe related in the 286th Number of the Journal général de Medicine by Mr. Tarbes, as quoted by the Editor of the London Medical and Phyſical Journal, the prominent phenomena were nearly the ſame as the one juſt related. Rumination was firſt manifeſted by the patient after his recovery from confluent ſmall-pox, in the ſixth year of his age; and it was conſtantly performed after every meal, until the period of its total ceſſation.

About half an hour after having eaten, he ſuffered a ſlight uneaſineſs in the epigaſtric region; this ſenſation was followed by the tranſmiſſion of a ball of food from the ſtomach to the mouth. The aliments thus brought up had neither a diſagreeable odour nor an acid taſte, and did not appear to have undergone any alteration in the ſtomach. The patient chewed them with as much pleaſure as he did on firſt taking them. After this portion was again ſwallowed, another maſs, which did not appear to have been mingled with that chewed the ſecond time, was brought into the mouth; and ſo, in ſucceſſion, all the food he had taken at his laſt meal was returned. On ſitting down to eat his food, the patient, inſtead of maſticating well what he took, only divided it in a very imperfect manner, as might be ſeen by the ſpecimens returned into the mouth during rumination. If he, by chance, happened to ſleep ſoon after a meal, he, after about two hours, awoke to vomit up all the food which had not been ruminated. He went on in this way until the time of his marriage, when his rumination ceaſed, almoſt ſuddenly. It was leſſened on the day enſuing from it, and was entirely diſcontinued at the end of eight days. A great thirſt, which he had ſuffered whilſt he ruminated, diſappeared at the ſame time. He ſuffered no inconveniences in conſequence of the change; and, during the ſix years which have ſince elapſed, he has become more robuſt and healthy than before.

Dr. Copeland has related a curious caſe of this kind in the London Med. and Phyſ. Journal, No. 267, for May laſt (1821.) The ſubject of it was a gentleman in the meridian of his age, of a ſtrong but ſpare habit, and of the ſanguineo-melancholic temperament. Owing to cauſes to which he was ſubjected through the very early period of life, he had been obliged to take his meals in a very haſty manner. The very few minutes allowed to his ordinary meals led to a haſty and imperfect maſtication of the food; and, although his time was at his own diſpoſal as he reached manhood, ſtill the habit had been retained through the reſt of the already paſſed portion of his life.

The greater part of its early period was ſpent in an active, varied, and pleaſant, employment, generally in the open air, and in the vicinity of the ſea; and this alternation of active exerciſe, in ſo healthy a ſituation, preſerved the due equilibrium of the organic actions; the former neutralizing the effects produced upon the digeſtive functions by the co-operation of an haſty and imperfect maſtication of the ingeſta, and by ſedulous ſtudy.

So long as this diverſified mode of living was enjoyed, the regular operation of the digeſtive tube was continued, and no ſymptoms of dyſpepſia appeared, until he took up his conſtant reſidence in the metropolis. For a conſiderable time, the chief and almoſt only complaint was *ſputatoria*, or water-qualm: for two or three hours after every conſiderable meal, part of the more liquid contents was ejected from the ſtomach, in large mouthfuls, at intervals of from two to five or ten minutes, attended with a ſlight acidity; ſometimes with a ſlight flatulence and ſenſe of fullneſs at the ſtomach, but never with any cardialgia, nor with the ſlighteſt ſenſation of nauſea. This affection was generally augmented by any of the uſual articles of deſert, or by port-wine; while it was relieved, or entirely prevented, by a moderate quantity of white wine, and by avoiding every ſpecies of exertion that could tend to diſturb the function of digeſtion. This affection, after continuing ſeveral years, with occaſional interruptions, according to the care and means taken to prevent it, paſſed at laſt into complete rumination, which has been preſent after every conſiderable meal for ſome time. But, as it was attended with leſs inconvenience than the preceding ſputatoria, and being unaccompanied with any diſagreeable ſenſation, no great importance was attached to it, until it became complicated with a cutaneous eruption. For that I was conſulted; and, upon making inquiry into the ſtate of the digeſtive organs, was readily informed of the ruminating affection. The profeſſional intercourſe that now took place furniſhed me with the particulars already related, which may ſerve as an introduction to a knowledge of the nature of this diſeaſe.

The following is a ſtatement of the particulars of this caſe, when ſubmitted to my care. The ruminating affection was at that time generally preſent after all his meals, and conſtantly after breakfaſt and dinner. The appetite was always good, and the food, conſtantly taken in large mouthfuls, was maſticated haſtily and imperfectly, and ſwallowed eagerly. There was no thirſt; the bowels were habitually coſtive. Sleep was ſound. His meals were taken more with a deſire to ſatisfy an unpleaſant ſenſation or a requiſite deſire, than to indulge the pleaſures of the palate, and was performed haſtily, in order that the ſtudies and purſuits, to which he conſidered eating an interruption, might be immediately reſumed.

Under the uſual circumſtances, rumination commenced from a quarter of an hour to an hour and a half after a meal. Immediately upon the commencement of this act, a ſlight ſenſation of fullneſs might be felt at the cardia, when the attention was particularly directed to it, that led to a deeper inſpiration than uſual. So ſoon as the act

act of inſpiration was completed, and while the muſcles of the glottis remained fixed, a bolus of the unchanged aliment roſe rapidly from the ſtomach, with the firſt effort at reſpiration, at the moment when the diaphragm had juſt relaxed, and the re-action of the abdominal muſcles commenced. But expiration did not take place until the alimentary ball had paſſed completely into the mouth, as the glottis remained cloſed until then: upon this having taken place, expiration was immediately effected; and ſo rapidly did expiration ſucceed to the regurgitation of the alimentary bolus, that the latter (unleſs when the attention was cloſely applied to the ſubject) appeared as part of the expiratory act.

The ruminating proceſs was never accompanied, at any time, with the ſmalleſt degree of nauſea, nor any pain or diſagreeable ſenſation. The returned alimentary bolus was attended with no unpleaſant flavour, was in no degree acidulous, and was equally agreeable, and was maſticated with additional pleaſure, and with much greater deliberation than when firſt taken. The whole of the aliments received at any one meal was not returned in order to undergo this proceſs, only the part that had undergone an inſufficient maſtication; but which indeed conſtituted the greater portion of ſolid aliment. That taken at the commencement of a meal was the firſt diſgorged: this was aſcertained by eating from a variety of ſolid diſhes, or from partaking of different portions of the ſame. The more fluid portions were not always returned, unleſs along with the more ſolid or imperfectly maſticated parts. When, however, the ſtomach was diſtended by a large meal, the fluid contents were frequently returned, and ſubjected to this proceſs.

This affection may be conſidered as having been paſſively under the control of the will; and, although it ſometimes took place when nearly unconſcious of the proceſs, yet it never occurred when the mind was incapable of being acted on by external impreſſions received by the ſenſes. Thus, if at any time, from previous fatigue, and the concentration of the organic nervous energy towards the digeſtive organs, ſleep was induced immediately after a full meal, this affection did not take place; but flatulence, acrid eructations, &c. afterwards ſupervened, and continued for ſome time, in conſequence of the gaſtric juices being inſufficient to the production of the requiſite changes on the ingeſta retained in a ſtate of imperfect diviſion. Very frequently, when the ruminating proceſs was thus prevented, or voluntarily ſuppreſſed when circumſtances required it, the ingeſta, both fluid and ſolid, were returned at the end of ſeveral hours; but were then generally acid, frequently acrid and bitter, and ſometimes in ſo large a quantity as to fill the mouth beyond its capacity of retention. But even then no cardialgia nor gaſtrodynia was experienced, nor the ſmalleſt degree of nauſea; and even theſe diſgorged matters were attempted to be maſticated, although generally thrown out on account of the diſagreeable taſte.

"In ſpeculating upon the nature of this caſe," ſays Dr. C. "it appears evident that the energy of the digeſtive and aſſimilating organs was greatly diminiſhed: conſequently the ſtomach, deriving its influence, whether that preſiding over the muſcular action or vaſcular ſecretion, from the ſame ſource, namely, the organic ſyſtem of nerves, experienced a proportionate diminution in its ſecreted juices. This was rendered apparent by the changes which took place in the aliments, when taken even in very moderate quantity, and when retained without being ſubmitted to re-maſtication. Connected with debility of this organ, an increaſe of its animal ſenſibility, which it derives from the diſtribution of the eighth pair of nerves, appears to have been preſent. Under theſe circumſtances, the gaſtric juices (being, as inferred, in diminiſhed quantity) could be ſufficient only for a ſmall portion of aliment, which nevertheleſs had been taken in an abundant quantity; and, having combined with that part whoſe ſtate is moſt favourable to ſuch an admixture, and being, by the uſual action of this organ, conveyed to the pylorus, the imperfectly-maſticated portions, and that part which remains unpenetrated by the gaſtric juices, muſt either continue at the cardiac extremity, or be propelled there by the action of the ſtomach. That the undigeſted portions of the food do not only remain in that ſituation, but may, by a peculiar and complicated action of this organ, be conveyed there, may be proved not only by reaſoning upon the nature of its organic action, but has even been demonſtrated by large fiſtulæ of this organ, ſituated at its anterior convexity, and opening externally at the epigaſtric region. In a caſe in the Hôpital de la Charité, under the care of Corviſart, the complicated action of this organ was witneſſed, conveying the digeſted portions of the ingeſta towards the pylorus, which paſſed only in very ſmall quantity, while the bulk of the unchanged aliment was propelled, by a contrary action, to the oppoſite extremity of the organ. It cannot be ſuppoſed improbable that the irritation produced in this part of the ſtomach by the unchanged aliments in ruminating individuals, ſhould excite the animal ſenſibility of this organ; and, if the brain be in a ſtate capable of receiving the ſenſation, it is propagated to the organs of reſpiration, and their action induced through the medium of the ſame ſet of nerves, namely, the par vagum, that forms not only the reſpiratory claſs, but alſo the connecting chain between the organic and animal orders of the grand nervous ſyſtem; and, while it beſtows an exquiſite ſenſibility on the pulmonary ſyſtem, it likewiſe gives a requiſite, but ſparing, ſhare of its influence to this important organ.

"In effecting the proceſs of rumination, the organic contractility of the ſtomach can do no more than, by an elective proceſs (ſoon to be explained), place the aliments about to be returned in a ſituation, in reſpect to the cardia, favourable to the excitation of the animal ſenſibility of this organ, and to its ready regurgitation and propulſion along the œſophagus. So ſoon as the demand is made upon the ſenſibility by the ſituation of the alimentary bolus, the par vagal claſs of nerves is excited to action, and a full inſpiration is effected, as has been deſcribed. The introduction of the bolus into the cardiac extremity of the œſophagus, may be conſidered as effected by the ordinary contractility of the ſtomach; perhaps ſympathetically heightened at the moment by the re-action of the abdominal muſcles; while, at the ſame time, the diaphragm has juſt undergone relaxation, in which the cardia may, from intimate nervous communication, ſuffer a ſimilar participation, and thus give facility to the aſcent of the alimentary ball in the œſophagus, which immediately contracts behind it from the irritation produced by its paſſage, and the bolus is thus conveyed to the mouth.

"The influence of the will appears to be requiſite, ſince the proceſs is interrupted during ſleep. But this influence is only *paſſively* engaged in the production of the ruminating act, by bringing about the co-operation of the reſpiratory organs. The elective proceſs exerciſed by the ſtomach in this affection, is ſimilar to that which it employs in periods of health, and may be conſidered as relative to the degree of digeſtive energy, and to the comparative ſtates in which the various ingeſta may enter the ſtomach.

"In the debilitated ſtate of the ſtomach, and conſequent deficiency of the ſecretions, digeſtion can be perfectly performed only when the aliments are preſented in ſmall quantity, and in a favourable ſtate, from complete comminution and from intermixture with the ſalivary juices. If, however, in this ſtate of the organ, the food is conveyed rapidly into it, poſſeſſed of neither of theſe requiſites, ſo as to produce ſudden diſtention, a re-action of this viſcus upon its contents takes place; and, as the imperfectly-maſticated food conſtitutes the greater portion of the ingeſta, there is abundance preſent to be returned into the cardia, while there is a deficiency of aliment in

a fit ſtate to combine with, or to be operated upon, by the gaſtric juices; which, when effected, is rapidly conveyed to the other extremity of this organ, by the reaction of the muſcular coat, from the undue diſtention and the ſtimulus of ſolid contents. Thus a double effect is produced by the healthy organic contractility of this organ, when in a weakened ſtate, and yielding a diminiſhed quantity of the uſual fluids; which ſtate indeed may be conſidered as conſtituting this peculiar affection, namely, that part of the aliment which is diſſolved by the gaſtric juices is conveyed towards the pylorus, while, at the ſame time, the tonic action tending to diminiſh the capacity of the organ puſhes the leſs comminuted and indigeſtible portions of food into the unreſiſting cardia; which is returned, as I have attempted to deſcribe, in order to undergo a ſecond comminution and intermixture with the ſalivary juices; after which it is in a fit ſtate to be conveyed to its deſtination along the mucous ſurfaces, with the juices of which it combines, and thus permits a central portion of the maſs to return and undergo a ſimilar proceſs.

"In the curative plan purſued during the time this gentleman was under my care, the cutaneous eruption was viewed as originating in the long and progreſſive derangements of the digeſtive canal; and the ruminating affection, from the highly intelligent hiſtory of its origin afforded me by the patient, as well as of the ſenſations and connexions of the phenomena ſo kindly accorded me during my attendance, was conſidered as the moſt advanced and peculiarly modified ſtate of dyſpepſia, or gaſtric debility.

"Under the uſe of infuſions made from a combination of vegetable tonics, aperients, and aromatics, with the addition of an alkaline carbonate or a carminative tincture, and the frequent uſe of the warm bath, with ſubſequent friction; while, at the ſame time, a deliberate maſtication of the aliments, and a moderate indulgence in light and digeſtible food, was enjoined; amendment ſoon became apparent. After a fortnight's continuance of this plan of treatment, the cutaneous diſeaſe had made conſiderable progreſs towards removal, and the ruminating affection, which till then had been preſent after every conſiderable meal, was now very ſeldom experienced; nor did any ſymptoms of dyſpepſia take its place, unleſs when the injunctions regarding the mode of living and maſtication of the food were not attended to, or when ſubjected to cauſes operating a diminution of the digeſtive energy; then, dyſpeptic ſymptoms, or even ſlight rumination, occaſionally preſented themſelves.

"Within a few weeks, the eruption was entirely removed; but the ruminating affection returned whenever the proper precautions were not obſerved. Having impreſſed the mind of my patient with the neceſſity of purſuing correctly the plan I had preſcribed to him, upon the grounds that ſuch an affection, if indulged, would gradually undermine the energy of his ſyſtem, he became more attentive to the ſtate of his digeſtive organs, and to his mode of living; and now, (March 1821.) for ſeveral months, he has enjoyed perfect health, and had no return of the ruminating act. Having transferred, as he ſays, the gratification formerly enjoyed in the ſecond maſtication to the firſt, this proceſs is now performed more deliberately; a more complete admixture of the aliments with the ſalivary fluids and with the air, takes place; while the ſtomach is leſs ſuddenly, and much more moderately, diſtended."

Diſſections have not been able to throw any light upon this affection; nor can it be expected, in the preſent ſtate of our medical knowledge, that, even in the event of a violent death taking place in a ruminating ſubject, any viſible alteration in ſtructure could be detected. Fabricus ab Aquapendente and Thos. Bartholinus were confident of finding two ſtomachs, at leaſt, in ruminating individuals, from the analogy of the cornuted tribes. Pyer and Morgagni ridiculed the idea, and ſupported a contrary opinion, upon the ground that there were animals that ruminated without a double ſtomach. The only inſtance Dr. Copland had met with in which inſpection after death took place, was in the inſtance of this affection occurring in a monk. This diſſection is recorded both by Jo. Rhodius (Cent. ii. obſ. 59.) and alſo by Bonetus, (Sepulchretum, l. iii.) It was made by Fanciſcus Plazzonus, and is thus related by Jo. Rhodius: "Monachus cum voluptate cibus ruminavit. Medici brutorum more gemino ventriculo præditum putabant. Ipſo defuncto, F. Plazzunos œſophagum reperit undiquaque carnoſum inſtar muſculi, reliquis univerſi corporis partibus ſe recte habentibus." The phyſicians of the ſeventeenth century were not much enlightened by the opening of this monk, but their dreams reſpecting the exiſtence of two ſtomachs were henceforth diſſipated.

Enthuſiaſts in their arduous profeſſion (which all young medical men ought to be) are greatly indebted to ſuch learned phyſicians as Dr. Copland, Dr. Cooke, &c. for their indefatigable reſearches into the early hiſtories and records of the more ambiguous diſeaſes; and the utility of ſuch condenſed communications is greatly enhanced by the practical remarks accompanying them. Mr. G. Neſſe Hill has added a caſe, *and diſſection*, of ſimilar diſeaſe in a ſeverely-afflicted inſane patient, who fell under his care in the year 1791: he appeared to fall a victim to epileptic inſanity, the reſult of early indiſcretion. That part of the hiſtory of this young man which related to his rumination of his food, bore an exact reſemblance to the one ſo ably detailed by Dr. Copland. "I examined the body, (ſays Mr. Hill,) in the preſence of the venerable Haygarth, who, as well as myſelf, was much ſtruck with the extreme tenuity and ſmooth internal ſurface of the ſtomach. In order the more correctly to obſerve the ruminating proceſs, I invited my patient to dinner ſeveral times; he ate with a ravenous appetite and wonderful quickneſs, but never finiſhed a meal without commencing the ruminating proceſs." A further hiſtory of this caſe will be found in the Appendix to Hill's Eſſay on the Prevention and Cure of Inſanity.

7. Limoſis dyſpepſia, or indigeſtion. The function of digeſtion in the ſtomach being performed by means of ſecreting agents, which are veſſels and nerves, and by muſcular fibres which propel the food downwards, all cauſes of indigeſtion muſt operate, 1. by diſturbing the tranſmiſſion of nervous influence; 2. by diſturbing the action of ſecreting veſſels; or, 3. by paralyſing the play of the muſcular fibres. Now it would require little labour to ſhow, that nothing can influence the one materially without influencing the others, both on account of their reciprocal action, and on account of the agency which foreign ſubſtances will produce on the other ſtructural elements in conſequence of the deficient action of one. Thus, if nervous influence be diſturbed, ſecretion will be wanting; conſequently the food will undergo chemical decompoſition, will ſwell and evolve gaſes; thus it will diſtend the circular fibres of the ſtomach beyond their uſual ſphere of relaxation, and by that means prevent the further digeſtion of food. In the ſame way the muſcular coat will be liable to diſtention in the caſe of diminiſhed ſecretion, when that diminution ariſes from torpor of the ſecernent veſſels; and, if the circular fibres are diſtended by mere quantity, that diſtention will hurt the nervous power; for it is known that when muſcles are ſtretched beyond a certain natural compaſs, their nerves communicate to the ſenſorium pain or irritation. In this way, therefore, reaſoning from our knowledge of the quick communication of nervous power to and from the brain, we infer, that increaſed tranſmiſſion of nervous influence to the affected organ will ariſe. Here ſecretion will be increaſed, though in early inſtances probably unaltered. By this increaſed ſecretion, the food will be prevented from enlarging by chemical changes, and cannot therefore further diſtend the circular fibres; while thoſe forces will, in conſequence of the

the ſolution of the ſubſtance, more eaſily expel it: ſo that, in early accidents of this ſort, the increaſe of one power ſeems to relieve in ſome meaſure the deficiency of the other. This, however, can obtain but for a ſhort time; for the undue excitement of the ſecreting veſſels muſt ſoon induce altered ſtates of the gaſtric juices; ſtates in which of courſe the latter will be deficient in ſome of the diſſolving qualities. It is impoſſible to ſtate exactly which of, or in what proportion, theſe powers firſt undergo derangement. It is probable that, while in gluttons diſtention of muſcular fibres is the firſt ſtep to diſorder, in the drunkard the nervous expanſions may be firſt injured, while the ſecreting veſſels are diſordered by cauſes which ariſe from the conſtitution at large. Having ſhown, however, that theſe powers are all eſſentially deranged in a manner almoſt ſimultaneouſly, it is of little importance to attempt to trace the ſubject further: for it does not ſeem that, generally ſpeaking, in the earlieſt ſtage of indigeſtion, the vaſcular ſyſtem is materially implicated. We except of courſe the affection of the ſtomach which we have noticed in our introduction, chronic gaſtritis.

We have already endeavoured, on general principles, to trace the morbid affections ariſing from diſorders of the alimentary canal: it remains to do ſo in detail. We have ſaid that this diſorder injures the other parts by nervous influence, or by the abſorption and local application of diſeaſed blood. There ſeems every reaſon to believe, that in indigeſtion, when the complaint is not very violent or of long ſtanding, though nervous irritation may ariſe, the aſſimilation of food into healthy blood is not materially altered: ſo that diſeaſe traceable to indigeſtion will in the firſt ſtages be the mere conſequence of nervous diſorder. It is important, as a practical diſtinction, thus to know when derangement is propagated to remote organs by nervous communication, without involving the vaſcular ſyſtem importantly, or whether the vaſcular ſyſtem has become deranged in conſequence of the local application of diſeaſed blood, or a continuance of nervous irritation ſo long kept up as to alter the contractile power of the veſſels. The tracing of diſeaſes in this manner appears to us a matter of the utmoſt importance; for it is notorious that many affections ariſe from diſturbance in the ſtomach and bowels, which mimic or reſemble idiopathic diſeaſes of the firſt magnitude and danger.

Idiopathic diſeaſe may after a time be induced by the long continuance of the cauſe juſt mentioned; but it is a practical fact of the utmoſt conſequence, that, while inflammation, (and that is the moſt frequent form of diſeaſe that occurs,) ariſing idiopathically, is difficult of ſubduction, and only to be removed by emptying the blood-veſſels; the ſame action ariſing from nervous excitement thus propagated, ſoon ſubſides when that excitement is withdrawn; and this takes place, though more rarely, even in caſes of long ſtanding; in caſes where the aſſimilative function is deranged, and morbid ſtates of the fluids are exiſting, the removal of theſe ſtates being attended with the gradual ſubduction of the propagated diſeaſe.

Having detailed the cauſes of indigeſtion in full in our introductory obſervations on this claſs, we ſhall now proceed to conſider the ſymptoms of indigeſtion, dividing it into two ſtages. The firſt, in which mere diſturbance of function, the digeſtive, and that in ſlight degree, is apparent, and in which the ſympathetic diſeaſes are varying and unmarked; the ſecond, in which that diſturbance is manifeſted in a marked and ſerious form, in which the vaſcular ſtructure ſeems continually affected, and which is generally connected with diſeaſed ſtates of the collatitious viſcera. The dependant ailments attached to each of theſe ſtates will be diſcuſſed under the ſame heads. This diviſion is however merely choſen on account of its practical utility, becauſe ſome difference of treatment both of the local and conſtitutional diſeaſe is neceſſary, according as the digeſtive diſturbance is recent or of long ſtanding; but, in enumerating the ſymptoms of this diſorder, it muſt be confeſſed that no peculiar ſign indicates with certainty or preciſion the paſſing of *diſorder*, or the firſt ſtage, into that of *diſeaſe*, or the ſecond; and that much careful and in ſome meaſure original obſervation is required even after the fulleſt deſcription on the part of the practitioner.

The ſymptoms of the early ſtage of indigeſtion are ſuch as ariſe from chemical changes in the food, and the ſimpleſt changes in the gaſtric fluid: theſe are the evolution and eructation of various gaſeous, oily, acid, or acrid, productions. They exiſt in various degrees; but are only preſent, however, during or after a meal; and, when the digeſtion is not in action, little inconvenience is experienced. It appears, however, that the trifling diſturbance in the function of the ſtomach may, for a certain time, produce a feeble or otherwiſe vitiated ſecretion, without in any other way very ſenſibly affecting the functions of the ſyſtem. People frequently complain of a ſenſe of diſtention after eating, and flatulent and acid eructations, who, notwithſtanding, enjoy good general health; and find that even theſe ſymptoms may be prevented by taking leſs food, and that of a more digeſtible quality; and, if they are prudent in this reſpect, and the conſtitution is otherwiſe ſound, and not expoſed to the effects of indolence, and other cauſes weakening the nervous ſyſtem, the ſtomach will often recover its powers without farther means. The irritating cauſes are often, however, daily and hourly applied, and leave the ſtomach permanently diſordered by their frequency. The gaſtric juice becomes probably ſo altered or increaſed, or ſecreted at improper times, as to produce unpleaſant fulneſs in the ſtomach, even during its empty ſtate. The bowels, whether in conſequence of the unnatural or undigeſted ſtate of the materia applied to them, whether ſympathetically affected by continuity of ſtructure, or from want of a natural ſtimulant exiſting in the ſecretion of the ſtomach, become deficient or irregular in performing their office. Their ſecretions likewiſe ſuffer deviations from the healthy ſtate, and are ſcantily produced. The quantity, colour, or conſiſtence, of the fæces, are changed; they are occaſionally diſtended and tenſe, eſpecially ſome time after eating. Diſordered ſecretions are manifeſted in the mouth: a clammy taſte is experienced; and the tongue is more or leſs furred, eſpecially in the morning. But theſe ſymptoms, the patient finds, yield to ſome mild aperient, which, at the ſame time, promotes the action of the ſtomach; and his feelings on the whole differ but little from thoſe of health. He is more apt to be thirſty; his appetite is generally more or leſs impaired and variable; he complains of his feet being cold; but ſtill his ſtrength and general appearance are but little affected; and he ſeldom thinks it neceſſary to pay particular attention to ſymptoms which appear ſo ſlight, and for the time yield ſo readily. By degrees, however, they recur more frequently, and begin to be attended with ſome depreſſion of ſtrength, which at firſt is only occaſional. This, in general, is the firſt thing which ſeriouſly calls his attention to the diſeaſe. The mind, if the diſeaſe proceed, partakes of theſe returns of languor, and the patient at length finds it difficult at all times to command his attention, and, upon the whole, that he is not capable of his uſual mental efforts. His ſleep is diſturbed by perplexing dreams, and ſometimes by fits of night-mare. In a large proportion of caſes, however, he enjoys good nights, and even thoſe who are troubled with dreaming and reſtleſſneſs, often feel more drowſy than uſual. He now becomes alarmed, and occaſionally feels a degree of deſpondency. Inſtead of thinking too lightly of his complaint, he often regards it in the moſt ſerious point of view, and cannot be perſuaded that any thing leſs than ſome important derangement can produce the anxiety and depreſſion by which his attention gradually becomes wholly engroſſed.

The derangement of the alimentary canal now pro-

duces diſordered function of the collatitious viſcera; and a change takes place which marks an important ſtep in the progreſs of the malady. The alvine diſcharge begins to deviate from the healthy appearance: it ſometimes contains uncombined bile, ſometimes it chiefly conſiſts of bile; its colour at other times is too light, more frequently too dark; and occaſionally, at length, almoſt black. At different times it aſſumes various hues, ſometimes inclining to green, ſometimes to blue; and ſometimes it is mixed with, and now-and-then almoſt wholly conſiſts of, undigeſted bits of food. When there is much ſtraining, it often contains mucus in diſtinct maſſes, and not unfrequently ſubſtances reſembling bits of membrane. It frequently ſeparates from the canal with more difficulty than uſual, and leaves a feeling of the bowels not having been completely emptied. We have reaſon to believe that the above change and variety of colour ariſe chiefly from the ſtate of the bile, to which the alvine diſcharge owes its natural tinge, being quite white when no bile flows into the bowels. It would appear that the properties of the bile are ſometimes changed without change of colour; but this is comparatively ſo rare, that, if the colour of the alvine diſcharge be natural, we may generally infer that the function of the liver is duly performed.

Many conceive that the changes of colour in the alvine diſcharge are often to be aſcribed more to circumſtances in diet, and changes which the contents of the bowels undergo in their paſſage through this canal, than to the ſtate of the bile; and we have no doubt theſe cauſes operate to a greater or leſs extent. The long delay of their contents in the bowels generally darkens the colour; a milk-diet produces a diſcharge of a lighter colour than one conſiſting chiefly of animal food, and ſome vegetables and medicines communicate a certain tinge to the diſcharge. With a little attention on the part of the practitioner, this circumſtance will ſeldom miſlead him. It muſt always be kept in view, that the appearance of the diſcharge often changes when it has remained for ſome time out of the body.

The diſeaſe has hitherto been what is called ſtomach-complaint. It is now, from the various appearances of the vitiated bile, and the various ſymptoms which ariſe from the irritation it occaſions in the alimentary canal, what is called bilious and nervous complaint. The former of the two laſt appellations has alſo ariſen from the bile, of which there is ſometimes a ſuperabundant ſecretion, being occaſionally, in conſequence of the inverted action of the duodenum, thrown into the ſtomach; and there exciting nauſea, headache, and bilious vomiting.

The urine alſo deviates from the healthy ſtate. In its moſt healthy ſtate, it is perfectly tranſparent when paſſed, and remains ſo after it is cool, its colour being more or leſs deep in proportion to the degree in which its contents are diluted. But it is ſometimes covered with a very thin oily film, which appears to ariſe from an imperfect ſtate of the aſſimilating proceſs. Sometimes alſo it is limpid, and paſſed in unuſually large quantities, more frequently ſcanty and too highly coloured. It is then moſt apt, as we ſhould *à priori* expect, to depoſit ſediment, unleſs ſome degree of fever prevail, when it often either depoſits nothing, or a little of the red ſediment.

A remarkable ſympathy between the ſtate of the kidneys and inteſtines is often obſerved in indigeſtion; the urine remaining ſcanty and high-coloured, when the bowels are conſtipated; and flowing freely, and of a paler colour, as ſoon as a free diſcharge from them has been obtained. Even in thoſe dropſical affections which ſupervene on this diſeaſe, it is common for all diuretics to fail, when the bowels are conſtipated, and for the operation of cathartics alone to be followed by a free diſcharge from the kidneys.

The copious flow of urine which ſometimes attends indigeſtion, ſeems frequently to ariſe from a failure in the action of the ſkin, as appears from ſome of the experiments juſt referred to. The kidneys and ſkin ſeparate the ſame fluid from the blood, and a failure of ſecretion from the latter is often compenſated by an increaſe of that from the former, if they have not by ſympathy partaken too much of the ſtate of the ſkin. Thus, in dyſpeptics, an unuſual application of cold to the ſurface, when the powers of the ſyſtem are not able ſo to re-act as to ſupport the due action of the ſkin under it, frequently occaſions an increaſed flow of urine. The ſame cauſe often occaſions a greater diſcharge from the bowels. It particularly demands attention in this diſeaſe, that, although the increaſed diſcharge from the bowels in the inſtance before us is of a watery nature, when the ſkin has, from the ſtate of that diſeaſe, become uniformly languid, the increaſe is often in the ſolid, as well as liquid, contents of the bowels. On the ſame principle, the quantity which paſſes from the bowels of delicate children when the ſkin has become dry and ſhrivelled, is often aſtoniſhing, and that even when little nouriſhment is received; as if not only what ought to have paſſed by the ſkin, but a great deal of what had been inhaled by this organ, were depoſited in a ſolid form in the alimentary canal.

What is here ſaid is well illuſtrated by the caſes which we detailed of very great eaters, in whom the alvine diſcharge was no greater than in other people, but the ſecretion by the ſkin was found much more copious.

The ſenſible change in the appearance of the alvine ſecretions in indigeſtion, is generally attended with ſome change in the other ſymptoms. The ſtomach is more apt to be oppreſſed after eating, the patient often obſerving that he feels as if there were not room for what he had taken. The bowels are more frequently variable, diarrhœa often ſupervening without any evident cauſe, almoſt uniformly followed by fits of conſtipation. Theſe, the patient finds, cannot now be removed by the ſimple medicines which at firſt reſtored due action to the bowels; larger doſes or more active medicines are neceſſary, and their effect correſponds with the previous ſtate of the bowels. The diſcharge is generally unſatisfactory, ſomething ſeeming to be retained. It is very often watery or ſemi-fluid, mixed with mucus, and ſometimes ſtreaked with blood; and, after it has been repeated, often chiefly conſiſts of mucus and a little blood, the paſſing of which is attended with much griping and bearing-down, and followed by a conſtant deſire of further evacuation. The patient takes more medicine with the hopes of a freer effect; but he thus often increaſes the ſtraining more than the diſcharge.

After this ſtate of irritation has continued to recur for a great length of time, a degree of permanent ſpaſmodic ſtricture ſometimes appears, which gives a tape-like appearance to the alvine diſcharge. In the mean time the patient is haraſſed with a variety of other ſymptoms, ariſing from the irritation occaſioned by the morbid contents of the alimentary canal; increaſing languor, pains of the ſtomach, more frequently of the bowels, and particularly of the lower part of the bowels, ſometimes continued, generally of the griping kind; a ſenſe of heat, or, as the patient often calls it, burning, referred to the ſtomach, and now-and-then extending to the bowels, (which ſometimes proves the moſt obſtinate and diſtreſſing ſymptom of the diſeaſe;) or of weight in the right hypochondrium or lower part of the abdomen, with unuſual diſtenſion of the former, ſometimes diſappearing in a day or two, particularly after freer evacuations, and returning again, at other times more ſtationary; a more foul and clammy tongue, nauſea, more rarely vomiting, a depreſſion of ſtrength, which ſometimes, particularly after the unſatisfactory operation of cathartics, almoſt amounts to ſyncope, and a deſpondency that is hardly equalled in any other diſeaſe.

As theſe ſymptoms proceed, others, the conſequence of the ſympathy which exiſts between the ſtomach and other parts of the ſyſtem, gradually ſhow themſelves. Theſe

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are different in different caſes; pain of different parts, and other complaints, of the head, affections of the ſight, the hearing, ſmell, or taſte. The voice and articulation are ſometimes variouſly affected. The patient is diſtreſſed with ſpaſms of the trunk or limbs, numbneſs, and even temporary loſs of power in the latter; and feelings of endleſs variety are deſcribed, as ſometimes in one part of the body, and ſometimes in another.

By a conſtant recurrence of ſuch attacks without being uniformly ill, for the rapidity with which the patient rallies is often as great as that with which he is ſubdued, he is gradually rendered unfit for the active duties of life. This preys on his mind, increaſing the deſpondency which makes a part of his diſeaſe, and which in its turn, by further debilitating the digeſtive organs, aggravates all the ſymptoms. Theſe organs being no longer in a proper ſtate to ſupply due nouriſhment, the body becomes emaciated, and more permanently feeble, the ſtrength by degrees rallying leſs readily and leſs perfectly after the frequent returns; and what was at firſt only a temporary depreſſion from a debilitating cauſe affecting the nerves of the alimentary canal, is gradually changed into real debility, the countenance, which is almoſt always a ſure index of what is paſſing internally, becoming pale and haggard.

The patient, often from an early period of indigeſtion, feels ſome uneaſineſs on lying on the left ſide; more rarely this is the caſe with reſpect to the right ſide. In the progreſs of the diſeaſe, lying on either ſide becomes uncomfortable, and, in its advanced ſtages, the only eaſy poſition is on the back, with the ſhoulders a little raiſed, and generally inclined to the right ſide.

The tongue and other parts of the mouth are variouſly affected from the commencement. Their ſecretions become more and more thick and clammy, the former being covered with a white or browniſh mucus, which alſo more or leſs adheres to, and irritates, the fauces. Sometimes all theſe parts are more or leſs parched and ſtiff; at other times the ſaliva is morbidly thin and copious, the tongue being cleaner, but often of a whitiſh and ſodden appearance. In protracted caſes, when the ſymptoms have been rather obſtinate than ſevere, and conſiderable debility has come on, this ſymptom is often very troubleſome, the ſaliva frequently running from the mouth. In the advanced ſtages of the more ſevere caſes, there is often a viſcid frothy ſecretion from the fauces, while the mouth in general is drier than uſual, which forms a very prominent feature of the diſeaſe. The patient is conſtantly hawking up this matter, particularly after eating, and will tell you that all his food turns to phlegm. This diſcharge is ſometimes ſo great and haraſſing as to prove the moſt diſtreſſing ſymptom, and ſeems not a little to add to the debility. In ſome caſes the tongue, in the more advanced ſtages, becomes clean, ſhining, and morbidly ſmooth, and at length affected with aphthæ. This ſtate of it is ſeldom obſerved except when a conſiderable degree of fever has ſupervened, which is not uncommon at theſe periods.

The ſkin, in protracted caſes, often becomes dry, ſhrivelled, and ſometimes, at length, almoſt ſcaly, and the hair is parched and inclined to ſtand on end; the whole ſurface is cold, the patient is conſtantly hanging over the fire, and even experiences frequent fits of chillineſs approaching to ſhivering. He bears all extremes of temperature ill, being as much oppreſſed by a very high temperature as he is chilled by a low one. Wounds heal leſs readily than uſual; and the ſkin is not unfrequently affected with a troubleſome itching, which often ſhifts its ſeat; or with nettle-raſh, herpes, and other ſpecies of eruptions; and even ulceration ſometimes ſupervenes without any evident cauſe.

Beſides the more tranſitory ſymptoms in the head, which have been mentioned, there are often marks of an habitual undue determination of blood to the brain, producing languid inflammation of the eyelids, tinnitus aurium, and occaſionally throbbing of the temples. Some are oppreſſed with drowſineſs, almoſt approaching to ſtupor; others with almoſt conſtant pain more or leſs ſevere, ſometimes in the back of the head, more frequently in the fore part; others are ſubject to giddineſs, and ſome even to ſudden fits of inſenſibility. The thoracic viſcera are often particularly affected; not unfrequently dyſpnœa ſupervenes, and the patient is ſometimes haraſſed by a dry and irritating cough, or with fits of palpitation. When expectoration attends the cough, it is generally difficult, but brings conſiderable temporary relief. It deſerves notice, that, in this ſtage of the diſeaſe, he more frequently complains of pain in the left than in the right ſide; but the ſeat of the pain is very various; not unfrequently it is chiefly in the back, about the ſhoulders, ſometimes attended with itching, and in the limbs, more frequently in the legs than the arms. Irregularity of pulſe and ſyncope are not unuſual ſymptoms; and are much to be feared when combined with other characteriſtics of *angina pectoris*, as they ſometimes produce, in the ſecond ſtage of indigeſtion, organic diſeaſe of the heart. Pain and tenderneſs of the muſcles of the cheſt is alſo frequent; and, when this occurs, the patient ſeems worſe at night, and turns in bed with difficulty and pain.

The above hiſtory of the firſt ſymptoms of indigeſtion we have borrowed from the accurate work of Dr. Wilſon Philip. It remains to trace the ſympathetic derangements which grow out of this ſtage.

It is to be premiſed, that, when nerves are irritated, and ſympathetically affect diſtant parts, the latter, however influenced, return to their natural ſtate when the nervous excitement is removed. Of courſe, as the altered ſtate of the nervous influence will accelerate or impede the contractile powers of veſſels, the phenomena of inflammation may occur, and the ſame excitement continued may produce the conſequence of inflammation. It follows therefore, that, if the nervous expanſion of the ſtomach be irritated, and cauſe diſtant diſorders, we may cure thoſe by removing that irritation: but if, from its long continuance, or from the nature of the affected ſtructure, irritation degenerates into inflammation, we have further indications to fulfil. Of this fact experience convinces us every day. We have to correct the morbid ſtate of the ſecondarily-affected part, as well to remove the firſt cauſe.

The firſt derangements are what we have to conſider at preſent. The ſubject has been ably treated of by Dr. Marſhall Hall, in his Eſſay on the Mimoses; a name which, as its origin implies, deſignates a ſtate which *mimics*, or reſembles, other diſeaſes.

The above-mentioned author has however uſed this term in a very extended ſenſe; he has included in it many diſeaſes where idiopathic diſorder had become eſtabliſhed. For our own part, we ſhall reſtrict the term to thoſe affections which are propagated by nervous influence, which do not implicate permanently the vaſcular ſtructure, and which ſubſide on the removal of indigeſtion. Uſed in this ſenſe, it characteriſes the affection in queſtion with great force and faithfulneſs; and conveys a clear idea of the difference which we find in the mere ſympathetic diſorder, and thoſe more ſerious affections which, ariſing from longer-continued or ſeverer forms of dyſpepſia, or from theſe and the morbid prediſpoſitions of their own ſeats, require mixed methods of treatment: i. e. ſuch as immediately influence the circulating as well as the digeſtive function. But, ere we enter on this branch, we muſt again remind our readers, that we conſider *Diſpepſia*, in all its immediate as well as remote ſymptoms, as a diſeaſe incapable of regular arrangement. In proportion as one or other of its numerous cauſes are applied, in proportion as the remedial indications are wrong or miſplaced, will it appear in the marked and ſevere characters of the ſecond ſtage, without

exhibiting any traces of what we have called its firſt. And, beſides this, if morbid prediſpoſitions are exiſtent in the remote ſtructures, idiopathic diſeaſes will occur in them, as ſoon as the nervous excitements we have juſt ſpoken of are applied to them; and thus ſhow the fallacy that will attach to the unreſtricted notion, that the ſympathetic diſorders of the firſt ſtage of indigeſtion are ſo purely nervous as not to produce real topical inflammation in ſome caſes. We are convinced however, that, as the diviſion we have made will be found good in the generality of caſes, it is better to adopt it than run the various remote and local ſymptoms of indigeſtion into one another without order. The anomalies we ſhall notice will eaſily be remembered; and, though their *confuſion* (if we may uſe the expreſſion) muſt undoubtedly take from the uniformity of arrangement, we conſider that far better than that we ſhould fail to repreſent with fidelity, and to the beſt of our knowledge, the true phenomena of nature.

To return, however, to the *mimoſes*. The common and diſtinguiſhing ſymptoms of theſe affections are, that, while in idiopathic diſeaſe a peculiar and perpetual ſtate of diſorder is found, or at leaſt a ſtate which exhibits regular intermiſſions and paroxyſms, theſe complaints exhibit no regularity whatever; that, while in idiopathics one great and predominant ſymptom arreſts the attention of the patient, and often of the practitioner, in *this* the diſeaſe is complicated, affects for a time one ſtructure, then another; and indeed manifeſts all thoſe appearances which we ſhould expect in merely excited ſtates of the nerves, without inflammatory action. As it is impoſſible, on account of the multiplied groups of ſymptoms which may occur in theſe affections, to detail all their forms, we ſhall confine ourſelves to a general review of their nature as they occupy the nerves of the grand ſyſtems, or parts.

The firſt we ſhall conſider is the *brain*. Here we find many ſtates ariſing from this cauſe, very cloſely reſembling diſeaſe of the vaſcular ſyſtem; and it muſt be remarked indeed, that the latter ſtate is more frequently induced by nervous excitement in the brain than in any other part. The moſt common ſymptom is *faintneſs*. This is the moſt ordinary nervous excitement, ſince it occurs in the ſimpleſt derangements of the nervous power. The circle of ſympathies in this caſe, ſudden and ſimultaneous as it undoubtedly is, is complex. The ſtomach affects the head, the head the function of reſpiration, the latter the heart; and, this laſt failing duly to impel the blood into the cerebral ſtructure, *fainting* takes place. A further conſequence of this ſtate is *languor* of the muſcular ſyſtem from torpid circulation in the brain; and the ſame torpidity will likewiſe influence the ſecreting powers. The irritant of the ſtomach being however removed, all theſe effects ceaſe. But, where a continued dyſpeptic ſtate exiſts, theſe effects become more permanent, which readily explains the fainting, languor, tremor, &c. which are attendants on the firſt ſtage of indigeſtion, and which are eaſily removed with that complaint. With regard to the languor, it is to be remarked that between languor ariſing ſimply from the cauſe we are ſpeaking of, and between that which ſupervenes in the more advanced ſtate of indigeſtion, a great difference exiſts: for, while the firſt merely depends on the interruption of nervous influence, the latter probably owes its preſence to ſome alteration in the contractile power of the muſcular fibre. However this may be, the difference between real and apparent debility is allowed by the beſt practical writers.

We have no knowledge why ſtomachic irritation applied to the brain cauſes ſometimes one, ſometimes another, kind of diſorder of that organ; why one man feels temporary blindneſs, another debility, another delirium, and ſo on. We have certainly no means of knowing whether this takes place becauſe the applied irritants act only on particular parts of the cranial ſtructure, or whether the nature of the irritants alters the nature of the ſympathetic diſeaſe. We have good reaſon to infer both of theſe circumſtances. The firſt, however, is a ſpeculation of no uſe in practice: the latter may be ſo in a ſlight degree, becauſe we ſhall find that, in the inflamed ſtate of the ſtomach, the inflammation will more readily ariſe in the brain; while, in the caſe of mere nervous irritation, that ſtate will be leſs frequently found. The moſt formidable appearances which are complicated with irritation of the gaſtric nerves are thoſe of epilepſy and apoplexy. Slight degrees of hypochondriaſis, too, likewiſe occur; but theſe are unfrequent in the firſt ſtage of diſpepſia. A threatened attack of apoplexy of this kind is often obviated by the exhibition of a ſtrong purge. Where it once takes place, or where the pulſe is the ſame as we commonly find aſſociated with that ſtate, bleeding, &c. will of courſe be had recourſe to likewiſe. We mention this here, to remind the reader of the great neceſſity of procuring evacuations by emetics and purgatives when this form of apoplexy exiſts. It is this kind of apoplexy which ſo often and ſo fatally attacks perſons retiring to bed *after a hearty ſupper*; an occurrence lamentably frequent in the daily records of our times. A ſudden attack of epilepſy has often been induced by the ſame cauſes. The purgative treatment is extremely beneficial, as well as in ſtates of inſenſibility and delirium, loſs of memory, blindneſs, &c. ſuddenly ſupervening to theſe digeſtive derangements.

A peculiar ſtate of the brain is often induced by irritation in the alimentary canal, which has been called by Dr. Nicholl, the firſt author who has given a clear view of it, "Erethiſm of the brain." According to the experience of that author, it ſeems that it chiefly occurs in children. Such a ſtate, however, is often met with in patients afflicted with indigeſtion at more advanced ages. Dr. Nicholl thus deſcribes it: "There is a ſtate or condition of the cranial brain in infants, which may be called a ſtate of irritation, an irritated ſtate, or, in one word, *erethiſm*. What this peculiar condition of the cerebral ſtructure is, I cannot explain. It is a ſtate diſtinct from that which is called inflammation of that ſtructure, for it may exiſt without any perceptible increaſe of the quantity of blood that flows through the cerebral blood-veſſels; it is a ſtate under which inordinate effects ariſe from ordinary impreſſions upon different parts of the nervous ſyſtem. In its perfect form, and under a high degree of it, it is a highly ſenſitive condition of the cranial brain, a condition the very reverſe of that under which ſleep occurs. Under ſuch a condition of the cranial brain, the child is wakeful, ſcarcely ever ſleeping; it is attentive to every ſound, and to every object of ſight; its temper is irritable; the retina is highly ſenſible to light, ſo that the child winks if its face be turned towards the window, or towards a candle; the pupil is, in many inſtances, more or leſs contracted; but this is not always the caſe. The limbs are much in action; the head is often moved about, or is ſhaken from ſide to ſide; the child cries without any apparent cauſe, and it is ſoothed only by toſſing it, by carrying it about, by putting it to the breaſt, or by letting it ſuck the cheek of the nurſe, or its own fingers; the ſecretion of tears is, in many inſtances, increaſed, cauſing ſuffuſion of the eyes, and redneſs of the edges of the tarſi; the ſecretion of the ſchneiderian membrane may be increaſed, cauſing a ſtuffed ſtate of the naſal paſſages, producing ſneezing, and exhibiting the appearance of that ſtate which is popularly called *a cold*. The bowels are, in many caſes, relaxed; yet no diſordered ſtate of the ſtools may appear. During ſuch a ſtate as I have deſcribed, there may be a degree of animation, and a quickneſs of obſervation, much beyond what are commonly met with in children of the ſame age: ſo that, although a morbid condition of the cranial brain be preſent, the child may be conſidered as particularly healthy, on account of its being wakeful and lively, and ſenſible to the

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moſt trifling impreſſions. But it frequently happens, that an attentive obſerver may detect other ſymptoms: the child may ſtart in its ſleep; it may be very readily awakened; when awake, it may ſtart at the ſlighteſt noiſe, as at the ſhutting of a door, moving a chair, paſſing the finger over the wicker-work of its cradle, or on being ſlightly moved, or touched gently; a ſudden frown may paſs over the forehead, and may quickly diſappear; the eyes may be cloſed irregularly, or alternately, or a winking of one eye, or frequent winking of both eyes, or a firm cloſing of both eyes, may be from time to time detected; the hand may be raiſed frequently to the head; the child may cry, without any evident cauſe, as if it were pricked with a pin; at other times, it may ſhriek; the fiſts may be clenched, the thumb being bent in, and laid flat acroſs the palm of the hand, the forearms being bent upwards on the arms. Should a ſimilar condition of the ſpinal brain be preſent, the child may be bent backwards, preſenting a ſtate of *opiſthotonus*; its legs may be drawn up, while the head is thrown backwards."

There is another form of infantile erithiſm characterized by want of animation, fretfulneſs when rouſed, want of ſleep, and yet "a ſtate that can hardly be called waking;" indifference to ſurrounding objects, pallor and chillineſs of the body, rolling of the eyes, plaintive moaning or ſhrieking, jactitation of the hands, and other minor ſymptoms; which our author denominates *torpid erethiſm*.

Scrofulous children have generally the greateſt tendency to cerebral erithiſm; and, where this tendency exiſts, the ſlighteſt irritation of the nervous ſyſtem will call it into action. In the milder forms and earlier ſtages of this affection, the ſymptoms which it produces may be great wakefulneſs, great ſenſibility to ſlight impreſſions, with reſtleſſneſs and high animation.

It is to be remarked, that irritants applied to any of the nervous expanſions may produce erethiſm, ſo that it is juſt poſſible that it may ariſe independent of gaſtric or inteſtinal diſorder. It is to be noticed likewiſe, that this ſtate is extremely liable to run into inflammation of the brain and hydrencephalus, which it ſometimes reſembles in the cloſeſt manner, particularly where worms are the irritants applied.

The *reſpiratory function* is often much diſordered by dyſpepſia. Paroxyſms of oppreſſive dyſpnœa come on, which very cloſely reſemble aſthma; ſo cloſely indeed, that it is only by attending to the increaſe of the ſymptoms after eating, to its hiſtory, and the ſtate of the alimentary canal, that we can eſtabliſh a diagnoſis. And it is not improbable that aſthma properly ſo called, frequently, if not generally, originates in a complication of this nature; but is afterwards continued, or repeated, either from a degree of diſorganization induced in the heart or lungs, from the influence of the external cauſes of aſthma, or from the cauſes of indigeſtion.

The *affections of the heart* which occur in conſequence of the Mimoſis acuta, are fluttering, palpitation, and irregular action. Fluttering and palpitation of the heart are amongſt the moſt frequent ſymptoms. To eſtabliſh a correct diagnoſis in the ſeverer caſes it will be neceſſary to watch the effect of the remedies in removing this diſorder. The palpitation of the heart, if a conſequence and effect merely, will be mitigated or removed with the original affection. In the leſs ſevere form of this complaint, the diſcrimination muſt be principally founded on a cautious obſervation of the effect of bodily exerciſe on the action of the heart, when the ſymptom of palpitation is otherwiſe abſent, and when the patient is leaſt indiſpoſed, and on the continued hiſtory of the complaint. In diſeaſe of the heart, it is bodily exertion and mental agitation which renew and recall this dreadful diſeaſe; but, in the complication of dyſpepſia with palpitation, the patient, if not prevented by weakneſs, can, at the time when the hurried movement of the heart is abſent, run pretty rapidly, or walk up ſtairs, without ſuffering more than is uſual; and periods occur when he has paſſed ſeveral days, weeks, or months perhaps, without experiencing the palpitation. In a diſeaſe of the heart, theſe circumſtances are by no means obſerved; the uneaſy ſenſations which accompany this diſeaſe, if abſent at times, are always excited on any corporeal exertion; and, moreover, diſeaſe of this organ is in general highly characterized, and diſtinguiſhed from certain ſymptomatic diſorders of its functions, by the *permanency* of the affection; by its *invariable* aggravation on muſcular exertion, as well as mental emotion; and by the particular relief obtained at firſt from blood-letting. Diſeaſe of the heart, although its ſymptoms may be mitigated at one period and aggravated at another, is however *permanent*; the ſymptoms are never entirely abſent; and they may at any time be renewed, in an aggravated form, by muſcular exertion. In dubious caſes, the patient may be made to *run up ſtairs*; the ſymptoms of an organic diſeaſe of the heart are invariably aggravated by this muſcular exertion, the pulſation of the heart becoming violent, the pulſe perhaps irregular, the reſpiration exceedingly difficult, &c. circumſtances not equally obſerved in ſymptomatic derangements of the functions of this organ, unleſs when they are attended with great debility. There is almoſt always, too, great but tranſitory relief from blood-letting, in a degree not obſerved in the ſymptomatic affections.

The affections of the *muſcular ſtructure*, independent of the debility, &c. juſt noticed, are partial paralyſes, ſuch as are termed ſpaſmodic, among which tetanus often appears. The beſt illuſtration of this ſtate is afforded by the hiſtory of hyſteria, when it ariſes from gaſtric irritation. The abſurdity, however, of applying the term *hyſteria* to a diſeaſe which does not at all implicate the uterine ſyſtem, and which even affects men, is obvious enough: we ſhall therefore uſe the term of Dr. Hall, viz. Mimoſis urgens, and reſerve the term hyſteria to deſignate ſymptoms of uterine irritation. The Mimoſis urgens, then, is generally denoted by combining ſome conſiderable emotion of the mind, denoted by ſighing, ſobbing, tears, or laughter, with a ſenſe and expreſſion of ſuffocation, and with ſome urgent affection of the head, heart, reſpiration, ſtomach, or muſcular ſyſtem, and a peculiar and high degree of hurry, and apparently imminent danger.

Of the Mimoſis urgens there are three forms, the mild, the ſevere, and the inveterate; and there are moſt numerous modifications.

1. The mild form of the Mimoſis urgens ſubſiſts as a tendency to alternate high and low ſpirits, to fits of laughter, to frequent deep ſighing, and to tears. A fit of laughter, or of crying, ſometimes takes on an aggravated character; the laughing, or the ſobbing, becomes immoderate, convulſive, and involuntary, and there is frequently a peculiar ſpaſmodic chucking in the throat. The countenance changes, being alternately fluſhed and pale, and denoting great anxiety. There is frequently an urgent difficulty in breathing, with much rapid heaving of the cheſt. Sometimes a dry, ſpaſmodic, and violent, fit of coughing occurs. There is generally a ſenſe, an appearance, and an urgent fear, of impending ſuffocation. In different inſtances there is palpitation, hiccough, retching, or borborygmus. The patient is deſpondent, and aggravates all her ſufferings.

2. The ſevere form of the Mimoſis urgens conſiſts in a various attack, catenation or combination of the following ſymptoms: The commencement, courſe, or termination, of this and indeed of every form of the Mimoſis urgens, is generally marked, and the caſe diſtinguiſhed, by the ſigns of ſome inordinate mental emotion, (joy, grief, or other affection,) which conſtitute the moſt characteriſtic ſymptoms of this diſorder. The attack is frequently uſhered in by an unuſual appearance of the countenance; a rapid change of colour, rolling of the eyes, diſtortion or ſpaſmodic affection of the face. The extremities are apt to become very cold. A ſtate of gene-

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ral or partial, of violent or of continued, convulſion, or of fixed ſpaſmodic contraction, takes place, and diſplays every poſſible variety in mode and form. The ſevere form ſometimes conſiſts chiefly in a general or partial pain and throbbing of the head. Occaſionally this pain is confined to one particular ſpot, and is ſo acute as to have obtained the appellation of *clavus hyſtericus*. Sometimes there is intolerance of light and noiſe; ſometimes a ſtate of ſtupor; ſometimes delirium. The reſpiration is frequently much affected: an oppreſſive and ſuffocative dyſpnœa takes place; or the breathing is rapid, anxious, and irregular; or variouſly attended with ſobbing, ſighing, much rapid heaving of the cheſt, and ſometimes with a ſpaſmodic action of the diaphragm, inducing a peculiar elevation of the abdomen, or an equally-peculiar ſuccuſſory movement of the trunk in general; ſometimes the reſpiration appears to be ſuſpended altogether for ſome time, the pulſe continuing to beat as before.

A crowing noiſe, or ſcreaming, is apt to occur in this affection. There is, occaſionally, hoarſeneſs, or even an entire loſs of the voice, continued for ſome time. There is ſometimes a painful, violent, dry, hoarſe cough, continued, or recurrent in paroxyſms. There is occaſionally acute pain of the cheſt or abdomen. Palpitation of the heart, and ſyncope, are alſo uſual affections. The pulſe is otherwiſe little affected. There is frequently an urgent ſenſe of ſuffocation, accompanied with the feeling of a ball aſcending into the throat; this ſymptom is ſo peculiar as to have obtained the denomination of *globus hyſtericus*, and is conſidered as diagnoſtic of this affection. Hiccough, and violent ſingultus; retching and vomiting; the ſenſe of a ball rolling within the abdomen; borborygmus; a peculiar great and ſudden tumidity of the abdomen, apparently from flatus; conſtipation, &c.

3. The inveterate form of the Mimoſis urgens (id enim vitium quibuſdam feminis crebro revertens perpetuum evadit) conſiſts ſometimes in an almoſt-perpetual agitation of ſome part of the body, the limbs, the reſpiration, the throat, or the ſtomach; and ſometimes in a ſtate of continued contraction of the hand or foot, or of ſome other part. In different inſtances too, there is a continued ſtate of nervous agitation from the ſlighteſt noiſe or other cauſe; of paralytic, epileptic, or ſpaſmodic, diſeaſe; or of imbecility of the mind. In ſhort, this affection is characterized, by affecting in the ſame or in different inſtances, ſingly or conjointly, all the ſeveral ſyſtems which conſtitute the human frame; the organs of animal and of organic life; the different ſets of muſcles, voluntary, involuntary, mixed, and ſphincter; the faculties of the mind, and the emotions of the heart; the functions of the head, the heart, the ſtomach, &c. "It is in thus viewing the Mimoſis urgens, that the diagnoſis is often formed between its different and very-various attacks, and other affections having a different origin, but of which it is the *imitator*, nam nullos fere non *æmulatur* ex iis affectibus quibus atteruntur miſeri mortales." Hall, p. 162.

The diagnoſis in Mimoſis urgens is founded partly on the peculiar and different appearance of the particular caſes, and partly on the precurſory, concomitant, or ſucceſſive, occurrence of ſome unequivocal ſymptom, and eſpecially of the appearances of mental emotion, &c. before noticed; and of hurry and apparent urgency of complaint in general. It is, in particular, in this manner that the paroxyſm of convulſion in the Mimoſis urgens is to be diſtinguiſhed from epileptic or puerperal convulſions; for, though the appearances are very ſimilar, there is probably ſome ſymptom of mental emotion, or ſome appearance *peculiar* to the Mimoſis urgens, eſpecially the hurried and heaving reſpiration, or ſome circumſtance in the hiſtory of the attack, which may lead to the diagnoſis. Otherwiſe the phyſician muſt wait awhile, and watch the courſe of the affection, and the ſucceſſion of ſymptoms; in this manner ſome ſymptoms decidedly peculiar to the Mimoſis urgens will occur to prompt the diſcrimination. In the epileptic or puerperal convulſion, there is an *abſence* of theſe ſymptoms of mental emotion, as joy, grief, &c. and the patient ſeems to be rather a prey to ſome power which exerts a violent empire over the ſource of ſenſe and muſcular motion. The Mimoſis urgens may excite alarm; but the epileptic or puerperal convulſion preſents a far more dreadful aſpect; the face perhaps becoming deeply fluſhed and livid, with foaming at the mouth, more ſhocking diſtortions of the countenance and of the body, and a very different and a more ſerious affection of the reſpiration. By ſuch means theſe affections will generally be diſtinguiſhed.

The occurrence of delirium is not very frequent; but Dr. Hall has witneſſed it repeatedly. The caſe is identified by the occurrence of ſome ſymptoms peculiar to the Mimoſis urgens.

The occurrence of ſtupor as a form of the Mimoſis urgens is by no means unfrequent. Dr. Hall relates the following caſes: "Some time ago I received an urgent call to viſit a poor woman ſaid to be in an alarming ſtate of inſenſibility. She was without ſenſe or motion, but, in other reſpects, unaffected with any particular ſymptom. The medical attendant had prepared his lancet to open a vein in the arm. In a ſhort time, however, the patient recovered herſelf, and manifeſted ſymptoms which are peculiar to the Mimoſis urgens.—In another caſe which occurred in an aged woman, a vein had been opened, under the idea that ſhe was affected with apoplexy. Some ſymptoms of an anomalous kind occurred, and ſhe became affected with an unequivocal attack of the Mimoſis urgens.—In ſimilar or dubious caſes it is proper to wait, and obſerve the change of ſymptoms; and particular inquiry muſt be made into the hiſtory, mode of attack, &c. of the affection. Perhaps the patient ſoon opens the eyes, ſighs, is affected with dyſpnœa, or burſts into tears. In general ſome unexpected and anomalous ſymptom occurs, to denote the nature of the affection."

In pain of the cheſt in Mimoſis urgens, the countenance is expreſſive of great anxiety, hurry, and agitation; and the noſtrils are moved with rapidity. The patient complains much, manifeſts great impatience, is urgent for relief, and calls out from the pain. The pain of the cheſt is extremely acute, and the part affected is deſcribed as excruciatingly tender on being touched, and the hand applied to it is uſually puſhed rudely away. With or without the pain of cheſt, there is often an urgent dyſpnœa; the reſpiration is rapid, hurried, with much characteriſtic heaving of the cheſt, ſometimes with great and rapid movements both of the cheſt and abdomen, and often with a peculiar hiſſing noiſe.

Cough occurring as a form of the Mimoſis urgens, comes on in continued fits; it is frequent, hoarſe, and hiſſing; "æger creberrime tuſſit, fere ſine intermiſſione, nihil prorſus expectorans." Hall, 176.

The affection of the diaphragm in the Mimoſis urgens is attended by the moſt acute pain in the epigaſtric region, extending to each ſide along the falſe ribs, and to the back; it is augmented occaſionally by moving, or by the action of the diaphragm in reſpiration, and cauſes the patient to cry out. The reſpiration is irregular, perhaps performed by the cheſt alone; the noſtrils move, the face is ſometimes fluſhed, and there is often ſhedding of tears. Theſe caſes are diſtinguiſhed from inflammation, by the occurrence of ſymptoms peculiar to the Mimoſis urgens; the mode of attack, which is ſudden; and the general aſpect of the caſe, which is hurried and urgent; contraſted with the uſual characteriſtics of inflammation.

The imitation of croup by the Mimoſis urgens takes place in ſuch a manner as to deceive a curſory obſerver. The reſpiration and cough have preciſely the character of theſe ſymptoms as occurring in inflammation of the trachea. It is by inquiry, waiting, and by cautiouſly obſerving the caſe, that the diagnoſis is to be inſtituted. On inquiry, the attack will probably be found to have been marked by ſome ſymptom or character of the Mi-

moſis urgens; or, by waiting, ſome ſuch ſymptoms may occur to develope the myſtery. The caſe is ſometimes ſo urgent as apparently to demand an operation to prevent an impending ſuffocation. We quote the following caſe: "In a young woman, aged fifteen, the firſt ſymptom which arreſted the attention was a ſtridulous ſound of the reſpiration; and circumſtances conduced to render an attack of an inflammatory nature probable. She had been conveyed through the cold air, and appeared to be livid from cold. On being ſeen in bed, however, the nature of the diſeaſe became obvious, from the preſence, then, of globus; from the hiſtory, by which it was aſcertained that other ſymptoms of the Mimoſis urgens had occurred; and from the abſence of any affection of the pulſe. The patient was ſpeedily relieved by the operation of a purgative medicine." Hall, 177.

The pain of the abdomen in the Mimoſis urgens is attended with great urgency of complaint; much anxiety and ſuffering; an extreme tenderneſs to the ſlighteſt touch, rather than under preſſure; an hurried and irregular ſtate of breathing, &c. The countenance is expreſſive of an urgent anxiety; the patient is reſtleſs, impatient, and iraſcible, and puſhes the hand, although gently applied to the abdomen, rudely away; the general ſurface, and the pulſe are, at the ſame time, little affected; there is ſometimes vomiting, or a ſort of retching; the bowels are generally conſtipated. The hiccough or the retching is ſometimes of the moſt violent kind, and is apt to be long continued. Dyſury, or retention of urine, is alſo common as a form of the Mimoſis urgens. Its duration is uſually ſhort. But it has continued occaſionally for a long period. It is diſtinguiſhed by being combined with other ſymptoms of this affection.

It muſt not be forgotten that the ſtomach, when its contents irritate the nervous expanſions, and the irritation is propagated to the brain, that organ re-acts on the ſtomach, and produces pain and ſpaſm in various parts of the alimentary canal, which are not topically diſeaſed: as for inſtance a ſlight contraction of the rectum, of the œſophagus, ſpaſm of the gall-duct, mælena hæmateneſis, &c. But theſe are generally ſo obviouſly connected with the preſence of dyſpeptic ſymptoms, that we need not take particular notice of them.

Of the Second Stage of Dyſpepſia.—The firſt ſtage of indigeſtion having continued for ſome time, or an erethematic inflammation of the ſtomach, or any of the various cauſes capable of inducing inflammation, being preſent; the ſecond ſtage of indigeſtion makes its appearance. The paſſing of the firſt ſtage into this is denoted by various ſigns; ſome taken from the nature of the gaſtric or inteſtinal derangements, but chiefly from the nature of the ſympathetic irritations. With reſpect to the former, the ſtomach betrays ſymptoms of chronic inflammation; and the inteſtinal excretions, hitherto irregular, for the moſt part aſſume deficiency of colour or conſiſtence of a more permanent kind. The ſtate of nervous excitation, in which ſympathizing parts have been long retained, brings on a more permanent change in the ſanguineous ſtructure, or ſecretion becomes diſturbed in the ſame continued manner in particular parts. The topical affections are leſs changeable and varying. The mind, loſing the petulant nervouſneſs of the firſt ſtage, feels all the imaginary hurry and the anxiety of hypochondriaſis; the ſymptoms are leſs under the control of medical treatment; every thing, in a word, aſſumes a more fixed and continued form. The great pathognomonic ſign conſiſts in a permanent tenderneſs, on preſſure, of the ſoft parts cloſe to the edge of the cartilages of the falſe ribs on the right ſide, after they have turned upwards to be joined to the ſternum. This ſpot is often very circumſcribed, and always lies about half-way between the end of the ſternum and the place at which the loweſt of the cartilages begins to aſcend; and the cartilage itſelf near the tender part often becomes very tender, not unfrequently indeed much more ſo than the ſoft parts. The patient in general is not aware of this tenderneſs till it is pointed out by the phyſician. There is often, we have ſeen, a degree of fullneſs in the right hypochondrium at earlier periods; but it is then more tranſitory, being generally relieved and ſometimes removed by the effects of cathartics, and, not unfrequently, ſpontaneouſly diſappearing and returning again. The tenderneſs above mentioned never exiſts long and to any conſiderable degree without the pulſe becoming hard, and it often at the ſame time becomes rather more frequent than in health.

Sometimes the hardneſs of the pulſe is ſo well marked that it is eaſily diſtinguiſhed, but more frequently the hardneſs is only to be diſtinctly perceived by examining the pulſe with the utmoſt care. See our remarks on the manner of diſtinguiſhing the *hardneſs* of the pulſe, in the preſent article, p. 94. The tenderneſs of the epigaſtrium, after it has laſted for ſome time, generally begins to be attended with ſome degree of fulneſs in the part, and to extend downwards along the edge of the cartilages, till at length there is a degree of fulneſs, and ſometimes tenderneſs, throughout the right hypochondrium, which feels firmer than the left; but the tenderneſs is ſeldom ſo great as in the part of the epigaſtrium above deſcribed. Sometimes the preſſure, both there and in the hypochondrium, rather produces a ſenſe of oppreſſion, affecting the breathing, than pain. Sometimes, particularly in the epigaſtrium, it occaſions pain paſſing through the body towards the back, ſometimes quite to the back, at other times a fixed pain or ſenſe of oppreſſion under the ſternum, and, in ſome caſes, a pain extending to the left ſide.

The tenderneſs of the epigaſtrium, as well as the hardneſs of the pulſe, are perceived moſt clearly when the patient has been taking exerciſe; muſcular action, as might be expected, increaſing the phenomena of inflammation. We muſt not forget to remark, with reſpect to exerciſe, that its performance is often attended with much uneaſineſs, all motion except of the paſſive kind producing an inſupportable degree of languor. This obtains chiefly, however, in the more ſevere forms of the affection, the ſlighter ones being uſually free from it.

Theſe ſymptoms are generally accompanied with others indicating ſome degree of feveriſhneſs The chilline's of which the patient has long complained is now ſometimes, and independently of any change of temperature in the ſurrounding medium, interrupted by languid and oppreſſive fits of heat; and the hands and feet, inſtead of being uniformly cold, as in the earlier ſtages, often burn, particularly during the firſt part of the night, while at other times they are more obſtinately cold. The thirſt alſo often increaſes; and ſometimes there is a tendency to partial ſweats in the morning, eſpecially if the patient lie longer than uſual; and theſe ſymptoms are generally attended with an increaſe in ſome of thoſe of the firſt ſtage.

The inflammatory ſtate of the ſtomach proceeding unſubdued, organic changes are ſoon induced, and thickening of its coats; ulcers, ſcirrhus, and a variety of ſtructural derangements, occur. More frequently, however, the inflamed ſtate of the ſtomach and bowels ſubſides, while the organs to which its diſturbance has been propagated undergoes the ſtructural diſorganization. The liver, lungs, ſpleen, pancreas, lower bowels, meſenteric glands, heart, and brain, are ſaid to be moſt obnoxious to this occurrence; but it cannot be queſtioned that every part of the body is liable to the ſame changes, and from the ſame cauſes. Sometimes one of theſe parts is affected, ſometimes many; and it is to be remarked, that, in conſonance with the known laws of pathology, when diſeaſe eſtabliſhes itſelf firmly in a ſecond part, the firſt is relieved from it. Indeed there ſeems this further difference between the mere nervous excitement which ſupervenes to the firſt ſtage of Dyſpepſia and the inflammatory affections we are now treating of, that, while the

former tend to keep up and increaſe the original diſeaſe, theſe (the latter) act on that which excites it in the ſame manner as a counter-irritant is known to do, though unqueſtionably in a much more effectual manner. Thus, it is not uncommon in indigeſtion for the liver to ſuffer in ſuch a manner, that it ſhall become enlarged and tender on preſſure; and, when the diſeaſe is deſtroying the texture of the lungs, having ſpread from the liver to them, for the former to recover, or nearly recover, its healthy ſtate. And thus an extenſive external diſeaſe, occurring in ſuch caſes, will often ſave the vital organ, even after the diſeaſe has made conſiderable progreſs in it.

It is obvious, then, from the foregoing remarks, that the treatment of all diſeaſes remotely traceable to indigeſtion are not to be diſcuſſed in this place; nor are the diſorganizations of the ſtomach to be treated of here; as each of theſe form diſtinct ſpecies, and require ſeparate conſideration. It only remains therefore to trace the diſordered ſtates of the ſanguineous and ſecretory functions ariſing in the ſecond ſtage of Dyſpepſia; and to notice the general indications for the relief of the local, and the particular indications for the cure of the general, diſeaſe.

For the reaſons ſtated in p. 108, we ſhall forbear to mention all the complaints traceable to the confirmed ſtage of indigeſtion. Indeed it would ſeem from what we have there remarked, that, as theſe propagated complaints are literally the complaints of the ſanguineous and nervous ſtructure of the parts affected, they are diſtinct and idiopathic; that they are inflammations, however induced, and therefore to be met with the uſual remedies for that action. But practical conſiderations (which ſhould ſuperſede all other) induce us to notice certain caſes in which experience has ſhown that the moſt marked and ſerious forms of chronic inflammation, and of diſeaſed ſecretion, have been cured by the medicinal treatment of dyſpepſia; and we think that, when the laws of ſympathy are better known, this diviſion will appear no leſs philoſophical than practical. We have before adverted to the impoſſibility of drawing an accurate diſtinction between inflammations which, though produced by nervous irritations, are rendered permanent by their own diſeaſed tendencies, and thoſe which are merely ſympathetic. And, in the caſes we are about to conſider, probably a ſtill greater difficulty of diagnoſis exiſts. The difficulty in theſe caſes is to eſtabliſh how far, when the original cauſe of dyſpeptic diſeaſe is removed, the parts will return to their natural ſtate.

Reaſoning à priori, we ſhould conclude, that the operation of this cauſe could not extend beyond inflammation and altered ſecretion; but experience has clearly ſhown, that, nervous irritation being removed, diſorganized parts undergo reparative proceſſes, and in an aſtoniſhing manner may reſume their natural ſtructure.

In the nervous ſyſtem we remark, that the head is influenced in this diſeaſe in a manner decidedly inflammatory. This inflamed ſtate of the cerebrum, in the ſecond ſtage of indigeſtion, is well ſhown by head-ache, by increaſed hardneſs and fulneſs of pulſe, and by the increaſed pain which the recumbent poſture produces. As it advances, various forms of mental diſturbance become manifeſt. In this form of diſeaſe we muſt be eſpecially careful not to let our notions of the dyſpeptic origin of the diſeaſe weaken the vigour of our practice; for local and (when the ſtate of the circulating powers demand it) ſevere general depletion are neceſſary here, as in idiopathic diſeaſes; and indeed, as this is the part where the moſt intimate connexion between the ſanguineous and nervous ſyſtems takes place, we ſhould naturally expect to meet with this fact.

It ſometimes happens, in this ſecond ſtage, that the head-ache aſſumes a chronic form, continuing for weeks, or even months, without being very ſevere. Both local and general blood-letting then very frequently fail to give permanent relief. The beſt means are thoſe which ſupport an habitually-free action of the bowels and ſkin, (and moſt effectually correct the diſeaſe of the digeſtive organs,) and permanent drains from the neighbourhood of the head.

There are two occurrences which ought ever to be preſent to the mind of the practitioner: the firſt is the tendency to the tranſition of nervous into idiopathic inflammation, which is particularly obſerved with regard to the head; the ſecond, the poſſibility of the co-exiſtence of the two ſtates.

The tranſition of the affection of the head in Dyſpepſia into an idiopathic inflammation, or the co exiſtence of the latter affection with the former, is to be apprehended on the occurrence of any of the following ſymptoms in a ſerious degree and continued form: A ſenſe of fluſhing or fulneſs about the head; acute pain of the head; unuſual heavineſs, dull head-ach, or vertigo; drowſineſs, ſtupor, diſturbed ſleep, delirium, incubus, ſtertor; forgetfulneſs, timidity, confuſion of mind; change of affections; tendency to laughter, and tears; affection of the ſenſes, as temporary loſs of ſight, flaſhes of light, double viſion, ſinging or loud noiſes in the ears, intolerance of light, or ſound; tenderneſs of the ſcalp. Many of theſe ſymptoms, however, occur in the firſt ſtage. It is only when they exiſt in an eminent degree that they denote danger. But it is beſt to take an early alarm. The danger of compreſſion of the brain is unequivocal on the occurrence of an unuſual diſtortion, or an unmeaning expreſſion, of the countenance; of a defect in articulation; of a temporary numbneſs or torpor, or of tranſient and partial weakneſs of any of the limbs; eſpecially if one ſide of the body alone be affected. The occurrence of ſtupor, convulſion, paralyſis, or relaxation of the ſphincters, leaves little to doubt reſpecting the exiſtence of this fatal occurrence.

In ſome caſes, the *erethiſmal* ſtate of the brain before noticed puts on a more marked and formidable appearance; and it is not very unuſual, when this diſeaſe has continued ſome time, to ſee the patient, after more ſevere attacks than uſual, and ſometimes without this warning, ſuddenly fall down, and in a few hours, and in ſome caſes almoſt immediately, expire. In ſuch caſes the aids of medicine are vain. The powers of the conſtitution are not oppreſſed by diſeaſe, but worn out by its continuance. This is what, in contradiſtinction to apoplexy ariſing chiefly from the ſtate of the veſſels, is properly termed *nervous apoplexy*, the moſt fatal of all its forms; and it has been remarked, that in ſome caſes no morbid appearance preſents itſelf on diſſection: the fatal derangement is in the nervous ſyſtem alone, whoſe ſtructure is too minute for our obſervation. If the uſual plan of bleeding in caſes of ſudden inſenſibility be here reſorted to, the diſeaſe is only the more ſuddenly fatal.

The ſtate of the brain in ſuch caſes reſembles that which ſurgeons call *concuſſion*. Its mechaniſm is deranged. The difference is, that in the one this mechaniſm is deranged by a ſudden and violent cauſe, applied while the powers of the ſyſtem are entire; and which, conſequently, if the little ſtrength that remains be carefully huſbanded, may often repair the injury: the other is the effect of a ſucceſſion of ſlight cauſes gradually changing the mechaniſm of the brain, and at the ſame time exhauſting the powers of every other part, ſo that the conſtitution poſſeſſes no means of repairing the injury. The pure nervous apoplexy, however, as here deſcribed, is an extremely rare diſeaſe; becauſe it very ſeldom happens that the cauſes continue long enough ſo to derange the finer mechaniſm of the brain as to produce loſs of function, without influencing the ſtate of the circulation in it in ſuch a manner as to produce a fatal effect in this way.

It more often happens, that diſeaſe of veſſels cauſing apoplexy is produced; and it is worthy of remark, that in this ſtate a pallid countenance is uſually met with. This circumſtance occurs occaſionally in all the forms of apoplexy; but we think it is more particularly noticed in this than in any other. Dr. Philip ſays, "I have repeatedly

edly ſeen, in an exhauſted conſtitution, the face become ſuddenly pale, and all power loſt; the patient falling down inſenſible, and the countenance continuing to increaſe in paleneſs till it aſſumed a cadaverous hue; and yet this patient has been immediately reſtored to the uſe of his faculties, the paleneſs of his countenance at the ſame time abating, by the loſs of blood; and there is every reaſon to believe would have died without it. For it is evident that the apoplexy we are conſidering is of a different nature from diſtention of the veſſels of the encephalon ariſing from general fulneſs; and therefore loſs of blood from the head, and that only to ſuch an extent as relieves the ſymptoms, is alone proper; the incautious uſe of general blood-letting in ſuch a caſe being alſo followed by a degree of debility which further diſpoſes to returns of the attack, as well as to other diſeaſes."

The effect of the gaſtric irritation in debilitating the veſſels of the head, might be illuſtrated by many facts: it is enough to mention the fluſhing of the face which occurs to dyſpeptics after dinner.

Of the nature of *epilepſy* ſo little is known, that any attempt to trace its connexion with indigeſtion muſt be futile; nor indeed does there appear any real difference in the diſeaſe, let it ariſe from what cauſe it may.

The moſt chronic and inveterate form in which the brain is affected through the gaſtric media, is that of hypochondriaſis. We ſhall reſerve our ſpeculations as to the nature of this complaint till we come to the claſs Neurotica, in which we ſhall take up the ſubject of nervous irritations ariſing from indigeſtion on a more extended ſcale. It will be ſufficient at preſent to ſtate, that in conſidering the mutual action of one part of the ſyſtem on another, the ſtate of the mind deſerves particular attention in indigeſtion. The diſeaſe itſelf we have ſeen ſeldom fails to render it anxious, irritable, and apprehenſive; and this ſtate of mind, which we have found ranked among its cauſes, cannot fail to influence its ſymptoms.

The affections of the muſcular ſyſtem which ſupervene on this ſtage of indigeſtion, are of a gouty or a rheumatic nature; and, like other inflammatory affections, they preſent leſs indication of plethora when dependent on gaſtric diſturbance, than when they ariſe from other cauſes. It muſt not be forgotten, that an ill ſtate of the abdominal viſcera is always connected with chronic rheumatiſm; a circumſtance which induces us to defer tracing the connexion, or noticing the peculiarities, of that dyſpeptic variety in this place. We ſhall remark, however, that, where a tendency to gout exiſts, diſeaſe may be induced by any cauſe that produces, and for a certain time keeps up, indigeſtion. In ſome the diſpoſition to gout is ſo great, that it appears without being preceded by ſymptoms of derangement in the firſt paſſages; but in the majority of caſes it is preceded by theſe ſymptoms, and the tendency to them ſeems to conſtitute a conſiderable part of the hereditary diſpoſition to gout.

The regular forms of this diſeaſe, not affecting a vital part, tend leſs to derange the ſyſtem in general, and give more relief to the primary diſeaſe, than moſt of the other ſymptomatic affections which have been enumerated, the patient often remaining well for ſome time after; and, the more cautious he is in preſerving the vigour of the digeſtive organs, the longer interval he enjoys. Hence appears the danger which attends interrupting the regular fits of gout: the ſympathetic diſeaſe, being prevented from taking the courſe which the diſpoſition to affection of the extremities gives it, ſeizes on the part, generally an internal one, which next to theſe is moſt liable to diſeaſe; and, on the other hand, if any thing ſo affects any of the vital parts during a fit of gout as to render it conſiderably the weakeſt part, the ſympathetic diſeaſe ſometimes leaves the joints and ſeizes on the internal part, producing what is called *retrocedent gout*. It is evident that the riſk of both theſe accidents will be greateſt, where the powers of the ſyſtem are moſt impaired.

The *muſcular ſyſtem* is likewiſe affected in ſome caſes by a permanent and gradual debility, by tremor, and by loſs of ſubſtance. The latter circumſtance is much dwelt upon by Dr. Hall, who weighed ſeveral of his patients, with a view to more correct information on the ſubject. It will be found, however, that ſome dyſpeptic patients retain their embonpoint, notwithſtanding much functional diſturbance.

The patients of indigeſtion are uſually affected with great tremor, obſerved ſometimes in a quivering of the lip, or dimpling of the chin, but more uſually, on holding out the hand, or in carrying a cup of tea, for inſtance, to the mouth, on attempting to ſtand erect or walk, or on being fatigued or hurried. The tremor, in ſome protracted caſes, has formed the moſt remarkable feature of the affection; in others, it has been much leſs obſerved, but it is rarely, if ever, entirely abſent.

The debility which now comes on is, as we have before obſerved, of a different nature from that merely-nervous inaction which happens in the early ſtages of the complaint. The latter is the mere want of nervous ſtimulation, while the former ſeems to be a change in the contractile power of the muſcular fibre, probably derived from the morbid ſtate of the blood, and indicating much danger.

The *heart* is often affected in the ſecond ſtage of indigeſtion, in various and ſevere modes. The palpitation which in the firſt ſtage was merely nervous, in ſome inſtances now becomes ſo obſtinate, as to aſſume the form of angina pectoris, carditis, &c. and, being accompanied with an increaſed hardneſs of pulſe, can only be relieved by loſs of blood.

Dr. Philip has noticed a connexion between rheumatiſm and this ſort of carditis. He ſays, "It is a common obſervation, that carditis is apt to ſupervene after repeated attacks of rheumatic pains of the limbs. I believe from many caſes which have fallen under my obſervation, that it will generally be found, in ſuch inſtances, that the rheumatic pains had been combined with, and in a greater or leſs degree dependent on, diſorder of the digeſtive organs." The pain of the limbs ariſing from this cauſe, often aſſume the form of idiopathic rheumatiſm, and become very obſtinate, if the cauſe which ſupports them be overlooked; which is the more likely to happen, as cold is very often the immediate exciting cauſe. Dr. Philip has ſeen ſevere pains of the limbs, which had long reſiſted the means uſually ſucceſsful in rheumatic caſes, wholly removed by combining with theſe means the treatment adapted to the ſecond ſtage of indigeſtion; and it is well known to ſurgeons, that the ſwelling of the knee-joint which ſometimes accompanies the rheumatic conſtitution, is only cured by the ſame indication.

On turning our attention to the other viſcera, we ſee the ſpaſmodic contractions of the bowels, and their occaſional diſturbance of function, developed in the early periods of indigeſtion, now terminating in inflammation, ſtricture, adheſions, piles, &c. The ſigmoid flexure of the colon appears to be a part very liable to be affected with inflammation, probably from the contents lodging there longer than in other parts of the large inteſtines. It is not uncommon in protracted caſes, to find a conſiderable degree of tenderneſs in the ſeat of this part, which is ſometimes at length affected with ulceration. It is alſo common to find tenderneſs on preſſure in the ſeat of the cœcum.

The liver, too, aſſumes an inflammatory appearance. We often find, when the patient takes cold, or is expoſed to other cauſes of inflammation, or the dyſpepſia is aggravated, the greater part of the right hypochondrium becomes full and tender on preſſure, with a ſenſe of oppreſſion and an increaſed hardneſs of pulſe, often accompanied with ſome degree of dyſpnœa, and a dry teaſing cough. He ſometimes complains of pain in the right, not unfrequently in the left, hypochondrium, or in the pit of the ſtomach, or in the right or left ſhoulder; and

experiences

experiences ſome uneaſineſs in lying on either ſide, particularly on the left, the common derangement of the biliary ſecretion being rendered more marked with theſe ſymptoms. The hepatic inflammation thus induced is ſeldom, however, of that active kind which requires general blood-letting; a fortunate circumſtance, as patients of this deſcription rarely bear loſs of blood well. Theſe attacks generally partake of the chronic nature of the habitual diſeaſe, and for the moſt part yields to local blood-letting and bliſters, with the aid of a mild diet and ſaline and aperient medicines.

The pain is often felt in the left ſide, while the tenderneſs on preſſure is wholly confined to the right; but, after the affection of the right ſide is relieved by evacuations from the tender part, it is not uncommon for the left ſide to become both full and tender, the inflammatory affection appearing to attack the ſpleen as ſoon as the liver is relieved from it; and it will ſometimes, on the fulneſs and tenderneſs of the left ſide being relieved by the ſame means, return to the liver. This alternation often happens more than once before the diſeaſe ſubſides. Sometimes, though much more rarely, the fulneſs and tenderneſs appear in the left ſide alone. The pain is then more confined to the ſeat of the tenderneſs.

Whenever the liver becomes thus implicated in the inflamed ſtate of the ſtomach, it leads to a train of ſymptoms ariſing out of hepatic derangement, which demand ſerious attention. It is not the leaſt of theſe, that the re-acting diſeaſe aggravates the gaſtric diſturbance, a circumſtance which very often perplexes us in the diagnoſis. But we muſt poſtpone further reſearches till the ſubject of diſeaſed liver comes before us.

The connexion of *urinary gravel* with dyſpepſia is worthy of particular notice. We are indebted to Dr. Philip for an ingenious ſpeculation on this ſubject. He thinks that it is not by ſympathy alone that indigeſtion excites urinary gravel. He ſhows that in moſt caſes of dyſpepſia there is a conſiderable production of acid in the firſt paſſages; and this acid, as appears from his experiments, enters the maſs of blood, and is thrown out of the ſyſtem by the ſkin and kidneys. As all other acids occaſion a precipitation of lithic acid from the urine when the action of the ſkin is impaired, the one we are ſpeaking of often paſſes in ſuch quantity by the kidneys as to cauſe a depoſition of lithic acid before the urine leaves theſe organs, which there (probably in conſequence of being agglutinated by a ſecretion which its ſtimulation excites on the internal ſurface of the kidney) frequently concretes into ſmall maſſes occaſioning fits of gravel.

A precipitation of lithic acid is often obſerved in the urine of dyſpeptic patients, after it has ſtood for ſome time; and that the gravel which afflicts them is only a greater degree of this ſymptom, appears from the obſervations of the beſt writers on calculous diſeaſes, who conſider the calculi formed in the kidney to be almoſt always concretions of lithic acid.

Dr. Philip ſeems to conſider, that, in diſputing that the kidneys are affected by ſympathy with the ſtomach, he is borne out by the fact, that while, as we have ſeen, the other inteſtinal organs are peculiarly liable to aſſume the inflammatory ſtate of the ſecond ſtage of indigeſtion, the kidneys ſeldom ſhow any tendency of this kind. This aſſertion ſeems, however, by no means conſonant with experience; but Dr. Philip obviates the difficulty by ſaying, that, "it is not uncommon, in indigeſtion, for the acrid ſtate of the urine, ariſing from the ſuperabundance of acid and its other ſaline contents, occaſioned by the greater generation of acid in the alimentary canal, and the inactivity of the ſkin, ſo to irritate the urinary paſſages as to occaſion frequent micturition, and a ſenſe of burning, and other painful ſenſations in theſe paſſages, even when no depoſition of lithic acid takes place in them." Without attempting to invalidate this theory, or even to prove direct ſympathy between the ſtomach and kidneys, we cannot help thinking, that an indirect ſympathy between the ſtomach and kidneys, through the medium of the ſkin, would account for the circumſtance we are conſidering in a manner more conſonant with general principles, and equally capable of demonſtration.

In proſecuting further the groups of ſymptoms which ariſe from dyſpepſia, *cachectic diſorders* will hold a prominent rank. The maraſmus both of infants and adults is often directly traceable to the undigeſted ſtate of the pabula vitæ, even where no affection of the abſorbents of the meſentery exiſts; ſo that tabes, atrophia, &c. will (as we ſhall endeavour to ſhow when theſe are on the tapis) often gain relief from the treatment of dyſpepſia. There is, however, one ſpecies of cachectic diſorder which we muſt notice here for want of a more fit place in our nomenclature: we allude to a ſtate which has been deſcribed by Dr. Hall as a variety of (what he calls) the Mimoſis acuta; and which appears an analogous diſtemper to that noticed by many authors under the terms *purpura, ſcorbutus*, &c. This affection is indicated by all thoſe ſymptoms which we ſhould naturally infer from a morbid condition of the circulating fluids; for inſtance, by deficient action of the muſcular fibres, manifeſted in its larger ſtructures; by languor, indolence, and debility; and, in its ſmaller ones, by various topical congeſtions, and by hæmorrhage; and theſe latter are peculiarly remarkable on the ſkin and the nervous expanſions. The ſkin, being preſſed or otherwiſe injured, betrays extraordinary marks of want of tone, or of the reſiſtance to, and recovery from, unnatural agents, which healthy ſtructures ſo remarkably diſplay; and it is ſometimes affected with a continued though variable ſtate of ſallowneſs, of yellowneſs, or icterode hue; of darkneſs, or of a wan, ſqualid, or ſordid, paleneſs of complexion; or a ring of darkneſs ſurrounding the eyes, and extending a little perhaps towards the temples and cheeks, and ſometimes encircling the mouth; and the gums, throat, &c. are peculiarly liable to fall into ulcerations, hæmorrhages, &c. Pains in the bones are often felt. We ſelect a caſe from Dr. Hall, which, though it does not exemplify this complaint in its worſt form, yet is worthy of permanent record, becauſe it ſerves to trace the diſeaſe very concluſively to a dyſpeptic origin.

"E. M. aged 35, a framework-knitter, tall, ſtout, and healthy, was employed, in 1815, in the moſt active and laborious manner, in hay-making; he was expoſed to great heat, underwent much fatigue, perſpired profuſely, and drank copiouſly of beer and ale. He became affected with weakneſs, liſtleſſneſs, loſs of fleſh, nocturnal perſpiration, head-ache and vertigo, loſs of apetite, and icterus, with pale-coloured ſtools and deep-coloured urine. He recovered from theſe complaints; but in the year 1816 had the misfortune to break his leg. In conſequence of this accident and the ſubſequent confinement, he became and remained indiſpoſed; he gradually loſt fleſh, and from 14 ſtone, weighed between 12 and 13 only; and experienced, on taking cold, a loſs of apetite and ſtrength, with an inability to work, not known before. In November 1817, he underwent much bodily exertion, and remained expoſed to the cold and damp. He took cold, and became affected with hoarſeneſs, ſore throat, and cough, with œdema of the ankles. Theſe ſymptoms ceaſed, except the œdema, which receded however gradually; but he was ſtill affected with the following complaints, which are copied from his own account of them: Loſs of fleſh, and of ſtrength; a feeling of internal weakneſs; feveriſhneſs, a parched and dry ſtate of the throat, and ſometimes of the tongue; ſenſibility to cold, chillineſs, tendency to perſpiration, eſpecially in the night; head-ache; ſleepineſs; dulneſs of ſpirits; nervouſneſs; fluttering at the heart and about the ſtomach; cough; dyſpnœa; a clammy tongue and mouth, and fœtid breath; loſs of appetite, ſenſe of load at the ſtomach, occaſional rejection of food, conſtipation, and pain in the chondiliac regions. This patient became much better from the uſe of gentle purgatives of calomel, rhubarb, and

Epſom

Epſom ſalt. But in Auguſt 1818, he became affected with ſevere and continued diarrhœa, with a loſs of fleſh from 11ſt. 2lb. to 10ſt. 6lb. and loſs of ſtrength, and aching and wearineſs, and pain in the ſhoulders, ſides, and legs. He again recovered under ſimilar remedies; but, in November 1818, was taken with feveriſhneſs, attended with a parched tongue and mouth, ſome delirium in the night, and further loſs of fleſh and of ſtrength; and, at the ſame time, there occurred an extenſive ulceration of the back part of the pharynx, and a conſiderable diſcharge of bloody mucus from the noſtrils. He was reduced from 10ſt. 9lb. to 9ſt. 2lb. This ſtate continued, and icterus again occurred, with the uſual appearance of the tunica albuginea, ſkin, urine, and ſtools. Soon after this time I made the following liſt of appearances and affections in this poor ſufferer's complaint: 1. Swarthineſs of complexion; 2. feveriſhneſs, with parched throat and mouth, and heat of the forehead and legs; 3. tendency to perſpiration; 4. quivering of the chin and lips in ſpeaking, ſimilar to that obſerved before ſhedding tears; 5. tremor; 6. fluttering; 7. loſs of fleſh; 8. diſcharge of bloody mucus from the noſtrils, with ulceration; 9. ulceration of the throat; 10. icterus; 11. diſcharge of much blood and mucus from the bowels, preceded and attended by pain of the abdomen, with teneſmus and forcing; 12. the ſtools, otherwiſe, light coloured; 13. ſome anaſarca; 14. boils; 15. painful ulcers on the legs."

Connected with the ſame morbid ſtate of the body generally, we have to obſerve thoſe anomalous and diſtreſſing caſes which we denominate ſiphilodes. But more of this under that term.

Another cachectic diſeaſe muſt be here treated of. We have before ſhown, that nervous excitement may produce the phenomena of *hyſteria*, whether it be derived from the ſtomach or uterus; and, in conſidering *chloroſis*, there ſeems every reaſon for ſuppoſing that a ſimilar circumſtance occurs; viz. that, while chloroſis is a diſeaſe generally cauſed by the want of due catamenial diſcharges, the want of proper digeſtion, whether from deficient ſenſation or morbid abſorption, may ſimulate, if not literally produce, the ſame complaint. A fact reſting on good authority ſpares us the trouble of reaſoning in proof of this aſſertion: it is, that the *male ſex* are by no means exempt from attacks of this kind, eſpecially the young and ſedentary. *Chloroſis* is evidently a bad term for this affection; nor do we like Dr. Hall's term, *Mimoſis* decolor, becauſe the expreſſion of *mimicking* diſeaſe is not quite applicable to it. We however borrow from that author the deſcription of it, and therefore admit for the preſent his nomen.

The *incipient ſtage* of the Mimoſis decolor is denoted by paleneſs of the complexion, an exanguious ſtate of the prolabia, and a ſlight appearance of tumidity of the countenance, and puffineſs of the eye-lids, eſpecially the upper one. There is ſometimes a tinge of green, yellow, or lead-colour, and frequently darkneſs of the eye-lids. There is great paleneſs of the general ſurface, hands, fingers, and nails; an opaque, white, tumid, and flabby, ſtate of the ſkin; a tendency to œdema of the calves and ankles; and a certain loſs of fleſh. The tongue is white, and loaded; it is ſwollen, marked by preſſure againſt the teeth, or variouſly formed into creaſes or folds; its papillæ are very numerous, and much enlarged. The gums and the inſide of the cheeks become tumid; and the latter, as well as the former, are ſometimes impreſſed by the teeth. The breath is tainted. The patient is generally languid, liſtleſs, indiſpoſed for exertion, eaſily overcome by exerciſe, nervous and low-ſpirited, drowſy, dizzy, fainty, or breathleſs. There is generally ſevere headache or vertigo; the memory and power of attention are apt to be impaired; and there is ſometimes heavineſs for ſleep. There is alſo, in different inſtances, pain of one or both ſides about the falſe ribs, or in the hypochondriac or chondiliac regions. Sometimes there is cough, difficulty in breathing, palpitation or irregular action of the heart, or imperfect ſyncope, and almoſt univerſally a ſenſe of fluttering about the præcordia. The appetite is generally impaired. There is frequently a morbid appetite for acids, or for magneſia. The bowels are conſtipated, a ſtate which ſometimes leads to diarrhœa; the fæces are dark-coloured, fœtid, and ſcanty. The urine is frequently loaded. The catamenia become irregular, are preceded and attended by much pain of the back and region of the uterus, and ſometimes, but not always, become ſlowly defective in quantity, and pale in colour.

In the *confirmed ſtage* of this affection, the ſtate of the complexion and general ſurface is ſtill more marked. The countenance is more pallid; the prolabia and the gums exanguious; or the prolabia, eſpecially the upper one, have a ſlight lilac hue; and the integuments are tumid. The ſkin is ſmooth, but becomes preternaturally dry; the integuments are puffy, opaque, and pale, or yelloviſh; and there is a tendency to œdema of the feet. The tongue becomes clean and ſmooth; but it is pale, with a ſlight but peculiar appearance of tranſparency, and of a pale lilac hue; and it remains a little ſwollen and indented. The patient is now affected with languor, laſſitude, and even ſerious weakneſs, being at once reluctant and unable to undergo fatigue. There are often attacks of ſevere pain of the head, or of equally ſevere pain of the ſide; and repeated bleeding, leeches, and bliſters, are uſually employed, affording a temporary reſpite from theſe complaints. There are alſo, ſometimes, fits of dyſpnœa, of palpitation of the heart, or of fainting, with beating of the carotids. The pulſe is rather frequent, often about 100, and eaſily accelerated and rendered irregular by mental emotion. The appetite is ſometimes impaired, occaſionally greater than natural, and very frequently depraved, inducing a longing or conſtant deſire for ſome indigeſtible ſubſtance, as acids or pickles, magneſia, chalk, cinders, ſand, coffee-grounds, tea-leaves, flour, grits, wheat, &c. which the patient likes to have conſtantly in her mouth, or to which recourſe is had when ſhe ſuffers from agitation of mind, (like the dirt-eating negroes, p. 122, 3.) The bowels are ſlow and conſtipated, a ſtate which ſometimes alternates with diarrhœa, and induces melæna; the ſtools are dark, fœtid, and ſcanty. The catamenia are attended with pain, and become paler, and leſs in quantity, often ceaſe, and often yield to a ſtate of leucorrhœa which is more or leſs conſtant.

In the *inveterate ſtage*, all the ſymptoms aſſume an aggravated character. There is a very ſlow, but progreſſive, loſs of fleſh. The languor becomes a ſtate of permanent debility. The œdema increaſes, and takes on the aggravated form of anaſarca. The pulſe becomes frequent. There are leſs of the appearances of mere *diſorder*, and more of the character of *diſeaſe*; i. e. thoſe local affections, which exiſted in a leſs continued manner before, now became either permanent, or are induced by the ſlighteſt cauſes; and the patient can ſcarcely bear the moſt ordinary occurrences of domeſtic life, and perhaps remains always in bed. Sometimes there is an almoſt permanent pain of the head, perhaps with intolerance of light or of noiſe; ſometimes pain of the cheſt, with tenderneſs, difficulty in breathing, and cough. Frequently there are pain and tenderneſs of the abdomen, with ſickneſs and conſtipation, or with diarrhœa. Different ſymptoms reign in different inſtances; as ſome hyſteric or ſpaſmodic affection; a ſtate of locked jaw, cloſed hand, contracted foot, or twiſted limbs; palpitation of the heart; hurried or ſuſpended reſpiration; long fits of coughing, hiccough, retention of urine. It is worthy of notice, that this chlorotic ſtate and the cachectic diſeaſes noticed before are often alternate, or run into one another.

An important connexion ſeems to exiſt between the pathology of the ſtomach and the mucous membrane of the *lungs*. In the firſt ſtage of indigeſtion, an irregular and ſpaſmodic cough is often produced by nervous irrita-

tion, as we have before ſeen; and, when the inflammatory ſtate has come on, an inflammation of the mucous membrane of the bronchiæ is no uncommon occurrence. In caſes where prediſpoſition to diſeaſe exiſts, idiopathic diſeaſe enſues; but more commonly a dependance on the original diſorder is ſtill remarked in ſtructures ſecondarily affected. Affections of more ſeverity, and which perhaps have their ſeat more immediately in the parenchyma of the lungs, are thoſe which dyſpepſia gives riſe to when implicated with diſordered liver. The latter viſcus indeed holds a very important relation with the pulmonary organs, whether in health or in diſeaſe. When we come to treat of inflammation of the mucous membrane of the bronchiæ, we ſhall ſpeak more fully of the ſympathetic action of the mucous expanſion. Suffice it to ſay at preſent, that communicated diſeaſe is frequently obſervable between the ſtomach and lungs. Dr. Haſtings, in his Treatiſe on Bronchitis, has very accurately deſcribed the diſeaſe in queſtion. It is diſtinguiſhed by the uſual ſigns of bronchitis (which ſee); ſuch as, tightneſs of the cheſt, cough, copious expectoration, &c. and the further preſence of various dyſpeptic ſymptoms, as well as indirectly by the effect of remedies uſed in indigeſtion. But often more ſevere diſturbances ariſe; and the violence of the ſymptoms approaches cloſely to the characteriſtics of ſtructural alteration. Indeed every one ſees caſes apparently of phthiſis which yield to the treatment for indigeſtion. For our own part, we wiſh to confine the word phthiſis to the apoſtematous or tubercular kinds. Now, with regard to the former, we conceive no one will aſſert that it is curable by dyſpeptic treatment; and, with reſpect to the latter, ſcarcely a bolder prognoſis will be given. It muſt be conceded, however, that the latter form of diſeaſes may be thus cured. Mr. Abernethy has demonſtrated to a mathematical certainty, that the reparative proceſſes are beneficially influenced in the higheſt degree by the treatment in queſtion; and we have only to extend this eſtabliſhed propoſition from the viſible external parts to the internal ſurfaces; yet, in ſo doing, we muſt conſider, that both the perpetual motion and the aerial ſtimulation of the pulmonary organs, render reparation of ſtructure a moſt difficult taſk in them. Moreover it is acknowledged that we have no pathognomonic ſign of phthiſis; that not even the vomiting of pus can render the exiſtence of apoſtema unequivocal, ſince pus may be ſecreted from the mucous membrane in certain ſtates of inflammation; and therefore we ſhall conclude, that ſtomachic medicines can be uſed as direct agents only where neither apoſtema nor tubercle exiſts. We muſt be careful, however, where we fix the bounds between ſympathetic and real diſeaſe. In the 43d, 44th, and 45th, ſections of Morgagni's 21ſt Epiſtle, we find the diſeaſe which he calls the *pleuritis verminoſa* treated of at ſome length. The author mentions one caſe, in which all the ſymptoms of pleuriſy were well marked, that terminated favourably by bloody vomiting which brought up a worm; and he refers to a paper of Pedratto on the *pleuritis verminoſa*, where the relief obtained by the expulſion of worms from the ſtomach and inteſtines is unequivocally proved. In this paper it appears, that all who vomited the worms, or paſſed them by the bowels, recovered; while thoſe who retained them died. All the common means of treatment in inflammation of the lungs failed; medicines which deſtroyed the worms were alone ſucceſsful. While their expulſion immediately removed the diſeaſe, it is impoſſible for us to believe that organic alteration of the lungs had taken place; yet in thoſe in whom the diſeaſe had been allowed to take its courſe, the ſame appearances were found in the thoracic viſcera as in thoſe who die of other forms of idiopathic diſeaſe. Analogous caſes are not unfrequently obſerved at the preſent day.

In regarding the connexion above mentioned, we often find that the diſeaſed action of the digeſtive apparatus is cauſed by the pulmonic irritation, and that the action ſo induced keeps up and increaſes the latter irritation. Theſe caſes are however rare, when compared with thoſe in which dyſpepſia is firſt manifeſted; and they are ſeldom found till diſeaſe has been of long continuance. It is generally preceded by ſymptoms of indigeſtion, and particularly by thoſe which indicate ſome diſorder in the ſecretion of bile. Contrary to what is uſual in other ſpecies of the diſeaſe, the ſpirits from the beginning are generally more or leſs depreſſed, and the countenance is ſallow.

While the firſt ſtage of indigeſtion remains, and nervous irritation is the only cauſe of the cough, the latter is uſually dry, or the patient brings up a little mucus after a ſevere and often long-continued fit of coughing, which ſeems to be rather the effect of the irritation of coughing than any thing which had previouſly exiſted in the lungs; for the cough in this ſpecies of conſumption, particularly in its early ſtages, frequently comes in violent fits, in the intervals of which the patient is often but little troubled with it. Theſe fits are particularly apt to occur after he has eaten, eſpecially if he has eaten a great deal, or any thing by which the digeſtion is diſturbed: and on lying down.

As the ſecond ſtage ariſes, bronchitis is the moſt uſual form of diſeaſe. The cough becomes more frequent, returns leſs decidedly by fits, and is attended with a more copious expectoration.

An expectoration at firſt limpid or glairy comes on. As the diſeaſe advances, this increaſes, though ſometimes for a conſiderable time without puruloid characters. By degrees, however, we ſee ſmall portions of an opake pus-like ſubſtance mixed with the expectorated mucus, and the proportion of it increaſes as the diſeaſe advances. In ſome caſes the quantity expectorated is aſtoniſhing, often much greater, in proportion to the ſeverity of the other ſymptoms, than in idiopathic bronchitis.

Blood is not unfrequently mixed with the colourleſs matter, and ſometimes pure blood is coughed up in the early ſtage of the diſeaſe. After the pus-like expectoration commences, if blood has not previouſly appeared, it is much leſs apt to appear than in other forms of the diſeaſe. If it appear even in ſmall quantity after this ſtage commences, Dr. Philip ſays that the caſe generally proves fatal. The above-mentioned author is likewiſe of opinion that, while the blood is mixed only with a tranſparent fluid, there may be good hopes of recovery; or, if there be no admixture of blood, there may be alſo hopes of recovery, if the diſeaſe has not laſted long. But, when the expectorated matter aſſumes a ſanious appearance, it ſeems to indicate much danger. In theſe caſes there is of courſe the dull pain and tenderneſs in the epigaſtric region of the ſecond ſtage of dyſpepſia; and in progreſs of time, an irregular hectic is formed, differing, however, from the true tubercular hectic; for, though there is uſually ſome evening exacerbation, during which the face is generally flushed, and though the hands and face are occaſionally bedewed with perſpiration in the night; theſe go off before morning. The emaciation too, though it becomes very perceptible, does not proceed ſo rapidly as in tubercular phthiſis.

The latter circumſtance ſeems to diſplay itſelf in the ſame proportion as the fever. Anorexia, flatus, tenderneſs over the liver, pain in the ſhoulder, or other hepatic or dyſpeptic ſymptoms, are invariably preſent; and, though they vary at different times, the patient is never free from ſome of them. The connexion between them and the pulmonary ſymptoms is rendered evident by the latter increaſing with the former; ſo that, when the epigaſtric region is very full and tender, and the flatulence and acidity more troubleſome than uſual, the cough and dyſpnœa are ſo alſo; and, on the former ſymptoms ſubſiding, the latter likewiſe abate. Even the riſing of wind from the ſtomach, often, for the time, removes the tendency to cough.

If the progreſs of the diſorder be not checked, the ſymptoms approach ſtill nearer to thoſe of tubercular phthiſis,

phthiſis, or in fact that diſeaſe is formed. Hectic fever becomes completely formed, and the patient is waſted with profuſe perſpirations, anaſarca and other dropſical ſymptoms often ſupervening.

As the pulmonic diſeaſe becomes more clearly formed, the diſeaſe of the alimentary canal diminiſhes, as we have before ſhown it is apt to do when idiopathic diſeaſe (which operates as a derivative) is ſet up; and this occurrence leads of courſe to a fearful prognoſis.

The intimate connexion between gaſtric and cutaneous diſeaſes has been clearly pointed out by Mr. Abernethy, and the beſt practical phyſicians of the day. Indeed the natural ſympathy which is perceived between the ſtomach and the ſkin would lead us to expect ſuch a connexion. It is not ſtrikingly evinced, however, in moderate temperatures, and while no extraordinary agent is in action; but, when in a high range of atmoſpherical heat, when the veſſels of the ſkin are excited, and the proceſs of perſpiration is increaſed, we clearly obſerve this conſent between the ſkin and ſtomach, as evinced by want of appetite; an effect which is greatly increaſed, if to the external ſtimulus of high temperature we add fatiguing exerciſe, whereby the perſpiration is morbidly excited, and the indirect debility of the ſub-cutaneous veſſels and ſtomach (by ſympathy) induced. Hence, after pedeſtrian exerciſe in the forenoon during the heat of ſummer, and after the perſpiratory veſſels have become relaxed, we find a ſenſe of fainting at the ſtomach, and anorexia; while, on the contrary, as the weather becomes cool, and the veſſels of the ſkin contracted thereby, we perceive the ſympathy in queſtion exerted in the oppoſite mode; for a ſtimulus is quickly communicated to the ſtomach and the appetite is keen: and again, when the degree of cold is ſo great as to induce permanent debility of the veſſels of the ſurface, and this is not immediately counteracted by exerciſe or clothing, the ſtomach, as well as other organs, inevitably ſympathiſes, and the important proceſs of digeſtion is interrupted.

As further inſtances of this ſympathy, we may adduce the effects exhibited on the ſkin by a glaſs of water or wine taken into the ſtomach; the breaking-out of ſweat which enſues to ſome as ſoon as acids are applied to the œſophagus; and, when we add to theſe facts the numerous examples which daily occur of ſurfeits, and the derangements in the colour, ſenſation, and function, of the ſurface immediately conſequent on a debauch, we ſhall have no doubt in deciding, that, in nine caſes out of ten, cutaneous foulneſs and gaſtric irritation are related to each other as cauſe and effect.

Among the numerous painful ſenſations and impeded functions which we have had occaſion to enumerate as conſequences of dyſpepſia, we believe there is not one which, primarily occurring, will not produce, as well as follow, that diſeaſe. Theſe derangements in the circulating media, all nervous irritations, all agents ſufficiently powerful to control the actions of the living powers, impediment in any part of the reſpiratory or aſſimilating apparatus or in the functions of the mind, all fortuitous leſions, will, unleſs counter-irritations or prediſpoſitions to diſeaſe exiſt in other parts, produce indigeſtion. This eſtabliſhed, it ſerves to ſhow the imperious neceſſity that there is to ſtudy the cauſes of dyſpepſia, and to direct our therapeutical maxims accordingly; and, in ſo doing, what a large fund of obſervation this enquiry admits of, when we turn back to conſider the formidable though incomplete liſt which we have already detailed.

In conſidering, therefore, the *treatment* of dyſpepſia, we ſhall revert to what we ſaid, at p. 128, of its firſt cauſes. The contemplation of thoſe which act by influencing the nervous ſyſtem of the ſtomach, is of courſe the moſt extenſive. It is by this medium that local injuries and topical inflammations, intenſe ſtudy, &c. produce gaſtric diſorder; and, when the complaint in queſtion is thus traced as a conſequence, the treatment is obvious. There are ſome nervous impreſſions, however, which, though not themſelves continued, induce a train of morbid actions which ſoon exhibit the form of dyſpepſia.

Of theſe impreſſions, the moſt frequent is the ſtate of the atmoſphere. The influence of ſalubrious air in promoting healthy digeſtion cannot indeed eſcape the moſt ſuperficial obſerver. This fluid ſeems to operate beneficially in various ways. Thus it may promote digeſtion by the excitement to muſcular action which its ſtimulus produces, by the elevating and pleaſurable mental emotions its purity excites, or its healthful impreſſion on the mucous membrane of the lungs may be tranſmitted more directly to the ſtomach. Hence it follows, that, on the other hand, the want of due materials for reſpiration muſt be ſeverely felt in the digeſtive function. The atmoſphere acts on the ſkin only by its temperature; but the frequent variations in this reſpect which our own country is ſubject to, has been long conſidered a fruitful ſource of bodily ailments. It does not ſeem that either the cold or heat of our own climate is particularly injurious, ſince the compenſating powers of the conſtitution ſoon render us equal to either extreme; but that it is the ſuddenneſs of the change which is ſo obnoxious to our health; for, while heat augments the cutaneous capillaries, both in ſize and in frequency of action, (an effect which extends to ſome extent along the arterious trunks,) its abſence induces a diminution of their parietes, and a more-permanent and leſs-frequent contraction; and, of courſe, a ſudden change from one to the other of their ſtates tends to diſorder the contractibility of the atonic veſſels, by ſympathy of thoſe of the lungs and alimentary canal, and by another modus operandi of the general circulating forces.

From theſe premiſes the management of the dyſpeptic patient, in regard to air, follows in the moſt obvious manner. The viciſſitudes of the climate he cannot of courſe control; but he may avoid the more frequent and ſeverer changes of temperature to which his own imprudence expoſes him. We of courſe allude to the faſhionable modes of dreſſing, and the habit of being out in the night-air, &c. Theſe errors, however, have been ſeverely inveighed againſt by a multitude of writers, and, as might have been expected, with little good to the community, few members of which have the reſolution or the inclination to conquer habitual indulgences. It remains our duty, therefore, to point out the beſt preventatives of danger during the expoſure of invalids to the influence of nocturnal temperature. Theſe methods we have extracted principally from the writings of Dr. James Johnſon.

After adverting to the deleterious combination of cold and moiſture found in the night-air, this gentleman remarks, that there are five circumſtances to be attended to when we are ſubjected to its influence; viz. 1. The condition of the body before going out of doors. 2. The defence of the body's ſurface while expoſed. 3. The defence of the lungs. 4. The exerciſe on the way. 5. The conduct to be obſerved on getting home.

1. The condition of the body ought to be as warm as poſſible, ſhort of perſpiration. Many lives are annually loſt by the ill-judged caution of lingering about the halls and doors of the heated apartments till the body is cool, before venturing into the air. In this ſtate it is highly ſuſceptible of the baneful influence of the night. It would be better to iſſue forth, even with ſome perſpiration on the ſurface, than wait till the ſyſtem is chilled.

2. Upon the ſecond point we need not enlarge. The frequent ſight of thick coats, cloaks, &c. clearly evince that our countrymen do not offend much againſt this regulation.

3. The defence of the lungs cannot be too ſtrongly enforced. They ſhould be guarded from the direct influence of the night-air by ſuch mufflings about the face as may detain a portion of the air expired from the lungs each time, and thereby communicate a degree of warmth

to

to each inhalation of atmoſpheric air. A large net, for example, folded looſely round the face, will receive a portion of caloric, or heat, from the breath, at each expiration, which portion will be communicated to the current of air ruſhing into the lungs at each inſpiration; and thus the frigidity of the nocturnal atmoſphere will be in ſome degree obviated.

4. As we proceed into the night-air while the body is warm, ſo we ſhould, by a briſk pace, endeavour to keep up that degree of animal heat with which we ſet out, and that determination to the ſurface which is ſo effectual in preventing affections of any internal organ.

5. As the ſudden tranſition from a heated apartment to a frigid atmoſphere muſt, in ſome degree, produce a determination to the centre, and more or leſs check the perſpiratory proceſs, ſome warm and moderately-ſtimulating liquid may be taken before going to bed, in order that the functions of the ſkin and the balance of the circulation may be reſtored; unleſs, as is often the caſe in nervous ſubjects, ſpirituous potations cauſe reſtleſſneſs and want of ſleep.

It is of conſequence, moreover, that the dyſpeptic patient ſhould avoid the thick fogs and damp air which ſurround all large towns or manufactories; and that he ſhould therefore remove from ſuch ſituations into the open country. Or, in caſe his reſidence in foreign regions, whether northern or tropical, is the probable cauſe of his indiſpoſition, a return home is of courſe the obvious remedy.

As a further method of obviating atmoſpherical impreſſions, the nature of our clothing requires ſome attention. Dyſpeptic patients ſhould not only endeavour to wear a lighter and warmer clothing than is uſual, but adopt a more uniform ſyſtem of attire throughout the year; in which caſe they will, in a great degree, obviate the keen ſuſceptibility to aerial impreſſions for which they are ſo remarkable. They ſhould avoid likewiſe the faſhionable habits which exiſt in regard to frequent changes of dreſs. The fair ſex in particular, and the leſs robuſt of our own, are obſerved to wear a warm dreſs in the fore part of the day, a period when the ſun is moſt powerful, and when exerciſe is more uſed; while the evening or dinner dreſs conſiſts of garments of the thinneſt texture, when the frame is more exhauſted, and the air damp and cold. No words are required to point out the injury ſuch a practice muſt inflict on the patients of indigeſtion.

We have before adverted to the effect of ſtudious habits on the proceſs of digeſtion. Perhaps a few words on the management of the *mind* will not be miſplaced. We do not wiſh, far leſs hope, to check the patient and abſtracted exertions of genius; but, if it can be ſhown to the philoſopher that knowledge will more kindly open her ſtores to him who has not corporeal ailment to deſtroy the balmy refreſhment of ſleep, and whoſe enthuſiaſm is not liable to be dulled by baneful hypochondriaſm, he will perhaps be induced to ſpend ſome of his exiſtence, we truſt not unhappily, in the lighter diſſipations of converſation, and in the cheering influence of corporeal movements. It will not be loſt time. Health has always been conſidered the reſult of a general and pervading harmony; that, while one part or ſtructure acts for the ſupport of life, another reſts. Even the heart, powerful as it is, reſts and acts alternately. All other organs obey the ſame law; they have longer intervals of exertion and relaxation, it is true; but ſtill they have them. Shall the brain only receive none? Without enliſting ourſelves on the ſide of the philoſopher who ſaid the mind always thinks, we may ſafely aſſert, that, except during ſleep, the brain is perpetually occupied in receiving impreſſions, or in performing its own internal operations. If ſleep, then, be the only time it is exempt from this toil, how impaired muſt the functions of that cerebral ſtructure be which experiences but imperfectly and for ſhort periods the influence of "tired Nature's ſweet reſtorer!" But it is not only by tending to deſtroy ſleep that too long application weakens the faculty of thought; the time borrowed from the due exertion of the muſcular ſyſtem is certainly ill applied. That abſorption and circulation are facilitated by muſcular motion will be admitted on all hands: and whence does the brain derive its ſuſtenance, but from the circulating powers? And further, who has not felt how at times his mental energy in a few hours of application rapidly overtakes, nay ſurpriſingly outdoes, the laborious ſtudy of days, when he toils "invita Minerva!" The ſtudent, therefore, ſhould endeavour, above all others, to exerciſe in ſome degree all his powers, his functions, and his faculties. His employments naturally tend to make him abſtinent; and we are well aſſured, that, if he does not diſdain the uſeful leſſons of experience in regard to his bodily infirmities, he will find no reaſon to coincide in the melancholy but frequent aſſertion, that intellectual grandeur and corporeal energies are incompatible; nor will Ovid's deſcription (pallor in ore ſedet macies in corpore toto) be longer applicable to him.

To apply the ſubject of the management of the mind more cloſely to indigeſtion, our preſent ſubject. The proper exertion of the mind is perhaps too little attended to by dyſpeptics; yet it is of much importance; for mental anxiety is no unfrequent ſource of the complaint in queſtion, and is always an aggravation of it. Fortunately many of the exerciſes which are good for the body act favourably on the mind alſo; as for inſtance, the leſs-laborious employments of horticulture and huſbandry; the driving of a gig, riding on horſeback, &c. Occaſional occupations in certain games, in which ſome degree of corporeal exerciſe is combined with the employment of the mental faculties, as billiards and the like, are ſerviceable. We ſhould principally ſelect ſuch amuſements as at the ſame time do not engage the feelings too deeply. The glow which poetry infuſes over the ſoul may be ſafely indulged in by the man of buſineſs, or by thoſe who follow profeſſions in which the reaſoning faculties alone are called into play. But ſuch indulgence is perhaps unfavourable to the poet himſelf. We may admit for the occaſion the fable of old, (ſee the article MUSIC, vol. xvi.) and try the delicious influence of ſweet ſounds over the morbid feelings of the patients in queſtion. Some, on the other hand, require the avocations of buſineſs, which ſhould be diveſted however of the anxiety uſually attendant. The variety of men's minds requires however the contemplation of objects of different kinds, though the grand rule is, in reſpect to the mind as in the body, to exerciſe without fatiguing it. But we may be ſpared entering into any thing more than hints, as the ſubject requires particular application rather than general rules.

The ſecond cauſe of derangement of the gaſtric function, viz. by diſtention of the muſcular fibre, is next to be conſidered. We purpoſely omit at preſent the diſtention produced by chemical change ariſing from a want of nervous power or of ſecretion. It remains, therefore, to conſider diſtention only as far as regards the too-great quantity, or the gazeous or ſwelling quality, of the aliment received.

The moſt common cauſe of diſtention of the ſtomach is eating too faſt; for, the appetite only ſubſiding in proportion as the food combines with and neutralizes the gaſtric fluid, this practice inevitably tends to induce perſons to eat more than is requiſite or natural; and, as the gaſtric fluid is but ſlowly ſecreted, the major part of the food remains in a place favourable, on account of its temperature, to chemical change without being ſubmitted to the counteracting influence of the gaſtric fluid: whereas, when we eat ſlowly, ſo that a proper time is given for the combination to take place, the appetite abates before the ſtomach is overcharged: for, while digeſtion goes on, and the gaſtric fluid is only ſupplied in proportion as freſh food comes in contact with the coats of the ſtomach, it combines with the food as it is formed, and never excites the

the appetite. The truth of this is evident to every one who has obſerved that, if his meal is interrupted for ten or fifteen minutes, although he has not eaten half his uſual quantity, he finds that he is ſatisfied. The gaſtric fluid which had accumulated has had time to combine with, and be neutralized by, the food he had taken. On the ſame account a few mouthfuls taken a little before dinner will often wholly deſtroy the appetite, eſpecially in delicate people, in whom the gaſtric fluid is ſecreted in ſmall quantity, or of a leſs active quality. Moreover, when we eat too faſt, the food is not only received into the ſtomach in too great quantity, but is ſwallowed without being duly maſticated and mixed with the ſaliva, and therefore without properly undergoing what may be conſidered the firſt proceſs of digeſtion. It is thus preſented to the ſtomach in a ſtate in which the gaſtric fluid pervades it, and conſequently acts upon it, with more difficulty. In this way eating too faſt is injurious, even when the patient eats but little. For theſe reaſons, "to eat moderately *and* ſlowly," is often found of greater conſequence than any other rule of diet. The dyſpeptic, in eating, ſhould carefully attend to the firſt feeling of ſatiety. There is a moment when the reliſh given by the appetite ceaſes; a ſingle mouthful, taken after this, oppreſſes a weak ſtomach. If he eats ſlowly, and attends carefully to this feeling, he will never overload the ſtomach.

Another frequent cauſe of over-diſtention of the ſtomach is high-ſeaſoning and great variety of food, or ſuch as particularly pleaſes the palate, by which we are induced to eat after the appetite is ſatisfied; or, by the ſtimulus of the high-ſeaſoning, a greater ſupply of gaſtric fluid than the food calls for is excited, and thus the appetite prolonged. This ſeems in particular to be an effect of wine drank during dinner; and this practice, although it occaſions leſs immediate inconvenience than eating too faſt, often, if carried very far, by the preternatural excitement of the ſtomach, at length impairs its vigour. It is not uncommon, in the diſſection of ſubjects who have greatly indulged in the pleaſures of the table, to find the ſtomach enlarged, and its fibres ſenſibly relaxed.

The degree of diſtention which the ſtomach undergoes alſo depends much on the *kind* of aliment. All food appears to ſwell more or leſs after it is received into the ſtomach; ſome kinds more than others, and of courſe that which is moſt difficult of digeſtion, *cæt. par.* ſwells moſt; both becauſe it is digeſted and removed from the ſtomach moſt ſlowly, and becauſe that which moſt reſiſts the action of the gaſtric fluid is moſt apt to run into fermentation.

It would take up too much time to mention all the kinds of food which are prone, by their gazeous conſtituents, to produce gaſtric diſtention. Generally ſpeaking, vegetables have this effect in a much greater degree than animal food, and in a crude ſtate eſpecially. Bread often produces it; and it is probably on the ſame account that malt-liquors, taken during meals, exert a pernicious influence over digeſtion. Diſtention of the ſtomach is alſo produced by too much drink, or, as with reſpect to food, by ſwallowing it with too great rapidity.

Now, with regard to the third origin of dyſpepſia, diſordered ſecretion, it ariſes in moſt caſes out of the two former ſtates; and, the errors or accidents producing them being removed, the effect generally ceaſes. When, however, it becomes eſtabliſhed, its removal implies a much wider indication. In the firſt periods of diſeaſed ſecretion, this fluid is perhaps not much impaired in its digeſtive properties, though diminiſhed in quantity, and poſſeſſed of ſome additional conſtituents. Eructations of various kinds, pain, &c. now occur, but with little general diſturbance, which, as we ſaid before, a little attention to diet ſoon ſets to rights. In this ſtage we agree with Dr. Philip in thinking, that a diet compoſed of a moderate portion of animal food and bread is the beſt; but of courſe this rule will be daily excepted againſt on account of conſtitutional peculiarities.

Though the conſideration of diet is again before us, after the ample notice we have beſtowed on this ſubject, (p. 102–106.) it would be ſuperfluous to do more than briefly recapitulate the rules to be adopted. Theſe are only to be underſtood, and will always be beſt remembered, by a knowledge of the digeſtive proceſs. The patient of indigeſtion will therefore in the firſt place attend to the due maſtication of his aliment; to its moderately ſlow tranſmiſſion to the ſtomach; to its degree of moiſture, which regards the two points, that it be ſufficiently moiſt to allow the pervaſion of the gaſtric juice without weakening that ſecretion by dilution, and without producing fermentation by its own exceſs. He will take eſpecial care, when he conſiders the nature of the propulſive power of the ſtomach, that he offers no impediment to that function by taking violent exerciſe during digeſtion. He will carefully note and partake of thoſe ſubſtances which on their reception into the ſtomach produce leaſt pain or irritation. He will avoid thoſe, on the contrary, which produce any ill feeling; namely, for the moſt part the tough, oily, or aceſcent, particles of food. Nor ſhould various kinds of food be taken at once by the dyſpeptic. Few patients will digeſt well more than one ſort of aliment at a meal. Moreover, the popular notion of taking little and often is to be regarded as a popular error: and when it is conſidered, that the maſtication and other proceſſes belong to digeſtion, that economy in which nothing is vain, and which are in fact indiſpenſably neceſſary, the dyſpeptic ſhould not evade the neceſſity of ſuch proceſſes by taking aliment reduced to a pultaceous conſiſtence. We dwell on this point, becauſe it is ſo common to hear of *nouriſhing food*, an expreſſion which, in its common acceptation, is meant to imply the capability of certain ſubſtances to nouriſh our frame rather by its own nature than by that of the digeſtive action. Thus a variety of jellies, rich ſoups, &c. are laviſhly beſtowed on the emaciated ſufferer, and theſe greaſy ſtimulants fail not to deſtroy the little remaining function which the ſtomach may poſſeſs. Dr. Philip ſays very wiſely, when ſpeaking on this point, that, "however impoſing the plans of concentrating much nutriment in a ſmall compaſs may at firſt view appear, we may be well aſſured, that in ſuch concentration ſomething is taken away from what nature deſigned for our food, which is uſeful to us." Thus moſt dyſpeptics find, that potatoes, for example, finely maſhed, although without any admixture, are more difficult of digeſtion than when properly maſticated. To mention a more ſtriking fact: it has been ſhown by the chemiſts, that a very cloſe analogy, an apparent identity indeed, exiſts between ſugar and the chyle which is derived from vegetables; yet a horſe fed on ſugar will not live a month.

The relation which exiſts between all the ſtructures of the body, and the neceſſity of preſerving a proper correſpondence of energy between the nervous, the vaſcular, and the muſcular, ones, ſince they are all connected in the alimentary canal, at once ſhows the propriety of corporeal exerciſe in indigeſtion: for the exerciſe of the voluntary muſcles affords energy, not only to them, but to the involuntary movements, and gives, as is well known, much aſſiſtance to the circulatory powers. But the bodily exerciſe of dyſpeptic patients is a matter of nice and difficult diſcrimination; for it is well known, that, however ſalutary exerciſe may be to a certain extent, yet that its exceſs tends to produce conſequences directly oppoſite. Sleep, appetite, and digeſtion, which are improved by gentle exerciſe, are often ſuſpended after violent fatigue or exertion. The weak ſtate of the muſcular ſyſtem in ſome caſes is another ſtrong argument in favour of modicating the degree of locomotion, and of cautioning patients not to run into the common error of fatiguing themſelves, under the idea of ſtrengthening their frame by ſtrenuous exertions.

In the firſt ſtage of indigeſtion, and ere much debility ariſes, *walking* during the interval of digeſtion is unqueſtionably the beſt exerciſe. It is, in the firſt place, very

very agreeable, and it ſeems moreover the moſt natural. There is no other accompanied with ſuch a uniform and regular exerciſe of the muſcles and joints; and, from the valvular ſtructure of the veins of the extremities, it is better fitted than any other to promote the circulation, and conſequently all the functions of the ſyſtem.

The effect of riding on horſeback upon the abdominal viſcera is peculiar and ſalutary; and the jolting of a briſk trot ſeems, without inducing fatigue, to give tone to and promote the action of the bowels and liver in an eminent degree. In the more advanced ſtages of indigeſtion, this delightful exerciſe becomes injurious; and little elſe can be borne, except the walking pace of the horſe. It is ſeldom, however, adviſable to ride at all at this period, ſince at the pace juſt mentioned the patient is ſubjected to the baneful effect of diminiſhed temperature. It is better therefore to indulge in the eaſe of a carriage; and, as this becomes too irkſome from its vibratory motion, ſailing is a gentler mode of exerciſe. It has the credit of being ſerviceable in almoſt all caſes of debility, and has been found particularly ſo in debility of the ſtomach and bowels. But even this exerciſe, except in warm weather, is unadviſeable on account of the expoſure to cold air.

Whenever theſe paſſive exerciſes cannot be borne, the dyſpeptic may find much relief from the uſe of friction, as he likewiſe might experience from the refreſhing practice of champooing; which, unfortunately however, is unknown in this country.

The reader will find the ſubject of paſſive exerciſe well treated of in Dr. J. Johnſon's work on the Atmoſphere and Climate of Great Britain, p. 197, & ſeq. We extract a portion, in which however it will be ſeen that the learned author differs in ſome meaſure from the views we have taken in regard to exerciſe after meals. He ſays, "During geſtation, for inſtance on horſeback, the ſtomach, liver, inteſtines, indeed the whole digeſtive apparatus, experience a ſucceſſion of ſhocks, which develop the tonicity of theſe organs, and favour the exerciſe of their functions. If the ſtomach be empty, geſtation awakens the digeſtive powers, whets the appetite, and induces hunger: if that organ be moderately filled with food, the whole chylopoïetic ſyſtem, enlivened by geſtation, executes with greater facility, promptitude, and perfection, the elaboration of nutritive matter; and the whole fabric receives, in conſequence, an acceſſion of ſtrength. Hence people afflicted with anorexia, or difficulty of digeſtion, experience the moſt marked benefit from paſſive exerciſe, eſpecially if uſed before the hour of repaſt. When uſed by them after meals, it muſt be moderate in degree, and gentle in manner. Thus we every day ſee invalids, to whom digeſtion is a painful proceſs, eſcape the feelings of ſatiety by a gentle ride on horſeback or in a carriage after dinner. In this reſpect muſcular or active exerciſe differs eſſentially from geſtation. To run, to dance, to play at cricket, immediately after eating, is to aſſail the ſtomach with violent ſucculſions which derange the natural order of its movements, and diſſipate on the voluntary muſcles thoſe vital forces and energies which ought to be concentrated on the organs of nutrition.

"But it is not on the proceſs of digeſtion alone that geſtation exerts a beneficial influence. It enlivens the whole abdominal circulation of blood, but particularly that of the various branches of the vena portarum. It thus affects the hepatic ſyſtem, facilitating both the ſecretion of the bile, and its elimination from the ducts of the liver into the duodenum. It increaſes the periſtaltic motion of the inteſtines; in conſequence of which, the chyme is preſented with greater regularity and rapidity to the mouths of the lacteals, and the chyle is poured, in a freer current, into the blood-veſſel ſyſtem."

When theſe meaſures fail, when exerciſe does not induce thoſe trains of action which lead to health, and when the abſtraction of noxious particles of diet fails in the ſame purpoſe; it becomes neceſſary to have recourſe to medicine. It ſeldom happens, however, but that dyſpepſia alone will yield to the meaſures above mentioned: when it does not, we ſhould be always ſuſpicious of the extenſion of the diſeaſe. The bowels are, as we have before ſhown, the parts moſt diſpoſed to participate in the diſeaſes of the ſtomach; and therefore our treatment ſhould not unfrequently be directed to them. Independently however of the implication of the bowels in the common affection, the action of certain medicines on theſe viſcera is beneficially exerted on the ſecretions of the ſtomach and liver. Purgatives promote thoſe ſecretions in two ways: by the mechanical ſtimulus derived from the periſtaltic motions of the bowels, and through the medium of that ſympathy ſo remarkably obſervable in the continued mucous ſtructures. The proper uſe of aperients is a ſubject of great importance at all periods, and in all ſtates, of indigeſtion. In the period under conſideration, their object is merely to ſupport a regular action of the bowels, which, as the ſecretions of the whole canal are inclined to fail, and the ſtomach and upper bowels do not diſcharge their contents ſo readily as they ought to do, ſhould be rather freer than in health. Different aperients ſuit different conſtitutions. For the purpoſe of ſupporting a regular action of the bowels, we recommend pills compoſed of ipecacuanha, compound extract of colocynth, and ſoap, with the addition of a little gamboge when they are not ſufficiently active, to be taken occaſionally at bed-time. But we abound ſo much in forms of aperient medicines, that it were waſting time to mention many of them in this place.

It is a common practice to give ſome form of mercury to patients labouring under indigeſtion; and, in conſequence of the ſtimulus this mineral exerts on the liver, its uſe is generally beneficial; but as a ſimple aperient it ſhould not be reſorted to, and that for two reaſons: the firſt, that it exerts a prejudicial influence on the ſecretion of the gaſtric juice; and ſecondly, becauſe it has the effect of often doing more than we require; as for inſtance, when it ſalivates (which it will ſometimes do in very ſmall quantities), or when it excites ſtructures undiſeaſed, and thus deſtroys the balance of action to the reſtoration of which our endeavours are oftenеſt directed.

The uſe of aperients alone is not however always ſufficient. The diſordered ſecretion of the ſtomach continuing, it becomes neceſſary to excite the ſecreting veſſels by artificial ſtimuli, for the purpoſe of altering their action on the blood, and cauſing them to elicit more appropriate fluids; as well as of exciting the muſcular fibres and the nervous expanſions to carry off their load. Among theſe, bitters hold the firſt rank. Thoſe in common uſe are—gentian, chamomile, bitter orange-peel, wormwood, columba, and bark. We are not of opinion that much difference exiſts in the merits of theſe various ſubſtances. Many practitioners uſe one or the other of them excluſively, and perhaps with nearly equal ſucceſs. It ſeems that the chamomile, orange-peel, gentian, and wormwood, are leſs inclined to promote the general circulation; and are therefore preferable when a plethoric ſtate of ſyſtem is obſervable. On the other hand, the caſcarilla, columba, and the Peruvian bark, exert a more general influence on the ſyſtem; and are therefore proper when, from the irritation of the nerves of the ſtomach, the cerebral maſs communicates too languid an impreſſion to the circulating ſyſtem.

It is generally found adviſeable to combine bitters and aperients. A formula conſiſting of ſix drachms of compound infuſion of gentian and of the ſame quantity of infuſion of ſenna is of this kind: it is generally found to promote all the proceſſes of digeſtion and abdominal excretion. The combination of ſalts with the ſame bitter infuſion is likewiſe a common and excellent formula.

It is often requiſite to adminiſter ſtimuli derived from the mineral kingdom. Of theſe the mineral acids, the preparations of iron, and the ſulphate of zinc, are in common uſe. Of the mineral acids, the ſulphuric is perhaps

haps the beſt in indigeſtion, and has this advantage over the other ſorts, that it operates more diſtinctly on another part affected in dyſpepſia, viz. the ſkin. It is peculiarly ſerviceable in thoſe caſes, where ſweating, which is not unuſual, is too eaſily induced by exerciſe; for much tendency to ſweating indicates relaxation, not vigour of the ſkin.

There are few caſes of indigeſtion in which iron is not found more or leſs uſeful at an early period, if no tendency to the ſecond ſtage of the diſeaſe has ſhown itſelf. Its good effects are increaſed by combining it with bitters and aromatics; and, in idiopathic indigeſtion, the carbonate has appeared to us its beſt preparation, provided it can be taken ſcruple-doſes, without producing a feeling of heat and oppreſſion in the ſtomach. In the opinion of many, the ſulphate of zinc given in very ſmall doſes, alſo holds a diſtinguiſhed place among theſe medicines. It may be given at later periods than iron, but it requires caution; and, if its good effects do not ſoon appear, ſhould be laid aſide. It is one of thoſe powerful agents, which muſt always be employed with ſome degree of ſuſpicion.

The medicines we have ſpoken of hitherto ſeem principally to exert their influence on the contractility of the muſcular fibre, or the capillary veſſels. But, as we have before ſeen that, however various may be the cauſes which act on the muſcular fibres of the ſtomach, or on its nerves; yet theſe powers are ſo connected, that whatever impairs the one neceſſarily affects the other; ſo we ſhall find that a ſimilar obſervation applies to the means of relief; that thoſe medicines which tend to reſtore a healthy nervous power to the ſtomach, tend likewiſe to form the food into that ſubſtance which is beſt fitted to excite the muſcular fibres of this organ; and that whatever excites the natural action of theſe fibres, tends to relieve the nerves from uneaſy impreſſions, and, in the moſt favourable way, to bring into contact with their extremities the food on which they are to operate through the intervention of the ſecreting veſſels.

There are ſome remedies which act peculiarly on the nervous ſyſtem of the ſtomach. Theſe are irritants, or thoſe which increaſe the production of the nervous power; and anodynes or narcotics, the effect of which is to dull the ſenſibility. The potent nature of the firſt claſs is ſhown by their exhilarating effects on the ſyſtem at large. It is thus that diſtilled ſpirits and aromatic tinctures produce ſo much alleviation from the uneaſy ſenſations of dyſpepſia. It is well known, however, that the meaſure of vigour which ſpirituous potations afford is generally followed by increaſed debility; and we ſhould therefore be cautious in the exhibition of them. They can be given with ſafety only under the following circumſtances; viz. when patients have ſo long indulged in their uſe, that we have to fear the increaſe of dyſpeptic ſymptoms from the ſudden relinquiſhment of the habitual ſtimulant, or when we have ſo far corrected the ſtate of the other viſcera and of the ſyſtem in general, that the ſtomach ſeems only to want ſome additional nervous excitement to call its natural action into full play. Even when exhibited with theſe intentions, it is beſt to give ſpirits only in conjunction with bitters, and in ſmall doſes. This rule does not of courſe apply to violent or ſpaſmodic paroxyſms of dyſpepſia, in which ſomewhat active doſes of diſtilled ſpirit are often admiſſible. When combined with bitters, the medicines of this claſs render the former medicaments more permanent in their effect; and indeed, the action of the latter ſeems often neceſſary to enable the ſtomach to bear the former without oppreſſion. The quantity of diſtilled ſpirits in ſuch mixtures ſhould always however be ſmall; a twelfth, at moſt an eighth, of the whole. In the exhibition of aromatics leſs nicety is required: the properties of all are ſimilar, though ſome ſuit the ſtomach and the taſte of individuals better than others. Thus ginger may be uſed when cardamoms ſtimulate the ſyſtem too much; and cardamoms will relieve flatulence and ſpaſmodic pains, when ginger fails.

Among the drugs which augment nervous ſenſibility, we have to mention ammonia. The operation of this ſubſtance is by no means ſimple. It accelerates the pulſe for ſome time after reception into the ſtomach, while it ſtimulates the contractile fibres of that viſcera, and is alſo a grateful and permanent ſtimulus to its nerves. It is well calculated to relieve thoſe patients in whom the force of the circulation is below par; provided, however, that no tenderneſs of the epigaſtrium, hard pulſe, or any ſenſation of burning in the hands or feet at night, is experienced; for the latter ſymptoms would undoubtedly be formidably augmented by its adminiſtration. Camphor poſſeſſes ſome of the properties of ammonia in a ſlighter degree. Its property of alleviating ſickneſs renders the miſtura camphoræ a good vehicle for other medicines.

We have recommended much caution in the uſe of irritants: the uſe of anodyne remedies demands perhaps ſtill more. The only medicine of this claſs which produces effects worth notice is opium. In violent ſpaſms this medicine may be given ſomewhat freely; but Dr. Philip ſays, that very ſmall doſes, two or three minums of tincture of opium for example, repeated two or three times a-day, often prove highly ſerviceable in allaying morbid irritation; their conſtipating effect is eaſily counteracted; and ſometimes indeed they have very little of this effect. A better mode of exhibiting opium is under the form of the Pulv. ipecac. comp. From two to four grains of this preparation, given every ſix or eight hours, appears to have a peculiar effect in allaying the irritation attending indigeſtion, which probably ariſes from its action on the ſkin. It appears to be beſt adapted to thoſe caſes in which that combination of languor and reſtleſſneſs, often ſo remarkable in this diſeaſe, prevails. It is better from time to time to diſcontinue and renew its uſe, than to exhibit it for a great length of time without interruption; which, even when the doſe is very ſmall, is apt to occaſion ſome confuſion or other uneaſineſs of the head; an effect which goes far to increaſe eventually all the dyſpeptic ſymptoms.

While theſe remedies are then in action, we ſtill have to contend with paroxyſms of pain and nervous irritation. To theſe, opium, ether, cardamoms, and the whole hoſt of antiſpaſmodics, are the uſual and effectual remedial agents. Among theſe means of temporary relief, very-warm water holds a higher place perhaps than is generally ſuppoſed. To its frequent uſe there are the ſame objections as to other powerful ſtimulants; but occaſionally it relieves dyſpepſia in a very deciſive manner. It deſerves mentioning, although it is difficult to explain it, that a conſiderable degree of heat applied externally to the region of the ſtomach is as effectual, provided it be continued for a ſufficient length of time, in removing cramp, as any application of heat we can make internally. It is alſo frequently relieved by heat applied to the feet. It is during this ſtage of dyſpepſia that galvaniſm is often advantageous; but in the uſe of this ſtimulant we muſt be careful to regulate it ſo that it may not excite inflammatory ſymptoms.

When the bowels become implicated in the diſeaſe of the ſtomach, a more briſk and continued ſtate of purging is required. To ſpaſmodic affections of thoſe parts the ſame ſpirituous remedies that relate to the gaſtric affection are applicable.

When, from the fullneſs of the right hypochondrium unattended by deficiency of bilious ſecretion, we have reaſon to ſuppoſe tardineſs of action in the duodenum, thoſe purgatives which excite the periſtaltic motions are preferable to all others. Of theſe, the combination of rhubarb and ſenna may be mentioned as one of the beſt. When, on the other hand, mucous ſecretions are apparent to exceſs in the fæces, the ſaline cathartics ſhould be employed.

ployed. We reſerve, however, further remarks on the due regulation of the bowels till we come to the next genus.

The functional derangement of the liver occurring as a conſequence of dyſpepſia, requires the particular treatment of the former complaints to be conjoined with that of the latter diſeaſe. The medicine beſt calculated to promote the ſecretion of bile is mercury. The different preparations of this mineral may be uſed according to the peculiar conſtitution of the patient. The moſt common are Abernethy's blue pill, Plummer's pill, and calomel. The firſt of theſe, given in doſes of four or five grains every ſecond or third night, as recommended by Mr. Abernethy, is particularly ſerviceable in thoſe caſes where the affection of the liver has ſupervened early, and where, conſequently, it is the principal cauſe which ſupports and aggravates the dyſpepſia. This pill diſagrees however with ſome conſtitutions. We do not allude to the tranſient ſenſation of pain which is felt in ſome ſtomachs for the firſt half-hour after its reception; but the more permanent ſenſations of the ſame kind that are ſometimes experienced. Calomel is perhaps, after all, the beſt kind of mercurial for the firſt ſtage of indigeſtion; and is chiefly applicable when irregularity of the ſecretion of bile is preſent. It alſo deſerves notice that calomel neceſſarily occaſions briſk purging, on which the benefit derived from it often greatly depends; ſo that, while, by its peculiar effect on the firſt paſſages, it excites a better action of the liver, by its purgative effect it tends further to emulge the gall-ducts, and relieve the diſtended ſtate of the liver. Its operation, then, is moſt wanted where this diſtention is greateſt, which may be known, we have ſeen, by the ſtate of the right hypochondrium, and will be leaſt injurious where the ſtrength is moſt able to bear ſo conſiderable a call upon it. When there is little diſtention of the liver, and the ſtrength is much reduced, the operation of the blue pill, provided it agrees tolerably well with the ſtomach, is preferable. The relief obtained from it may be leſs ſpeedy, but it will be obtained at leſs expenſe to the conſtitution. Inſtances frequently occur of the bad effects of not attending to this diſtinction. What is only a ſalutary evacuation in one caſe, is an overpowering cauſe of debility in another.

Plummer's pill often ſits well on the ſtomach when both of the former preparations of mercury fail. The proportion of antimony in its compoſition tends to cauſe its influence to be exerted on the ſkin as well as on the liver; and hence in the cure of cutaneous affections it is held in merited eſtimation.

As the effect of mercury is only required to be tranſient in the firſt ſtage of dyſpepſia, whatever form of the mercurial remedy we employ ſhould be carried off by an aperient, either given with it or at a proper interval afterwards. Of theſe alternatives, we ſhould (with the exception of peculiar caſes) incline to the latter; for it cannot be queſtioned, that much larger doſes are required to promote the hepatic ſecretion when combined with the dry purgatives, as colocynth, aloes, &c. and we have ſeen caſes where it failed entirely to produce ſuch effect. In the milder form of diſeaſe we are now ſpeaking of, a draught of ſalts and ſenna, taken in the morning after a mercurial pill the over night, will we think be found the leaſt painful or debilitating in its operation. When mercury occaſions much irritation of the bowels, its continued uſe brings on a degree of dyſentery. The patient is tormented with griping and teneſmus, and at length paſſes little beſides mucus, often mixed with a ſmall quantity of blood. In ſuch caſes, we muſt diſcontinue its uſe for a ſhort time; and when we find, as ſometimes happens in ſuch caſes, that on returning to it the ſame ſymptoms conſtantly recur, and cannot be prevented by changing the preparation, or the uſe of anodynes and mucilages, it muſt be entirely laid aſide.

Given under the above regulations, mercury is a very excellent remedy for the hepatic derangements of indigeſtion. Its indiſcriminate uſe undoubtedly does much harm; and there can be little doubt that various kinds of "antibilious pills" (as they are fooliſhly called), which are daily vended in great quantities, do upon the whole more harm than good. Indeed this muſt always be the caſe with patent medicines; no medicine can be energetic, unleſs it has the property of inducing derangement of ſome part; and therefore, if the production of a derangement from the natural ſtate be not properly directed, much miſchief muſt enſue. The indiſcriminate uſe of mercury in gaſtric complaints has called forth theſe remarks; and we wiſh particularly to repeat to our medical brethren a fact well eſtabliſhed by the teſtimony of the beſt authors; that mercury ſhould hold no place in the treatment of ſimple indigeſtion, while the ſecretion of bile is unchanged; and that, when that change has occurred, its cure ſhould be effected by the leaſt poſſible quantity of this potent mineral. As mercury ſometimes irritates the ſyſtem at a rate not balanced by its beneficial influence, it becomes neceſſary to ſearch for a ſubſtitute which may be employed inſtead of it. The combination of the nitric and muriatic acids, taken internally or uſed externally, as Dr. Scott firſt recommended, has appeared to us the moſt ſucceſsful. See NITRO-MURIATIC ACID, vol. xvii. p. 104.

With reſpect to the more diſtant affections ariſing from dyſpepſia, we have before ſhown, that, numerous as they are, they are for the moſt part the products of nervous irritation; hence depletion has little effect on them. When they are of that violent and uncontinued character which we have called, after Dr. Hall, the Mimoſis urgens, antiſpaſmodics, as muſk, valerian, ether, emetics, &c. are the remedies indicated in addition to the uſual dyſpeptic treatment. The ſame remark applies to the ſpaſmodic dyſpnœa, palpitatio cordis, &c. When more permanent effects ſeem induced, counter-irritants are of eſſential ſervice.

The affections of the *head* which occur in indigeſtion require more particular notice. We ſhould be particularly careful to keep the circulation rather below than above the uſual ſtandard in cerebral affections, becauſe of the formidable diſpoſition to inflammation which they frequently and ſuddenly aſſume. On this account, when the pulſe does not forbid it, and the cerebral is not relieved by the excitement of ſecretion in the gaſtric ſtructure, topical bleeding is the moſt adviſable ſtep. This ſhould be followed by the ſhower-bath, an agent at once exciting the ſkin and depleting the cranial circulation. This practice is uſeful in the ſtate of erethiſm which we before noticed as deſcribed by Dr. Nicholl. That author recommends the uſe of the pulv. ipecac. comp. but a ſpecimen of the diſeaſe we lately ſaw ſeemed increaſed in violence after each exhibition of the above medicine. On the whole, topical bleeding, a cooled ſtate of the external part of the head, the abſtraction of ſtrong light and of all irritating impreſſions from without, tolerably free purging, and the uſe of diuretics, are the beſt modes of treatment. In all head-affections, free diſcharges from the inteſtines and bladder are ſtrongly required. In the head-ache of the firſt ſtage, emetics give temporary relief; but particular care is required to note the diagnoſtics, as ſtupor, or throbbing of the temples, which tend to ſhow eſtabliſhed diſeaſe in the head. When this occurs, or indeed when inflammation is ſet up in any ſtructure, the uſual treatment of the *phlogotica* muſt be combined with that in queſtion.

The connexion between the functions of the ſkin and alimentary canal has been often adverted to. The former ſtructure affords an excellent mean for relieving the diſorders of the latter. Thus the medicated bath recommended by Scott is a more powerful agent in improving the ſecretion of the ſtomach, liver, and bowels, than the internal uſe of the acid. But the chief meaſure acting on the ſkin is the bath. Cold bathing is an old remedy in indigeſtion. It is ſeldom ſafe, however, in nervous or debilitated ſubjects. Where its uſe can be borne, a ſhort

plunge

plunge is the beſt mode of applying it; and much care ſhould be taken that perfect dryneſs, and indeed re-action, of the ſkin, be produced, by rubbing with dry cloths. In ſome caſes ſponging only, followed by the ſame friction, is the furtheſt attempt at cold bathing which the delicacy of our patients' conſtitutions will allow us to make. The warm bath does not require the ſame limitation; and it deſerves in our opinion more conſideration than it generally obtains. A gentleman of much experience, Dr. J. Johnſon, is of the ſame opinion; he obſerves that, if the general uſe of the warm bath ſhould ever become prevalent in this country, it will produce a more beneficial revolution on the health and longevity of the inhabitants, than any change which the hand of time has ever wrought; and that, ſo far from weakening or enervating the conſtitution, it has a decidedly contrary effect; and therefore, in debilitated ſubjects, it is infinitely more proper and ſafe than the cold bath. Indeed the good effects of the latter reſult from the re-action of the ſyſtem; but, as this re-action is entirely an effort of the conſtitution itſelf, to reſiſt as it were, or undo, what the cold immerſion had produced, a conſiderable degree of vital energy is neceſſary; otherwiſe ſome internal viſcus may ſuffer. On the contrary, ſays Dr. J. the warm bath elicits the blood to the ſurface of the body, with hardly any of that re-action obſerved after the cold bath. The whole contaneous ſyſtem of veſſels is thus filled with blood, while the veſſels of the interior organs are relieved, and that without any particular exertion of the heart which might render it liable to ſubſequent exhauſtion. The ſpirits too are raiſed, the pulſe mended, and the appetite increaſed; in ſhort, a general renovation is felt throughout the whole frame; an effect more remarkably obſerved after exhauſtion or fatigue. The oriental nations have long appreciated its virtues in this reſpect. Homer deſcribes Ulyſſes, among others, as refreſhing himſelf with the warm bath, on his return home; and the numerous and ſplendid baths, by the building of which the Roman emperors gained ſo much popularity, will ſhow that this comfort, or luxury, was no leſs eſteemed in the weſt.

The warm bath will by no means be an effectual remedy in dyſpepſia, unleſs the immerſion in it be of much longer continuance than is uſual in this country. Dr. Thomas, a practitioner who has ſpent ſome time abroad, informs us, that "upon the continent, where ſo much good is produced by this powerful remedy, no one thinks of recommending a patient to ſtay leſs than an hour in the warm bath; and at Uſſat, where ſo many cures have been effected by means of the bath, and by ſuch means *only*, I have known many weakly delicate patients take two baths of one hour each every day for three weeks without intermiſſion; and I have no doubt in my mind, and the ſame conviction pervades medical men in general in France, that it is owing to this manner of taking the warm mineral baths, that ſo much good is effected by that remedy; and, by parity of reaſoning, I may ſay, that little good is obtained from them in this country, becauſe there is not ſufficient time allowed for bathing."

The vapour-bath is alſo a remedy of great efficacy in the complaint in queſtion.

The diſeaſes for which the warm bath may be employed, are much more numerous than thoſe where the cold bath can be exhibited with ſafety. And in fact it may be uſed on moſt occaſions without premiſing the accurate diſcrimination required ere we adopt the critical meaſure of cold bathing. See the article BATHING, vol. ii. p. 803.

On the treatment of the *ſecond ſtage* of indigeſtion, we have ſeen that, after a certain period, a change takes place in the nature of dyſpepſia; that a diſordered ſtate of the circulating veſſels of the ſtomach ſupervenes to ſuſpenſion of nervous influence and of muſcular propulſion; that this change happens at various periods, ſometimes in a few days or weeks, but that not unfrequently it is not manifeſted for many months, more rarely for years; that this ſtate is characterized by a change in the phenomena of the circulating ſyſtem, indicated by a hard pulſe; and that there is likewiſe pain in the ſtomach. We conſider theſe ſymptoms as indicating chronic inflammation of the ſtomach; and we may remark, that this opinion is borne out by analogical reaſoning on what takes place in other parts, and by the diſſections of the more marked caſes which are recorded by foreign practitioners. We have therefore to reduce inflammation; and of courſe the ſtimulating meaſures which we have uſed in the firſt ſtage of indigeſtion are to be laid aſide; but, in adopting the oppoſite or antiphlogiſtic treatment, we muſt conſider that the ſtomach is the ſeat of complex functions; and that, though inflammation has ſupervened, nervous derangement and muſcular inaction ſtill remain. Moreover, the periodical action of the ſtomach, and its conſtant expoſure to irritants, render general or ſudden depletion of the contents of its veſſels of little avail, ſince, however the latter may be depleted, and however perfectly they may recover their natural diameter, the frequent ſtimulus of foreign ſubſtances will tend to reproduce the morbid ſtate of vaſcular fullneſs. The impeded nutrition which is preſent cauſes a debility of the ſyſtem quite obnoxious to vaſcular depletion. The treatment of this ſtage of dyſpepſia requires therefore particular attention, inaſmuch as we have to reduce inflammation by one train of proceſſes, and produce muſcular and nervous action by another. As theſe are incompatible indications, the leſs muſt give away to the more important; that is to ſay, we muſt reduce the inflammatory action firſt, and conſider the muſcular and nervous debility afterwards. The former intention muſt be effected by applying leeches to the epigaſtrium, by cooling applications, as effervеſcing draughts and ſolutions of nitre, cold water, &c. and by a very abſtemious vegetable diet. When theſe meaſures are ſucceſsful, we may cautiouſly return to the uſe of bitters, &c. and thereby endeavour to remove the cauſes, i. e. morbid diſtention and diminiſhed nervous power, which have produced the diſeaſe in queſtion. When the inflammatory ſtate has not continued long, and has not appeared till the nervous indigeſtion has been of long ſtanding, we generally prognoſticate its removal by the above-mentioned means with certainty; but, in proportion as it becomes more thoroughly eſtabliſhed, we ſhall find leſs marked relief from the bleeding, and a much more aggravated and ſudden return to inflammation when we attempt to ſtimulate by bitters.

It is at this period of indigeſtion that ipecacuanha is an excellent remedy. The effect of this ſubſtance is to produce ſecretion from the ſtomach, though, it muſt be allowed, not that which is commonly called the gaſtric juice; the nature of that fluid, or at leaſt its peculiar effect on the nervous expanſion, being altered. That ſecretion is an excellent means of removing local plethora is well known; and hence appears the advantage we derive from this drug. In regard to its doſe, we ſhould give as much as induces ſecretion without cauſing nauſea, a phenomenon which tends to debilitate the muſcular fibres of the ſtomach. A grain and a half, two, or in ſome caſes three, grains will be ſufficient. It is neceſſary, however, to produce ſecretion from a more extenſive ſurface than the ſtomach itſelf: the bowels ſhould be kept in an open ſtate, and the hepatic ſecretions ſhould likewiſe be promoted. In taking the firſt ſtep, we ſhould employ thoſe purgatives which produce the leaſt pain or irritation in their operation. Vegetable diet, which we have before ſpoken in commendation of, will in many caſes relax the bowels; but, where this effect is not produced, aperients muſt be given. They ſhould be of a mixed kind; they ſhould comprehend many ingredients of this numerous claſs, avoiding however ſuch as produce nervous irritation. We have commonly recommended, when it is ſufficiently active, the Confectio ſennæ; but many other formula will no doubt anſwer the purpoſe equally well. Of courſe, when one part of the bowels is more ſlug-

giſh than another, we ſhould endeavour to excite it by purgatives which act ſomewhat excluſively on it; as, for inſtance, rather more rhubarb muſt be adminiſtered when the duodenum ſeems inactive, &c. The number of motions muſt be ſomewhat regulated by the ſtrength, &c. but three in the courſe of the day will ſeldom be too many.

We have noticed, that, when the firſt ſtage of indigeſtion has continued for ſome time, the function of the liver becomes diſordered. A greater or leſs tendency to diſorder in this organ, after it once appears, always continues throughout the diſeaſe, ſo that it is a conſtant attendant on the ſecond ſtage; and thoſe medicines which influence the ſecretion of this organ, therefore, always form part of its treatment. Of theſe we ſtill find mercury by far the moſt efficacious. Several circumſtances, however, render caution, in the uſe of this medicine, even more neceſſary in the ſecond than in the firſt ſtage. Not only has the greater continuance of the diſeaſe occaſioned a greater loſs of ſtrength; but its increaſe, and the change which has taken place in its nature, renders it neceſſary to employ this medicine for a longer time, and often in a way that more directly influences the ſtate of the conſtitution.

In the firſt ſtage, as we have ſeen, we want only the tranſient effects of this medicine on the liver. On the other hand, we now want to induce a more permanent change in the diſeaſed ſtate of that viſcus, and rather to reſtore the altered properties of its ſecreting veſſels than ſimply to increaſe their action for the ſake of removing plethora. It has been lately recommended, with this view, to give mercury in very-minute and ſomewhat-frequent doſes. Dr. Philip ſays that he has "generally given a grain of the blue pill, ſometimes only half a grain, twice or three times in twenty-four hours, till the ſecretion of bile appeared to be healthy, repeating theſe doſes when it was again diſordered; and by ſuch doſes, which may appear to many little better than trifling, I have ſeen the bile gradually reſtored to a healthy ſtate, when larger doſes had been employed in vain. They not only often ſucceed where larger doſes fail, but the change, in proportion as it takes place more ſlowly, ſeems generally to be more permanent." We may add, that, in the ſecond ſtage of indigeſtion, violent action of the abdominal viſcera ſtrongly tends to deſtroy their tone; and this forms another reaſon againſt employing large doſes of mercury, ſince, by their action on the ſecreting ſurfaces, they promote ſudden and debilitating evacuations; an effect very unfavourable in the weak ſtate of the conſtitution which attends this ſtage.

By the above practice we avoid the occaſional ill effects of mercury in a great degree, though ſome practitioners of diſtinction conceive it to be ſomewhat inert. Our own experience, however, is in favour of it; and in Dr. Hall's writings caſes are mentioned in which the like diminutive doſes of this medicine produced favourable reſults.

Much latitude will be allowed, however, in the uſe of mercury, ſince the difference of climate or of conſtitution renders a doſe in ſome caſes too-powerful, in others perfectly nugatory. There can be no doubt, for inſtance, that in hot climates a much larger proportion may be given of this medicine than in temperate; and the various degrees of ſuſceptibility to its action, which different individuals exhibit, are equally well known and unaccountable.

When mercury diſagrees with the bowels, conium, hyoſciamus, or extract. papaveris, may be conjoined with it; or we may have recourſe to the nitro-muriatic-acid bath as a ſubſtitute. The latter remedy is indeed ſometimes of uſe during the intervals of uſing mercury; but it too often happens that the cathartic tendency of the mercury is increaſed by the acid. The bath muſt not be uſed during the inflammatory ſtate of the ſtomach, but may be very advantageouſly preſcribed when local bloodletting has been premiſed. The degree of action which the nitro-muriatic-acid has to exert on the conſtitution is regulated by the ſtrength of the health, and by the extent of the cutaneous ſurface immerſed, a hand or a foot being firſt bathed; and, if its effects are borne well, by degrees the reſt of the body up to the chin. See vol. xvii. p. 106.

Dr. Philip has recommended dandelion to be uſed as a ſubſtitute for mercury in dyſpepſia. He ſays that "it appears to poſſeſs greater powers in this diſeaſe than are uſually aſcribed to it, but it requires to be taken in very large doſes. It is beſt adapted to thoſe caſes, in which the bile is deficient or much diſordered, while the power of the ſtomach is ſtill conſiderable. In ſuch caſes, I have ſeen the patient reſtored by a ſtrong decoction of dandelion uſed for common drink, without the aid of any other medicine. In addition to its effect on the liver, it tends to cool, and conſequently allay the inflammatory diatheſis, and often excites both the bowels and kidneys. The latter effect, which is beſt counteracted by alum, when the ſtomach bears it well, is frequently ſuch as to make it neceſſary to diſcontinue the dandelion. The former is ſeldom conſiderable, and can always be reſtrained. It is often given with great advantage in aid of the ſmall doſes of mercury when the ſtomach bears it well, and enables us further to diminiſh the quantity of this medicine."

The functional derangements which occur as remote conſequences of dyſpepſia, are to be cured only by removing the original diſeaſe. The topical inflammations require additional remedies; for we have before noticed that, when of long ſtanding, they often act as counter-irritants to the gaſtric diſturbance. The liver, lungs, ſpleen, and heart, are moſt liable to this affection; and are all to be treated on theſe principles; viz. to withdraw nervous irritation by counter-ſtimulation, to bleed locally or generally according to the frequency and hardneſs of the pulſe, and procure ſecretions from the abdominal viſcera, and from the ſkin, by the warm bath.

The ſame rules apply to the treatment of the head-affections. Here the ſympathy between the external and internal parts allows the additional uſe of cold lotions to diminiſh the action of the veſſels of the head: a ſimple meaſure, but one of great efficacy. The erect poſture, or at leaſt a near approach to it, ſhould likewiſe be inſiſted on; and a more active kind of purging than in the derangements of the abdominal viſcera. The erethiſmal ſtate of the brain ſhould be treated with continued counter-irritation, and with much aſſiduity; ſince, when once it has apoplexy, this latter calamity is generally fatal, and appears uninfluenced by bleeding or any other known means of relief.

In the gouty and rheumatic affections of this ſtage of indigeſtion, in addition to the uſual means, the Colchicum is by no means a deſpicable remedy. Indeed, where this drug agrees, it ſeems to reduce both the arthritic and the gaſtric inflammation at the ſame time. The uſe of an anodyne liniment likewiſe affords temporary relief to the rheumatic pains.

When the inflamed ſtate of the mucous membrane has been communicated to the bowels, and piles, ſtricture, or tenderneſs along the courſe of the cœcum, are preſent, the moſt efficient method of relief is *anal leeching*. This practice has not obtained in our country the attention it deſerves, though the great benefit our continental neighbours derive from it, ſhould have taught us its common uſe long ere this time. We find ſome prejudice oppoſed to it; but, if properly conducted, it is by no means unpleaſant or indelicate. The leeches may be applied to the fundament by means of a glaſs formed like an eye-glaſs, but of larger dimenſions; and, after they have laid hold, the patient ſhould ſit over a bidet, and by the warm vapour or by ablution promote the diſcharge of blood. We have found this method more ſucceſsful than even leeching over the epigaſtrium, where tenderneſs of the part is preſent; and it has this further advantage, that, from the nature of the ſanguineous diſtribution, it directly depletes the whole abdominal viſcera.

Pain

Pain in the courſe of the colon is often relieved by friction with a liniment, by ſuppoſitories and clyſters. Before leeching has been uſed, the inflammatory ſtate of the bowels is rather increaſed than relieved by cathartics; and, after it, thoſe only of the mildeſt nature ſhould be had recourſe to.

The ſubjects of mælena, diarrhœa, &c. which would naturally follow here, muſt be deferred till our noſological arrangement brings them before us.

When inflammation of the mucous membrane of the lungs is connected with Dyſpepſia, we have a very powerful agent in the *hydrocyanic acid*. This remedy has indeed been preſcribed with ſucceſs by Dr. Elliotſon for the relief of all dyſpeptic ſymptoms dependent on diſturbed nervous power; but we have not introduced it into our liſt, as we have not been able to collect, from mere general experience, the like favourable teſtimony of its virtues; and it is ſo potent a drug, that we would not hazard its occaſional deleterious effects, ſince the correction of the firſt ſtage of dyſpepſia may generally be accompliſhed by milder meaſures. In the removal, however, of bronchitis, this acid muſt be regarded as an important agent, and one which at the ſame time perhaps relieves the original ſource of diſeaſe. It is given in the doſe of half a minim at firſt, and this is gradually extended in proportion to the effect obſerved from it. Of courſe this complaint requires more ſtrict attention to the purity of air, the regulation of temperature, and the perſpiration of the ſkin, than other forms of the dyſpeptic ſympathies. It is generally accompanied with hepatic derangement; and on this account is uſefully treated by ſmall doſes of calomel, perſevered in until a healthy bilious diſcharge is ſeen in the ſtools.

The cachectic diſeaſes of indigeſtion require in general a very remarkable change in the diet of the invalid; nor does it ſeem that we need in theſe caſes ſo particularly regard the ſpecies of change, ſince an *alteration* of whatever kind is generally found uſeful: thus, a meat-diet will produce a cachectic ſtate of blood in ſome, as a vegetable diet will in others; and a *change* is in either caſe clearly indicated, both by reaſon and experience. We ſhall take up this ſubject under the head Dyſthetica.

The chlorotic indigeſtion mentioned at p. 139, requires in general a more generous diet and more active exerciſe; and as, in females, the uterus is often implicated in the diſeaſe, ſteel, aloes, &c. are appropriate remedies.

The connection between urinary gravel and indigeſtion does not lead to any difference in the uſual plan of cure; ſince, from whatever cauſe gravel may ariſe, it will require a peculiar treatment. It is worthy of remark, however, that beer, eſpecially if ſtale, will cauſe the depoſition of ſabulous matter; while ſpirits, eſpecially alcohol, diminiſhes this tendency in a remarkable degree. Theſe facts are of courſe of moment in relieving the ſymptoms in queſtion.

In the uſe of all theſe meaſures, and in their application to the various forms of dyſpeptic derangement, the practitioner ſhould endeavour ſo to conjoin them, and adopt their uſe to the idioſyncraſy of his patient's conſtitution, that he may not materially diſturb the balance of power in the various parts of the ſyſtem; but the uſe of remedies will ſeldom avail much, if the primary and fundamental ſources of the diſeaſes in queſtion, viz. bad air, improper or exceſſive quantity of food, and ſympathetic irritations, be not removed.

Genus VI. *Colica*, [from κωλον, the colon; this part being the chief ſeat of the diſeaſe.] Griping of the guts.

This genus contains ſix ſpecies. It is characterized by griping pain in the bowels, chiefly about the navel, with vomiting and coſtiveneſs. The cauſes of the complaint are local irritants, whether undigeſted aliment, poiſon, or crude ſecretions of the upper parts of the alimentary canal. Or it may, and indeed moſt commonly does, ariſe from ſympathy with a remote part; perhaps more frequently with the ſkin. Seven ſpecies are enumerated by Dr. Good, and Cullen mentions more; but the proximate cauſe of all theſe appears to be the ſame; viz. ſpaſmodic contractions of the muſcular fibres of the inteſtines.

1. Colica ileus, (Colica ſpaſmodica, *Cullen.*) Characterized by retraction of the navel, and ſpaſms of the muſcles of the belly. It begins with a ſenſe of weight or pain, at the pit of the ſtomach, attended with loſs of appetite, yellowneſs in the countenance, a ſlight ſickneſs, and coſtiveneſs; the pain gradually increaſes, becomes fixed about the navel, from whence painful dartings proceed in various directions; wherever pain is felt, ſoreneſs and tenderneſs remain ſome time afterwards. The ſickneſs increaſes with the pain; and, at length, a vomiting of bilious matter comes on, the function being of courſe deranged by the diſeaſe of the inteſtines. The urine is diminiſhed in its uſual quantity, and a teneſmus ſometimes adds to the diſtreſs. While the pain is ſpaſmodic, the pulſe remains unaffected, except concurring circumſtances produce a change in it. The urine is various. If the ſmaller inteſtines are the ſeat of the pain, it is felt more acutely; if the larger inteſtines are the parts aggrieved, the ſenſe of pain are more dull and heavy; ſometimes there is a bitter taſte in the mouth, and a yellowneſs in the countenance. Sometimes the diſorder ſimulates a fit of the gravel; ſtones paſſing through the ureters; rheumatic pains in the muſcles of the belly; the blind piles; ſtones paſſing through the gall-duct. Gravel in the kidney produces often colic-pains, not eaſily diſtinguiſhable; but, when ſtones paſs through the ureters, the teſticle on that ſide is often retracted, the leg is benumbed, and a pain ſhoots down the inſide of the thigh. Rheumatic pains in the muſcles of the belly rarely affect ſo accurately the umbilical region, but dart, in various directions, to the cheſt or to the pelvis, and are attended with ſoreneſs, not confined to the abdomen. The pain from the blind piles is confined to the rectum; and that from a ſtone in the gall-duct is felt in the pit of the ſtomach, occaſionally ſhooting through the body to the back.

When the diſorder is purely ſpaſmodic, the mere alleviation of the ſpaſm is ſufficiently obvious. Ether, valerian, ammonia, opium, &c. being premiſed, means are to be put in force for procuring ſtools. Therefore, either ſoon after or in conjunction with an opiate, ſome cathartic medicine ſhould be adminiſtered, either by the mouth or in a clyſter. If the conſtipation has been but of ſhort duration, the neutral ſalts will generally be adequate to the purpoſe of procuring evacuations; ſuch as the magneſiæ ſulphas, for inſtance, or the ſodæ ſulphas: both have the advantage of being conveniently repeated at ſhort intervals, in ſmall quantities, until the deſired effect is produced; and their action is increaſed by their union. Caſtor-oil, a mild and tolerably-certain purgative, is the beſt medicine we know of. Indeed moſt painters who are aware of the utility of caſtor-oil eſcape the attack of this malady, to which (as well as to the next ſpecies) they are very ſubject, by taking a large doſe as ſoon as they perceive the ſlighteſt ſymptoms of the diſeaſe. Where ſickneſs is preſent, if more active means are required, calomel, combined with jalap and rhubarb, may be employed. Moreover, remedies may be applied immediately to the part affected, by means of clyſters. Large quantities of warm water (to the extent of ſome pounds), injected by a proper ſyringe, have frequently had the effect of removing the pain and ſpaſmodic ſtricture of the colon, partly by the ſoothing effects of the warmth, and partly by mechanical dilatation. Opium may alſo be adminiſtered in the ſame menſtruum, combined with neutral ſalts, with conſiderable advantage. Theſe emollient clyſters act alſo powerfully in aid of laxative medicines taken by the mouth, particularly where the latter are impeded in their operation by a collection of indurated fæces; for, while the periſtaltic motion of the bowels is rouſed by the laxatives

laxatives in the upper part of the canal, the obſtruction is mechanically loofened, in the lower part, by the clyſter. A ſolution of aſſafœtida, alſo, adminiſtered in this way, tends both to relieve the pain by its antiſpaſmodic qualities, and alſo to ſtimulate the lower bowel to evacuation. But, where there is very obſtinate conſtipation, a clyſter of more efficacy is one made of turpentine, properly ſuſpended in water by means of mucilage or the yolk of an egg. In caſes where every purgative medicine has failed, and the moſt powerful clyſters have proved ineffectual, the action of the bowels may be excited by throwing cold water on the lower extremities. When inflammation does not ſeem likely to occur, and powerful cathartics are required, the oil of croton will be found a remedy of great avail.

It is of much importance, however, to diſtinguiſh ſpaſm from inflammation of the colon, with which it is ſometimes connected, and into which it is likely to run. In fact, this always happens before a fatal termination takes place.

The former is thus diſtinguiſhed from the latter affection. The ſymptoms, which imply the ſpaſmodic ſtate, are a ſoft pulſe of natural or of little-increaſed frequency; the pain intermitting occaſionally, or moving from one part to another, and being relieved, or at leaſt not increaſed, by external preſſure, and the occurrence of fæculent evacuations, though the latter circumſtance is ſeldom to be relied on. The ſymptoms, on the contrary, which lead to a ſuſpicion of inflammation, are, unremitting ſeverity of pain, obſtinate conſtipation, tenſion of the abdomen, and an aggravation of the pain by preſſure; a very-frequent ſmall and hard pulſe; the ſkin being hot and dry, or partially moiſt with clammy ſweats; frequent retching, with a dry brown tongue, hiccup; and, above all, pain in the head, or diſturbance of the cerebral functions.

Where inflammation is threatened, recourſe ſhould be immediately had to the lancet, and a free bleeding from the arm, from a large orifice, ſhould be effected. In plethoric habits, this operation may require to be repeated, if the pain ſhould not remit, and the pulſe ſhould remain hard and frequent, and if the blood drawn ſhould exhibit the buffy coat or contraction of the coagulum. Where the ſymptoms of inflammation are leſs violent, leeches to the abdomen, the warm bath, fomentations, or a bliſter, may be applied. In ſtrong habits, indeed, if the pain has been of conſiderable duration, inflammation is always much to be apprehended; and a moderate veneſection may be beneficially employed in anticipating its actual attack. The tobacco-clyſter is likewiſe uſeful in violent caſes; but the dreadful effects this agent is capable of producing ſhould render us very cautious in the uſe of it. Of courſe, opium, an excellent remedy in the ſpaſmodic colic, ſhould be entirely proſcribed in this.

In the aggravated form of this attack, a ſymptom ariſes which gives name to the diſeaſe; namely, the ſtercoraceous vomiting, or *iliac paſſion*. In it the periſtaltic motions of the inteſtines are totally inverted, and all their contents, even clyſters, will be vomited; a circumſtance always to be accounted highly dangerous; but, if the paſſage through the inteſtines be free, even though their periſtaltic motion ſhould be inverted, there is much more hope of a cure than when the belly is obſtinately coſtive, and there is ſome fixed obſtruction which ſeems to bid defiance to cathartic remedies.

Introſuſception, ulceration, mortification, &c. are the ultimate conſequences of the inflammatory proceſs; occurrences for the moſt part fatal, or at leaſt only deriving aſſiſtance from ſurgical operations.

A very ſevere kind of colic is produced by the poiſon of lead. It is our next ſpecies; viz.

2. Colica rachialgia, (C. Pictonum, *Cull.*) The colic of Poitou; otherwiſe called the painter's or Devonſhire colic. In this diſeaſe the pain is at firſt dull and remitting; but progreſſively growing more violent and continued; extending to the back and arms, and at laſt producing paralyſis. We copy the following more detailed account of its ſymptoms from the Encyclopædia Britannica. "The patient is generally firſt ſeized with an acute pain at the pit of the ſtomach, which extends itſelf down with griping pains to the bowels. Soon after there is a diſtenſion, as with wind; and frequent retchings to vomit, without bringing up any thing but ſmall quantities of bile and phlegm. An obſtinate coſtiveneſs follows, yet ſometimes attended with a teneſmus, and the bowels ſeem to the patient as if they were drawn up towards the back; at other times they are drawn into hard lumps, or hard rolls, which are plainly perceptible to the hand on the belly. Sometimes the coats of the inteſtines ſeem to be drawn up from the anus, and down from the pylorus, towards the navel. When a ſtool is procured by artificial means, as clyſters, &c. the feces appear in little hard knots like ſheep's dung, called *ſcybala*, and are in ſmall quantity. There is, however, uſually an obſtinate coſtiveneſs; the urine is diſcharged in ſmall quantity, frequently with pain and much difficulty. The pulſe is generally low, though ſometimes a little quickened by the violence of the pain; but inflammatory ſymptoms very ſeldom occur. The extremities are often cold; and ſometimes the violence of the pain cauſes cold clammy ſweats and fainting. The mind is generally much affected, and the ſpirits are ſunk. The diſeaſe is often tedious, eſpecially if improperly treated, inſomuch that the patient will continue in this miſerable ſtate for twenty or thirty days ſucceſſively; nay, inſtances have been known of its continuing for ſix months. In this caſe the pains at laſt become almoſt intolerable: the patient's breath acquires a ſtrong fetid ſmell like excrement, from a retention of the fæces, and an abſorption of the putrid effluvia from them by the lacteals. At laſt, when the pain in the bowels begins to abate, a pain comes on in the ſhoulder-joints and adjoining muſcles, with an unuſual ſenſation and tingling along the ſpinal marrow. This ſoon extends itſelf from thence to the nerves of the arms and legs, which become weak; and that weakneſs increaſes till the extreme parts become paralytic, with a total loſs of motion, though a benumbed ſenſation often remains. Sometimes, by a ſudden metaſtaſis, the brain becomes affected, a ſtupor and delirium come on, and the nervous ſyſtem is irritated to ſuch a degree as to produce general convulſions, which are frequently followed by death. At other times, the periſtaltic motion of the inteſtines is inverted, and a true iliac paſſion is produced, which alſo proves fatal in a ſhort time. Sometimes the paralytic affection of the extremities goes off, and the pain of the bowels returns with its former violence; and, on the ceſſation of the pain in the inteſtines, the extremities again become paralytic; and thus the pain and palſy will alternate for a very long time."

The cure of this dreadful diſorder is to be effected by removing the ſpaſmodic conſtriction of the inteſtinal canal. In this form of colic there appears to be little diſpoſition to inflammatory action; and therefore, wherever colic can be decidedly traced to the operation of lead, we ſhould adminiſter a large doſe of opium, and repeat it at ſhort intervals, until the pain (and of courſe the ſpaſmodic ſtricture) is relieved. When this effect has been produced, we may proceed to excite the action of the bowels, and procure proper evacuations of fæces; after which, the cure is ſoon completed by tonics and cordials. This practice of firſt relieving the pain and conſtriction by opiates, before the bowels are attempted to be forced by purgative medicines, was ſtrongly recommended by Dr. Warren, (Med. Tranſact. vol. ii.) and was alſo employed by Dr. Darwin, (Zoonomia, vol. ii.) As aſſiſting the antiſpaſmodic operation of opiates, the warm-bath, fomentations, &c. ſhould likewiſe be reſorted to.

Of the palſy which ſucceeds to Colica pictonum there ſeems to be a tendency in the conſtitution, eſpecially in recent caſes, to recover itſelf, if the exciting cauſe is avoided;

avoided; and this may be aided by the local ſtimulus of warm water, friction, &c. and by mechanical ſupport to the paralyzed hands. Dr. Pemberton has recommended that, for this latter purpoſe, the patient ſhould have his hands and fingers extended upon a ſort of battledore, tied to the fore-arm, which ſhould be worn daily. He affirms that, in ſeveral inſtances, a perfect cure of the paralyſis from lead has been effected in the courſe of a few weeks. (Treatiſe on Diſ. of the abdominal Viſcera.)

Some varieties are mentioned as ariſing from other cauſes than the poiſon of lead; but it does not ſeem that this peculiar form of colic called rachialgia, and attended with paralyſis, is produced by any other materia. It has indeed been ſuppoſed, from its prevalence in cider-countries, that acid ingeſta might produce it; but this occurrence ſeems to have ariſen from the frequent employment of lead in the machinery of cider-making. The reader will find this opinion very clearly proved by conſulting ſir George Baker's papers in the Medical Tranſ. vol. iii. Dr. Hunter, ibid. Dr. Fothergill, Med. Obſ. and Enq. vol. v. Indeed the pain ariſing from acid ingeſta is generally with teneſmus and relaxation rather than with conſtipation.

Alum has been ſtrongly recommended in rachialgia. The modus operandi of this drug ſeems obſcure; but it deſerves mentioning from the reſpectability of thoſe who introduced it. The ſame thing may be ſaid of the Cupri Sulphas. Salivation, percuſſion, electricity, &c. may all be uſed with benefit in this kind of palſy; but they will ſeldom be ſucceſsful if, as is generally the caſe, the attack of colic ſhall have left behind hindrance of the gaſtric and inteſtinal functions. It is in caſes when the latter circumſtance happens that the Bath water is a uſeful remedy.

It is obvious that the return of Colica pictonum, and of the palſy which ſucceeds it, can only be effectually prevented by relinquiſhing thoſe avocations which neceſſarily expoſe the patient to the influence of the poiſonous metal which excites the diſeaſe; or by refraining from thoſe liquors with which any of its preparations are intermixed. When the buſineſs of the patient precludes this, much good may be derived from purgatives whenever conſtipation has continued for a whole day.

When colics ariſe from acrid poiſonous matter taken into the ſtomach, the only cure is either to evacuate the poiſon itſelf by vomiting, or to ſwallow ſome other ſubſtance which may decompound it, and thus render it inactive. The moſt common and dangerous ſubſtances of this kind are corroſive mercury and arſenic. The former is eaſily decompounded by alkaline ſalts; the latter by magneſia in large quantities. Some kinds of fungi, when ſwallowed, are apt to produce colics attended with ſtupor, delirium, and convulſions; and the ſame ſometimes happens from eating a ſhell-fiſh known by the name of muſcles. The effect of the latter is removed by vomiting. See the article Poison.

3. Colica crapuloſa, (C. accidentalis, C. meconialis, *Cull.*) Colic from indigeſtion. The pain accompanied with nauſea, head-ache, and dizzineſs, before vomiting, and often terminating in a griping looſeneſs. It is produced by eating indigeſtible aliments, or digeſtible aliments in too great abundance. In this ſpecies the vomiting or looſeneſs, or both together, frequently operate a cure. When they do not, we may, following the natural indications, excite ſickneſs and purging.

4. Colica flatulenta, wind-colic. In this ſpecies, the pain is acute, extending to the pit of the ſtomach, often impeding reſpiration; accompanied with great fulneſs and flatulency; and relieved by preſſure, bending the body forward, or expulſion of wind. The diſorder is produced by crude and flatulent fruits, and hence common among children. It is, however, more generally a ſymptom of dyſpepſia, and hence the cure is obvious. The paroxyſm is to be relieved by antiſpaſmodics and opium; the cauſes removed if poſſible, and the bowels kept open.

A ſimilar treatment is requiſite in the next ſpecies, with this reſtriction, however, that it is ſo often connected with general diſturbance of the nervous and vaſcular ſyſtems, that opium ſhould be leſs freely given, and ſuppurations and clyſters uſed in preference to irritating purges.

5. Colica ſtipata is characterized by ſevere pain, obſtinate coſtiveneſs, great tenſion, with little flatulency: the vomiting is ſometimes accompanied with fæces; the coſtiveneſs, with bloody ſtrainings: it terminates, where not fatal, in a free dejection of the infarcted matter. Dr. Good gives three varieties.

α. *A viſcido meconio*, from viſcid meconium. Colica meconialis, *Sauv. Cull.*

β. *A fæcibus induratis*, from indurated fæces. C. ſtercorea, *Cull.*

γ. *Ab enterolitho*, from inteſtinal concretions. C. calculoſa, *Cull.* Ileus calculoſus, *Sauv.*—The early volumes of the Phil. Tranſ. contain ſome very extraordinary caſes of this kind. The moſt ſingular is in No. 3. p. 68. anno 1681. continued in No. 181. p. 94. anno 1686. by Dr. Konig, of Bern. The patient, Margaret Lower, a young woman of twenty-five, diſcharged continually the contents of the inteſtines, and even the clyſters that were injected, by the mouth, and at length a number of ſtones as hard as flint, ſome in fragments, ſome of the ſize of peaſe, others of that of filberts. A claſhing of ſtones againſt each other was felt by preſſing the hand upon the abdomen: there was great conſtipation, ſevere gripings, dyſury; and the urine, when voided, was often loaded with a gravelly matter. The aliment and injections being conſtantly returned by the mouth, Dr. Konig deſiſted *for four months* from offering her either meat, drink, or medicine of any kind, excepting occaſionally a ſpoonful of oil of almonds. Blood was now and then vomited from the violence of the ſpaſmodic action of the ſtomach; and frequently urine, to the amount of three or four ounces at a time, of a ſtrong taſte and ſmell. The diſeaſe ſeems to have laſted, with remiſſions, from January 1678 to February 1683, at which period the hiſtory is abruptly dropped, though the patient ſeems to have been in a ſtate of recovery. It was preceded by the appearance of veſicular eruptions in the ſkin, and was probably produced by their repulſion. The chemical examination of the calculi is looſe and unſatisfactory.

6. Colica calloſa. This ſpecies of colic differs materially from all the preceding; for here the contraction of the muſcular fibres is limited to a ſmall portion of the inteſtine; and, analogous to what we obſerve in the urethra and other membranous canals, the repetition of this action often ends in a certain permanently-contracted ſtate of the part affected. In the early ſtages, however, this ſeems merely a diminiſhed ſphere of contraction acquired by the fibres in queſtion; for they are ſtill capable of dilatation, and no thickening of ſubſtance is at firſt perceptible. This ſtate cannot however continue long; the ſtricture becomes thickened, and ſomewhat indurated, and the paſſage of fæces in a great degree interrupted.

The ſituation in which we meet with this ſtricture is more commonly about the termination of the colon, and at the projection of the ſacrum, than any other part of the inteſtinal canal: and, when one ſtricture is diſcovered in this ſituation, there is often another a few inches lower in the gut. This does not, however, uniformly happen, a ſtricture being often met with about the termination of the colon, where there is none in the inteſtine; and the ſame impediment has been found between three and four inches from the anus, where there has been none higher. But theſe contractions occur ſo excluſively in moſt caſes about the ſigmoid flexure of the colon, and near its termination in the rectum, that this part ſhould be carefully examined in every caſe of obſtruction.

Although the above parts of the colon are the moſt obnoxious to ſtrictures, yet it is evident the complaint may take place in any part of it. "I have once ſeen," ſays Dr. Baillie, "one of the vulvulæ conniventes much

longer than uſual, and paſſing round on the inſide of the jejunum like a broad ring. The canal of the gut was neceſſarily much narrowed at this ring; but no miſchief had ariſen from it. This malformation, however, might have laid the foundation for future miſchief; ſome ſubſtance too large to paſs might have reſted on the ring, and produced inflammation, ulceration, and untimely death." And, in a caſe publiſhed by Dr. Combe, in the fourth volume of the Tranſactions of the College of Phyſicians of London, where there was an uncommon pulſation in the aorta, diſſection diſcovered the lower part of the ilium, as far as the colon, contracted for the ſpace of three feet, to the ſize of a turkey-quill; the aorta was in a perfectly healthy ſtate.

The ſymptoms indicating the preſence of ſtricture in the rectum, as chiefly copied from the accurate work of Mr. W. White, are, habitual coſtiveneſs; occaſional uneaſineſs, ariſing from a ſenſe of fulneſs in the courſe of the tranſverſe arch of the colon, but more eſpecially towards the termination of its ſigmoid flexure, chiefly occaſioned from wind meeting with ſome obſtruction downwards. The patient is often ſenſible of the aggravation of this ſymptom from a variation in the quality or quantity of his food. Sometimes the fulneſs may be felt externally, in the courſe of the ſigmoid flexure of the colon. Although this ſymptom frequently happens to be the firſt to arreſt the patient's attention, and continues ſome time before any particular local inconvenience is experienced from the paſſing of the fæces, yet this by no means invariably occurs. Beſides the ſenſe of fulneſs juſt noticed, other ſenſations are often excited in the courſe of the colon; viz. acute pain, a ſenſe of preſſure when the fæces accumulate above the ſtricture; violent ſpaſmodic contractions in different parts of the inteſtine, which uſually happen after the colon has been exerted by expelling the fæces. Sometimes the patient feels as if tightly girded with a cord. It may be proper to notice, that theſe different ſenſations are in general aggravated, in proportion as the ſtricture is ſeated high up in the rectum. Sooner or later the patient experiences an uneaſineſs on going to ſtool, attended with difficulty in voiding the fæces. As the diſorder advances, the alvine excretions become gradually more ſcanty, the fæces are ejected ſometimes flat, at others of a triangular form. They are ſmaller than natural; and are often diſcharged with a ſquirt, ſometimes accompanied by a ſudden and loud exploſion of wind.

The ſame phenomena are thus conciſely deſcribed by Dr. R. White in the fourth volume of the Memoirs of the London Medical Society. "When a perſon ſomewhat advanced in life is troubled with frequent conſtipation, complains of fulneſs and weight in the ſtomach, with repeated inclination to diſcharge the contents, and uneaſy rumbling in the belly, and diſtention in the lower part of it, with a ſenſation of numbneſs toward the upper part of the ſacrum, extending down the rectum; repeated fruitleſs efforts being alſo made to paſs a ſtool, attended with a ſenſe of conſtriction and teneſmus high up in the rectum, and flatus, which ſeemed to the patient to occupy the intermediate ſpace, burſts forth; clyſters failing as well as medicines, and the complaint unattended with fever or pain;—it will be reaſonable to expect ſome mechanical obſtruction in the paſſage."

After an evacuation, a ſenſation commonly continues for ſome time, as if the whole of the fæces had not been expelled. This by degrees goes off, and the patient feels himſelf tolerably eaſy until the next time of going to ſtool, when a ſimilar ſenſation recurs.

With regard to the leſſened diameter of the fæces juſt noticed, which muſt neceſſarily be the caſe whenever a permanently-contracted ſtate of the gut takes place, there are ſome exceptions. If the ſtricture indeed ſhould happen to be ſo low in the rectum as not to allow room for the accumulation of fæces, it muſt appear evident that they will be found uniform in diameter, in proportion to the degree of ſtricture, while they continue to be diſcharged in a figured ſtate. And alſo, when the ſtricture is high up in the rectum, ſo long as the gut below retains its natural expulſive power, an accumulation will be prevented, and the diminiſhed ſize of the fæces will continue. But, as the diſorder increaſes, the inferior portion of the inteſtine gradually loſes that power; and, when the contraction becomes conſiderable, a ſmall quantity of fæces only paſſes at a time through the ſtricture, and, not being ſufficient to ſtimulate the lower part of the rectum, (which in a great meaſure is deprived of its natural action,) an accumulation goes on from time to time, until at length it becomes difficult to remove; and, on thoſe occaſions, fæces of a natural ſize have been ſometimes diſcharged.

Pain of the back, about the ſacrum, is a very common attendant on ſtricture in the rectum, and ſometimes a primary ſymptom; the pain frequently ſhooting down the thighs, and in ſome inſtances to the ſoles of the feet. Hæmorrhage is alſo a frequent occurrence, as well as a mucous diſcharge. Mr. White alſo has found pain in the back part of the head a uſual ſymptom of this diſeaſe.

When the foregoing ſymptoms lead us to ſuſpect the preſence of ſtricture, manual examination muſt be had recourſe to. Indeed the matter can only be determined by this method. "This ought to be performed in the moſt careful and attentive manner, ſeeing there is a poſſibility of miſtaking the complaint either for a diſeaſed proſtate gland, or for a ſcirrhous uterus, eſpecially if the hardneſs is attached to the cervix uteri, or back part of the vagina. In proſecuting the examination, the firſt ſtep to be taken (after the bowels have been emptied) is to introduce the finger (oiled) as high up the rectum as poſſible, at the ſame time deſiring the patient to bear down, as if going to ſtool. For, if the examination is firſt made by introducing a bougie, it may happen that the inſtrument is puſhed between the folds of the inteſtine, particularly if there ſhould be particular laxity of its internal membrane; and the practitioner may be led to ſuppoſe there is a ſtricture, when in reality none exiſts. If, however, on introducing the finger, neither ſtricture nor induration can be diſcovered in the rectum, a bougie, ten or twelve inches in length and pretty thick, muſt be introduced, and paſſed as high as the termination of the colon; which will eaſily be done, if ſtricture is not likewiſe preſent at the lower part of the rectum.

This complaint is liable to be confounded with diarrhœa, dyſentery, piles, indeed with almoſt every chronic diſeaſe of the inteſtines, and, above all, with ſcirrhus uteri, and ſcirrhus of the rectum. So much difficulty, indeed, occurs in reſpect to the former, that Dr. White ſays, "Symptoms of the contracted rectum in the female are ſo ſimilar to that of a ſcirrhous uterus, that I do not know any mark whereby the one diſeaſe can be diſtinguiſhed from the other, excepting that in the latter the urinary bladder is more liable to be affected than in the former; though ſometimes pain and difficulty in diſcharging the urine attend that alſo."

In diſtinguiſhing this caſe from Proctica calloſa, or ſcirrhus of the rectum, we ſhould notice, that, in ſimple ſtricture, pain is only experienced on going to ſtool; while, in a ſcirrhous ſtate of the rectum, the ſufferings are not only greater at theſe times, but there is alſo, at other times, great pain about the ſacrum, often ſhooting down the thighs, as well as a ſenſe of burning heat and pain in the rectum. In this laſt deplorable diſeaſe, eſpecially in its advanced ſtages, the fæces paſſed are generally in a liquid ſtate, ſo that the diſeaſe may be confounded with a chronic dyſenteric complaint. In ſtrictures of the rectum, there is little emaciation or loſs of ſtrength until the diſorder is far advanced; the countenance then becomes ſallow; and, in ſome inſtances, the pulſe is quick, with other hectic ſymptoms. Moreover, as we before remarked, the ſimple ſtricture is higher up

than

than the ſcirrhus, and not generally of ſo hard and unyielding a ſtructure. The cleareſt diagnoſis is derived, however, from the introduction of a canula, as recommended by Mr. Coley of Bridgnorth, in a paper read to the Medico-Chirurgical Society. This gentleman having a patient under his care, whom he was unable to afford relief to by a common bougie, ſince that inſtrument invariably bent upon itſelf, had recourſe to a tin canula, for the purpoſe of giving ſupport to the yielding bougie. The experiment ſucceeded; and, having occaſion ſome time after to increaſe the diameter of his canula, Mr. Coley found that, by holding a lighted candle at the end of it, he could readily diſtinguiſh the contracted part of the inteſtine.

In the treatment of this affection, the principal part conſiſts in removing the cauſes of irritation by diet of the leaſt irritating kind, as jellies, ſago, &c. and evacuating the bowels daily by clyſters of warm water. When injections cannot be thrown up in the ordinary way, from the contracted ſtate of the paſſage, a large hollow bougie may be faſtened (inſtead of a common pipe) to a bladder, by which means they may be conveyed beyond the obſtruction.

Nervous irritation may be leſſened by conium, hyoſciamus, &c. and the combination of the blue pill with them is generally required to promote the biliary diſcharge, which is of courſe much deranged in caſes of long ſtanding. If purgatives are given by the mouth, none of this claſs ſhould ſuperſede caſtor oil. It is ſcarcely neceſſary to add, that aloetic cathartics tend to increaſe the complaint. In reſpect to the regulation of the alvine excretions it is proper to remark, that attention to this part is not only neceſſary in the conſtipated ſtate of the bowels, attendant on the early ſtage of the diſeaſe, but alſo in its more advanced progreſs, when diarrhœa has ſupervened, becauſe the evacuations are ſeldom in ſufficient quantity to relieve the bowels, without the aid of laxatives.

The local application of the bougie is the next thing to be conſidered. This will often produce much irritation and aggravation, unleſs nervous excitement be removed by emptying the bowels and regulating the diet previous to its uſe. Before employing this inſtrument, we ſhould be well aſſured that ſcirrhus is not preſent, as it uniformly aggravates that diſeaſe. The bougie ſhould be, at firſt, of ſuch a ſize as to paſs the ſtricture without conſiderable reſiſtance, leſt irritation and inflammation be excited. The ſize ſhould alſo be increaſed very gradually till the parts become accuſtomed to the ſtimulus. There being always more or leſs of ſpaſmodic action excited by the bougie, it ſhould be introduced ſlowly and gently, waiting a little when it touches the ſtricture, before it is puſhed through. At firſt it ſhould not remain longer than half an hour in the rectum; if there be much irritation, not ſo long. By degrees it may be allowed to remain eight or ten hours at a time, with little or no inconvenience to the patient. In general, it may be paſſed daily. From four or five to eight or ten weeks will elapſe before the ſtricture admits a full-ſized bougie; even then, the inſtrument muſt be gradually left off. It is found that the natural action of the bowels is generally much improved by the application of the bougie. As auxiliaries we may mention the hip-bath, and injections with extract of poppy. The former may be uſed for a few minutes before employing the bougie; and the anodyne injection after the bougie contributes to leſſen the morbid irritability of the part. With reſpect to the kind of bougie, we ſhould prefer that uſed by Mr. Coley, though perhaps, this is not a matter of the firſt importance. Mr. Coley's bougies are compoſed of lint rolled up, tied at the lower end with ſtring, which forms a loop about three inches long, for the purpoſe of being ſecured to a T bandage. They are to be immerſed in a compoſition of lead four parts, and wax one part; and then drawn through a wooden frame, having holes of various diameters. Great advantage, our author obſerves, will be derived from making the points conical. His manner of applying them differs from the common mode in this, that they are *wholly concealed within the rectum*, as will be preſently deſcribed; which he conſiders a great improvement, as it enables the patient to walk about, or even ride on horſeback, during the uſe of them. He adviſes them to remain in the bowel, if poſſible, all night; which, he thinks, has the effect of promoting the abſorption of diſeaſed ſtructure, by long-continued preſſure, as well as of reſiſting the tendency to contract. At the ſame time, he obſerves, that the diſcharge of the cerate, produced by the heat and moiſture of the anus, is avoided; the cerate *not being melted by any portion of the inteſtine above the ſphincter*.

Mr. White mentions a variety of this diſeaſe, which ariſes in conſequence of venereal infection. "When the diſorder proceeds from this cauſe, it generally commences with an appearance either of ulceration, or excreſcence about the verge of the anus. The ſphincter ani becomes gradually contracted; and, the diſeaſe extending upwards within the rectum, a conſiderable thickening and induration of the coats of the inteſtine take place, which produce great irregularity and contraction in the paſſage. Sometimes there is a continued line of contraction from the anus, as far as the finger can reach, then terminating in a kind of cartilaginous border, the inner membrane having a thickened and condenſed feel. There is often a diſcharge indicating a diſeaſed, if not ulcerated, ſtate of the inner membrane above the contracted portion of inteſtine. All the caſes which I have hitherto met with of this nature, have occurred in females, and they have uniformly proved incurable, when attended with the ſtructural derangement juſt deſcribed."

The rectum is alſo liable to contraction from tubercles ſituated immediately above the ſphincter ani, very different from the ſoft bluiſh hæmorrhoidal tubercles which often ſurround the anus. Theſe laſt protrude when the patient ſtrains; and, when returned within the ſphincter, no hardneſs can be perceived in the gut. It is the reverſe with the other tubercles; they do not come below the ſphincter, and they have an indurated feel.

The ſpecies of contraction noticed as the conſequence of venereal infection, Mr. W. has found exaſperated by the bougie, even when conjoined with a regular courſe of mercury. "In the tuberculated ſtate, however, ariſing from a ſimilar cauſe, (he ſays,) the bougie will be found of great ſervice." In ſcirrhus of the rectum, the bougie would manifeſtly be improper.

Sometimes ſtricture is attended by prolapſus ani, fleſhy excreſcences, or hæmorrhoidal tubercles, which prove a hindrance to the uſe of the bougie, and require to be previouſly removed by ligature or the knife. But, in doing this, he muſt be careful not to include any portion of the prolapſed inteſtine, which ſometimes comes down with the excreſcence. The prolapſus ani, however, which occurs as the conſequence of ſtricture in the rectum, is very partial, and unlike the common prolapſus. Whilſt the whole of the lower portion of the rectum protrudes from a relaxation of the ſphincter, this only occupies one ſide of the anus, forming a pendulous flap. It is neceſſary to puſh this flap gently up with the finger beyond the ſphincter, to make way for the bougie to paſs, which otherwiſe would be apt to get entangled in the prolapſed portion of the inteſtine. The uſe of the bougie will ſometimes overcome this impediment; but, if it ſhould continue after the paſſage is dilated, and prove troubleſome, the pendulous part may be removed with the knife, and the patient freed from future inconvenience.

With regard to the diviſion of the ſtricture, as practiſed by Wiſeman and others, there can be no doubt of the expediency of the operation in ſome inſtances, where the bougie fails, and the ſtricture is of a cartilaginous hardneſs. See the article SURGERY.

Genus

Genus VII. *Coproſtaſis*, [from κοπρος, dung, and στασις, ſtagnation.] Retention of the Fæces. This genus has only two ſpecies.

1. Coproſtaſis coacta, (Obſtipatio, *Cull.*) Coſtiveneſs. This is a complaint to which ſedentary perſons and bon-vivants are much expoſed, and which has long and juſtly been conſidered a frequent cauſe of the numerous dyſ-peptic caſes we daily witneſs. Its obvious cure is the uſe of cathartics; and for theſe medicines formulæ abound in every family. The frequent recourſe which is had to purgatives tends, however, to impair the functions of the inteſtines, by rendering the periſtaltic powers inactive except under the influence of ſtimulus; and further, even this ſtimulus, as is well known, gradually loſes its effect by repetition. On this account our therapeutical indications ſhould embrace a wider field of remedial agency. As the muſcular fibres are the agents of the periſtaltic motion, we ſhould endeavour to ſtrengthen the tone of the muſcular ſyſtem generally, ſince one part is ſeldom weak without all participating in the ſame debility. This purpoſe is peculiarly to be effected by exerciſe to ſuch a degree as to ſtrengthen muſcular contraction without producing fatigue; by the cold bath, and by medicines which are ſaid to give tone to the muſcles. Mr. Howſhip, in his work on the inteſtines, ſays, that bark internally adminiſtered for ſome continuance will bring on the healthy action of the bowels to ſuch a degree that purgatives become unneceſſary. The beſt method of uſing it ſeems to be to unite it with a moderate doſe of cathartic medicine, and then gradually diminiſh the doſe of the latter, and increaſe that of the former.

If coſtiveneſs continues, however, a clyſter of warm water will produce the alvine diſcharge, and without, of courſe, ſtimulating in any inordinate degree the entire ſecretion, ſince this meaſure does nothing more than diſſolve the fæces. The uſe of clyſters is becoming more faſhionable in this country, and there is every reaſon to believe, that, if we uſed them oftener, and applied draſtic purges leſs frequently, the digeſtive apparatus of moſt perſons would be found in a better condition. It has been recommended by ſome to endeavour to inſtitute regular ſtools by voluntary endeavours at regular periods; but we believe this will ſeldom do good, except when an indolent habit of neglecting the calls of nature has been the cauſe of the complaint; and, even then, ſtraining ſhould not be long perſiſted in.

Coſtiveneſs ſeldom occurs in young infants. When it does, it always ariſes from badneſs or deficiency of the nurſe's milk, or from the food. If one copious evacuation take place every twenty-four hours, and the infant be thriving, there is no occaſion for interference; but, if there be any greater torpor of the bowels than this, ſuitable remedies are to be employed. For this purpoſe, a briſk laxative may be given every day, for four or five times ſucceſſively. The beſt laxatives for infants are manna, calcined magneſia, and cold-drawn caſtor-oil. Where theſe means fail, and there is reaſon to attribute the coſtiveneſs to the nurſe's milk, we muſt regulate the diet, and open freely the bowels, of the latter. But, if it be found that the milk ſtill poſſeſſes that injurious quality, the nurſe ſhould, if poſſible, be changed. Where this cannot be done, four or five drops of antimonial wine may be given to the infant every night at bed-time.

2. Coproſtaſis adſtricta. In this ſpecies the ſame general treatment ſhould be regarded. Purgatives of a gentle kind, and gradually leſſened as they are found effectual, are the firſt agents. Diet ſhould be uſed of a relaxing kind, we mean ſuch as is principally compoſed of green vegetables. The ſympathy which exiſts between the ſkin, the mucous lining on one part of the alimentary canal and another, render medicines applied to the ſtomach and ſkin of effect on the bowels; ſo the warm bath, naſeating doſes of calomel and antimony, will, if perſevered in, ſometimes effect a cure. Conſtipation often occurs without producing much inconvenience. Some perſons are accuſtomed to have their bowels moved not oftener than twice a-week; and, to ſuch, a week's coſtiveneſs is attended with no particular inconvenience. Chaptal mentions the caſe of a female patient, who, for four months, had no diſcharge either from the bowels or kidneys, and as little evacuation by ſweat, notwithſtanding that her diet was confined to milk-whey and broths. And the writer of this article is acquainted with a lady who often paſſes a week or a fortnight, and on one occaſion paſſed a month, without a fæcal evacuation: her urinary diſcharge is copious, but clear; and no extraordinary degree of perſpiration is manifeſt on her ſkin. But this is nothing to caſes related in old books, as in the early volumes of the Phil. Tranſ. and of the Journal des Sçavans: from theſe and ſuch like authorities, Dr. Maſon Good has quoted caſes of fæces retained for ſix months—two years—three years—ſeven years! *Credat Judæus apella!*

Genus VIII. *Dyſenteria*, [from δυς, bad, and εντερον, bowel.] Dyſentery. Griping and teneſmus; frequent mucous and bloody digeſtions, the fæces ſeldom diſcharged, and in ſmall quantities. Bloody flux.

The word *dyſentery*, as uſed by the ancients, had no very preciſe ſignification. Originally its import was "an affection of the bowels" in general; and we find Hippocrates uſing it, not only to ſignify all ulcerations, but all hæmorrhages, of the inteſtines (even thoſe which are critical and ſalutary), and likewiſe every kind of flux, with or without blood. (Prorrh. 2. et Epidem. lib. ii.) It would ſeem, however, that, after his time, ſome of the other Greek authors, whoſe works are loſt, were ſenſible of this want of preciſion, and therefore reſtricted the meaning of the word to an *ulceration* of the bowels, attended with gripes and *teneſmus*, (or ſtraining,) and with mucous and bloody ſtools. For a diſeaſe with theſe ſymptoms Celſus calls *tormina*, and ſays it is the *dyſenteria* of the Greeks; and Cœlius Aurelianus, retaining the Greek name, deſcribes the dyſentery much in the ſame manner with Celſus. (See Celſ. de Med. lib. iv. cap. xv. Cœl. Aurel. de Morb. Chron. lib. iv. cap. vi.) Yet Galen returns to the looſer acceptation of the word, ſometimes defining a dyſentery "an ulceration of the bowels," at other times mentioning four ſpecies of that diſtemper, all with bloody ſtools; but of which only one agrees with the *tormina* of Celſus, or the dyſentery of the moderns. Aretæus confines the term to an *ulceration* of the bowels; and this notion of the conſtant ulceration of the bowels, in conjunction with dyſenteric ſymptoms, prevailed in all medical writings until the time of Sydenham and Willis. Dr. Good mentions two ſpecies of this diſeaſe:

1. Dyſenteria ſimplex; unaccompanied with fever: the fæces, when diſcharged, evacuated without conſiderable pain, of a natural quality, and affording eaſe.

2. Dyſenteria pyrectica, accompanied with fever, great loſs of ſtrength, and depreſſion of ſpirits: the fæces, when diſcharged, of various colours and conſiſtence; highly fetid, and mixed with putrid ſanies, ſebaceous matter, or membranous films.

Of the firſt ſpecies of dyſentery it is unneceſſary to ſay much; its cure is effected by milder means than the ſecond, though according to the ſame indications. Nor, important and dire as the ſecond form is, will it require a long diſcuſſion, ſince its nature has been ſo cloſely ſtudied, and its method of cure ſo well eſtabliſhed of late by our colonial ſurgeons, that we have the ſatisfaction of preſenting more general principles as guides on this ſubject than we are enabled to do with regard to moſt other diſeaſes.

In ſpeculating on the nature of dyſentery, the firſt thing that requires our conſideration is the increaſed diſcharge from the bowels. Of the cauſe of this phenomenon one explanation alone preſents itſelf; viz. a more rapid paſſage of the ſecreted fluids through their veſſels;

or, in other words, excitement of thoſe veſſels. Whether this excitement be deſerving of the name of *inflammation* has been diſputed. It is, however, a queſtion of no great moment. We ſhall have occaſion to ſhow, when the ſubject comes before us, that the two above-mentioned ſtates are, as far as regards the mucous membranes, very cloſely allied; and in the preſent caſe, even if inflammation be not the mode of action primarily eſtabliſhed, diſſection ſhows that it is almoſt always unequivocally and extenſively preſent in fatal caſes.

It has been objected againſt conſidering this diſeaſe as inflammation of the bowels, or *enteritis*, that the latter diſeaſe is uniformly accompanied with *coſtiveneſs* and ſuppreſſed ſecretion. It muſt be noted, however, that a diſtinction ſhould be made between inflammation as it affects the exhalent orifices of veſſels, and the ſame action affecting the blood-veſſels more extenſively. As far as regards the bowels only, it ſeems very clear that diarrhœa and dyſentery are the ſame diſeaſe, ſince increaſed and morbid ſecretion are in each apparent. Dyſentery, however, appears to affect a larger extent of the ſyſtem than the former complaint; and indeed we cannot help coinciding with Dr. J. Johnſon in conſidering that we muſt look to a ſeries of cauſes rather than to a proximate one for illuſtrating the nature of this diſeaſe. From the labours of this author and of ſeveral of his contemporaries it is made evident, that the ſkin and liver are the parts primarily affected in dyſentery. The diſeaſe happens for the moſt part in warm climates, where of courſe theſe organs are ſubjected, as is well known, to the influence of debilitating agents. It happens too, moſt commonly, when wet or damp weather ſupervenes to that which was airy and warm. That ſuch change of temperature ſhould produce this diſeaſe in ſome caſes, while enteritis or other maladies are cauſed by the ſame agent at other times, can only be accounted for on the aſſumption of prediſpoſition to diſeaſe. Thus we ſhould be inclined to think, à priori, that hepatitis, cholera, and dyſentery, might be brought on by the ſame cauſes, according to the debility which the habits or conſtitution of the individual affected might produce in a particular part of the ſyſtem: and this accords with the experience of the beſt practitioners. In fact a little conſideration ſhows us, that this opinion may be puſhed much further. In cold climates the lungs are the organs which undergo the greateſt degree of ſtimulation from the atmoſphere; and hence, if the cutaneous perſpiration be checked, we find a vicarious diſcharge take place on the bronchial membrane, and pneumonia and phthiſis become common. So, the liver being the part moſt called on for exertion in warmer climates, and the whole of the digeſtive powers being weakened in the ſame ratio, we find, in theſe ſituations, that the hindrance of the cutaneous diſcharge cauſes larger afflux of fluids to the abdominal viſcera, and a conſequent diſturbance of function.

Stimulating and indigeſtible diet, which is often uſed by the European in tropical climates, has been mentioned as another cauſe of the prevalence of dyſentery; and Mr. Bampfield (Practical Treatiſe on Dyſentery) is of opinion, that the peculiarities of clothing may be looked to as another cauſe. He ſays, "The copious perſpiration of the newly-arrived European becomes accumulated, when he is ſitting or walking, on the lower part of the ſhirt, more eſpecially about that part of the abdomen where the waiſtband of the ſmall-clothes or pantaloons preſſes againſt it, the tight or cloſe application of which occaſions an increaſe of heat and of perſpiration at this particular part during the day, and intercepts the exhalation as it flows down the body; hence, if he ſhould lie down in this ſtate, cold will be induced on a particular part of the abdomen, by the evaporation of the exhaled fluid from the wet linen in contact with it; perſpiration, before profuſe, will be now effectually ſuppreſſed, and its injurious conſequences be felt by the chylopoïetic viſcera."

It is a propoſition almoſt proved, then, that the ſkin is firſt affected in dyſentery, and that a vicarious diſcharge of mucus takes place from the bowels. The ſtoppage of the perſpiration induces moreover a general plethora of the abdominal viſcera; and, as the liver commonly participates in the inaction of the veſſels of the ſurface, this important gland, and probably other glands, fail to unload this plethora by ſecretion; ſo that not only is a great diſcharge thrown on the bowels, but, the latter organs being inſufficient for its removal, a generally plethoric and febrile ſtate is eſtabliſhed. The irritation made on the nerves of the bowels by the morbid ſecretions induces irregular and violent contractions of the muſcular fibres; and hence we explain the occurrence of pain, teneſmus, and retention of fæces, as well as of thoſe permanent ſtrictures which are ſometimes found in theſe parts on diſſection.

The firſt notice of this diſeaſe is generally a ſenſation of chilline's and ſlight rigour; to this ſucceed anorexia and uneaſineſs in the bowels; in a few hours this is followed by griping and purging, attended with teneſmus, during which mucus only is evacuated; at the ſame time febrile ſymptoms make their appearance; the ſkin becomes hot and dry; and reſtleſſneſs, and ſometimes delirium, occur; an indeſcribable languor ſoon after this pervades the muſcular ſyſtem, blood is poured forth (when from the rectum in ſtreaks, when from the higher parts of the bowels perfectly mixed) with mucus. Severe pain and inceſſant purging attend the motions, emitting little odour, and often containing membraniform lymph. If the complaint continues uninfluenced by medicine, or receives no relief from the exhauſtion of the veſſels by their ſpontaneous action, death occurs with the uſual ſymptoms of high inflammation and mortification. Or, if the diſeaſe does not arrive at this termination, a chronic ſtate of the diſeaſe is induced, which, laſting for a longer or ſhorter time, ends in ſimple diarrhœa, in ulceration of the villous coats, in permanent contractions, or more favourably and leſs frequently in recovery.

The degree of violence with which the ſanguineous and nervous ſyſtems are affected is various. Sometimes the pulſe is little altered; and in this caſe we ſeldom find much blood in the ſtools, but merely mucus and ſerum, and thoſe in ſmall quantities. A pain in the abdomen is felt juſt before each evacuation, and at that period only. From this ſtate we find every grade of fever, and increaſe of the other ſymptoms in proportion, until we arrive at a variety in which the pulſe is accelerated to an amazing height, and delirium manifeſt; in which there is a conſtant fixed acute pain of ſome part of the abdomen or inteſtinal canal, including the parts contained in the pelvis; obſtinate retention of fæces, but very frequent and copious dejections of mucus, ſerum, or blood, or a mixture of theſe, together with ſevere tormina and teneſmus. The blood drawn and concreted exhibits the inflammatory buff. Sometimes the fever is of the intermittent or remittent kind.

The cure of dyſentery is founded on the following indications: viz. to remove the violence of morbid action, leſt inflammation, and its fatal conſequences, ſhould come on; to reſtore the balance of the circulation; and, laſtly, to correct the altered ſtate of the ſecreting veſſels of the inteſtines, and allay the contraction of the muſcular coats of the ſame ſtructures. The firſt is, of courſe, done by bleeding. Sydenham uſed this meaſure, though not to any important extent; and it was not till after the late war on the peninſula that its uſe became general.

As to the extent which bleeding ſhould be carried to in dyſentery, no general rules can be given, ſince this muſt be regulated rather by its effects on the pulſe than by quantity; and in fact it ſometimes happens that ſo little fever attends, that bleeding is unneceſſary. In violent caſes bleeding ad deliquum ſhould be had recourſe to, ſince, as in all other complaints characterized by increaſed vaſcular action, the ſuddenneſs with which we abſtract blood is of great importance.

As the fæces are retained notwithſtanding the urgency

for evacuation, purgatives may be adminiſtered. They are admiſſible only with much reſtriction. Caſtor oil ſeems the only purgative which can be preſcribed with ſafety, ſince moſt others in common uſe irritate the nervous expanſion of the bowels, and in even the morbid contractions. This oil is ſaid indeed to ſheathe the nerves, by its lubricity, from the irritating ſecretions, while it produces natural and general ſecretion. Clyſters have been recommended; but the ſtimulus of diſtention is of all other ſtimuli the moſt irritating to the diſeaſed inteſtine. Moreover they do not reach to thoſe points where the eſtabliſhment of ſecretion would be a deſirable matter; and conſequently little good can be expected from them.

It has been urged by Dr. J. Johnſon, that we ſhould not be obedient to every call of nature, the ſtraining which enſues being highly detrimental, and augmenting, in many caſes, the diſcharge of blood. Every motion of the body indeed, increaſes the deſire to evacuate. As little or nothing, except mucus and blood, comes away in four efforts out of five, we ſhould therefore endeavour to ſtifle the inclination to ſtool; and we ſhall often ſucceed; for the tormina go off in a few minutes, and by thoſe means we elude not only the ſtraining, but the painful teneſmus which continues ſo long after every fruitleſs attempt at evacuation. This circumſtance, though apparently of a trifling nature, Dr. J. thinks of conſiderable importance, though it has ſeldom been attended to. It has the ſanction of antiquity, however, as may be ſeen in the following precept of Celſus: "Et cum *in omni fluore ventris*, tum in hoc precipue neceſſarium eſt, non quoties libet deſidere, ſed quoties neceſſe eſt; ut *hæc ipſa mora* in conſuetudinem ferendi oneris inteſtina deducat."

Diaphoretics are of courſe to be uſed, and the ſecretions of the ſkin encouraged by the warm bath; but this is by no means an eaſy taſk, ſince, independently of the uncertain operation of theſe remedies, the perſpiration is liable to frequent checks on account of the patient's frequently riſing from bed to evacuate his bowels. The painful contractions of the bowels are beſt allayed by opium. A ſmall pill may be introduced into the rectum; or it may be given in the form of the pulv. ipecac. comp. in which combination its effects are alſo beneficially exerted on the ſkin.

The action of the ſecreting veſſels is altered by mercurial medicines; calomel in large and frequently-repeated doſes being indeed our principal dependence in this complaint. The modus operandi of this medicine is by no means generally underſtood. Thoſe who have uſed it moſt ſucceſsfully aſſert indeed, that it corrects the condition of the liver by emulging its ducts, unloading its congeſted or over-gorged veſſels, removing undue determinations of blood to its yielding texture, prompting the healthy ſecretion of its peculiar fluid, and thereby reſolves pyrexia. But all this is of courſe gratuitous aſſumption. The medicine may certainly ſtimulate the liver; but it is too much to aſſert that by ſo doing it cures dyſentery, ſince it is ſeldom ſucceſsful till ptyaliſm is produced; and every one knows that the ſecretions of the liver may be corrected by mercury in very ſmall doſes. Mercury is ſaid to equalize the circulation; but this appears an illogical propoſition. If the aſſertors of this imply that it produces *general ſecretion*, and thus brings into action torpid ſecernents; it is a truiſm which cannot be queſtioned; but to ſpeak of equaliſing circulation in any other manner implies that calomel affects morbid ſtructures in one mode, and healthy ones in another; a notion which does not ſeem to have the leaſt probability on its ſide. However this may be, mercury is the only medicine to be truſted to in dyſentery: and it muſt be puſhed to ſuch an extent as to induce ſalivation. It may be given from doſes of a few grains to that of one ſcruple three times a-day; and it is aſſiſted by other medicines in conjunction: thus opium, ipecacuanha, and calomel, anſwer the deſired end with leſs uncertainty than the ſeparate exhibition of any ſingle one.

The diet of the dyſenteric patient ſhould be very ſparing, and ſhould conſiſt of the leaſt irritating ſubſtances, the various preparations of the farinacea, as ſago, arrow-root, rice, &c. are alone admiſſible; but the leſs food of any kind that is taken in the beginning of the diſeaſe, the better. In chronic dyſentery, where our principal effort muſt be directed to keeping the biliary ſecretion by gentle doſes of calomel, and inducing regular action of the ſkin by diaphoretics, by flannels next the ſkin, and as much as poſſible by regulated temperature; the diet ſhould conſiſt of the ſame kind of ſubſtances as in the acute ſtage; and it is ſometimes adviſable to uſe aſtringents, as the kino, &c. A diſh is recommended by Dr. J. Johnſon, which he ſays the patients reliſh much: it conſiſts of flour and milk boiled together, and rendered palatable with ſugar and ſpice.

When the diſorder is pretty well removed, gentle ſtimulation by the bitters and the mineral acids, particularly the nitric, muſt be had recourſe to. At the ſame time we muſt guard againſt ſuffering the patient to indulge in too much food; for after this complaint the appetite is often greater than the powers of digeſtion, and its indulgence is ſometimes followed by a relapſe into the original diſeaſe, or other diſeaſes, equally diſtreſſing and dangerous, are brought on.

The queſtion concerning the *contagion* of dyſentery will be diſcuſſed when we ſpeak of the ſubject at full under the order PYRECTICA of this arrangement.

Genus. IX. *Diarrhœa*, [from ῥέω, to flow.] Flux, or Looſeneſs. Generic characters — Alvine evacuations crude, looſe, and too frequent: with little or no griping or teneſmus. There are ſix ſpecies.

1. Diarrhœa fuſa. Fæces of common quality, but immoderately looſe and copious.

2. Diarrhœa bilioſa. Fæces looſe, copious, and peculiarly yellow.

3. Diarrhœa mucoſa. Dejections conſiſting of, or containing, a copious diſcharge of mucus. This is aſcribed by Cullen to acrid ingeſta, or taking cold, particularly in the feet. When produced by cold, it forms the Catarrhus inteſtinorum of various authors: the motions are acrid, often with but little bilious tinge, and the lower part of the rectum is excoriated, like the noſtrils in a coryza.

4. Diarrhœa chyloſa. The dejections milky or chyliform.

5. Diarrhœa lienteria. The dejections conſiſting of the aliment paſſed rapidly and with little change.

6. Diarrhœa ſeroſa, the watery looſeneſs, in which the dejections are almoſt entirely liquid. It is frequently metaſtatic, and ſtill oftener produced by elaterium, or other draſtic purgatives. Sometimes urinous, occaſionally tinged with blood.

Diarrhœa is a leading and characteriſtic ſymptom in many diſorders, both acute and chronic, general and local. This genus is to be diſtinguiſhed from the foregoing by being generally without fever, and by the alvine evacuations conſiſting of the natural fæculent matter, though in a more liquid ſtate; and by the abſence of *teneſmus*, or violent bearing down, which attends Dyſentery. There is alſo in the latter diſorder more ſevere griping than in Diarrhœa: but this occaſionally occurs in the Diarrhœa, and therefore is not a deciſive diſtinction. There is, however, as we ſaid before, a mutual alliance between the two diſeaſes, which occaſionally paſs into each other; a diarrhœa, if neglected or improperly treated, ſometimes being converted into dyſentery; and a dyſentery, when its worſt ſymptoms have been ſubdued, ſometimes leaving a diarrhœa behind.

The eſſential part of this diſeaſe, in all the ſpecies we have enumerated, conſiſts in a preternatural increaſe of the periſtaltic motion, and of the ſecretions, in the whole or a great part of the inteſtinal canal; and the prediſpoſing cauſe of the diſeaſe is a peculiar irritability of the inteſtines, and of the ſecreting veſſels which open upon their internal ſurface.

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The ſeveral exciting cauſes of diarrhœa may be referred to two different claſſes. The firſt compriſes diſorders of certain parts of the body, which, either from a ſympathy of the inteſtines with theſe parts, or from their connection with the ſyſtem at large, occaſion an increaſed action of the inteſtines, without the transference of any ſtimulant matter from the primary diſeaſed part to them. Thus, the general ſympathy of the inteſtines is often manifeſted in perſons under the influence of certain paſſions of the mind, as anger, fear, and ſome others, which occaſionally excite a diarrhœa. And among the diſeaſes of other parts of the body, which affect the inteſtines, the irritation of dentition, in infants, may be mentioned as a familiar illuſtration, as it is ſeldom difficult and painful without occaſioning diarrhœa. The ſympathy between the ſkin and the bowels is particularly great in many individuals, ſo that a chill, or the application of cold and moiſture, eſpecially to the feet, will generally excite a diarrhœa: and the ſame ſympathy is ſhown in others by the occurrence of diarrhœa from the ſuppreſſion of cutaneous eruptions, or the ſtopping of profuſe or habitual diſcharges from ſores, &c.

The ſecond claſs of occaſional cauſes of the increaſed action of the inteſtines, conſiſts of the ſtimuli which are applied directly to the inteſtines themſelves: and theſe are of various kinds. They may be ſubſtances introduced by the mouth, as indigeſtible aliment, purges, &c. or poured into the inteſtines by the ſeveral excretories opening into them, as the ſecretions of the liver, &c.

Diarrhœa, when it occurs in fevers, is often a very unmanageable and dangerous ſymptom. After the meaſles it is often ſalutary; but in many inſtances it has proved more fatal than the diſeaſe itſelf, as is ſaid to have been the caſe in the fatal epidemic meaſles in the iſland of St. Helena in the year 1807. Diarrhœa is one of the moſt common diſorders attendant on difficult dentition in children: in fact, almoſt every irritation which excites feveriſhneſs in young children, is apt to occaſion it. It is likewiſe a ſymptom of the preſence of worms in the inteſtines. In the laſt ſtage of pulmonary conſumption, a colliquative diarrhœa, which is liable to alternate with the colliquative ſweats, is an almoſt univerſal occurrence.

The leading indications of the cure of diarrhœa will turn upon one or other of the following circumſtances. Whether it appear to ariſe from, 1. a morbid irritability of the inteſtines; 2. a preternatural ſtimulus applied to them; or, 3. a combination of theſe two. The firſt indication will require the irritability to be allayed; the ſecond, that the offending matter be expelled, or its acrimony corrected; and the third will demand a mixed plan, conſiſting of the other two, either jointly or alternately, together with an attention to the ſtate of other functions and organs, which may affect that of the *primæ viæ*.

The means adapted to fulfil the *firſt* indication, or to allay the morbid irritability of the inteſtines, will conſiſt in the adminiſtration of opiates. In moſt of the forms of diarrhœa, ſmall doſes of rhubarb are a good aſtringent. In the caſes of D. mucoſa or D. lienteria, eſpecially when it has ariſen from acrid purgation, conſtituting a hypercatharſis, and in all inſtances of colliquative diarrhœa, the adminiſtration of opiates is particularly requiſite. The vicarious diſcharge muſt be ſolicited to the ſkin by warm bathing and ſudorifics; and, if diſorganization is threatened, the uſe of calomel, as in dyſentery, muſt be reſorted to.

The means adapted to fulfil the *ſecond* indication, of removing a preternatural ſtimulus from the inteſtines, conſiſt in the adminiſtration of evacuants, or correctors of acrimony. Hence the uſe of emetics, of purgatives, of clyſters, with the one view; and of mucilaginous diluents, alkalies, and abſorbents, with the other.

The acrimony, which excites diarrhœa, eſpecially in children, is moſt commonly of an acid nature, and is generated in the ſtomach during the imperfect digeſtion of the food. Alkaline and abſorbent medicines tend to neutralize it, and therefore to remove the irritation of this acrimonious cauſe of diarrhœa. Cordials and ſtimulants alſo are uſeful auxiliaries in removing ſuch a diarrhœa.

When the *third* indication occurs; when there is, at the ſame time, a morbid irritability of the inteſtines, and an unuſual ſtimulus applied to them, the latter muſt be removed or corrected, where that is practicable, by evacuants or other means, and the irritability moderated. Abſorbents, ſuch as preparations of chalk, teſtaceous powders, lime-water taken with milk, &c. will tend to correct any acid acrimony that may be formed in the canal; while gentle laxatives may be combined with them, ſuch as rhubarb. Theſe are principally indicated in caſes of chronic diarrhœa, and in debilitated habits. A determination of the fluids to the ſkin, by diaphoretics, by warm-bathing, by reſtoring ſuppreſſed diſcharges, or ſubſtituting ſuch as may be equivalent, by warm clothing, friction, and the exerciſe of geſtation, will aid in fulfilling this indication; eſpecially in caſes where the occurrence of diarrhœa is obviouſly connected with the application of cold, the ſuppreſſion of cutaneous excretions, or with a generally debilitated habit. This purpoſe is alſo more effectually accompliſhed, when a courſe of ſuitable diet is purſued at the ſame time; eſpecially the uſe of milk, rice, the amylaceous parts of vegetables, ſuch as arrow-root, tapioca, ſago, &c. with animal broths and jellies. Dr. Heberden recommends the combination of ſpices with the vegetable mucilages, as the nutmeg, cinnamon, &c. or the combination of cretaceous medicines with ſpices and opiates. He alſo adviſes the uſe of a ſpoonful of mutton ſuet, diſſolved in four ounces of warm milk, twice a-day, both as medicine and nutriment to a patient under chronic diarrhœa.

Dr. Good mentions a caſe of D. ſeroſa, which occurred to himſelf in 1806. The patient was a young woman, aged twenty-four; the diſorder had continued for ten years, and had never produced fewer than nine or ten watery ſtools a-day, ſometimes tinged with blood. She was often in great ſpaſmodic pain in the ſtomach or inteſtines; and had tried a long liſt of aſtringents, anodynes, and other medicines, to little purpoſe. She was much reduced; and it appeared to be a caſe of great local irritation from local debility. Gentle ſtimulants were here of eſſential ſervice; and the diſeaſe gradually yielded to camphor mixture and pills of the reſinous gums.

Diarrhœa is a common complaint among infants. The natural appearance of the ſtools is altered from the bright orange colour, pulpy and curdled conſiſtence, and inoffenſive ſmell; and they become green, ſlimy, and at the ſame time emit a ſour ſmell, which ariſes from the prevalence of acidity in the firſt paſſages. The complaint is not often dangerous; it generally yields to a laxative compoſed of a little magneſia and rhubarb. But the nurſe's food ſhould be regulated; and the infant ought to have no other food, in addition to the milk, than arrow-root.

This complaint generally ariſes from expoſure to cold, or from ſome irritation or accumulation in the bowels. The linen and ſtools are ſtreaked with blood; and there is violent pain, or ſymptoms of fever. Where ſlimy ſtools are of the colour of clay, and emit a putrid ſmell, the infant ſoon becomes emaciated; and the diſeaſe often terminates fatally, though its progreſs be ſlow.

As the diſorder proceeds, very unfavourable ſymptoms occur, ſuch as emaciation and dryneſs of the ſkin, ſwelling or ſhrinking of the belly, with an altered appearance of the countenance; and there is a conſtant fretting or peeviſhneſs of temper. Swellings of the glands of the groin, and a little uneaſineſs of breathing, as if there were a ſlight tendency to cough, are alſo very unfavourable ſymptoms. In many of theſe caſes the purging is the effect of a diſeaſed ſtate of ſome of the digeſtive organs, or of the meſenteric glands; but in others it ariſes from an irregular action of the former organs. The

continued

continued uſe of alterative medicines, which maintain a ſteady but gentle action upon the alimentary canal, and the adjoining viſcera, ſeems to be the moſt ſucceſsful treatment. At the ſame time we muſt correct and modify their operation according to circumſtances, and palliate urgent ſymptoms. The occaſional uſe of injections of thin ſtarch and laudanum, in the proportion of eight or ten drops of the latter to two table-ſpoonfuls of the former, may likewiſe be employed.

A ſevere and often fatal ſpecies of diarrhœa is known in Scotland by the name of the "weaning braſh." It occurs after weaning a child too ſuddenly, eſpecially at an unfavourable ſeaſon, as the autumn. It commences ſometimes two or three days after weaning, but frequently not for three or four weeks, with a purging and griping, and green ſtools. If this be neglected, the ſymptoms increaſe, retching and vomiting ſupervene, followed by a loathing of every kind of food, emaciation and ſoftneſs of the fleſh, reſtleſſneſs, thirſt, and fever of a hectic character. But the moſt characteriſtic ſymptom of this diſeaſe is a conſtant peeviſhneſs, the effect of unceaſing griping pain, expreſſed by the whine of the child, but eſpecially by the ſettled diſcontent of its features. In the progreſs of the diſeaſe, the evacuations from the belly ſhow very different actions of the inteſtines, and great changes in the biliary ſecretion; for they are ſometimes of a natural colour, at other times ſlimy and aſh-coloured, and ſometimes lienteric. The diſeaſe ſeldom proves fatal before the ſixth or ſeventh week; but ſometimes an earlier termination is ſuddenly produced by inceſſant vomiting and purging, or by convulſions, from the extreme irritation in the bowels.

On diſſection, the inteſtinal canal, from the ſtomach downward, is found abounding with ſingular contractions, and has in its courſe one or more intus-ſuſceptions; the liver is firm, larger than natural, and of a bright-red colour; and the gall-bladder, which is enlarged, contains a dark-green bile. In ſome caſes the meſenteric glands have been found ſwelled and inflamed; in others, however, ſcarcely enlarged, and having no appearance of inflammation. It is probable, therefore, that this diſeaſe is owing to the morbid ſtate of the liver, and that the extremely irritable ſtate of the whole abdominal viſcera, marked by the ſpaſmodic contractions and intus-ſuſceptions, &c. is occaſioned by ſympathetic irritation.

The diet ſhould conſiſt of eggs, the finer kind of light ſhip-biſcuit, or arrow-root, cuſtard, the juice of lean meat, plain animal jellies, broths freed from their oily part, and milk. The breaſt-milk might perhaps be reſtored with advantage. Vegetables of all ſorts, particularly fruits, acids, and compoſitions of which ſugar or butter form a part, and fermented liquors of every kind, ſhould be ſtrictly prohibited. The feet ſhould be kept warm by woollen ſtockings, and flannel worn next the ſkin; and the warm bath and fomentations may be frequently uſed to alleviate the continual ſpaſms. Small doſes of calomel are however the moſt effectual remedy againſt the weaning braſh, as againſt other chronic forms of bilious diarrhœa. We may generally give half a grain of calomel morning and evening, or a grain every night, for a week or ten days. After the third or fourth doſe, there is generally a great change in the colour of the alvine diſcharge; it becomes of a dark mahogany-colour, and is in general more offenſive. When this change takes place, it produces a favourable change in the diſorder. Soon afterwards, the children become free from fever, more placid; and in a day or two more their appetite returns, with their former complexion, and every other demonſtration of health.

Connected with diarrhœa, we have to notice a complaint of the bowels clearly deſcribed of late by Dr. Powell. Like the foregoing, it conſiſts in a diſeaſed ſecretion from the mucous lining of the alimentary canal; the matter evacuated being of a ſubſtantial form, and conſiſting of layers of coagulable lymph moulded into the form of the inteſtinal cavities. The ſame matter is often formed towards the termination of dyſentery, and Villermé (Dict. des Sciences Médicales) ſays, "I have had occaſion to ſee great quantities of theſe adventitious membranes paſſed by ſtool, in the colic of Madrid. They were generally of a gelatinous conſiſtence, and enveloped in mucus. One of theſe exhibited an exact mould of the inteſtine, being tubular, and ſome inches in length." In this caſe it is eaſily referred to throwing out of lymph, a conſequence of inflammation. In the complaint in queſtion, it does however follow inflammatory action. Indeed we meet with the ſame membraneous ſubſtances in ſedentary perſons, eſpecially females, who have languid and imperfect digeſtion, with a torpid ſtate of the biliary and inteſtinal ſecretions. Here gelatinous concretions would appear to take place on the internal ſurface of the inteſtines, and even the hepatic ducts themſelves, from mere remora of the fluids and want of energy in the ſecretory glands and organs. Sometimes theſe flakes are conſiderable; and, when developed in water, repreſent entire tubes broken off irregularly at the ends; which has led to the erroneous opinion that they were portions of the mucous membrane of the inteſtines.

The ſymptoms of this diſeaſe reſemble very cloſely thoſe which attend the paſſing of gall-ſtones; ſo much ſo, indeed, that Dr. Powell ſays, "Whenever violent pain takes place in the epigaſtric region of the abdomen, exacerbating in paroxyſms accompanied by ſickneſs, yellowneſs of the eyes and ſkin, and urine, by clay-coloured fæces, and without any proportionate increaſe of action in the circulation, biliary concretions are ſuppoſed to be forcing through the ducts; and, when theſe ſymptoms abate, it is inferred that their paſſage into the duodenum has been effected." In the caſe of biliary concretions, however, we naturally expect a repetition of attacks, and no very ſpeedy termination of the patient's ſufferings: on the contrary, the ſort of attack here deſcribed is more inſulated, and, when once it has paſſed, its recurrence is by no means equally to be dreaded as is that of the former.

In eſtabliſhing his diagnoſis more particularly, however, Dr. Powell directs the uſual large pan to be filled with water, and the fæces to be ſtirred in it, after which the water has been left to reſt long enough to aſcertain whether the concretions, as they often do, have riſen to the ſurface. This water he pours off; and repeated ſimilar affuſions are made, time being allowed for ſubſidence between each. The reſidue is then to be examined. This reſidue, in the caſes to which the author refers, "has exhibited a large quantity of flakes, moſtly turned into irregular ſhapes, and appearing to have formed parts of an extenſive adventitious membrane of no great tenacity or firmneſs." In the firſt caſe that came under Dr. Powell's notice, this membrane was paſſed in perfect tubes, "ſome of them full half a yard in length, and certainly ſufficient in quantity to have lined the whole inteſtinal canal." In the others alſo, the aggregate quantity has been very large, and continued to come away for many days, in irregular thin flakes, of but one or two inches in extent, and not perfectly tubular. Dr. P. has definitely examined four ſuch caſes, in all of which the leading ſymptoms led him to ſuſpect the paſſage of biliary concretions at the time. They were all adult females. In but one of theſe our author had been conſulted for *previous* ill health. "She had frequently ſuffered from occaſional pain in the inteſtines, and derangement of her powers of digeſtion, with flatulence and a ſenſe of ſuffocation. She was always relieved, at the time, by mild opening medicine, and believed herſelf able to prevent the attacks of pain from increaſing to any ſerious degree of violence, by repeating it according to circumſtances. A ſimilar hiſtory of liability to frequent recurrence of pain, accompanied by indigeſtion, was related to me in the other inſtances. The more violent ſeizures under which I ſaw all the patients, conſiſted in a ſudden and exceſſive pain in the epigaſtric region, increaſing in paroxyſms very frequently,

quently, rather relieved by preſſure of the patient herſelf at the time, but leaving great ſoreneſs and tenderneſs during the intervals. This ſtate continued under four days; during it the ſtomach was very irritable, and the tongue coated and clammy. Jaundice came on at an early period; and the ſtools were white, brown, or ſomewhat greeniſh, and ſtreaked in colours, until the films began to paſs, when they were mixed with a full ſufficiency of bile, but not at firſt of a healthy colour. The pulſe throughout was calm, moderate, and natural, in none of the inſtances amounting to 90." There was no indication of inflammation. In one inſtance Dr. Powell noticed a conſiderable hardneſs and contraction of the abdominal muſcles; in another caſe there was ſuperadded to the above ſymptoms a difficulty in paſſing the urine, with pain in the region of the bladder, requiring the uſe of the catheter.

The practice which appeared to Dr. P. moſt advantageous, was the ſteady uſe of a mixture of the infuſum gentianæ compoſitum and infuſum ſennæ, with the addition of from ℥x. to ℥xx. of liquor potaſſæ, repeated ſo as to produce four or more ſtools in the twenty-four hours. Under its uſe the flakes firſt ſeparated, and continued to do ſo in great abundance; the jaundice diſappeared, and the patients recovered health and ſtrength. During the paroxyſms, the warm bath, warm fomentations, leeches, and bliſters, are ſerviceable as external remedies; and internally, we ſhould attempt to allay the pain and irritation, firſt by pretty large doſes of opium and hyoſciamus, and then acting on the bowels pretty briſkly by compound extract of colocynth, calomel, and hyoſciamus, aided by purgative enemas to ſolicit the periſtaltic action. The recurrence of theſe diſtreſſing attacks can only be prevented by regulating the ſtate of the bowels, and by correcting the depraved ſecretions themſelves. This is to be done by ſtrict regimen, great attention to the functions of the ſkin, and by ſuch remedies as act on the biliary ſecretion. In conjunction with thoſe meaſures, a ſteady perſeverance in the uſe of the nitro-muriatic acid bath has been uſed in obſtinate caſes with ſucceſs.

Genus X. *Cholera;* [ſuppoſed by Celſus to be derived from χολη, bile, and ῥεω, to flow, (literary *bile-flux*;) but Trallian traces it from χολας, an inteſtine, and ῥεω, (literally *bowel-flux*;) a derivation which agrees better with the phenomena of the diſeaſe.] Purging and Vomiting; wind and cramp in the ſtomach and bowels.

The cauſe of cholera is, as we have before hinted, referrible, in common with dyſentery, to a diſturbed ſtate of circulation, induced in the firſt inſtance by inaction and conſtriction of the veſſels of the ſkin, and thereby communicating a plethoric ſtate to the abdominal viſcera. In cholera, however, the diſeaſe affects more ſeverely the liver and ſuperior part of the alimentary canal, and the lower bowels ſeem influenced but in a minor degree. In mild caſes, the plethoric ſtate of the liver unloads by ſecretion, and the bile is evacuated by vomiting and purging. In caſes of extreme violence, however, no ſuch effect takes place; and hence the old authors ſeem to have fallen into a great error in attributing cholera to increaſed ſecretion of bile: for, as the colonial practitioners have well ſhown, a copious flow of this ſecretion is rather to be conſidered as ſalutary or critical than indicative of the diſeaſe in queſtion. We have three ſpecies of this genus.

1. Cholera vulgaris, or Cholera morbus. Specific character—Vomiting and purging frequent and copious. The following excellent deſcription of this diſeaſe is copied from Sydenham. He ſays, "Malum ipſum facile cognoſcitur, adſunt enim vomitus enormes, ac pravorum humorum cum maxima difficultate et anguſtia per alvum dejectio; cardialgia, ſitis. Pulſus celer ac frequens, cum æſtu et anxietate, non raro etiam parvus et inæqualis, inſuper et nauſea moleſtiſſima, ſudor interdum diaphoreticus, crurum et brachiorum contractura, animi deliquium, partium extremarum frigiditas, cum aliis notæ ſymptomatibus, quæ adſtantes magnopere perterrefaciunt, atque etiam anguſto viginti quatuor horarum ſpatio ægrum interimant." The practitioners who followed Sydenham deſcribed the diſeaſe as attended from the firſt by *bilious* vomiting; but later writers deny this. And that cloſe obſerver of nature, Aretæus, ſays, "In primis quæ evomuntur, *aquæ ſimilia ſunt;* quæ anus effundit, ſtercorea, liquida, tetrique odoris ſentiuntur. Siquidem longa cruditas id malum excitavit, quo ſi per clyſterem eluanter, *primo pituitoſa, mox bilioſa feruntur.*"

2. Cholera flatulenta, windy or dry cholera. The vomiting and purging rare or abſent; great and oppreſſive flatulence; retching; flatulent dejections and eructations. Sydenham ſays, that in the epidemic cholera of 1669 he met with but a ſingle inſtance of the dry or flatulent ſpecies. It ſeems, indeed, a diſeaſe of rare occurrence, and the diſcriminating ſymptom, *flatulence*, is probably owing to the nature of the ſwallowed food.

3. Cholera ſpaſmodica, Indian cholera; emphatically called "mort de chien." The dejections watery; ineffectual retching; ſpaſms ſucceſſive and violent, commencing in the thoracic and abdominal muſcles. We copy the ample account of the ſymptoms of this dreadful malady from the authentic Reports on the Epidemic Cholera which raged throughout Hindoſtan and the peninſula of India, in 1817, 18, and 19; publiſhed under the authority of the Bombay government.

"The attack was generally uſhered in by a ſenſe of weakneſs, trembling, giddineſs, nauſea, violent retching, vomiting, and purging, of a watery, ſtarchy, whey-coloured or greeniſh, fluid. Theſe ſymptoms were accompanied or quickly followed by ſevere cramps, generally beginning in the fingers and toes, and thence extending to the wriſts and fore-arms, calves of the legs, thighs, abdomen, and lower part of the thorax. Theſe were ſoon ſucceeded by pain, conſtriction, and oppreſſion of ſtomach and pericardium; great ſenſe of internal heat; inordinate thirſt, and inceſſant calls for cold water, which was no ſooner ſwallowed than rejected, together with a quantity of phlegm, or whitiſh fluid, like ſeethings of oatmeal. The action of the heart and arteries now nearly ceaſed; the pulſe either became altogether imperceptible at the wriſts and temples, or ſo weak as to give to the finger only an indiſtinct feeling of fluttering. The reſpiration was laborious and hurried, ſometimes with long and frequently-broken inſpirations. The ſkin grew cold, clammy, covered with large drops of ſweat; dank and diſagreeable to the feel, and diſcoloured of a bluiſh, purple, or livid, hue. There was great and ſudden proſtration of ſtrength, anguiſh, and agitation. The countenance became collapſed; the eyes ſuffuſed, fixed and glaſſy, or heavy and dull; ſunk in their ſockets, and ſurrounded by dark circles; the cheeks and lips livid and bloodleſs; and the whole ſurface of the body nearly devoid of feeling. In feeble habits, where the attack was exceedingly violent, and unreſiſted by medicine, the ſcene was ſoon cloſed. The circulation and animal heat never returned; the vomiting and purging continued, with thirſt and reſtleſſneſs; the patient became delirious or inſenſible, with his eyes fixed in a vacant ſtare, and ſunk down in the bed; the ſpaſms increaſed, generally within four or five hours.

"The diſeaſe, ſometimes at once, and as if it were momentarily, ſeized perſons in perfect health; at other times, thoſe who had been debilitated by previous bodily ailment; and individuals in the latter predicament generally ſunk under the attack. Sometimes the ſtomach and bowels were diſordered for ſome days before the attack, which would then, in a moment, come on in full force, and ſpeedily reduce the patients to extremities.

"Such was the general appearance of the diſeaſe where it cut off the patient in its earlier ſtages. The primary ſymptoms, however, in many caſes, admitted of conſiderable variety. Sometimes the ſickneſs and looſeneſs were

preceded by ſpaſms; ſometimes the patient ſunk at once, after paſſing off a ſmall quantity of colourleſs fluid, by vomiting and ſtool. The matter vomited in the early ſtages was, in moſt caſes, colourleſs or milky; ſometimes it was green. In like manner, the dejections were uſually watery and muddy; ſometimes red and bloody; and, in a few caſes, they conſiſted of a greeniſh pulp, like half-digeſted vegetables. In no inſtance was feculent matter paſſed in the commencement of the diſeaſe. The cramps uſually began in the extremities, and thence gradually crept to the trunk; ſometimes they were ſimultaneous in both; and ſometimes the order of ſucceſſion was reverſed; the abdomen being firſt affected, and then the hands and feet. Theſe ſpaſms hardly amounted to general convulſion. They ſeemed rather affections of individual muſcles, and of particular ſets of fibres of thoſe muſcles, cauſing thrilling and quivering in the affected parts, like the fleſh of crimped ſalmon; and firmly ſtiffening and contorting the toes and fingers. The patient always complained of pain acroſs the belly, which was generally painful to the touch, and ſometimes hard and drawn back towards the ſpine. The burning ſenſation in the ſtomach and bowels was always preſent; and at times extended along the cardia and œſophagus to the throat. The powers of voluntary motion were, in every inſtance, impaired; and the mind obſcured. The patient ſtaggered like a drunken man, or fell down like a helpleſs child. Head-ach over one or both eyes ſometimes, but rarely, occurred. The pulſe, when to be felt, was generally regular, and extremely feeble, ſometimes ſoft; not very quick; uſually ranging from 80 to 100. In a few inſtances, it roſe to 140 or 150 ſhortly before death. Then it was indiſtinct, ſmall, feeble, and irregular. Sometimes very rapid, then ſlow for one or two beats. The mouth was hot and dry; the tongue parched, and deeply furred, white, yellow, red, or brown. The urine at firſt generally limpid, and freely paſſed; ſometimes ſcanty, with ſuch difficulty as almoſt to amount to ſtrangury; and ſometimes hardly ſecreted in any quantity, as if the kidneys had ceaſed to perform their office. In a few caſes, the hands were tremulous; in others, the patient declared himſelf free from pain and uneaſineſs, when want of pulſe, cold ſkin, and anxiety of features, portended ſpeedy death. The cramp was invariably increaſed upon moving.

"Where the ſtrength of the patient's conſtitution, or of the curative means adminiſtered, were, although inadequate wholly to ſubdue the diſeaſe, ſufficient to reſiſt the violence of its onſet, nature made various efforts to rally; and held out ſtrong, but fallacious, promiſes of returning health. In ſuch caſes, the heat was ſometimes wholly, at others partially, reſtored; the cheſt and abdomen in the latter caſe becoming warm, whilſt the limbs kept deadly cold. The pulſe would return; grow moderate and full; the vomiting and cramps diſappear; the nauſea diminiſh, and the ſtools become green, pitchy, and even feculent; and with all theſe favourable appearances, the patient would ſuddenly relapſe; chills, hiccup, want of ſleep and anxiety, would ariſe; the vomiting, oppreſſion, and inſenſibility, return; and in a few hours terminate in death.

"When the diſorder ran its full courſe, the following appearances preſented themſelves. What may be termed the cold ſtage, or the ſtate of collapſe, uſually laſted from twenty-four to forty-eight hours, and was ſeldom of more than three complete days' duration. Throughout the firſt twenty-four hours, nearly all the ſymptoms of deadly oppreſſion, the cold ſkin, feeble pulſe, vomiting and purging, cramps, thirſt, and anguiſh, continued undiminiſhed. When the ſyſtem ſhewed ſymptoms of revival, the vital powers began to rally, the circulation and heat to be reſtored; and the ſpaſms and ſickneſs to be conſiderably diminiſhed. The warmth gradually returned; the pulſe roſe in ſtrength and fullneſs, and then became ſharp, and ſometimes hard. The tongue grew more deeply furred; the thirſt continued, with leſs nauſea. The ſtools were no longer like water; they became firſt brown and watery; then dark, black, and pitchy; and the bowels, during many days, continued to diſcharge immenſe loads of vitiated bile, until, with returning health, the ſecretion of the liver and other viſcera gradually put on a natural appearance. The fever, which invariably attended this ſecond ſtage of the diſeaſe, may be conſidered to have been rather the reſult of nature's effort to recover herſelf from the rude ſhock which ſhe had ſuſtained, than as forming any integrant and neceſſary part of the diſorder itſelf. It partook much of the nature of the common bilious attacks prevalent in theſe latitudes. There was the hot dry ſkin; foul, deeply-furred, dry, tongue; parched mouth; ſick ſtomach; depraved ſecretions; and quick variable pulſe; ſometimes with ſtupor, delirium, and other marked affections of the brain. When the diſorder proved fatal after reaching this ſtage, the tongue, from being cream-coloured, grew brown, and ſometimes dark, hard, and more deeply furred; the teeth and lips were covered with ſordes; the ſtate of the ſkin varied; chills, alternating with fluſhes of heat; the pulſe became weak and tremulous; catching of the breath; great reſtleſſneſs, and deep moaning, ſucceeded; and the patient ſoon ſunk, inſenſible, under the debilitating effects of frequent dark pitchy alvine diſcharges.

"Of thoſe who died, it was believed, perhaps rather fancifully, that the bodies ſooner underwent putrefaction than thoſe of perſons dying under the ordinary circumſtances of mortality. The bodies of thoſe who had ſunk in the earlier ſtages of the malady, exhibited hardly any unhealthy appearance. Even in them, however, it was obſerved, that the inteſtines were paler, and more diſtended with air, than uſual; and that the abdomen, upon being laid open, emitted a peculiar offenſive odour, wholly different from the uſual ſmell of dead ſubjects. In the bodies of thoſe who had lived ſome time after the commencement of the attack, the ſtomach was generally of natural appearance externally. The colour of the inteſtines varied from deep roſe to a dark hue, according as the increaſed vaſcular action had been arterial or venous. The ſtomach, on being cut into, was found filled, ſometimes with a tranſparent, a green, or dark, flaky, fluid. On removing this, its internal coats, in ſome caſes, were perfectly healthy; in others, and more generally, they were croſſed by ſtreaks of a deep red, interſperſed with ſpots of inflammation, made up of tiſſues of enlarged veſſels. This appearance was frequently continued to the duodenum. In a very few caſes, the whole internal ſurface of the ſtomach was covered with coagulable lymph; on removing which, a bloody gelantine was found laid on the interior coat, in ridges or elevated ſtreaks. The large inteſtine was ſometimes filled with muddy fluid, ſometimes livid, with dark bile, like tar; juſt as the individual had died in the earlier or later periods of the attack. In moſt caſes, the liver was enlarged, and gorged with blood. In a few, it was large, ſoft, light-coloured, with greyiſh ſpots, and not very turgid. In others again, it was collapſed and flaccid. The gall-bladder was, without exception, full of dark-green or black bile. The ſpleen and thoracic viſcera were, in general, healthy. The great venous veſſels were uſually gorged; and, in one caſe, the left ventricle of the heart was extremely turgid. The brain was generally of natural appearance. In one or two inſtances, lymph was effuſed between its membranes, near the coronal ſuture, ſo as to cauſe extenſive adheſions; in other caſes, the ſinuſes, and the veins leading to them, were ſtuffed with very dark blood."

The treatment of cholera in each ſpecies will be founded on the ſame general principles; viz. to reſtore to the ſkin and external parts the balance of action by means of very-hot baths, diaphoretics, urtication, &c. to remove the plethora of the ſyſtem, and eſpecially of the portal ſyſtem, by active bleeding; and to promote ſecretion by mercurial remedies. The combating of particular ſymptoms, which is an indiſpenſable taſk, will require us to adminiſter opium for the allaying of ſpaſm and nervous

nervous irritation, and to give emetics to provoke, or effervescing medicines to restrain, vomiting; and so on. In our country the cure of cholera may, in general, be effected by diaphoretics, as the pulv. Doveri. comp. small and frequently-repeated doses of colomel, the warm bath, cold drinks, and abstinence; after which, columbo and other stimulants of the stomach may be used to perfect the approaches to health.

In the Cholera spasmodica we have however a much more terrible malady to contend with. In the Report we have just quoted, we are told that "the centre-division of the army, under the commander-in-chief, exhibited an awful specimen of the fatality of the disease. It consisted of less than 10,000 fighting men; and the deaths, within twelve days, amounted, at the very lowest estimate, to 3000; according to others, to 5, and even 8000!" The dread of a mortality so great will, no doubt, stimulate us to use the measures commonly successful with the utmost care and promptness; and, considering the immense body of information which we have received from the surgeons who witnessed the ravages of the disease in the vast populations of either Ind, we can have little hesitation in establishing therapeutical dogmas.

A measure which strikes at the fons and origo mali is bleeding. This should be at once carried ad deliquium animi, and should form the first part of the treatment. The alleviation of pain, the restoration of the biliary secretion and of the perspiration, must be attempted by large doses of calomel, varying from a few grains to a scruple, and combined with opium. Antimony being scarcely ever retained on the stomach, the sickness is to be moderated by clysters composed of aqueous solutions of opium, since even the latter substance, in a solid form, is rejected when given by the mouth. Mr. J. Boyle (Treatise on the Epidemic Cholera of India, 1821.) is of opinion, however, that sickness should by no means be checked. He says, "The constant nausea and irritation of stomach, which is observable in the early stages of this complaint, without full or violent vomiting, simply spouting up, as it were, any thing swallowed; the obstruction of the biliary ducts observed in dissection, and a general want of success in practice; induced me to embrace ideas perfectly new on the subject. The obstruction of the biliary ducts I looked on as a source of irritation to the nervous system generally, and the nausea and sickness of stomach as an effort of nature to free herself of an unaccustomed evil. In accounting for the causes of this disease, it has been observed, and with great justice, that when, from the exertions to vomit, bile makes its appearance, a favourable prognosis may be formed. Now, if the appearance of bile be a salutary one, (and it certainly is,) why not favour the progress of its formation, instead of obstructing its passage by the administration of sedatives? We know of nothing which will increase the secretion of bile so quickly or so effectually as the act of vomiting; we also know the sympathy which subsists between the liver and stomach, and that derangement of either organ will more or less affect both. It is evident, then, that the gastric derangement peculiar to this disease, is not only indicative of the existence of lurking mischief, but directly points to the treatment. Further, of all the cases of which I have seen or heard, there was not one fatal termination after bile had, in any way, or by any means, made its appearance."

The diaphoretics which the Indian practitioners give are often of a highly-stimulating nature; as arrack-punch, &c. but these should not be used till the plethora and consequent cerebral disturbance, which in some cases is dreadfully violent, is subdued by venesection. In using the bath, we should be careful to employ it hot; for it is established on good authority, that, till the temperature is raised to an unpleasant height, no good is derived from it.

The convalescents of cholera should be subjected to the influence of the nitric-acid bath; and the acid internally administered likewise forms a cooling palatable drink, which tends to restore the tone of the alimentary canal, and improves the secretion of the liver.

With regard to the contagious nature of this complaint, the reader is referred to PYRECTICA.

Genus XI. *Enterolithus*, [from εντερον, bowel, and λιθος, stone.] Stony concretions in the stomach and bowels.

For the information under this head we are wholly indebted to Dr. Mason Good; as no other system contains a similar genus. We have therefore no synonymes to put down. Dr. Good very justly observes, that "almost all animals are endued with a power of separating or secreting lime and other earths from the blood for particular purposes; as that of forming a shell covering in insects and worms, and of giving hardness to the bones in all other animals. Under a morbid action of single organs, or of the system generally, this is often secreted in an undue quantity, and poured forth into cavities where its accumulation and crystallization must be attended with mischief. Such, at times, is the case in respect to the stomach and intestines. But, independently of concretions derived from this source, we often meet with others produced by an agglutination or crystallization of the juices which are contained in the aliment, and which, not unfrequently, give immediate proof of their origin by the aromatic taste, smell, or other qualities, which such concretions exhibit. There is also a third kind of concretion occasionally to be traced in the intestinal canal, of a softer structure, and cetaceous or saponaceous feel, which appears to be produced by a peculiar combination of the materials of the fæces, and constitute proper *scybala*, although this term has not unfrequently been employed to signify portions of common fæces or stercoraceous matter in an indurated state." Thus, then, we have three species.

1. Enterolithus bezoardus, the intestinal bezoar: in concentric layers closely agglutinated or crystallized; capable of a fine polish; frequently with a metallic lustre on the surface of each layer; and an accidental nucleus in the centre: of a spheroidal figure; chiefly consisting of vegetable matter. It is said, (though not proved) to be found in the human stomach; but more commonly in that of the smaller ruminating quadrupeds, as the goat and antelope, particularly the beautiful and elegant species of antelope denominated *gazhal* by the Arabians and Persians, and *tsebi* by the Hebrew poets; the *ahu* of the Turks; the Antilope gazella of Linnæus. It was formerly employed as a febrifuge and alexipharmic in medicine; and worn as an amulet by the superstitious, who have sometimes purchased a single one at six thousand livres when very fine, and hired them in Holland and Portugal on particular occasions at a ducat a-day. See the article BEZOAR, vol. iii.

2. Enterolithus calculus, intestinal calculus: radiating from a common centre, or formed in concentric layers; mostly with an accidental nucleus; more or less porous; spheroidal or oblong; admitting an imperfect polish; composed chiefly of earths and animal matter. This species, Dr. Good says, is by no means unfrequently found in the human stomach and intestines; but far oftener in the digestive channel of other animals, and particularly in the larger ruminating quadrupeds, or those with a long complicated digestive organ, where the food, as in the formation of bezoars, is slowly carried forward; and in tardy draught-horses, particularly those of millers, which are fed largely on bran, which seems to yield a ready basis for these concretions. See Phil. Trans. xxiv. 1705. xliv. 1746. xlviii. 1754. In the last case, the disease had existed for years: the animal died aged twenty-two, nearly foaling; but gave no sign of pain or inconvenience till three months before her death. The calculus weighed 15 lb. 12 oz. average diameter 8½ inches by 8 inches. When chemically analyzed, they are chiefly found to consist

conſiſt of a triple or ammoniaco-magneſian phoſphate, like the earthy or white-ſand calculi of the human bladder; though it is difficult to conceive from what quarter the magneſia is obtained. In the caſe of millers' horſes, ſome portion of this earth may be derived from the bran, in which it is always to be traced; but the difficulty ſtill remains with reſpect to other animals. The figure, whatever be the ſize of the calculus, is uſually ſpheroidal, except where broken into ſeparate fragments: the matter is depoſited for the moſt part, as in the former ſpecies, upon a nucleus of ſome ſort or other, as a ſmall piece of flint, an iron nail, a ſeed or huſk, a piece of hay or ſtraw; the ſtructure ſometimes radiating from ſuch common centre to the ſurface, and ſometimes evincing diſtinct plates more or leſs united to each other. In the human ſubject, theſe calculi vary from the ſize of a pea to that of a filbert, cheſnut, or hen's egg, and are often ſtill larger. In the caſe of Margaret Lower (ſee p. 151.) they were uſually of the two former ſizes, and appear to have been formed in great abundance and with wonderful facility; for her abdomen, upon preſſing it, often rattled from the quantity it contained, with the ſound of a bag of marbles. Many of theſe were rough and ſharp-pointed at the edge, evidently fragments or nodules of larger concretions, and gave great pain in the rejection, whether above or below, for they were diſcharged both ways. The larger-ſized weighed rather more than two drams; and Dr. König, who relates the caſe, calculated that the whole that were diſcharged during the continuance of the complaint could not amount to leſs than 5lb. avoirdupois. In a caſe related by Mr. Martineau, (Phil. Tranſ. vol. xxxii. 1723.) five calculi, ſome of them much larger than the preceding, were voided per anum, by a poor woman in the third month of pregnancy, after having ſuffered from colic about four or five days: of theſe, the largeſt, 8 inches in circumference and 6⅝ in length, weighed two ounces ſixteen pennyweights and twelve grains. In this caſe, and in various others, the calculi ſeem to have been in the inteſtines for a conſiderable period of time without inconvenience; for it is hardly poſſible to conceive that all theſe ſhould have been produced in the courſe of a week. In another caſe in the ſame journal, vol. xli. 1740, related by M. Mackarneſs, a calculus of this kind was extracted with ſome difficulty from the anus by the ſurgeon who attended, which weighed 8½ oz. and was 10½ inches in circumference. It is deſcribed as "a hard unequal ragged flinty ſtone," but was not examined chemically. There is ſome doubt whether this had not forced its way from the bladder into the rectum; but there is little doubt that it had been preſent in one organ or other, and nearly of its full ſize, for ſeveral years before its extraction; for the patient's ſtools were obtained with difficulty; and "three children, which ſhe had ſucceſſively borne in the three preceding years, were all marked with a large hollow or indentation in ſome part of the head, in one inſtance of ſufficient extent to hold the moiety of a ſmall orange!"

3. Enterolithus ſcybala, concretions reſembling indurated fæces: ſoapy or unctuous; moſtly continuous; ſometimes in layers; ſpheroidal or oblong; varying in colour; conſiſting chiefly of mucous and oleaginous matter.

"This ſpecies," ſays Dr. Good, "has not hitherto received the degree of attention to which it is entitled; and even Fourcroy and Walther ſeem to have miſtaken it for a biliary calculus. The ſpecific character is drawn up from various inſtances that have occurred to the writer, or have been ſhown him by others. A laminated ſcybalum, taken from the fæces of a woman who had long been ſuffering from coſtiveneſs and abdominal pain, an inch and a half in length, and nearly two inches in circumference, of an oblong irregular ſhape, and reddiſh brown colour, was lately preſented to a medical meeting in this metropolis as a biliary calculus, the donor expreſſing his aſtoniſhment that it could by any means be protruded through the ductus communis. It had neither the ſpecific levity, nor the peculiar bitter, nor the reſinous ſtratification, of gall-ſtones; and there can be little doubt that it was formed in the inteſtinal canal."

In ſir Everard Home's paper On the Formation of Fat in the Inteſtines of living Animals, Phil. Tranſ. for 1813, a variety of ingenious facts and experiments are advanced to ſhow the mode in which ſcybala are formed in the alvine paſſage, the component parts of which ſir Everard ſuppoſes to be fat or oil, and mucus. The ſame paper contains, in ſupport of this opinion, two intereſting caſes by Dr. Babington: the one that of a lady, who, upon taking olive-oil, conſtantly voided a number of globular concretions, "varying in ſize from that of a ſmall pea to the bulk of a moderate grape, of a cream colour and ſlightly tranſlucent, of a ſufficient conſiſtence to preſerve their form and to bear being cut by a knife, like ſoft wax;" all which, like the ſcybalum above, had till this period been regarded as gall-ſtones: the ſecond caſe that of a girl four years and a half old, who appears to have had a power of ſecreting oil in the inteſtines, and of diſcharging it per anum: "At three years old her mother obſerved ſomething come from her as ſhe walked acroſs the room, which, when examined, was found to be fat in a liquid ſtate, which concreted when cold. Ever ſince that time to the preſent ſhe has voided at intervals of ten or fourteen days the quantity of from one to three ounces, ſometimes pure, at others mixed with fæces: when voided, it has an unuſually yellow tinge, and is quite fluid like oil. Her appetite is good, as well as her ſpirits, and her fleſh firm: her belly rather tumid, but not hard; ſhe is ſubject to occaſional griping." The medical records furniſh numerous inſtances of ſimilar formations. In the Act. Nat. Cur. vol. iii. obſ. 51. we have a caſe very ſimilar to Dr. Babington's, of ſoapy or oleaginous globules excreted in a paroxyſm of colic: "excreti globuli, quaſi ſaponacei, cedente dolore hypochondriorum." So in the Edinb. Med. Comment. vol. iv. p. 335, we have a caſe from the pen of Mr. Scott, of various adipoſe maſſes dejected in a ſoftened ſtate.

Genus XII. [*Helminthia*, from ἑλμινς-θος, an inteſtinal worm.] Worms or larvæ of inſects inhabiting the ſtomach or inteſtines.

The exiſtence of worms or paraſitic animals in the inteſtines of other living creatures, is to the phyſiologiſt an important ſubject of contemplation, inaſmuch as, the queſtion ſo long agitated concerning the ſpontaneous generation or external introduction of worms once ſettled, we ſhould be enabled to obtain ſome clearer ideas on the nature of life. In the practice of medicine, however, we are not required to enter into this difficult queſtion. It is enough for the pathologiſt to know that worms in the alimentary canal are to his fellow-creatures a ſource of annoyance and pain, by what ſigns to detect their preſence, and to know likewiſe by what means they are to be expelled. The latter view may lead him to make ſome claſſification of the animals in queſtion, ſimply however for the reaſon that it is neceſſary to vary the remedial agent according to the ſpecies or genus of the offending animal. The uſual ſeat of worms is the alimentary canal; but they have been found in all parts of the body. Sennertus ſays, "Præter vermes inteſtinales, ſunt et alii, *omnes fere corporis partes* incolentes, uti vermes dentales, gingivales, rhinarii, pulmonarii, cardiaci, ſanguinarii, urinarii, umbilicales; vermes in hepate, in ſaliva, &c. Sed hi omnes non niſi in ſtatu morbido inveniuntur." And to this liſt we might add a hundred others. The alimentary canal appears however to be the only part in which the preſence of worms can be detected by ſymptoms, or from which they can be expelled by medicine; ſo that we ſhall confine ourſelves to the paraſitic inhabitants of this cavity.

For an ample deſcription of the various kinds of inteſtinal worms, with plates repreſenting their external form and

and internal ſtructure, the reader is referred to the article HELMINTHOLOGY, and to each tribe under its generic name; as ASCARIS, HIRUDO, LUMBRICUS, TÆNIA, &c. We ſhall therefore merely copy in this place, with a few additions, the claſſification of Dr. Good, which muſt be allowed on all hands to be ſufficiently comprehenſive for practical purpoſes; and which, at the ſame time, compreſſes the immenſe body of reſearch from which it is compoſed into a very ſmall ſpace. The following are the three ſpecies and their varieties.

1. Helminthia alvi, or worms exiſting and finding a proper nidus in the ſtomach or alvine canal, chiefly of children and ſickly adults; producing emaciation, a ſwelled hard belly, gnawing or pungent pain in the ſtomach, pale countenance, fetid breath, and irritation of the noſtrils. Of this ſpecies of diſeaſe there are five varieties, occaſioned by the different genera of worms whoſe names they bear.

α. H. Aſcaridis lumbricoidis, commonly called the long round worm; by Dr. Baillie, Lumbricus teres. For its ſpecific character, and a repreſentation of it, ſee vol. ii. p. 251. The body is tranſparent, light yellow, with a faint line down the ſide; it is gregarious and vivacious, and, according to Brera, poſſeſſes much ſenſibility: is from twelve to fifteen inches long. It inhabits principally the inteſtines of thin perſons, generally about the ileum, through the parietes of which it ſometimes eats its way. It has been known to aſcend into the ſtomach, and creep out of the mouth and noſtrils: it occaſionally travels to the rectum, and paſſes away at the anus. This animal, being poſſeſſed of a cutting ſharp point, often cauſes pungent and rending pains, eſpecially about the umbilical region. Colic and borborygmi are ſymptoms peculiar to it.

β. H. Trichocephali hominis, the long thread-worm; (Trichurus vulgaris, *Baillie*.) Body above ſlightly crenate, beneath ſmooth; finely ſtriate on the fore-part: head obtuſe, and furniſhed with a ſlender retractile proboſcis; tail or thinner part twice as long as the thicker, terminating in a fine hair-like point; about two inches long; in colour reſembles the maw-worm, or common aſcaris: gregarious, and found chiefly in the inteſtines of ſickly children; generally in the cœcum.

γ. H. Tæniæ ſolii, the long tape-worm: articulations long and narrow, with marginal pores by which it attaches itſelf to the inteſtines, one on each joint, generally alternate; ovaries arboreſcent: head with a terminal mouth ſurrounded with two rows of radiant hooks or holders; and a little below, on the flattened ſurface, four tuberculate orifices or ſuckers, two on each ſide: tail terminated by a ſemicircular joint without any aperture: from thirty to forty feet long, and has been found ſixty. It inhabits the inteſtines of mankind, generally at the upper part. Is ſometimes ſolitary, but commonly in conſiderable numbers. As the head of the Tænia ſolium is furniſhed with pointed fangs, it ſometimes attaches itſelf with ſuch force to the mucous membrane of the inteſtines, as to produce the moſt ſevere, and even deadly, ſymptoms, ſince the membrane is mangled, and inflammation, or even gangrene, may be the conſequence. A ſingular ſymptom of this tænia is a frequent ſenſe of tenſion or tightneſs in the noſe. See HELMINTHOLOGY, vol. ix. p. 343–6.

δ. H. Tæniæ vulgaris, (T. lata, *Baillie*,) the broad tape-worm: articulations ſhort and broad, with a pore in the centre of each joint, and ſtellate ovaries round them; body broader in the middle, and tapering towards both ends; head reſembling the laſt, but narrower and ſmaller; tail ending in a rounded joint. Like the laſt, it inhabits the upper part of the inteſtines, from three to fifteen feet long; uſually in families of three or four. The ſymptoms of tænia are pain in the belly, with a turning motion and weight in the ſide; occaſional prickings or bitings in the region of the ſtomach; ſwelling of the abdomen at intervals, with ſenſe of coldneſs there; appetite enormous, while emaciation continues, with ſenſe of increaſing weakneſs; complexion livid; pupils unuſually dilated; eyes ſuffuſed with tears; vertigo with nauſea; vacillation of the legs, and ſometimes convulſive tremblings of the whole body; occaſional evacuation, per anum, of ſmall ſubſtances reſembling the ſeeds of the lemon or gourd, which are portions of the marginal papillæ of the worms.

ε. H. Faſciolæ, from the fluke, or gourd-worm. Body flattiſh, with an aperture or pore at the head, and generally another beneath: inteſtines flexuous: ovaries lateral: hermaphrodite, and oviparous.

2. Helminthia podicis, worms, or the larvæ of inſects, exiſting, and finding a proper nidus, within the verge of the anus, exciting a troubleſome local irritation, ſometimes accompanied with tumour; frequently preventing ſleep, and producing pain or faintneſs in the ſtomach. Here we have three varieties.

α. H. Aſcaridis vermicularis, from the maw-worm, or thread-worm: head ſubulate, nodoſe, and divided into three veſicles, in the middle of each of which is an aperture by which it receives nouriſhment; ſkin at the ſides of the body finely crenate or wrinkled; tail finely tapering, and terminating in a point; the female has a ſmall punctiform aperture a little below the head, through which it receives nouriſhment. Gregarious; viviparous; about half an inch long; ſometimes wanders into the inteſtines, and occaſionally as high as the ſtomach.

β. H. Scarabæi, larvæ of ſeveral ſpecies of the beetle, as of the S. nobilis; S. Schœfferi, S. volvens, which, when out of the body, depoſit their eggs in round balls of animal dung, which they roll up and bury with their hind feet.

γ. H. Œſtri; bots, or larvæ of the hæmorrhoidal breeze or gad-fly. Round; pale-green; tail obtuſely truncate; head tapering; mouth horny, with two lips, and two recurved black claws on each ſide of the mouth. Found convoluted in the mucus and fæces of man, but far more frequently of other animals, and eſpecially of the horſe.

3. Helminthia erratica; worms introduced by accident, and without finding a proper habitation in the ſtomach or inteſtines: producing ſpaſmodic colic with ſevere gripings; and occaſionally vomiting or dejection of blood. Of this ſpecies alſo we have three varieties.

α. H. Gordii, from the hair-worm. Found in ſoft ſtagnant waters: from four to ſix inches long, twiſted into various knots and contortions: colour pale-brown, with dark extremities. This diſeaſe is moſt frequent among the peaſants of Lapland; and was ſuſpected by Linnæus, and has been ſince proved, or thought to be proved, by Dr. Montin, one of his moſt celebrated diſciples, to be occaſioned by their drinking the half-putrid water of ſtagnant marſhes or ditches inhabited by the gordius. It is not known on the Lapland mountains. The gripings are often ſo violent, that the patient rolls and writhes on the ground in ſeverer agony than a woman in labour, and diſcharges bloody urine. After many hours, ſometimes an entire day, the diſorder terminates in a profuſe ptyaliſm that continues for a quarter of an hour. The Laplanders call the diſeaſe *ullen*, or *hotme*.

β. H. Hirudinis, occaſioned by various ſpecies of the leech. Swallowed along with the muddy and ſtagnant water they inhabit. Apparently both the medicinal and the horſe leech have been thus found; but the exact ſpecies has not been ſufficiently indicated. Sauvages, in his genus Hæmatemeſis, quotes Galen, Schenck, and Wedel; but does not deſcribe the ſpecies. Upon turning to Galen. iv. 411. D. the reader will find that he briefly adverts to the diſeaſe, and quotes from Aſclepiades and Apollonius the remedies that were employed in their reſpective days: but he does not characteriſe the worm;

worm; and Dr. Liſter, apparently without knowing that the ſubject had been touched on before, deſcribes the caſe of a patient, who, after having "had about his ſtomach and right ſide a moſt exquiſite and tormenting pain for at leaſt four months, which many times threw him into horrors and chillneſs, ague-like, and was the ſickeſt man," continues he, "I ever ſaw not to die," vomited up a worm of a dark-green colour, like a horſe-leech, and ſpotted. From the puncture of the animal, or the violence of the retching, he brought up at the ſame time two pounds of coagulated blood: and had occaſionally diſcharged blood downwards. The man imagined he drank it in pond-water during the preceding ſummer. The worm was dead when rejected, or at leaſt when Dr. Liſter ſaw it: four inches long, and three in its largeſt circumference; and is ſtill farther deſcribed and drawn as having three ſmall fins on each ſide near the head, with a forky, finny, tranſparent, and extenſile, tail. *Phil. Tranſ.* 1681–2. No. 6.

One of the moſt extraordinary caſes, among thoſe entitled to attention, is related by Mr. Paiſley in the Edinburgh Medical Eſſays, ii. art. 26. In this caſe there were two worms, whoſe heads he compares to that of the horſe-leech, and which appear to have been tolerably quieſcent in their growth, till the general ſyſtem was diſturbed by a wound on the breaſt, received by the patient in conſequence of a duel, with the ſmall ſword. The general ſymptoms of this ſpecies of Helminthia appeared about the third day afterwards, and continued with many variations for ſeveral weeks, when the patient diſcharged inferiorly one of theſe worms, meaſuring a foot and a half in length, and an inch and a half in diameter, dead, but full of blood, and accompanied by a large dejection of grumous blood, "to appearance ſome pounds;" and not many weeks afterwards the other, ſtill larger.—A worm, apparently ſimilar, is ſtated by Dr. Bond of Philadelphia, 1754, to have been diſcharged downwards by a female patient of his, who had been long ſubject to an hepatic diſeaſe, which gradually changed to violent helminthic ſymptoms in the ſtomach. Theſe, at length, ſuddenly vaniſhed; and within twenty-four hours the worm was dejected, dead, and in two parts, the whole making twenty inches in length. The patient died ſoon after; and, on opening her, this worm appears to have worked its way, when ſmall, into the liver by the courſe of the common duct, to have committed great depredation here, and afterwards, with conſiderable difficulty and dilation of the duct, to have travelled back again. Dr. Bond ventures to call it an *hepatic leech*; though he calculates its courſe as now ſtated. *London Med. Obſerv. and Inq.* i. 68.—Maroja, phyſician to Philip IV. of Spain, in his treatiſe *De Morbis Internis*, lib. iv. cap. 16, mentions the caſe of a patient who diſcharged a ſtill larger dead round worm of the ſame monſtrous kind, and died in the act of diſcharging it: its length was twenty fingers breadth; its rotundity equal to the ſize of a ſtout man's hand; full of blood, and had more than a pound and a half of blood taken from its inſide.

γ. H. Muſcæ cibariæ; larvæ of the pantry-fly. Theſe ſeem chiefly to produce miſchief while in the ſtomach, into which they may be taken with decayed cheeſe, as the eggs are ſometimes depoſited in it. See Dr. White's caſe, Mem. Med. Soc. Lond. vol. ii. The patient, aged thirty, was emaciated, of a ſallow complexion; had gripings and tenderneſs of the abdomen; coſtiveneſs, rigors, and cold extremities. Took columbo-root, and occaſionally calomel and other purgatives. In a month was better, and the appetite good. The next purgative brought away an immenſe number of pupes, or chryſalid worms; ſome of which, being preſerved, were tranſformed into four-winged inſects, the Muſca cibaria. Mr. Church, to whoſe entomological ſkill theſe worms were confided, aſſerts that he once knew a child diſcharge a larva of the caddy inſect (Phryganea grandis); and that the Phalæna pinguinalis lives and is nouriſhed in the ſtomach; and, after ſuſtaining ſeveral metamorphoſes, is thrown out, and proves its proper genus. See alſo Mr. Calderwood's caſe; Edin. Med. Com. ix. 223.

The ſymptoms of worms are as various and complicated as we ſhould naturally expect to find them, when we take into conſideration the multiform effect of nervous irritation on all parts of the body. When ſpeaking of the functional diſturbances of the alimentary canal, we have endeavoured to ſhow how the irritated extremities of the nervous expanſion of the ſtomach and bowels will convey nervous irritation to every other organ, and after a time induce more important changes. The ſame reaſoning will apply to the effect of worms, which are to the nerves irritants of extreme power. To deſcribe, therefore, all the ſymptoms of worms, would be endleſs; and it would moreover be uſeleſs, ſince they may be ſimulated by every other nervous diſorder. The only certain ſign of their exiſtence is their being ſeen in the ſtools; but in many this is not obſerved till their preſence has produced much gaſtric and inteſtinal diſturbance. According to profeſſor Brera, in perſons attacked by worms, the colour of the countenance is changed; it is ſometimes red, then pale, or leaden-coloured. A half circle of azure appears under the eyes; they loſe their vivacity, and are fixed and motionleſs with regard to ſurrounding objects; they are ſad and dejected; the lower eye-lids ſwell, and the pupils are evidently dilated. At other times the eyelids are yellowiſh, and the ſame tint extends over the white of the eye. There are alſo inſupportable itchings in the noſtrils, with occaſional hæmorrhage from the ſame parts; headache is frequent, eſpecially after taking food; this is ſometimes ſo violent as to produce delirium and phrenitis. The mouth is full of ſaliva, and exhales a fetid and verminous odour; there is grinding of the teeth; uneaſy and agitated ſleep, and great thirſt. Sometimes ſomnambuliſm renders the patient timid. Fainting, vertigo, and tingling of the ears, augment the morbid ſtate of the ſufferer. The cough is dry and convulſive, ſometimes ſtertorous, and even ſuffocating; reſpiration is difficult, and ſometimes attended with hiccough; ſpeech is interrupted, and in ſome inſtances entirely ſuppreſſed. The mouth is frothy, and there is palpitation of the heart; the pulſe is hard, frequent, rapid, and intermittent. The belly is tumid, and troubled with borborygmi; there are eructations, nauſea, retching to vomit, and vomiting. At one time there is no appetite; at another it is ſo great, that the patient is compelled to take more food than ordinary. The belly ſwells, and is the ſeat of ſevere pains; there is a ſenſe of pricking and tearing, which is not fixed, but wanders over the whole abdominal cavity; theſe ſufferings are aggravated when the ſtomach is empty, and immediately ceaſe on taking food. The bowels are ſometimes relaxed, ſometimes coſtive. The urine is crude and turbid; the excrements fetid; cardialgia afflicts the patient, and ſometimes deſtroys him; the body is emaciated, though the patient eats much; and violent itching of the anus ſometimes occaſions fainting. At other times teneſmus aggravates the pains of theſe parts. Languor, anxiety, liſtneſſneſs, and extravagance in conduct, diſcourſe, and the intellectual functions, are obſerved in perſons harraſſed with worms.

The profeſſor has alſo ſeen pains of the joints, reſembling arthritic rheumatiſm, reſulting from worms. Weikard relates the caſe of a woman who was long haraſſed with headache, ſpaſmodic affection of the eyes, vertigo, ſub-apoplectic attacks, and occaſionally temporary blindneſs. One day, feeling ſomething in her noſe, ſhe extracted, with a hook, a living lumbricoides, and then three more. Some anthelmintic remedies now preſcribed brought away ſeven worms per anum, when the woman was perfectly cured of her diſtreſſing complaints. Worms

have

have been known to excite apoplexy in the brain, and nephritis, when ſituated in the bladder; in which caſe, *Producunt aliquando erectionem moleſtam penis.*

Itching of the noſe, and dilatation of the pupil, are ſaid to be the leaſt equivocal ſign of worms.

Upon the whole, we may ſuſpect the preſence of worms where irregular appetite and great diſturbance of the nervous ſyſtem are preſent, without any other marked cauſe of irritation, and unattended with alteration in the circulating powers. The irregularity and the complete remiſſion of certain pains, and the deranged ſecretion of the bowels, will further aſſiſt the diagnoſis. It is a good rule, however, in all anomalous and rare diſeaſes, to enquire whether the patient has, or has had, any ſymptoms of worms, ſince even intermiſſions of the pulſe, palpitations of the heart, ſyncope, vertigo, loſs of ſpeech, blindneſs, buzzing in the ears, mental dejection, reſtleſs ſleep, hiccup, convulſions, epilepſy, and many other diſeaſes, may be produced by theſe animals.

The treatment of worms compriſes their expulſion in the firſt place, and ſecondly the prevention of their regeneration. For the former purpoſe, a numerous hoſt of drugs have been recommended by various authors. We ſhall inſert, from Prof. Brera, a catalogue raiſonée of the moſt approved anthelmintics.

Allium ſativum, or garlic, has been proved by Roſenſtein and Tiſſot to be capable of expelling worms, eſpecially the tænia.

Artemiſia ſantonica, or worm-ſeed, is well known to have conſiderable power over the lumbricoides particularly. The doſe is from two grains to a drachm.

Aſclepias Curaſſavica, or Curaçoa ſwallow-wort, (the Apocynum erectum, folio oblongo, &c. of Sloane,) from its emetic quality called baſtard or wild ipecacuanha, and by the negroes *red-head*, is a powerful vermifuge. See vol. ii. p. 256.

The bark of the baſtard cabbage-tree (Geoffrea inermis) ſtands, according to Mr. Chamberlaine, among the firſt in the liſt of powerful vermifuges; (ſee vol. viii. p. 339, 40.) but even this, after an extenſive trial, was given up by that gentleman on account of its uncertainty.

Jalap, probably from its diſagreeable ſmell and nauſeous taſte, is a uſeful auxiliary, at leaſt, to other anthelmintics.

Aſſafœtida has been often uſefully employed in ſeveral diſeaſes reſulting from worms, particularly in the ſpaſmodic claſs. It is ſometimes combined with other medicines, as myrrh, the black oxyde of iron, calomel, &c. Aſſafœtida enemata are uſeful in the aſcarides.

Oil, as cloſing all the ſpiracula of worms, is very inimical to theſe animals. The oil of walnuts has been particularly extolled; but Mr. Chamberlaine aſſerts that tænia will live for many hours in oil.

Camphor. Pringle long ago demonſtrated the anthelmintic powers of camphor. The celebrated Moſchati generally prefers it to other vermifuges. Half a drachm is diſſolved in a pint of water, to which a drachm of gum arabic is added, and this mixture is given in ſpoonfuls; or injections of ſtronger ſolutions than the above are thrown up. The employment of camphor is alſo attended with this advantage, that it counteracts the prediſpoſition to the further development of verminous ſeeds.

Tanacetum vulgare, the common tanſy, has been long celebrated. Aloes, rhubarb, the gratiola officinalis, gamboge, chamomile, ſulphuretted ſcammony, and other ſimilar articles, are alſo remedies commonly uſed for the expulſion of worms. They are not ſpoken of ſingly, becauſe theſe draſtics are uſually combined with other vermifuge remedies, vegetable or mineral.

Murias ammoniæ, combined with rhubarb or jalap, is conſidered by Block as a very efficacious vermifuge.

Iron, in conſequence perhaps of its tonic powers, is a well-aſcertained anthelmintic, tending both to deſtroy worms, and prevent their ſubſequent generation. The ſulphate of iron is conſidered to be the beſt preparation, as poſſeſſing the greateſt aſtringent force, and being powerful in moderating exceſſive ſecretion of mucus in the bowels. To children, profeſſor Brera gives it in doſes of from two to ten grains; and to adults, in doſes of half a drachm to a drachm. Theſe are large doſes. Its virtues are much enhanced by conjunction with cinchona, valerian, jalap, aſſafœtida, &c.

Mercury can have no ſpecific effect againſt worms, ſince the labourers in the quickſilver-mines of Almada, in Spain, are peculiarly ſubject to worms, though theſe people abſorb ſuch enormous quantities of that mineral, that globules of mercury are evacuated with the ſtools. The ſame thing happens in the mines of Lydria, and in the laboratories of Chemnitz in Hungary. Beſides this, Roſenſtein has adminiſtered mercury in ſeveral caſes, even to ſalivation, without being able to expel a ſingle worm. Brera ſays, however, that mercury, given in the ſtate of oxyde, acts on the ſolids as a powerful ſtimulant, ſince by its uſe the pulſe acquires great force, and the ſecretions and excretions are augmented. In this way ſeveral of the oxydes of mercury have been very efficient in expelling worms, and in curing verminous affections. Among theſe, the ſubmuriate of mercury is to be preferred. Ptyaliſm ſhould never be produced in theſe caſes.

Petroleum is famous at Montpellier againſt worms. Roſenſtein, many years ago, related the caſe of a man who was delivered of a tænia by a doſe of petroleum and oil of turpentine.

Tin has been conſidered vermifuge ever ſince the days of Paracelſus. But, as profeſſor Brera properly obſerves, this method is objectionable on account of the danger of lead or arſenic being mixed with the tin. He himſelf ſaw the Colica pictonum, and paralyſis of the lower extremities, produced by taking the filings of tin.

Towards the middle of the laſt century, Madame Nouffer's remedy againſt tænia excited conſiderable attention. The medicine was three drachms of the root of the male fern (Polypodium felix mas) in powder, mixed with four or ſix ounces of the diſtilled water of male fern, or lime-tree flowers, taken in the morning. The doſe, of courſe, was graduated for children. Two hours after taking the powder, the patient is to ſwallow the following bolus: Take of calomel, and dry reſin of Aleppo ſcammony, of each twelve grains; of gamboge five grains; form into a bolus with hyacinth confection. This, by the way, was a tolerably good vermifuge of itſelf, and doubtleſs contributed as much towards Mad. Nouffer's ſucceſs as the fern-powder.

Dr. Bourdies, of Paris, has adminiſtered the following remedy with great ſucceſs in both ſpecies of tænia: Pour a drachm of ſulphuric ether into a glaſs of the decoction of male fern, which the patient is to take faſting; four or five minutes after, an injection of the ſame decoction, with two drachms of ether, is to be thrown up. One hour after, give two ounces of oleum ricini, and one ounce of the ſyrup of peach-bloſſoms. This treatment is to be continued for three days. The worm is commonly diſcharged but half organized. When the worm is in the ſtomach, ſucceſs is certain; when in the inteſtines, the treatment, after ſome time, is repeated; then Dr. Bourdier preſcribes an enema of decoction of fern and two drachms of ſulphuric ether, immediately after the patient has ſwallowed the etherated potion.

The remedy of the celebrated Odier was no other than caſtor-oil. It both kills the worms and expels them. Adults ſhould take three ounces of the oil, and children a tea-ſpoonful, ſeveral times a-day. Lelle adviſes that the oil be taken at bed-time, and ten grains of gamboge the next morning.

Dr. Coffin has known Fowler's ſolution deſtroy the tænia in ſeveral caſes. Dr. Fiſher, of Maſſachuſetts, alſo obſerves, that the tænia may be deſtroyed by Fowler's ſolution.

ſolution. For this purpoſe the patient ſhould take it two or three times a-day, in as large doſes as the ſtomach will bear; and continue the uſe of it till the worms are deſtroyed.

Dr. Girdleſtone, of Yarmouth, ſtates in the 15th volume of the Medical and Phyſical Journal, that he has, for ſome time, preſcribed the ſolutio mineralis in caſes of tape-worm. "This medicine," he ſays, "with the uſe of purgatives, brings away larger portions than any purgative medicine without it. And I have found the ſolutio mineralis a moſt powerful deſtroyer of the aſcaris lumbricoides."

Dr. Pollock, of Bengal, has ſtated that a number of caſes of tænia were cured by decoction of pomegranate. "In ſome of theſe the tænia had acquired an enormous length; and in ſome of them it was received in tepid water, and lived for ſeveral hours after it was paſſed."

A remedy, however, of ſuperior power to all theſe, and one which ſeems to act very generally on all kinds of worms, is the oil of turpentine in doſes of from ʒ vi to two ounces. It was firſt recommended by Chaubert, and ſince tried on an extended ſcale in this country, where it has met with a very favourable reception. Many objections are in force againſt this medicine. The firſt, an intolerable thirſt that follows its uſe, and which it is improper to indulge by drinking: the ſecond is, that its efficacy is deſtroyed by mixture, and hence it is next to impoſſible to adminiſter a large doſe of turpentine to children, who, in fact, form the majority of worm-patients. In concluſion, therefore, though we have thought proper to enumerate moſt anthelmintics which have obtained great repute, we muſt give a decided preference to the *Dolichos pruriens*, or cowhage, over all others. This plant was firſt introduced into this country by Mr. Chamberlaine. The parts uſed are the ſetæ, or hairy contents of the pod, (ſee DOLICHOS, vol. vi. p. 11.) which are, according to the above-mentioned author, to be mixed with honey or treacle, and thus formed into an electuary; or it may be compounded in the form of lozenges, in which ſtate it becomes a very palatable remedy for refractory children. The action of this medicine is ſhown by Mr. Chamberlaine's experiments to be entirely mechanical, and exerted only on the body of the worms, the ſharp ſpiculæ ſticking into the animals in queſtion and killing them, while the coats of the bowels are defended from the accident by their conſtant ſecretion, or firmer ſtructure.

Of the electuary, made with cowhage and treacle, a tea-ſpoonful is in general found to be a ſufficient doſe for children, from infancy to the age of ſix or eight: from thence to fourteen, a deſert-ſpoonful is found to anſwer well: and, for all above that age, a table-ſpoonful. Formerly Mr. C. thought it might be ſufficient if taken once a-day, but experience has ſhown that it anſwers better when taken twice; viz. at night going to bed, and in the morning an hour before breakfaſt; and, though little or no previous medicine is neceſſary, yet it is generally found to operate more effectually where a gentle emetic (provided nothing forbids it) has been premiſed. The cowhage, after being begun upon, is to be continued for three or four days; after which, ſome briſk purgative, ſuch as jalap, or infuſion of ſenna, or in ſhort whatever purging medicine is known to agree beſt with the patient, is to be taken; which will in general bring away the worms, if there be any. Afterwards the cowhage is to be continued as long as there may ſeem occaſion; repeating the purgative at intervals of three or four days.

This medicine, excellent as it is, ſeems of late to have fallen into diſuſe in this country, where indeed the difficulty of procuring it genuine muſt have ſubjected its employers to frequent failures in its application. It is remarkable, however, that Mr. Chamberlaine, after thirty-five years very extenſive trial of it, never had one caſe of failure ſent to him, though he publicly courted their tranſmiſſion, and though it was as extenſively uſed as highly extolled by the firſt phyſicians of the day. For our own parts, when the uſe of gentle purgatives fails to expel the worms, we ſtrongly recommend the immediate exhibition of this medicine; a meaſure we may adopt without fear, ſince we are aſſured it acts mechanically, and cannot therefore do miſchief even if its employment be ill-timed. Dr. Coffin, the American tranſlator of Prof. Brera's work on verminous diſeaſes, ſpeaks highly in praiſe of this remedy.

After all that has been ſaid reſpecting the ſafety of cowhage, and however inoffenſive in general it may be, reaſon will dictate to us, that where the mucus of the ſtomach and inteſtines is abraded, or leſſened, from any cauſe whatſoever; or where there is a tendency towards inflammation in any part of the inteſtinal canal; the exhibition of this medicine cannot be unattended with danger.

The firſt edition of Mr. Chamberlaine's "Practical Treatiſe on Dolichos pruriens" was publiſhed in 1784. A tenth edition appeared in 1812, in which he obſerves, "I ſhall not go ſo far as to ſay, in praiſe of this my favourite medicine, that I *never* knew it to fail; but I will ſay, that I have experienced more certain good effects, and fewer ill conſequences, than from any other medicine given with the ſame intention; inſomuch, that I have, ſince I firſt began to exhibit the cowhage, had no occaſion to look for any other vermifuge. My primary object continues to be, the introduction into common practice of an article which I have long experienced to be a ſafe and efficacious anthelmintic; nor have my endeavours been unattended with ſucceſs, as the Dolichos pruriens is now for the firſt time introduced into the Materia Medica of the London Pharmacopœia, at the laſt reform of that book by the college, in the year 1809. It has been alſo received into the Pharmacopœia of the Dublin College of Phyſicians. In that of Edinburgh, it has ſtood as an officinal for ſeveral years."

When the worms have been expelled, the correction of the tone which has given riſe to or has been produced by them, will require the application of thoſe remedies and rules which are explicitly detailed under Dyſpepſia, in this article.

Genus XIII. *Proctica*; [from πρωκτος, the fundament.] Pain or derangement about the anus and rectum, without primary inflammation. There are five ſpecies.

1. Proctica ſimplex, ſimple pain at the anus. The pain which ariſes occaſionally in the anus is of a ſevere and ſpaſmodic kind; is liable to remit, and is produced by the paſſage of large and indurated fæces; or is cauſed by ſympathy with diſorder of other parts, generally of the ſuperior parts of the alimentary canal, leſs frequently of the urethra. Mild purgatives, warm fomentations, and, in ſevere caſes, anal leeching, are the moſt appropriate remedies.

2. Proctica calloſa, pain produced by, or accompanied with, a callous contraction of the rectum. The cauſe is uſually, but not always, ſcirrhus, which is liable moreover to degenerate, as in other caſes, into carcinoma. Colica calloſa is alſo an occaſional reſult. When this complaint does not ariſe from ſcirrhus, it may be conſidered of the ſame nature as Colica calloſa, under which title we have detailed the treatment. When it ariſes from ſcirrhus, in which caſe it forms what is called the ſcirrho-contracted rectum, therapeutical endeavours are of little avail. The origin of this complaint, as indeed of ſcirrhus altogether, is quite obſcure. Mr. White conſidered at firſt that it was a conſequence of ſimple ſtricture; but ſubſequent experience has induced him to alter his opinion. Mr. Copeland, in his excellent Treatiſe, thinks it may be cauſed by whatever produces inflammation or irritation of the inner membrane of the inteſtine; but neither is that opinion by any means well ſupported. The ſeat of this diſeaſe (different from what we uſually obſerve in Colica calloſa) is generally two or three inches above the outer ſphincter; and there is often

a ſound capacious portion of the bowel between the ſtricture and this ſphincter, though in the advanced ſtages of the diſeaſe even this often becomes indurated. Indeed the ſcirrhus ſometimes occupies nearly the whole cavity of the rectum; implicates in thickening and induration all its coats, particularly the muſcular; and, after a time, abraſion or ulceration of its internal membrane takes place, attended by a ſerous, or thin and ſanious, diſcharge. The ſevere ſufferings of the patient during the progreſs of this dreadful malady, and its more rapid advance to a fatal termination, will help to diſtinguiſh it from other ſpecies of contraction, when it would be difficult ſometimes to decide from mere local inveſtigation.

In addition to theſe remarks, and the diagnoſtic ſigns we have drawn between this diſeaſe and ſimple ſtricture, when ſpeaking of the latter diſeaſe, we copy, from Mr. White and Dr. Sherwin the following remarks. Along with the great and permanent pain about the ſacrum, ſhooting down the thighs as before noticed, the burning heat and pain of the rectum, "the patient gradually experiences a difficulty in evacuating fæces of a thick conſiſtence. As the paſſage becomes obſtructed, the fæces acquire a thinner conſiſtence, and the firſt complaint which he makes is of a looſeneſs." On this paragraph of Dr. Sherwin, Mr. White remarks, that, "although it may be very true, that the diſorder ſometimes arrives at the above-mentioned ſtage before any application is made for relief, yet it does not follow from thence, that a diarrhœa is a primary ſymptom; becauſe the hiſtory of caſes clearly demonſtrates that the complaint in general does exiſt for a conſiderable length of time before a diarrhœa comes on; and I believe it will be commonly found in a very advanced ſtage, whenever ſpontaneous diarrhœa takes place."

Dr. Sherwin further remarks, "He (the patient) continues in other reſpects apparently in good health; his appetite is but little impaired; reiterated ſcanty evacuations, amounting in the whole to a ſufficient quantity to keep the ſtomach eaſy, preſerve a ſort of balance in the inteſtinal canal: but, by degrees, the cavity of the gut becomes leſs permeable; opiates and teſtaceous powders have perhaps been had recourſe to, and the frequent needing to ſtool abates. The patient and his friends flatter themſelves he is getting well; but he ſoon falls off in his appetite for food. The abſence of ſtools is ſometimes attributed to this cauſe, till the lower part of the abdomen by degrees acquires a remarkable prominence, attended with uncommon rumbling of wind in the belly, like gurgling of water in a bottle. By degrees a total ſuppreſſion of ſtools takes place; the tumour of the abdomen increaſes; the uncommon rumbling of wind becomes more audible, ſo as to engage the attention of the friends and viſitants of the patient. The diſtention gradually increaſes, till the ſtomach is oppreſſed, and a vomiting comes on. The vomiting is not very frequent at firſt; but, by degrees, every thing ſwallowed is vomited up. Severe pains are felt from diſtention in various parts of the abdomen; and a true iliac paſſion of the chronic kind comes on, and continues as long as the patient lives, unleſs he is accidentally relieved by a free diſcharge of thin fæces, which will ſometimes unſuſpectedly give a reſpite to his ſufferings. In conſequence of which, the appetite for food will again return; the patient will again appear to be getting well: but the anxious ſolicitude of his friends at this period will urge him to get down a conſiderable quantity of generous nouriſhment, till a repetition of the ſame ſcene takes place, and the unhappy man is alternately tantalized and worn out, either with a ſtoppage or a purging.

"If aſſiſtance is not called in till the patient arrives at this deplorable ſtate of the diſeaſe, the want of ſtools, the great pain, vomiting, and tenſeneſs of the abdomen, may be pronounced an inflammation of the bowels, or an iliac paſſion of the acute kind. If powerful means are employed under ſuch idea, it is eaſy to conceive that the laſt moments of the patient muſt be rendered doubly diſtreſſing."

The conſtant inclination to ſtool which attends this diſorder may be diſtinguiſhed from a common teneſmus by attending to the following circumſtances. A common teneſmus is generally ſudden in its attack, or elſe it follows from purging or dyſentery; it is often the conſequence of draſtic cathartics, and is always attended with conſiderable pain, and moſt frequently with a mucous diſcharge tinged with blood, inſtead of fæces; whereas, that which accompanies the ſcirrhous rectum is attended with little or no pain, but with powerful ineffectual ſtrainings; during which, there will be often a diſcharge of wind; and the mucus ſqueezed out is ſlimy, but always more or leſs black, and the excrementitious matter is very ſeldom tinged with blood. In the common teneſmus, the impetus ſeems entirely ſpent on the ſphincter ani, and there is more or leſs of a protruſion of the gut: but in the ſtraining from a ſcirrhous rectum, the patient is not ſenſible of that diſtreſs at the fundament which is experienced in the other; and, as ſoon as the ſmall portion of excrementitious mucus is voided, he is able to riſe immediately from the ſtool; but in the common teneſmus he is under the neceſſity of ſtraining long, even after the expulſion of all that he knows, from his feelings, will at that effort be evacuated; and, after he is able to riſe from the ſtool, there ſtill continues a burning ſenſation, urging in a continual expulſion: whereas in the ſcirrhous rectum, after the patient has ſtrained hard, whenever a ſmall quantity arrives at the anus, it is ſquirted out with ſlight efforts, and little or no uneaſineſs follows; nor does the countenance ſhow that extreme diſtreſs which generally attends a ſpaſmodic ſtricture of a common teneſmus. It may alſo be obſerved, that there is very little emaciation of the body or loſs of ſtrength until the diſorder is far advanced; the countenance then becomes ſallow, and in ſome inſtances the pulſe is quick, and is accompanied by hectic ſymptoms.

The following deſcription of the appearances on diſſection are detailed by Dr. Baillie: "It (the ſcirrhus) ſometimes extends over a conſiderable length of the gut, viz. ſeveral inches; but generally it is more circumſcribed. The peritoneal, muſcular, and internal, coats, are much thicker and harder than in a natural ſtate. The muſcular too is ſubdivided by membranous ſepta, and the internal coat is ſometimes formed into hard irregular folds. It often happens that the ſurface of the inner membrane is ulcerated, producing cancer. Every veſtige of the natural ſtructure is occaſionally loſt, and the gut appears changed into a griſtly ſubſtance."

In the advanced ſtage of contracted rectum, an abſceſs often forms near the anus, and common fiſtula is produced on the abſceſs burſting, which renders it liable to be miſtaken for the original complaint. If operation for fiſtula be performed under theſe unfavourable circumſtances, it aggravates the ſufferings of the patient. Sometimes it happens in the female ſubject, that, in conſequence of an abſceſs forming, or the inteſtine becoming ulcerated, a communication is formed between the rectum and the vagina, and the liquid part of the fæces paſs through the aperture, and are diſcharged by the vagina.

The prognoſis of this dreadful diſeaſe, which Dr. Sherwin wrote 30 years ago, ſtill remains too true: he ſays, "The diſeaſe comes on in the moſt gradual and imperceptible manner: ſlow in its progreſs, but terrible in its conſequences; it yields not to medical aſſiſtance, but muſt under the beſt management become ultimately fatal. It however admits of palliation; and, if early diſcovered, will alſo admit of the laſt moments of the patient being reſcued from unavailing, miſtaken, and diſtreſſing, attempts to cure. It is therefore an object of the moſt ſerious attention of the humane practitioner."

Attempts at cure have not, however, been wanting. M. Delpech, in his Précis Elémentaire, tom. iii. has

propoſed to divide the ſtrictured gut, in order to ſecure the eſcape of the contents of the bowels, the confinement of which muſt, as he obſerves, produce extreme diſtreſs and danger. He adds, that the carrying up a cutting inſtrument into the midſt of a cancerous diſeaſe muſt be expected to produce ulceration, and, in this way, haſten the deſtruction of the patient; but that, in caſes of this kind, every thing that can be propoſed is ſubject to objection. His words are; "On a propoſé de faire alors la ſection de l'un de ces points intermédiares, afin d'aſſurer le paſſage des matières. Ce parti a de grande inconvéniens ſans doute. Porter l'inſtrument tranchant au milieu ou tout près d'une affection cancereuſe, c'eſt hâter l'ulcération, qui doit conſommer la ruine du malade; mais, dans des cas de cette nature, on ne peut rien entreprendre que de très défectueux." Upon this point it has been very properly obſerved, that operative ſurgery ſhould rarely, if ever, be recommended, unleſs where the chances are decidedly in favour of its ſucceſs: and, if this opinion is right, it muſt unqueſtionably be wrong to adviſe an operation in a diſeaſe of inevitably fatal event. It can only tend to bring diſcredit upon that branch of ſurgical practice, which, from the poſitive good that, under proper direction, it is capable of conferring, lays the faireſt claim to the regard and confidence of mankind.

Some practitioners have tried mercury in this malady, but with little ſucceſs. Should we be ſucceſsful at any future period in the treatment of ſcirrhus, we may perhaps entertain better hopes of the complaint in queſtion, though the conſtant irritation to which it muſt be ſubjected in this part will render its cure a matter of great difficulty. Déſault, in his Oeuvres Chirurgicales, mentions caſes which were cured by tents; but it is now generally underſtood, that theſe were merely ſimple ſtrictures.

3. Proctica teneſmus. A teneſmus is a frequent and inſatiable propenſity to ſtool, without being able to paſs any thing, notwithſtanding the moſt violent efforts. It may be occaſioned by any kind of irritation, either of the rectum itſelf or of the neighbouring parts; by acrid ſubſtances taken into the body; by ſome of the ſtronger purges, as aloes, ſcammony, elaterium, &c. or by ſympathetic irritations. It is often very pernicious, both from the exceſſive uneaſineſs it occaſions to the patient, and from exhauſting his ſtrength; and by the frequent and vain efforts bringing on a prolapſus ani, and communicating the violent irritation to the neighbouring parts, as the bladder, &c. When ariſing from local acrimony or from the uſe of cathartics, it may be deemed an idiopathic affection; but more generally it is found as a ſymptom of other complaints, as dyſentery, hæmorrhoids, helminthia, coſtiveneſs, calculus of the bladder, and pregnancy.

The treatment, when ſimply directed to the relief of the uneaſy ſenſation, conſiſts in injecting anodyne and mucilaginous enemata, and in exhibiting oleaginous cathartics. A clyſter of ſtarch, or of ſtarch and opium, forms the beſt remedy with which we are acquainted for the relief of teneſmus. In moſt caſes, however, we have to direct our attention to the diſtant irritation of which this complaint is ſymptomatic.

4. Proctica mariſca, (Hæmorrhois, *Cullen.*) Piles. Specific character, livid and painful tubercles or excreſcences, uſually with a diſcharge of mucus or blood. Of piles we have the four following varieties.

α. P. cœca, (H. cœca, *Cull.*) The blind piles: pain and tubercles without diſcharge.

β. P. mucoſa, (H. mucoſa, *Cull.*) Tubercles pale and mucous; they are moreover tranſparent, compreſſible, highly elaſtic, and often produced in the courſe of a few hours. This variety is ſuppoſed to ariſe from a depoſition of ſerum only beneath the ſkin

γ. P. cruenta, (H. cruenta, *Cull.*) The bleeding piles. Tubercles florid and bleeding: they conſiſt ſometimes in diſtention or a varicoſe ſtate of the hemorrhoidal veins; more frequently of blood effuſed into the cellular tiſſue. They are opake, of a dark colour, the blood ſhining evidently through the ſkin; and are of a firmer conſiſtence, and more ſlowly formed, than the preceding variety.

δ. P. polypoſa. Polype-like excreſcences ſhooting from a ſlender root; bulbous; ſoft and compreſſible; red or reddiſh; chiefly internal.

Piles in general occaſion only a ſlight degree of inconvenience; but ſometimes they give riſe to ſerious grievances, either by burſting and pouring out ſuch quantities of blood as reduce the patient to the loweſt ſtate of debility, and dangerouſly impair his health; or by exciting inflammation around them, and cauſing abſceſſes and fiſtulæ; or by becoming conſtricted by the ſphincter ani muſcle, ſo as to produce exceedingly acute pain; or, laſtly, by aſſuming a malignant character.

P. mariſca ariſes moſt commonly from ſome obſtruction in the circulation through the hæmorrhoidal veins. Habitual neglect of the bowels favouring the accumulation of hardened fæces in the rectum; ſtraining to void a confined ſtool; the preſſure of the gravid uterus, or of any preternatural tumours; a ſedentary life; ſudden and violent exertion; lifting heavy weights; have, in their turn, been the means of bringing on this diſeaſe, and may be conſidered as ſome of its moſt frequent cauſes.

The firſt appearance of all the varieties of mariſca is generally connected with pain and inflammation. The patient uſually complains of an uneaſy ſenſe of weight and fullneſs, as well as of heat about the parts, particularly ſevere in paſſing a motion. If the inflammation remain unſubdued, the fundament becomes very painful; the patient can then neither walk, ride, nor ſit, the only tolerable ſtate being that of abſolute reſt in the reclined poſition; and, during the continuance of this ſtate, paſſage of a motion is followed by extreme diſtreſs. With theſe ſymptoms there is generally more or leſs feveriſh heat and reſtleſſneſs, and perhaps even delirium.

The mariſcæ may be numerous, or otherwiſe. Sometimes a ſingle ſwelling only exiſts; more frequently there are ſeveral ſurrounding the anus. Occaſional hæmorrhage is in moſt caſes connected with mariſca. Perhaps in the effort to paſs a motion, bleeding comes on while the parts are inflamed; in this caſe, the blood generally flows from within the anus, though it may occaſionally ſpring from ſome part of the external ſwelling. Sometimes the bleeding will firſt occur, and frequently in the abſence of every other ſymptom; or at leaſt without pain, inflammation, or external tumour.

Many reſpectable writers affirm, that hemorrhoids which are not very troubleſome, and diſcharge only moderate quantities of blood, are rather ſalutary than hurtful to the conſtitution, and require no particular treatment. Among theſe, it may be ſufficient to mention, Stahl, Sabatier, and Petit. This opinion has, however, met with ſome oppoſition. In Dr. Rees's Cyclopædia, article *Hemorrhoids*, it is ſtrongly argued againſt. The writer of that article admits the general ſalutary effect of leeching in hemorrhoids, but affirms that the relief thus obtained ariſes from its curing other diſeaſes in the conſtitution which might be as well or better relieved by taking blood from the arm. The writer of that article proceeds as follows: "Entertaining, as we do, a total diſbelief of the doctrine, that the bleeding from piles is ever really ſerviceable to the ſyſtem, we ſhall never attempt to re-produce a diſcharge of blood from them, when ſuch is ſuppreſſed; but, at the ſame time, ſince a perſon with piles may alſo have complaints which require bleeding, we perceive no reaſon why, in ſuch caſes, any change ſhould be made in the common mode of taking away blood, or that veneſection in the arm ſhould be abandoned for the employment of the leeches or the lancet in another part. We know, that it is approved as a general maxim, to take away blood as near as poſſible to the ſeat of a diſeaſe: and to this method we alſo give our decided approbation. It is for this reaſon, that we often preſcribe the application of leeches to the anus, in caſes of inflamed protruded hemorrhoids. But, as we do not

credit that the ſtoppage of bleeding from piles is likely ever to prove a cauſe of any diſeaſes, but rather of an improvement of the health, we are far from being anxious to ſee the hemorrhage renewed in any form whatever. But, ſuppoſing ſome illneſs were actually to be the effect of a ſuppreſſion of bleeding from the tumours, ſuch illneſs could only be imputed to a conſtitutional plethora, induced by the uſual evacuation of blood not taking place. Here the redundant and hurtful quantity of the circulating fluid might be much more conveniently and certainly drawn from the arm, in the common way, than by applying leeches to the tumour, or puncturing them with a lancet. The blood, in this circumſtance, is not taken away for the relief of the piles, but of ſome other affection; and, conſequently, the principle of bleeding as near as poſſible to the ſeat of the diſeaſe is not at all obſerved, as ſome may ſuppoſe it is, in drawing blood from the ſwellings themſelves."

With regard to this ſubject, we may obſerve, that there can be little doubt but that, in caſes manifeſtly dependent on preſſure of the hemorrhoid veins, the loſs of blood may be uſeleſs, perhaps hurtful; but it cannot be queſtioned, that piles in many inſtances ariſe from a diſordered ſtate of the abdominal viſcera; and that they ſerve materially to relieve the local plethora of thoſe organs. Hence we ſee them ariſe often in dyſpeptic and bilious complaints, which they then relieve in a very effectual manner. To ſay that general bleeding would afford equal relief to theſe complaints, is to aſſert what is contrary to experience; and it is equally abſurd to ſay, that in this caſe the blood is not taken from the part affected, ſince a glance at the connexions of the hæmorrhoidal veins, ſhows that they are literally continued from the portal ſyſtem. The frequency of the above-mentioned cauſes of mariſca compel us therefore to ſay, that in diſmiſſing ſo unceremoniouſly the obſervation of the old practitioners, that the bleeding from piles is often ſalutary, we ſhould act very haſtily. We cannot help quoting the appropriate ſentiments of Dr. Parr, who (though he deemed the danger of ſtopping hemorrhoidal diſcharges inexplicable) ſays, however, that "it appears raſh and preſumptuous to deny, at once, what has been eſtabliſhed in the opinion of able and experienced practitioners; opinions not haſtily taken up, and as quickly reſigned, but apparently reſting on facts, the reſult of the obſervation of many years, in different and diſtant countries."

Dr. Parr is of opinion, that this complaint in old age is often indicative of diſeaſe in the venous ſyſtem in general. "If in early age we perceive active hemorrhages in the brain, in the more advanced periods we perceive ſimilar effects from venous plethora. We then find thoſe apoplexies and palſies from a languid circulation; in other words, from weakened reſiſtance of the venous ſyſtem. In the lungs we find, from the ſame cauſe, humoral aſthma and hydrothorax; in the epigaſtric region, infarcted liver, and the morbus niger; in the hypogaſtric, hemorrhoids. If we judge right, hemorrhoids are of two kinds. It is a diſeaſe of youth, as well as of maturer age; and, in the former, is often acutely painful without evacuations; in the latter leſs commonly painful, but uſually attended with bloody diſcharges. In each it ſeems a ſalutary determination from parts otherwiſe overcharged; and this we think is proved by many facts. In the very painful hemorrhoids of young perſons, ſaturnine and cold applications, which relieve pain, often induce ſickneſs and faintneſs. In ſpeaking of fiſtula, we have ſhown that checking the diſcharge is often injurious, and that conſumptive ſymptoms frequently follow the operation and the healing of the wound. We will admit that ſuch conſumptions are connected with the ſtate of the liver; but ſo far as we have ſeen, and the caſes are not few, the age is not that of biliary congeſtions, but of accumulations in the lungs, viz. the conſumptive period, from fifteen to thirty-five, generally from eighteen to thirty. It appears then highly probable that congeſtions on the thoracic viſcera are relieved by others on theſe parts; and we thus ſee the connexion of hemorrhoids with the general health, independent of any venous connexion with the liver. In theſe caſes, the parts inflamed are carunculæ already mentioned, and the inflammation is active. Yet in the hemorrhois of advanced life, ſuch congeſtions evidently take place. The diſeaſe is the venous, and the tumours, in the greater number of inſtances, varices: they bleed, and the patient is relieved. Congeſtion and inconvenience follow, to be again obviated by a recurrence of the hemorrhage."

The inflamed and irritable ſtate of the ſphincter which theſe complaints have a tendency to produce, often makes it contract ſpaſmodically on the hemorrhoid, and occaſion great pain and diſtreſs. Mr. Howſhip mentions two caſes in which the contraction was ſo powerful and continued, that the ſtrangulated hemorrhoid ſloughed off.

In ſpeaking of the treatment of this complaint, we ſhall of courſe paſs over all caſes ariſing from permanent preſſure on the hemorrhoidal veins, as from pregnancy, &c. Theſe can only be relieved by the removal of the cauſe. For the treatment of all the varieties, the ſame meaſures are indicated, except that, as the mariſcæ are only viſible juſt after the patient has been at ſtool, in ſuch caſes the practitioner is obliged to take this opportunity of performing operations, or of applying remedies.

The relief of the ſecond variety is eaſily accompliſhed. Abſolute reſt for a few days, attention to the bowels, and warm bathing of the parts, will compriſe all that is required.

As the P. M. cruenta, or bleeding piles, often produce much ſurrounding inflammation, they will require, in addition to abſolute reſt, an active treatment. If the patient is of a full habit, and the parts are very turgid and painful, an important ſtep will be the application of cupping-glaſſes near the parts. Leeches will occaſionally anſwer the purpoſe; but, if it be required to take away five or ſix ounces of blood ſpeedily, the operation of cupping is much more certain and manageable. If neceſſary, the bleeding may afterwards be encouraged by fomenting with warm water, or a poppy-head decoction. Should the bowels be confined, it may be prudent to delay, for a little while, the additional diſturbance incurred by the paſſage of a ſtool, perhaps containing hardened fæces, until the ſymptoms are ſomewhat relieved; although the procuring a cool and gently-relaxed ſtate of the bowels is always important; and indeed, till this point is gained, little real progreſs in improvement can be made. Should feveriſh ſymptoms demand attention, ſaline or antimonial diaphoretics may, if neceſſary, be added to aperients; and, when they have operated ſatisfactorily, we may direct an opiate at night. A ſalve, made of elder-ointment and the powder of oak-galls, in equal parts, may be applied to the tumours, together with linen wet with the lotio aquæ lithargyri acetati. This latter is more particularly neceſſary in conjunction with leeches, when the caſe is accompanied with conſiderable pain and inflammation.

Painful ſpaſm of the ſphincter is to be relieved by the continued uſe of warm fomentations, or occaſionally by gentle ſteady preſſure upon the tumid parts, by which means part of the blood will be made to paſs inward by the hemorrhoidal veins, relieving the ſenſe of outward fullneſs. When the pain and inflammatory ſtate of piles is owing to their being conſtricted by the ſphincter-ani muſcle, it is evident that the mode of relief conſiſts in puſhing the tumours with the finger a little within the rectum, where they are not liable to ſuffer from preſſure. When mariſcæ materially obſtruct the paſſage of the fæces, or are very painful, and ſubject to profuſe bleedings, and the means above mentioned are ineffectual, the removal of the tumours ſhould be recommended.

Piles are removed with a knife or ſciſſors, the tumours being

being ſimply cut through at their baſes. In performing this operation we are directed to ſave ſome portion of ſkin, on which account the ſcalpel is preferable to the ſciſſors. Another mode of removing piles is by a ligature paſſed round their baſe. This is an eligible plan when the ſwellings are ſituated high up the rectum, where the danger of bleeding is ſomewhat alarming; but it is tedious, ſeveral days often paſſing before the tumours drop off; and it is alſo leſs cleanly, and attended with much more pain than is occaſioned by the knife. There are very good ſurgeons however, who employ the ligature in preference to the knife, and of courſe where bleeding has produced much debility it is the beſt method. When the mariſcæ are numerous, we ſhall often ſucceed, as Mr. Ware firſt obſerved, in relieving the patient, by cutting off only one of them; for, if an accurate enquiry be made, he believes it will be found that the patient will point to one, or at moſt to two, of the tumours, from which all the pain proceeds.

If the hemorrhage which ſometimes follows the operation of cutting off piles brings on alarming ſymptoms of exhauſtion, we muſt diſtend the rectum with a piece of ſponge of ſuch ſize as will make the requiſite degree of preſſure upon the opening of the bleeding veſſel. Some dip the ſponge in a ſtyptic lotion; but the beſt way is to introduce that ſubſtance quite dry into the inteſtine, and let it expand there with the blood which would be imbibed by it.

When we meet with caſes of long ſtanding which we have reaſon to believe connected with diſordered function of the ſtomach and bowels, a very ſtrict attention to diet is called for. This is at all times indeed of the firſt importance, ſince it is quite obvious that, the irritation of the paſſing of ſtools being the chief ſource of irritation, every mean which diminiſhes their volume and acrimony muſt be a powerful agent in expediting the cure. If, after ſtopping the bleeding from piles, biliary diſturbance occurs, we ſhall do well to reproduce the diſcharge by anal leeching after the manner deſcribed when ſpeaking of Coproſtaſis. Oleaginous cathartics will alſo be found uſeful.

5. Proctica exania, (H. procedens, *Cullen.*) Falling down of the fundament. Inverſion and prolapſe of the villous tunic of the rectum, from relaxation of the ſphincter, with more or leſs tumour. This ſpecies conſiſts of two varieties.

α. P. ſimplex, conſiſts in a protruſion of a part of the internal membrane of the rectum, which, becoming inverted, and paſſing out at the anus, forms a red ſoft flattiſh circular tumour. It is frequently obſerved in children, affected with teneſmus or dyſentery, in thoſe who are ſuffering a fit of the ſtone, or undergoing the operation of lithotomy. Women, having internal hemorrhoids, and in the violent efforts of labour, are alſo ſubject to the ſame accident. Its common cauſe is too-violent and repeated exertions of the rectum itſelf, excited by ſome ſource of irritation about the extremity of this inteſtine. Thus, the too-frequent employment of aloetic medicines, the action of which particularly affects the large inteſtines, often occaſions the above complaint. The ſame thing reſults from aſcarides, which, lodging about the lower part of the rectum, occaſionally cauſe exceſſive irritation. Habitual coſtiveneſs, hemorrhoids; in a word, every thing which, by ſtimulating the rectum, excites too violent an action of this inteſtine, may induce this complaint. In the early and moſt ſimple ſtage of this diſeaſe, the ſwelling may be eaſily reduced by compreſſing it with the fingers, and the reduction may be maintained by the application of a bandage, which will keep up moderate preſſure; and, even in ſevere and more advanced caſes, the reduction may be readily effected by the following proceſs. The patient being in bed, lying upon his ſide, or, what is better, on the abdomen, while his buttocks are raiſed rather higher than the reſt of the body, the ſurgeon is to make ſtrong but equal preſſure, with the palm of his hand, on the lower portion of the prolapſed inteſtine. By continuing ſuch preſſure, the inteſtine may, in general, be eaſily reduced. But, if this plan ſhould not ſuffice, the upper part of the protruded inteſtine muſt be compreſſed with the fingers of one hand, (previouſly oiled,) while the lower part is preſſed upward by the palm of the other. In this way we are almoſt ſure to ſucceed, unleſs, from having too long delayed the reduction, the gut has become ſwollen and inflamed, when it will be impoſſible to reduce the part before ſuch ſymptoms have been ſubdued. For this purpoſe it may be proper to take blood from the patient, in ſuch quantity as his ſtrength will allow. The inteſtine may alſo be fomented; and, when the ſwelling has been diminiſhed by theſe means, there will be no difficulty in replacing the parts in the manner juſt mentioned.

After the bowel has frequently deſcended, the ſphincter ſometimes becomes ſo weakened, that it can no longer keep the part ſupported. Hence different bandages have been deviſed for ſupporting the anus after its reduction. A compreſs, doubled ſeveral times, is uſually applied to the anus, and ſupported in this poſition by means of a T bandage; and, in many caſes, this anſwers very well. A machine was invented by Mr. Gooch, which has the double advantage of ſupporting the inteſtine more ſecurely than any other with which we are acquainted, and of allowing the patient to take a great deal more exerciſe than he could do without its aſſiſtance. M. Bernard has invented an inſtrument which conſiſts of an oblong oval body, rounded at one end, and terminating at the other in a narrow, rather long, neck, with a flat border at its extremity. The body of this inſtrument, which is made of elaſtic gum, when introduced into the inteſtine beyond the ſphincter, dilates and ſupports the gut, while the ſphincter embraces its neck, and the border of this part of the inſtrument hinders it from aſcending too far up the rectum. A ſtring is alſo attached to the edge, which tends to prevent the occurrence. This peſſary is very ſmooth, and conſequently cannot do any injury to the parts. It is alſo very light, being only compoſed of a very thin, though tolerably ſolid, ſubſtance. As it is pierced at its termination, it does not impede the diſcharge of air, which might otherwiſe incommode the patient.

When the inteſtine is protruded at the time the patient is at ſtool, the part is to be immediately replaced. This the patient ſhould accuſtom himſelf to do without aſſiſtance; and then the bandage, or peſſary, is to be applied. In order to ſtrengthen the ſphincter ani and adjacent parts, the weakneſs of which muſt, in the majority of caſes, be regarded as the entire cauſe of the diſeaſe, the patient ſhould take preparations of bark and ſteel, and make uſe of the cold bath. Aſtringent injections, particularly ſuch as are compoſed of an infuſion of gall-nuts, or oak-bark, are alſo ſerviceable.

With reſpect to the ulcerated, inveterate, and irreducible, caſes of exania, we may attempt the extirpation of ſuch diſeaſes with the knife.

β. P. ſpaſmodica. The tumour large and irritated; and the inteſtine contracted by a ſpaſm of the ſphincter. This ſerious diſorder has been confounded with the previous variety, in which a conſiderable portion of the colon, cœcum, and even ſometimes of the ilium, becomes everted and puſhed out at the anus. (Morgagni de Sed. et Cauſ. Morb. Ex. xxxiii.) The tumour has been alſo miſtaken for a mariſca; and Dr. Cullen has, perhaps, given ſome countenance to the error, by deſcribing one of his ſpecies of hemorrhois as produced by a prolapſe of the anus. The hemorrhoidal tumour is dull and livid; that from a prolapſe of the anus is fleſh-coloured, ſometimes wrinkled, at others ſmooth and ſhining. Former practitioners conſidered this occurrence in the ſame point of view as P. exaniæ ſimplex: they believed that the whole of the rectum became everted, in conſequence of the relaxation of the ſphincter and levatores

tores ani, and that it then drew after it other portions of the inteſtinal canal. But they ought to have been undeceived by the ſtrangulation which generally occurs under ſuch circumſtances, and which not only throws a great obſtacle in the way of the reduction of the diſplaced part, but even ſometimes brings on mortification. Beſides, the connexions of the rectum with the neighbouring parts, by means of the cellular ſubſtance which ſurrounds it, and the attachment of this inteſtine to the poſterior ſurface of the urinary bladder, render the above origin of the complaint impoſſible. Such an explanation could only be admitted with regard to thoſe protruſions of the rectum which come on in a very ſlow manner. This account could not afford a ſatisfactory explanation of certain caſes, in which the everted inteſtine preſents a very enormous tumour. Fabricius ab Aquapendente mentions his having ſeen tumours occaſioned by a prolapſus of the rectum, which were as long as the fore-arm, and as large as the fiſt. In the Mêlanges des Curieux de la Nature, we find an account of a tumour of this ſort, which was two feet long, and occurred in a woman from parturition. Nor is a more ſatisfactory reaſon aſſigned for theſe caſes, by ſuppoſing that they originate from a relaxation of the villous coat of the rectum, and its ſeparation from the muſcular one. We are not authoriſed to imagine that ſuch a ſeparation can take place to a conſiderable extent, nor ſo ſuddenly as to give riſe to the phenomena ſometimes remarked in this diſeaſe. But more accurate obſervations have removed all doubt upon this ſubject. In the fourth volume of the Mémoires de l'Académie de Chirurgie, we read an account of a pretended prolapſus of the rectum, which, after death, was diſcovered to be an everſion of the cœcum, the greater part of the colon being found at the lower end of this inteſtine, and moſt of the rectum at its upper part. This everſion began at the diſtance of more than eleven inches from the anus, and terminated about five or ſix from this opening, the tumour, formed by the diſeaſe, having been reduced ſome time before the child's death. It was impoſſible to draw back the everted part, in conſequence of the adheſions which it had contracted. Another diſtinction has evinced the ſame fact. A child, after ſuffering very acute pain in the abdomen from receiving a blow, had a prolapſus of the inteſtine through the anus, about ſix or ſeven inches long. This was taken for a prolapſus of the rectum. After death, the termination of the bowel out of the anus was found to be nothing leſs than the cœcum, which had paſſed through the colon and rectum, to make a protruſion at the anus.

This diſeaſe occurs alſo, as an effect, in obſtinate coſtiveneſs, ſtone in the bladder, labour, and helminthia podicis.

In this place we have to detail the meaſures to be adopted for the removal of concretions and extraneous bodies from the rectum. Theſe concretions may be formed in the larger inteſtines, and eſpecially in the rectum, by the mere accumulation and protracted lodgment of the fæces. Sometimes, however, theſe maſſes of indurated matter include no extraneous ſubſtance; in other inſtances, their nucleus is a biliary calculus; but in moſt caſes they are merely compoſed of the fæces in a dry hardened ſtate.

Whatever may be the nature of theſe ſubſtances, their exiſtence may be known by the conſtipation, complete or partial, which they produce; by the ſenſe of weight which the patient feels about the fundament; or touching the indurated obſtructing body, by a finger introduced in ano. Oily emollient clyſters, and carminative draughts, will ſerve for expelling ſuch concretions as are not of too firm a conſiſtence; but the extraction of them is abſolutely neceſſary when they are particularly hard. The operation is to be done with a ſpoon, or ſuitable forceps, properly oiled; and, after the concretion has been removed, an emollient clyſter is to be adminiſtered, in order to allay any irritation which may have been caſed by the introduction of the requiſite inſtruments. When the ſphincter ani contracts ſo forcibly, that the operation is attended with extreme pain and difficulty, we are adviſed by ſurgical writers to make a dilatation of the anus, by practiſing an inciſion at its *poſterior* angle: a wound made in this direction cannot injure any part of conſequence, whilſt there would be a riſk of wounding the urethra in the male, or the vagina in the female ſubject, if the cut were made at the *anterior* angle; and an inciſion carried *laterally* would be apt to injure the pudic veſſels. A diviſion of the fibres of the ſphincter ani does not produce any material permanent weakneſs of its action; and a paralyſis of this muſcle, according to Richeraud, can never proceed from ſuch a cauſe.

The hard concretions which lodge in the rectum cannot be reached with the finger when they are ſituated high; and, in this circumſtance, the ſurgeon muſt uſe a probe, or ſound, in order to aſſure himſelf poſitively of their preſence.

The extraction of ſubſtances which madneſs or folly have cauſed to be introduced into this ſituation is often attended with a great deal of difficulty, and has even demanded, on the part of the operator, more than ordinary ſagacity, in conſequence of the various ſhapes, the hardneſs, and the fragility, of theſe different bodies. Glaſs phials, inſtrument-caſes, ſhuttles, &c. have been introduced into the rectum by maniacs. One perſon of this deſcription put into his rectum a flint-ſtone, which did not admit either of being extracted or broken, owing to its hardneſs and ſlippery ſurface, and which in the end cauſed the patient to die in the greateſt agony, with ſwelling and gangrene in the abdomen. Marchetti has recorded an inſtance, in which a pig's tail, hardened by cold, was forcibly thruſt up the rectum of a girl of the town. This extraneous body could not be withdrawn, as the ſhort briſtles, which all inclined outward, immediately came in contact with and pierced the inner part of the bowel. It remained in the part ſix days, and occaſioned a train of alarming ſymptoms; ſuch as fever, vomiting, ſwelling of the abdomen, and obſtinate conſtipation. Marchetti faſtened a ligature to the end of the foreign body, which protruded at the anus, and then paſſed the ligature through a long piece of reed, which he introduced up the rectum, and drew the pig's tail through this tube without lacerating the inteſtine. In another caſe, a piece of wood, three inches long and two in width, was lodged in the rectum. Colic, tenſion of the abdomen, fever, conſtipation, and difficulty of making water, came on, and laſted ſix days. The impoſſibility of removing the extraneous ſubſtance with a pair of forceps, led to the idea of uſing a borer, which, having been paſſed up the rectum under the guidance of the finger, was inſerted deeply enough into the piece of wood to draw it out.

Order II. SPLANCHNICA, [Gr. appertaining to the viſcera.] Diſorders affecting the collatitious Viſcera.

This Order contains four Genera.

Genus I. *Icterus*, [Gr. from the yellow or golden colour.] Yellow Jaundice. Generic characters—Yellowneſs of the ſkin; white fæces; urine ſaffron-coloured, and communicating a ſaffron dye. The courſe of the bile obſtructed. This genus has the following five ſpecies.

1. Icterus cholœus. Specific character; the courſe of the bile obſtructed from its own viſcidity, or from loſs of contractility in the bile-ducts; general languor; nauſea; dyſpepſia; and occaſional pain or uneaſineſs at the ſtomach.

2. Icterus chololithicus. (I. calculoſus, Cullen.) The courſe of the bile obſtructed by bilious concretions in the ducts; frequent retching occurs in this complaint, with acute pain in the hypogaſtric region, increaſed upon eating.

3. Icterus ſpaſmodicus. The courſe of the bile obſtructed by ſpaſmodic contraction of the bile-ducts: the

diſeaſe preceded by acrimônious ingeſta; hyſteria, or ſome violent paſſion of the mind; and generally ſubſiding within a few days after theſe are removed.

4. Icterus hepaticus. The courſe of the bile obſtructed by the derangement of the liver from ſchirrhus or infarction: occaſional retching and dyſpepſia.

5. Icterus infantum. The courſe of the bile obſtructed by viſcid meconium; without pain or dyſpepſia. See PARTURITION, p. 715.

Jaundice is found ſymptomatically in pregnancy, colic, coproſtaſis, and fevers of various kinds; eſpecially in the yellow fever.

The cauſes of jaundice are ſufficiently explained by the above claſſification, which is indeed founded almoſt entirely on their variety. The inſpiſſation of bile which occurs in the firſt ſpecies is ſaid by Dr. Saunders to have been found in the gall-bladder, and preſenting there a viſcid and pitchy conſiſtence. Dr. Powell, on the other hand, ſtates, that it does not ſeem to block up the large ducts, nor their entrance into the duodenum, but rather accumulates in the liver itſelf, the deviation from a ſtate of fluidity rendering its paſſage through the ſmaller canals difficult. He conceives that this ſtate of the ſecretion is connected with the uſe of ſpirits.

Inactivity of the ducts is another cauſe of the retention of bile. Some authors have indeed eſtimated the contractile powers of theſe parts at a very low rate; but we truſt that we ſhall be able to ſhow, in the proper place, that their contraction, though ſlow, is powerful and well marked. It cannot however be doubted, but that other powers aſſiſt the paſſage of the bile; as for inſtance, the occaſional diſtention or relaxation of the ſtomach, the motions of the diaphragm, bowels, and abdominal muſcles. Hence a life of indolence and inactivity ſeems to be a frequent ſource of the malady in queſtion. Hence too literary men, and thoſe who are engaged in ſedentary occupations, in which for the moſt part the body is inclined forwards, and the gall-ducts obviouſly liable to ſuffer conſtant compreſſion between the liver and adjoining parts, are frequently jaundiced. But, independently of the deficiency of theſe aids to the propulſion of bile, a want of contractile power in the gall-bladder will produce jaundice. Dr. Powell mentions a caſe in which the powers of contraction were loſt from over-diſtention; the accumulation of bile having become ſo great, as to produce a tumour externally, and an evident fluctuation.

Want of exerciſe operates powerfully in the production of the ſecond ſpecies likewiſe. Biliary concretions are comparatively more frequent in women than in men; thoſe men who are engaged in literary purſuits are very liable to them; and in either ſex they are moſt common after the active period of life is paſt. Haller noticed the frequency of their occurrence in criminals whoſe death had been preceded by long confinement. They are often found in the gall-bladders of oxen which have been ſtalled during the winter-months; and Dr. Powell believes that they occur in a larger than common proportion of maniacs who have been long confined.

Of the exiſtence of the third ſpecies ſome doubts have been entertained: Dr. Cullen particularly mentions it, and Dr. Powell deems it well eſtabliſhed. It is ſaid by Sydenham to come on occaſionally during hyſterics; and it has been obſerved to follow violent fits of anger, and other emotions of the mind. But the accurate Dr. Heberden denies the correctneſs of Sydenham's obſervation, in reſpect to hyſteria, both from his own experience and the authority of many other practitioners. With reſpect to the influence of the paſſions, Dr. Saunders remarks, that anger not only augments the quantity of bile ſecreted very conſiderably, but likewiſe vitiates it: hence it is, that, being carried into the duodenum in large quantities, and regurgitated into the ſtomach, it produces the ſame effects as an emetic; and hence probably the term *choleric*, as applied to paſſionate people. If the ductus communis do not tranſmit it as faſt as it is ſecreted, and the gall-bladder is ſo full that it cannot receive the exceſs; then it will be forcibly returned upon the hepatic ſyſtem, and, by entering the blood-veſſels, produce jaundice. Some have ſuppoſed that, during the general commotion of the paſſions, a gall-ſtone may have been puſhed from the bladder into the duct, and thus produced jaundice; but the whole attack has often been too tranſitory, and too free from the general ſymptoms of the paſſage of a gall-ſtone, to allow of ſuch a ſuppoſition. The ſymptoms of ſpaſm, affecting the parts in queſtion, are, however, generally conſidered as being ſimilar to thoſe of the paſſage of a concretion. So that, on the whole, the explanation which Dr. Saunders has given, of the influence of the paſſions in producing a temporary jaundice, appears to be the moſt probable.

The fourth ſpecies is generally traceable to drinking, as is likewiſe a thickening of the coats of the biliary ducts, by which their calibre muſt be diminiſhed, as mentioned by Morgagni (De Cauſis et Sedibus Morborum, Epiſt. xxxvii. art. 10.) who gives an inſtance of the total obliteration of the common duct. Dr. Saunders remarks, that this contraction of the canal of the duct is produced by the extenſion of diſeaſed ſtructure, originally produced in the ſtomach by the abuſe of ſpirituous liquors, to the biliary ducts. "In the diſſection of thoſe who have been intemperate dram-drinkers, the diſeaſed ſtructure may be traced," he ſays, "from the ſtomach along the courſe of the ductus communis; and I have frequently ſeen theſe ducts ſo contracted and thickened, that they could not tranſmit bile." A ſimilar effect, from inflammation of the liver extending to the gall-bladder and ducts, which often lays the foundation of an incurable jaundice, has been obſerved by Dr. Pemberton: the inflammation of the duct may be removed, he obſerves, but the thickening remains, a permanent evil.

In addition to the ſeries of cauſes already detailed, ariſing from obſtruction to the paſſage of the bile into the duodenum, it has farther been a queſtion, whether any obſtruction to its diſcharge from the bowels, after it has cleared its appropriate ducts, may not likewiſe occaſion its abſorption into the ſyſtem, and therefore produce jaundice. It would appear, from an experiment of M. Portal, that this may happen. He paſſed a ligature round the inteſtine of dogs, a little below the opening of the ductus communis choledochus; and obſerved that, in five or ſix hours afterwards, their eyes acquired a yellow tinge; and, upon examining the lacteals, he found them filled with bile. (Mem. de l'Acad. des Sciences, 1777.) In ſome of the caſes of obſtinate coſtiveneſs, accompanied by jaundice, that are on record, it is probable, therefore, that the jaundice was a ſymptom, rather than a cauſe, of the coſtiveneſs. This ſeems to be the caſe, in the ſlight jaundice of infants, which ſpeedily vaniſhes when the bowels are unloaded.

It is of conſequence that the ſchirrhous ſtate of the liver ſhould not be miſtaken for a mere congeſtion of blood or turgeſcence of the veſſels throughout the liver, which may preſs upon and block up the biliary ducts, and thus occaſion the abſorption of that bile to the ſecretion of which it miniſters. Hepatitis, or inflammation of the liver, is ſometimes accompanied by jaundice; and this would probably happen more frequently were it not in general confined to a ſmall part of the viſcus, or to its inveſting membrane. Moreover, after the intermittent fevers of this country, and the analogous remittents of warmer climates, a jaundice often comes on towards the concluſion, which has been conſidered as forming no very unfavourable prognoſtic; for there does not generally appear to be any other diſeaſe of the liver, in ſuch caſes, than an increaſe of its ſize, with great accumulation of blood through its ſubſtance. Dr. Powell mentions the caſe of a woman who died of conſumption, and whoſe lungs were found to be almoſt one maſs of ulcerated tubercle; within the laſt three days of her life, jaundice had come on to a very intenſe degree. Yet, on diſſection,

tion, the ducts were found free, and the gall-bladder empty, and no external tumour was discovered; but in the liver there seemed to be a great accumulation of blood; it was much increased in size, had a loose texture, and was in every part deeply tinged with bile.

Schirrhous tumours of the contiguous parts, as of the head of the pancreas, of the pylorus, scrofulous enlargements of the lymphatic glands in the capsule of Glisson, and steatomatous swellings of the omentum, are often so situated as to obstruct mechanically the passage of the bile into the intestines; tubercles of the liver have sometimes also operated as extraneous causes, and from their local situation, stopped the natural course of the bile. But the liver is often much enlarged by collections of large tubercles, which yet leave, in their interstices, a perfect freedom for the action of the vessels and the passage of the biliary ducts; and scirrhus of the liver is not usually a general disease, but is confined to particular spots, which are often out of the way of the biliary passages; so that it has been found, on dissection, to have made considerable progress without inducing jaundice.

Tympanites is often accompanied by jaundice, a circumstance which is to be deemed very unfavourable. In a case mentioned by Dr. Powell, the accumulation of air was so great, that, very speedily after the appearance of jaundice, the *cæcum* was burst by it, and the patient destroyed.

From whatever cause the obstruction of bile may arise, the absorbents carry back that secretion into the blood with the serum; and with which it becomes so intimately mixed, that it is received into the minutest of the white vessels, as in the eye and white of the nails. All the solid parts of the body, except the medullary substance of the brain, as some have affirmed, even the bones themselves, the fat, and the cartilages, have been observed to be deeply tinged of a yellow colour. The secreted fluids are generally also deeply tinged. In cases of some duration, the perspirable matter is coloured; so likewise is the saliva, which has a very bitter and bilious taste: but the urine is much more highly impregnated with bile, and more speedily, than any other of the secretions. Indeed the milk is the only exception which is made by authors; for the affection is supposed to extend even to the semen.

The affirmation that the bilious tinge extends to the humours of the eye, has not been detected by modern inquirers, and is probably without any foundation. But Galen, Hoffman, Boerhaave, and Sydenham, all assert that they have occasionally witnessed the circumstance; and Lucretius says;

Lurida præterea spectant quæcunque tuentur
Arquati. Lib. iv. ver. 333.

On the other hand, Dr. Heberden, and other physicians of much observation and experience, have never found such a change of vision in any patient; nor have we ever met with any living practitioner by whom it had been detected. It is not, indeed, an impossible case, particularly where the disease has been of very long continuance and great intensity, when, should the cornea or humours of the eye become impregnated with bile, the light would pass through a yellow medium, and objects thus be tinged of that colour. But these parts are not usually found impregnated with bile.

To sum up more closely the symptoms of jaundice, we may observe, that it is marked by a yellow colour of the whole surface of the body, which is first seen, and is most conspicuous, in the *tunica conjunctiva*, or white part of the eyes, and at the roots of the nails. The urine is thick, of a deep yellowish-brown colour; and tinges linen and other white substances, immersed in it, of a yellow hue; and this indeed is considered by many a pathognomonic sign. The bowels are often costive, but sometimes loose; and the stools are commonly of a very pale and clay-like appearance both in consistence and colour, from the absence of bile, and have not the usual feculent smell. This disease is accompanied with a sense of much lassitude and languor, and a great inaptitude to exertion; with lowness of spirits, and a feeling of pain and tension, or weight and oppression, about the præcordia; there is also frequently much anxiety, and some degree of difficulty of breathing, as well as a troublesome sense of itching over the skin, unattended by any eruption. Many symptoms of indigestion are generally present; such as nausea, vomiting, flatulency and eructations, and loss of appetite: solid food tastes bitter in the mouth of some patients; and in some states of the disease hiccup occurs, and occasional paroxysms of rigour or chilliness. The state of the pulse varies much; in general it is somewhat quicker than natural; but in some cases, and particularly under the circumstances just mentioned, it is slower. The pain is sometimes extremely acute in the epigastrium, or pit of the stomach, or in the right hypochondrium, especially during the passage of a gall-stone. Moreover the latter circumstance much increases the symptoms.

A pain, which is often most acute and severe, so as to be hardly supportable, but sometimes moderate, is produced, and is often accompanied by shiverings, which afterwards occasionally recur. The pain is seated at the pit of the stomach, and seems generally to be confined to that point of the epigastric region which corresponds to the situation of the opening of the common duct into the duodenum, and from this part it appears to dart through to the back; the pulse at the same time continues nearly as slow as is natural, and has none of the hardness attendant on inflammation. By an attention to the seat of the pain and this natural state of pulse, Dr. Heberden observes, that it is not difficult to foretel the outward yellowness in many cases, some days before it appears. The breath, during the continuance of the pain, becomes short and hurried; there is great general anxiety and restlessness, sometimes amounting to delirium, and at last great depression and fainting; the stomach is affected by nausea and retching; and there are often irregular spasmodic twitches in various parts of the body. There are often profuse sweats, which are, however, sometimes absent; and they do not depend at all upon the shiverings, for they are sometimes present when no shivering has occurred. These symptoms do not continue long in all their violence; for although the patient, during the passage of a gall-stone, is never free from some pain, yet it increases, by paroxysms, to a state of acute suffering, and subsides again into one of comparative ease, during which there is a sense of deep-seated soreness and fulness of the epigastric and right hypochondriac regions. The greatest relief from pain is experienced by bending the body forward upon the knees, in which position the relaxation of the abdominal muscles leaves the affected parts subjected to the least pressure. Another fit, perhaps of equal or greater violence than the first, then comes on, and alternates with another remission; this may occur several times in an hour; but sometimes the duration of the paroxysm is much longer.

At some early period of these attacks, the jaundice makes its appearance; and it continues for a considerable time after the violent symptoms have disappeared. When the concretion has passed, however, and the more urgent symptoms have ceased, the yellowness may soon be perceived to diminish in its intensity; but, before it can entirely disappear, it requires that the whole quantity of the tinged serum be removed by a gradual operation of the excretory glands, and a fresh supply in a natural state be introduced.

The duration of the attack, including the whole time of the passage of the concretion, is as various as its intensity; sometimes a few hours, sometimes several days, or even weeks, elapse, before it is expelled. In the former case, the passage is often so rapid as not to allow time for the

the jaundice to take place. The number and size of the concretions also vary much: sometimes the gall-bladder is filled with them; at other times there are not more than one or two: sometimes they are small and angular; at others large, and have a more regular surface. They have been sometimes seen nearly of the size and figure of the gall-bladder itself, so as almost to fill the whole cavity. These large concretions are less frequently the cause of jaundice than smaller ones; for, from their bulk, there is but little probability of their entering the *ductus cysticus*, and afterwards of obstructing the *ductus communis*: it is from calculi of smaller dimensions that such obstructions generally arise. Cases are recorded, however, in which calculi of immense bulk have passed; but those have no doubt obtained their passage by contracting adhesion, and producing ulceration into the bowels. It is remarkable, that while stones remain in the gall-bladder they are perfectly harmless; and when they are very small they readily pass with the cystic bile. The principal inconvenience, then, arises upon the accident of their being carried from the cyst into the narrow ducts. Biliary concretions are very frequently found in the gall-bladder, in the dissections of dead bodies, when no symptom has appeared during the life of the person to excite a suspicion of their existence.

It is commonly supposed that the biliary concretions are protruded from the ducts by the contractile power of the ducts alone. The truth of this opinion, however, Dr. Pemberton has questioned; and he maintains, that the gall-stone is propelled by the accumulating bile behind it, which at the same time pushes it forward and distends the duct. For, in the first place, the duct, he affirms, is always found contracted *before* the gall-stone; whereas, if the concretion were protruded by the contractile power of the duct, it ought to be contracted *behind* it. In the second place, opium and blood-letting are employed as relaxants and antispasmodics, and successfully: but this relaxation would rather retard than expedite the passage of the calculus, if its protrusion were the result of the contractile power. This opinion has unquestionably much probability in its favour.

The state of the pulse and the remission of pain, the occurrence of shivering after and not anterior to the pain, distinguish Icterus from the Phlogotica and their consequences.

The icterodic hue which occurs in Chlorosis is distinguished from the colour of jaundice by the unaltered whiteness of the eye, and the absence of bile in the secretions in the former complaint.

The treatment of this complaint must be varied according to the exciting cause of the obstruction. In Icterus cholœus our object will of course be to promote the action of the liver; for which purpose, brisk doses of calomel given at night, and worked off in the morning with salts, will be necessary; and, in addition to this, the regulation of diet and exercise, as noticed under Dyspepsia, must be attended to; and the muscular system put into moderate and regular action.

In the second species, of course, no permanent cure can take place till the biliary concretions are removed from the bile-ducts; and we know of no agent capable of accelerating their passage. If the notion of Dr. Pemberton be true, such medicines as relax the ducts may indeed be useful; and there can be little doubt but that, seeing how materially the muscular action affects these tubes, its presence may indirectly assist the passage of the stones; but, as to dissolving them by chemical agents, it appears to be a vagary long since given up by all enlightened pathologists; and we believe that we allow to our knowledge of the treatment of these complaints all the praise it deserves, when we state, that it embraces nothing more than the removal of impediment to the spontaneous operations of the affected structure, and the correcting of sympathetic derangements. With this first view, large doses of opium may be given, and such measures may be used as produce general relaxation, as the warm-bath. The second will vary of course according to the nature of the sympathetic disease. If the passage of the stone excite motions in the vascular system even in a slight degree, we should subtract blood freely and suddenly, and endeavour to calm nervous excitement by digitalis, &c. If, on the contrary, these motions are not induced, opium is unquestionably the most powerful remedy for abating pain with which we are acquainted: it should be given first in a large dose, (for instance two grs.) and then smaller proportions at such intervals that a regular effect be procured; always premising that the bowels are kept open and the vascular system undisturbed.

The same general rules are applicable to the third species. We may remark, however, that in this a free course of purgatives will in most instances be required: these should be of a warm and stimulating nature. The extreme pain often felt in this species requires, as in the former, the exhibition of opium.

In all cases, we think some good will be derived from the use of medicines which promote free discharges of the hepatic secretion. Mercury is of course usually prescribed; but, when this fails or is inadmissible, the acids internally and externally may be used with advantage. Indeed the nitric acid had obtained much reputation in jaundice, even so long ago as the time of Baglivi. The use of alkaline medicines has also obtained some countenance, which can only depend on their correcting in some degree the morbid state of the bile; a state which probably often occasions biliary concretions.

In that state of the liver which produces jaundice towards the end of intermittent fevers, mercury is the best and only remedy; and calomel, in small doses, is the form under which, in this and some other hepatic diseases, it seems to act most powerfully. Where scirrhus of the substance of the liver, or of the neighbouring organs, operates mechanically by its pressure upon the ducts, and occasions jaundice, it is more likely to prove the source of permanent mischief than any other cause, and our means of relieving it are less effectual. In the true tubercle of the liver, which begins with induration, and afterwards passes on to ulceration, the efficacy of any medicine is very doubtful; even mercurials, when given in large quantities, and under any form, have not seemed to produce any decided advantage.

When jaundice arises from a general congestion of the vessels of the liver, general blood-letting, or, if the circumstances of the constitution and strength of the patient forbid that, local bleeding by leeches, or cupping-glasses after scarification, or the application of blisters to the hypochondrium, will be useful, together with the exhibition of purgatives; and if it be admitted, that torpor of the intestinal canal, and a retention of bile or an accumulation of mucus in the duodenum, can sufficiently obstruct the departure of the bile, and thus occasion jaundice, as it seems to do in young children, the employment of any active purgative will be adequate to its removal. Calomel and jalap are particularly well suited to this indication.

Dr. Caleb Miller, of Bristol, (U. S.) has employed with considerable success the phosphoric acid, internally, for the cure of jaundice. He directs a large table-spoonful of the acid, prepared according to the directions contained in Murray's Materia Medica, to be added to a pint of balm-tea, and the mixture to be taken as fast as the stomach will bear it, till it operates as a diuretic. In a very obstinate case of jaundice, which was ultimately cured by this remedy, Dr. Miller states, that the patient took eight pints of the mixture in four-and-twenty hours.

Genus II. *Melæna*, [from μελας, black.] Black Jaundice. Generic characters—The colour of the eyes and skin fuliginous, leaden, or livid; black viscid dejections, with occasional vomitings of the same; anxiety; depression of spirits.

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The nature of this complaint was ſuppoſed by the ancients, among whom we may mention Hippocrates, Boerhaave, and Van Swieten, to be occaſioned by *atra bilis*. But Dr. Home, in his Clinical Experiments, traces it to an effuſion of blood from the meſeraic veſſels, which, by its ſtagnation and corruption, aſſumes that ſtrange appearance. The diſeaſe, he ſays, frequently follows hæmorrhage; and thoſe of a ſcorbutic habit are moſt ſubject to it. It is an acute diſeaſe, and terminates ſoon; yet it is not attended with any great degree of fever. Dr. Good conſiders that either of theſe cauſes may produce it, and accordingly he makes two ſpecies.

1. Melæna cholæa: the black diſcharge bilious; the vomiting occaſionally green and acid; great languor; vertigo. It ſeems to depend upon an organic depravation of the liver, chiefly perhaps in the caſe of habitual gluttons and drunkards, who have paralyzed or worn it out by perpetual ſtimulation: in conſequence of which, a pitchy and flaky bile is ſecreted inſtead of the genuine and healthy fluid.

2. Melæna cruenta: the diſcharge conſiſting of grumous blood intermixed with bile: pungent tenſive pain in both hypochondria; compreſſive pain at the pit of the ſtomach and fainting. This is probably the reſult of active or paſſive hæmorrhage (moſt likely the latter) from the liver, the ſpleen, the bowels, &c.

This diſeaſe has ſometimes proved ſalutary, and it has on other occaſions appeared periodically. For the cure of this complaint, gentle purgatives and clyſters have been recommended from the time of Hippocrates downwards; and they are as beneficial in this affection as in the hæmatemeſis, to which it bears much affinity. Dr. Home employed the diluted ſulphuric acid, in addition to laxatives; and, as he believed, with conſiderable advantage. Emetics he juſtly deems uſeleſs, if not injurious; and ſhunned the uſe of opium, as tending to ſhut up the matter that nature was carrying off. Opiates, however, combined with gentle cathartics, tend rather to aid the operation of the latter, by removing the ſpaſmodic conſtriction which takes place in the bowels, and thus alſo afford material relief to the pains. It has been ſometimes cured very rapidly by ſpirit of turpentine in large purging doſes.

Genus III. *Chololithus*, [from χολη, bile, and λιθος, a ſtone.] Gall-ſtones. Generic characters—Pain about the region of the liver, catenating with pain at the pit of the ſtomach: the pulſe unchanged; ſickneſs; dyſpepſy; inactivity: bilious concretion in the gall-bladder or bile-ducts.

As this diſeaſe differs from Icterus only in being unattended with yellow colour of the ſkin, it has been confounded with it by moſt of the noſologiſts. Dr. Good has, however, ſeparated them; for he ſays the yellow dye of the ſkin and urine, which is the pathognomic ſymptom of jaundice, occurs often without Chololithus; and Chololithus, even in its paſſing ſpecies or acute ſtate, without the yellow dye. The different degree in which its ſymptoms are manifeſted, according as the gall-ſtone is ſtationary or the reverſe, has appeared to our noſologiſts a ſufficient reaſon for ſeparating this genus into the two following ſpecies.

1. Chololithus quieſcens: pain about the liver and at the pit of the ſtomach obtuſe and occaſional; the bile leſs bitter than uſual; the dejections irregular.

2. Chololithus means: pain about the liver acute; frequent vomitings; dejections white, and at length loaded with one or more bilious concretions.

The reader will find the treatment, &c. detailed under Icterus; and the compoſition of the gall-ſtones will be mentioned when ſpeaking of the calculous diatheſis as connected with calculi in the bladder.

Genus IV. *Parabyſma*, [from παραβυω, *malè coacervo*, to heap up, or obſtruct.] Knotty or unequal intumeſcence of the abdomen from an indurated enlargement of one or more of the viſcera contributory to the digeſtive function; accompanied with derangement of the general health. This is the Phyſconia of Cullen, Sauvages, and others.

The whole of this genus, with the ſmall exception of caſes ariſing from inaction, may be conſidered beyond the reach of medicine. Indeed, when we conſider that, in attempting to remove tumours of long ſtanding, we are endeavouring to alter the actions of parts which have no analogous ſtructures in the natural ſtate, and with the laws of which we are conſequently unacquainted, we can have little hope of accompliſhing our taſk. To this we may add, that, while moſt maladies which depend on exalted or diminiſhed actions of the natural parts have been found at times amenable to medical agency, experience furniſhes no unequivocal records of the like happy termination of the diſtempers in queſtion. Yet do theſe diſtant diſeaſes claim our moſt unremitting, moſt intenſe, ſtudy and attention; ſince what we cannot cure we may perhaps prevent. To trace therefore, by diſſection of morbid parts, the various appearances which different grades of diſorganization preſent, and to combine this information with cloſe and faithful delineations of accompanying external ſymptoms, are purſuits which, though we muſt confeſs hitherto almoſt uſeleſs in regard to the complaints in queſtion, muſt ultimately meet their reward. Attempts of this nature have been made, and are ſtill proſecuted with much ardour, particularly on the continent. The knowledge at preſent obtained is however ſmall and unſatisfactory; ſo much ſo indeed, that many of the varieties ariſing out of the ſeven ſpecies of our author we ſhall paſs over without comment, merely referring our readers to ſome of the numerous hiſtories which the learned Dr. Good has noticed; and to the article Tumours for an account of the probable origin and mode of growth obſervable in diſorganization in general.

1. Parabyſma hepaticum: hard tumour in the right hypochondrium, verging towards, and ſometimes appearing at, the pit of the ſtomach; general languor; pale or yellow countenance; dyſpepſy; dejections irregular, often whitiſh. There are four varieties of this ſpecies.

α. P. coactum; from infarction. Found in feeble children, who ſecrete leſs bile, and have the cells of the liver clogged with mucus from atony of the abſorbents. Found alſo in intemperate livers; and in foreigners who reſide in hot climates: an unequal atony, and at times paralyſis, being produced in the organ from the exceſſive ſtimulus antecedently excited by the rays of the ſun or the uſe of ſpirituous potations. (See *Hepatitis* in this article.) In this caſe, gentle doſes of calomel, or blue pill, ſtrict regulation of the bowels, abſtemious regimen, &c. are generally followed, after due perſeverance, by reſtoration to health. The ſame remarks are applicable to the treatment of the infarcted ſpleen; for by theſe means a ſpleen ſo enlarged as to occupy the major part of the abdomen has been effectually removed in a few months.

β. P. ſcirrhoſum; the tumour aſſuming a ſcirrhous character.

γ. P. cololithicum; accompanied with bilious concretions.

δ. P. helminthicum; accompanied with flukes, hydatids, or other worms. See Winker's Diſp. de Hydat. apud Bonet, Med. Septentr. ii. Darwin, vol. iii.

Other morbid ſtructures of various ſorts and ſizes are occaſionally built up in the liver; but, as there is little evidence of their ſeparate origin, it is needleſs to multiply the varieties. They are ſo thickly interſperſed in our periodical journals, that all reference ſeems unneceſſary. Some varieties of them will be found in the ſuperb work of Dr. Farr, (Morbid Anat. Liver, 1812.)

2. Parabyſma ſplenicum; ague-cake: an indurated tumour below the falſe ribs on the left ſide, and towards

the ſpine on the ſame ſide; pale countenance; general debility. Three varieties are noted.

α. P. coactum; from infarction. Chiefly after obſtinate remittents or intermittents in organs weakened by previous intemperance; the abſorbents being hence doubly debilitated.

β. P. ſcirrhoſum; aſſuming a ſcirrhous character. On the death of a woman it was found to weigh thirty-three pounds, and to fill nearly the whole of the abdomen. The complaint laſted ſeventeen years before the patient died, during nearly the whole of which ſhe purſued her uſual avocations. *Sauvages.*—Three times its natural ſize. *Baillie*, Morb. Anat. Faſc. vi. pl. 3.—Contained fifteen pints of pus. *Hiſt. de l'Acad. des Sciences*, 1753.—The entire viſcus has often been extirpated without injury.

γ. P. cartilaginoſum: the coats of the ſpleen converted into a cartilaginous ſubſtance. *Baillie*, Morb. Anat. Faſc. vi. pl. 1.

3. Parabyſma pancreaticum: hard elongated tumour, running tranſverſely in the epigaſtric region; dyſpepſy; general languor. Here are two varieties.

α. P. coactum; from infarction. *Baillie*, Morb. Anat. pl. vii. fig. 1.—Torpitude produced by the ſtimulus of tobacco, almoſt inceſſantly chewed or ſmoked for many years; fatal. *Darwin.*

β. P. calculoſum; accompanied with white calculous concretions. *Baillie* ut ſup. fig. 2, 3, 4.

The pancreas occaſionally aſſumes a ſcirrhous ſtructure. It is deſcribed as remarkable for the little general diſturbance of the ſyſtem; the fixed and burning pain at the pit of the ſtomach, exceſſively increaſed by the preſſure of the diſtended ſtomach; ſo much ſo indeed, that, though the appetite is often good, the patient is compelled to induce vomiting after eating, to lull the pain. The bent poſture, as taking off compreſſion, is likewiſe preferred. Coſtive ſtate of the bowels much increaſes the pain, by producing the like preſſure on the diſeaſed viſcera. The palliative treatment is therefore obvious.

4. Parabyſma meſentericum: indurated and irregular maſs of tumours below the ſtomach, yielding to the preſſure of the hand; pale bloated countenance; atrophy; the appetite at the ſame time ſeldom diminiſhed, often voracious. There are ſix varieties.

α. P. helminthicum; accompanied with hydatids or worms.

β. P. ſtrumoſum; accompanied with ſcrophula. See *Maraſmus*, in this article.

γ. P. ſcirrhoſum; accompanied with ſcirrhus.

δ. P. ſarcomaticum; accompanied with ſarcomatous excreſcences.

ε. P. ſteatomatoſum; accompanied with ſteatomatous excreſcences. In one inſtance, the tumour weighed 40 lbs. *Nov. Act. Nat. Cur.* vol. i.

ξ. P. fungoſum; accompanied with fungous excreſcences.

The above varieties are from Sauvages, who has been copied by Cullen. The tumours are often very large, and conglobated: and at times accompanied with cyſts filled with a limpid fluid. In one inſtance theſe amounted to twenty of various ſizes, one as large as a child's head, ſix as large as the fiſt, and the reſt reſembling hens' and pigeons' eggs. Hence the whole abdomen is in ſome caſes ſo generally tumefied as to give a ſemblance of pregnancy. This is particularly the caſe with the laſt variety; and as the appetite, ſtate of the bowels and bladder, are often unaffected, there is not unfrequently ſome difficulty in determining the nature of the diſeaſe. See Sauv. in loco; as alſo the writings of Welſch, Trincavelli, Morgagni, and Riolani, who have made collections of extraordinary caſes; and compare Cruikſhank on the Anatomy of the abſorbing Veſſels, p. 115. 2d edit. 4to.

5. Parabyſma inteſtinale: the tumour hard and circumſcribed; round or elongated; moveable upon the preſſure of both hands; irregular dejections; obſtinate vomiting; pyrexy; and for the moſt part emaciation. Two varieties.

α. P. conglomeratum; coheſive, and conglomerated. *Morgagn.* de Sed. et Cauſ. Morb. tom. ii. In this caſe the tumour lay ſenſible to ſight, of a circular ſhape between the enſiform appendix and navel. On diſſection, the ileum and adjoining portion of the jejunum were retracted upwards, coacervated, and firmly adheſive.

β. P. ſarcomatoſum. *Fantoni.* Obſ. Med. ſelect. ii. In this caſe the tumour, of an oblong ſhape, lay below the left hypochondrium inclining to the epigaſtrium, prominent, with unequal hardneſs. On diſſection, every other part being found healthy, the colon, under the ſtomach, and towards the left ſide, for the length of the palm of the hand, appeared cloſely indurated, diſtended, and loaded with a fleſhy fibrous peculiarly-thickened tumour, which contracted its diameter.

6. Parabyſma omentale; the tumour indurated and diffuſed; frequently ſpreading over the whole of the abdominal region; dyſpnœa; emaciation. This ſpecies is uſually of a mixed kind: infarcted; ſcirrhous; glandular; and cartilaginous. It has been found of various extent and magnitude; from a weight of five pounds to twenty, twenty-five, thirty, and in one inſtance (*Greg. Horſtii.* Prob. 10. dec. vi.) fifty-ſix pounds, occupying the whole capacity of the belly. In one caſe, the hardneſs was almoſt ſtony: *Panarol.* Pentec. iii. obſ. 10. In another, oſſeous, the weight thirteen pounds: *Mongin*, Hiſt. de l'Acad. des Sciences, 1732. In a third, loaded with many thouſand glandules; in a fourth, accompanied with excruciating pains, the weight ſixteen pounds: *Huxh.* Phil. Tranſ. vol. vii.

7. Parabyſma complicatum: the belly hard, elevated, and diſtended as though pregnant, and often ſuppoſed to be ſo; yet more or leſs knotty and unequal; the breathing ſeldom impeded; for the moſt part, acute pain, nauſea, obſtinate vomiting, and thirſt. (Phyſconia polyſplanchna. *Sauv. Cull.* Phyſconia viſceralis. *Auc. Var.*)

The ſymptoms of this ſpecies, Dr. Good obſerves, muſt vary according to the organs affected, and the nature and extent of the diſeaſe. The enlargement is generally found to be ſarcomatous, ſcirrhous, hydatidous, or adipoſe. The liver is in moſt caſes more or leſs concerned; ſometimes in connexion with the ſpleen, ſometimes with the meſentery, ſometimes with the ſtomach or inteſtines, and ſometimes with all together. Hildanus found the liver ſo enlarged as to paſs beyond the falſe ribs of the left ſide, with the ſpleen equally enlarged, and fixed to the hepatic lobe. *Cent.* ii. *Obſ.* 45.—Huldenreich, in a woman of forty-five years of age, found the liver ſcirrhous, weighing fourteen pounds, with a fleſhy excreſcence in the meſentery of the ſize of a child's head: *Miſcel. Nat. Cur.* ann. vi. and vii. Jaundice accompanied this caſe.—Bartholine mentions a woman of elegant form, in the flower of her age, attacked with another variety of this diſeaſe, which at length deſtroyed her: when all the inteſtines, liver, ſpleen, and every adjoining viſcus, were found intermixed, and buried in fat; the liver being at the ſame time enlarged and ſcirrhous, and filling both hypochondria; the ſtomach thickened, and cartilaginous. *Cent.* ii.—Coiter found the whole of theſe organs adhering together, and filled with cyſts of different ſizes diſtended with a limpid fluid; he reckoned more than fourſcore: the organs themſelves were exhauſted and dry. *Obſ. Anat.* p. 117. See alſo the works of De Haen and Boerhaave for remarkable diſſections of the ſame kind.

Recent reſearches ſeem to prove in a very convincing manner, that, however different the matter contained in abdominal tumours, they have a common origin in tubercles, or, as ſome ſay, in hydatids. We ſhall not enter into this ſpeculation now; but, as it is of importance to diſtinguiſh the earlieſt approaches of a diſorder which gradually involves the whole of the liver, peritoneum, inteſtines,

teſtines, and occaſionally the ſtomach, in one dreadful and incurable diſeaſe, we ſhall tranſcribe from Dr. Baron a clear, and we believe, from our own obſervation, faithful, portrait of its primary ſymptoms.

The complaint comes on in general with tenderneſs and diſtention of the abdomen, accompanied with nauſea and vomiting. The bowels, for the moſt part, are coſtive, both before and after the attack; but they are frequently in an oppoſite ſtate. At this period, the ſymptoms not being ſo violent as to force the patient to ſeek for proper relief, they are very apt to be neglected: but, unleſs the true nature of the diſorder be diſcovered, and its courſe arreſted at an early ſtage, all ſubſequent efforts will probably be uſeleſs. The progreſs of the affection is as follows: the bowels become more and more irregular in their action; the tenderneſs and ſwelling increaſe; the appetite fails; the pulſe acquires greater velocity; the features look ſharp and contracted; the countenance becomes pale or ſallow, the lips parched and ſkinny; the tongue ſometimes of a bright colour, reſembling what is ſeen in diabetes, at other times it is covered with a thick whitiſh mucus. The fleſh and ſtrength decay rapidly: great emaciation takes place: the ſkin, except towards the laſt ſtage, is for the moſt part dry and ſcaly: the urine ſmall in quantity; occaſionally clear, more frequently otherwiſe. If a cough has not exiſted from the beginning, it is very apt to occur about this time; but this is by no means to be conſidered as a diagnoſtic ſymptom; its exiſtence depending upon the ſpreading of the diſeaſe to the pleura, and thoracic viſcera.

The feet ſometimes ſwell towards the concluſion of the diſeaſe, or the ſwelling is confined to one leg or thigh. At this period, if the examination of the abdomen be made with due care, it will be found to communicate to the touch the feeling occaſioned by a ſolid tumour; the integuments and muſcles not rolling upon the contained parts as in a ſtate of health. But in ſome caſes, where the effuſion is conjoined with the original and more important diſeaſe, a ſenſe of fluctuation may be diſcovered. Very frequently the patient complains of a diſtreſſing feeling of a "broiling heat" at the ſtomach; the diſcharge of a tough ropy phlegm from the mouth, conſtant nauſea, with violent retching and vomiting; and, in two caſes, the matter brought up during ſeveral days before death was ſtercoraceous. In the courſe of the complaint, the appetite is for the moſt part very bad; but the deſire for liquids is inſatiable, even though a conſciouſneſs exiſts that a large quantity cannot be ſwallowed without occaſioning very great diſtreſs. When a feeling of ſinking and emptineſs prevails, the patient eagerly thinks of many articles that might allay his uneaſineſs, but the ſight of them ſeldom fails to excite loathing and diſguſt. Should any ſuſtenance be taken, it is either ſpeedily returned by vomiting, or it cauſes indeſcribable uneaſineſs. The patient rolls about in all directions, in vain ſeeking for ſome point where he may repoſe. Every action of the ſtomach or inteſtines comes to be performed with great pain. The paſſage of flatus upwards or downwards, the movements which take place before the evacuation of the bowels, all give riſe to ſuffering. At times the pain is ſharp and tranſient; at others it is heavy and obtuſe; but a ſenſe of weight is ſeldom abſent; and it is more felt after vomiting or purging than before. One patient, (an infant,) in alluſion to this ſymptom, uſed to put his hand on the abdomen, and exclaim piteouſly, "Oh! ſo heavy!" Another ſaid, that his bowels felt as if they were "tied up in a napkin." At another time he ſaid, "they ſeemed to be in a maſs;" and at a third, he declared that, if he had "a ſhot attached to every convolution of his inteſtines, he could not ſuffer more than he did."

The above-mentioned author has not found medical treatment of much avail even in the earlieſt ſtages of the above complaint. The production of a continued ſtate of nauſea has ſeemed to him to be attended with ſome advantage; and Dr. Jenner has communicated ſome caſes which were cured by a long continuance of that uneaſy ſenſation. It is neceſſary, moreover, to palliate the ſymptoms by bleeding occaſionally; to keep the bowels lax, and to relieve pain by narcotics. Mercury, which might be ſuppoſed an agent of ſome uſe in promoting abſorption, appears to aggravate rather than to ameliorate the complaint. It is to be obſerved, that a ſomewhat different practice will be reſorted to by thoſe who regard this diſeaſe in a different light from Dr. Baron; this gentleman conſidering it a diſeaſe of the abſorbents, while others conſider the tubercles (the moſt common and earlieſt appearances on diſſection) to be produced by effuſed coagulating lymph, the conſequence of inflammation. Dr. B. oppoſes this view of the caſe with much ingenuity; but, upon ſumming up all the facts known on this intereſting ſubject, and after tracing the different gradations of diſeaſed ſtructure with much labour, we are forced to acknowledge our information very inſufficient, and our minds far from being made up on this head.

Class II. PNEUMATICA, [from πνευμα, breath.]

Diseases of the Respiratory Function.

Order I. Phonica, [from φωνη, the voice.] Diſorders affecting the Vocal Avenues. This Order contains ſix Genera.

Genus I. *Coryza*, [Gr. naſal mucus.] Running at the noſe. Galen confines the term κορυζα to defluxion from the noſtrils alone; but Hippocrates, as we learn from Celſus, applied it equally to defluxions from the head, noſtrils, fauces, and cheſt. The latter Greek phyſicians reſtrained it to the firſt, and diſtinguiſhed the two latter by the name of cataſtagmus (καταστραγμος), which equally imports *diſtillatio* or defluxion. Among modern writers *coryza* is uſed ſynonymouſly with *catarrh*, and is conſequently regarded as a febrile affection. It may indeed occur, and often does ſo, in various fevers as a ſymptom; but the older noſologiſts are more correct in giving it a place diſtinct from fever, when ſtrictly genuine. Defluxion from the noſtrils may proceed from two very different ſets of cauſes: increaſed action of the ſecernents, and diminiſhed action of the abſorbents. The firſt or ſtimulating ſet may conſiſt of ſternutatories; of the irritation of ſympathy, as in crying; of infectious effluvia in the atmoſphere (ſometimes, though ſeldom, limiting their action to the mucous membrane of the noſtrils, and hence approaching the nature of catarrh); and of the local ſtimulus of an *ozæna*, or naſal ulcer. The action of the abſorbents may be diminiſhed by expoſure to ſevere cold; by the debility of old age; and by a long habit of ſternutatories, which have a tendency, in proportion to their uſe, to render all the veſſels of the noſtrils torpid; although the abſorbents, as in the caſes of age and cold, and indeed in all inſtances of debility, are ſooner operated upon than the ſecernents. Here, therefore, the defluxion is produced, not from increaſed ſecretion, for the ſecretion may even be leſs than in a ſtate of health; but from the ſecretion, whatever its quantity, not being carried off by its uſual channel; and hence again that frequent and unſightly dripping from the noſtrils of perſons who addict themſelves to large quantities of ſnuff. Of this genus we have two ſpecies, with their varieties.

1. Coryza entonica: the defluxion pellucid, mucous, or ropy, with a ſenſe of irritation or infarction. This ſpecies is divided into four varieties.

α. Sternutatoria; from ſternutatories.

β. Lachrymoſa; from weeping or crying; the lachrymal ſecretion being increaſed by mental emotion.

γ. Catarrhalis, cold in the head; from ſudden cold or change in the temperature of the atmoſphere; accompanied with a naſal voice and loſs of ſmell; and excoriation of the mucous membrane of the noſtrils. The catarrhal

tarrhal variety of Coryza is moſt frequently met with in damp weather; and, as might be ſuppoſed, oftenest attacks perſons of the moſt delicate habits. In general the increaſed ſecretion induced gradually unloads the mucous membrane, and the complaint goes off. It is frequently connected with irritation of the bronchial lining of the lungs, and is then cured by the ſame meaſures as the latter affection.

C. catarrhalis in infants is often however of a violent nature; ſo much ſo indeed, that we ſhall give a more full account of it than of the preceding varieties. This coryza generally attacks infants at the breaſt; it is characterized by ſneezing, tumefaction of the noſe and eye-lids, and a ſhining appearance of the ſkin covering thoſe parts; conſtant open ſtate of the mouth; a rather dry ſtate of the lips and tongue; the reſpiration is accompanied by a naſal wheezing. Sucking is impeded, though liquids put into the mouth are ſwallowed with facility; the infant takes the nipple in his mouth, but he has hardly made three or four ſuctions when his reſpiration appears to be obſtructed; his face becomes of a violet colour; he precipitately abandons the nipple, utters ſome cries, and is ſeized with a fit of ſevere coughing, which leaves him in a ſtate of partial ſtupor. Theſe accidents diſappear in a ſhort time, but are renewed whenever he again attempts to ſuck. This firſt ſtage of the diſeaſe laſts for four or five days, or thereabouts; it is followed by a ſecretion from the naſal cavities, the exiſtence and quantity of which, at leaſt in new-born children, it is not always eaſy to aſcertain, becauſe it either dries or falls into the pharynx when the infant lies horizontally on its back. The abſence of any appearance of malformation of the tongue or of the mouth, the facility of deglutition, the occurrence of fits of coughing every time the infant attempts to ſuck, joined with the particular ſymptoms before mentioned, ſuch as a ſhining appearance of the ſkin of the noſe, with a tumefaction of this part and of the lower eye-lids, a naſal ſniffling, the manner of reſpiration by the mouth, clearly ſhow inflammation of the mucous membrane of the naſal cavities. The infant ſhould be kept warm; and we ſhould direct the attendants to foment its noſtrils with a warm decoction, and carefully remove the mucus collected in them. The infant will generally be able to ſuck as ſoon as the ſtate of the naſal cavities permit it to breathe with the mouth cloſed.

δ. C. ozænoſa, [from ὀζη, ſtench.] An ulcer ſituated in the noſe, diſcharging a fœtid purulent matter, and ſometimes accompanied with caries of the bones. Some authors have ſignified by the term, an ill-conditioned ulcer of the antrum. The firſt meaning is the original one. The diſeaſe is deſcribed as coming on with a trifling tumefaction and redneſs about the ala naſi, accompanied with a diſcharge of mucus, with which the noſtril becomes obſtructed. The matter gradually aſſumes the appearance of pus, is moſt copious in the morning, and is ſometimes attended with ſneezing and a little bleeding. The ulceration occaſionally extends round the ala naſi to the cheek, but ſeldom far from the noſe, the ala of which alſo it rarely deſtroys. The ozæna is often connected with ſcrophulous and venereal complaints. In the latter caſes, portions of the oſſa ſpongioſa often come away. After the complete cure of all venereal complaints, an exfoliating dead piece of bone will often keep up ſymptoms ſimilar to thoſe of the ozæna, until it is detached. Mr. Pearſon remarks, that the ozæna frequently occurs as a ſymptom of the Cachexia ſiphiloidea. It may perforate the ſeptum naſi, deſtroy the oſſa ſpongioſa, and even the oſſa naſi. Such miſchief is now more frequently the effect of the Cachexia ſiphiloidea than of Lues venerea. The ozæna muſt not be confounded with abſceſſes in the upper jaw-bone.

The variety we are treating of has its origin, in common caſes, from a violent degree of catarrhalis; and therefore, when the former complaint is preſent, it is neceſſary to repreſs it as faſt as poſſible, by local bleeding and counter-irritants, before this unpleaſant and intractable ſtage of the complaint be induced. When ſtruma or ſiphilis is the cauſe of the diſcharge, the general treatment of thoſe affections muſt be had recourſe to. Cauſes which ariſe from the former of theſe complaints are the moſt tractable.

2. Coryza atonica: defluxion limpid, and without acrimony, or ſenſe of irritation. Three varieties.

α. Algida; from expoſure to a keen, froſty, air.

β. Senilis; from old age.

γ. Superacta; from long and immoderate uſe of ſtrong aromatics, volatile alkali, or ſnuff.

Genus II. *Polypus*, [from its reſemblance to the worm of that name.] A fleſhy elongated excreſcence, ſhooting from one or more ſlender roots in the cavity of the noſtrils, running in different directions, and affecting the ſpeech.

It has lately been the cuſtom to apply the term *polypus* to a variety of concretions and excreſcences ariſing in different parts of the body, of very different origins and textures, as polypi of the heart, which are perhaps always grumous blood, or concrete gluten; polypi of the uterus and bladder, which are caruncles with a ſlender baſe or peduncle; and polypi of the trachea, which are alſo concrete gluten, occaſionally coughed up, ſometimes ſolid and branching, ſometimes tubular. Dr. Good, however, has followed Celſus, and moſt writers from his time to that of Heiſter, in reſtoring and limiting it to the fleſhy and ramifying excreſcence of the noſtrils; and he divides it into two ſpecies.

1. Polypus plaſticus, the ſoft polypus: ſoft, compreſſible, chiefly pale-red; apparently originating from diſtention or relaxation of the Schneiderian membrane.

2. Polypus coriaceus, the hard cartilaginous polypus: firm, cartilaginous, chiefly deep-red; apparently originating from, or connected with, a caries of the ethmoid bone.

This complaint, being moſtly the ſubject of manual operation, will be treated of under the article SURGERY.

Genus III. *Rhoncus*, [Greek.] Hoarſe ſonorous breathing from ſtagnation of mucus in the vocal canal. There are two ſpecies.

1. Rhoncus ſtertor, ſnoring or ſnorting: the ſound deep and loud; produced in the larynx and fauces.

2. Rhoncus cerchnus, wheezing: the ſound denſe, and impeded; produced below the larynx.

We cannot help conſidering both theſe ſpecies as ſymptomatic; though Dr. Good ſays, "it requires only a ſlight knowledge of the habits and morbid actions of the animal ſyſtem to diſcover inſtances in which both ſorts are idiopathic." But his mode of proving this aſſertion ſeems rather to favour our opinion than his own; for he ſtates, that "many perſons have a thick or wheezy reſpiration, produced by corpulency, or by changes of the atmoſphere from hot to cold, or from dry to moiſt, without any other diſeaſed affection."

Of the remaining three genera of this order we ſhall merely give our author's diviſions, the ſubject being amply treated of under the articles DEAF and DUMB, STAMMERING, STUTTERING, &c.

Genus IV. *Aphonia*, [from α, priv. and φωνη, voice.] Dumbneſs; total inability of ſpeech. (Mutitas, *Cull.* and *Sauv.*) This, we think, ſhould have been the laſt genus of the order. It contains three ſpecies.

1. Aphonia elingium, dumbneſs from the want of a tongue. This ſpecies is naturally divided into two varieties: α, congenita, where the deſtitution is coeval with the birth; and β, where the ſame is produced by accident, puniſhment, or diſeaſe. In either caſe we may naturally ſuppoſe this to be a *radical* and irremediable defect. Privation of the tongue, however, is not *always* accompanied with dumbneſs; ſince we have numerous, and

and apparently well-authenticated inſtances of the ſpeech remaining perfect after a total loſs of tongue and of uvula. We ſhall cite two of the moſt remarkable.

The firſt is of a woman who was a native of Monſaray, in the territory of Elvas, in Portugal. The caſe was atteſted by Wilcox biſhop of Rocheſter, then chaplain to the Engliſh factory at Liſbon, in a letter dated from that city, Sept. 3, 1707; and was laid before the Royal Society in London. The following is an extract from the letter: "The Conde d'Ericeyra, a nobleman of letters, and curious in natural knowledge, brought from the frontiers of this country a woman without a tongue, who yet ſpeaks very well; ſhe is ſeventeen years of age, but in ſtature exceeds not one of ſeven or eight. I was with her at the conde's houſe, and made her pronounce every letter of the alphabet, which ſhe can do diſtinctly. She hath not the leaſt bit of a tongue, nor any thing like it; but the teeth on both ſides of her under-jaw turn very much inward, and almoſt meet. She finds the greateſt want of a tongue in eating; for, as others when they eat move their meat about with their tongue, ſhe is forced to uſe her finger. She pretends to diſtinguiſh taſtes very well, but I believe doth it imperfectly. Her voice, though very diſtinct, is a little hollow, and like that of old people who have loſt half their teeth."

The other caſe was that of a girl born in Portugal alſo, (in 1718,) without a tongue. M. de Juſſieu, of the French Academy, ſaw her at Liſbon when ſhe was about fifteen years of age. He examined her very attentively. In the place of the tongue was a ſmall fleſhy ſubſtance, which he found was able to contract and dilate itſelf, of courſe it had all the muſcles of the tongue. The places where the tongue ſhould be, remained plump and full, as if the tongue had been in being. He examined afterwards how ſhe performed the ſeveral functions of the tongue. Firſt as to ſpeech: ſhe pronounced ſeveral words ſo diſtinctly, that, had he not known ſhe wanted the tongue, he could not diſcover by her ſpeech that ſhe wanted it. She, however, pronounced the letters C, F, G, L, N, K, S, T, X, Z, with more difficulty than the other conſonants. When ſhe pronounces them, ſhe inclines her head forward, drawing back the chin as it were to the larynx, in order to raiſe it in a line with her teeth. The ſecond function of the tongue, the taſte, ſhe had as exquiſite as any body. She told M. de Juſſieu, that ſhe found an agreeable taſte in thoſe dry ſweetmeats he had given her. Maſtication ſhe performed with difficulty: the above fleſhy ſubſtance was not long enough to gather and keep the food under the teeth: ſhe was here obliged to uſe the maxilla inferior, which through habit ſhe could either approach or remove from under the ſuperior, as ſhe wanted to bring the morſel ſhe would grind under the upper jaw. She ſometimes uſed her finger for the ſame purpoſe. Deglutition muſt needs be difficult to her. The tongue naturally forms itſelf into a kind of a hollow, ſomewhat like a ſpoon, by which means it gathers every atom in the mouth, and protrudes them into the pharynx; but here nature and uſe from her infancy have in ſome meaſure ſupplied this want of a tongue. The muſcles attached to the above fleſhy ſubſtance raiſe themſelves up, forming at the ſame time a kind of rima, which, in ſome ſort acting the part of a tongue, protrudes the aliments into the pharynx, ſhe obſerving to incline her head forward, which facilitates their deſcent. Thoſe, together with the labial muſcles, help her by their contraction to ſpit out what is in her mouth.

M. Roland, ſurgeon at Saumur, has a caſe pretty nearly the ſame. A boy, nine years old, loſt his tongue by a mortification that enſued an ulcer he had after the ſmall pox. There was this difference, the root of the boy's tongue was bifurcated, and pretty apparent, whereas the root of the above girl's was round and ſmall. This boy alſo could ſpeak, and perform the other functions of the tongue, like the girl.

2. Aphonia atonica: ſpeechleſſneſs from atony of the vocal organs. Here alſo we have two varieties.

α. Oblæſa; from leſion of the nerves of the tongue; as in paralyſis.

β. Pathematica; from ſudden and overwhelming terror or other violent paſſion. Commonly temporary, ſometimes permanent.

3. Aphonia ſurdorum. Dumbneſs from deafneſs, congenital or produced during infancy.

Genus V. *Dyſphonia*, [from δυς, bad, and φωνη, voice.] Sound of the voice imperfect or depraved. This is the Aphonia of *Cullen* and *Sauvages*. There are three ſpecies and many varieties.

1. Dyſphonia ſuſurrans: the voice weak, whiſpering, and ſcarcely audible. The varieties are—

α. Oblæſa; from leſion of the nerves of the larynx.

β. Pathematica; from ſudden and overwhelming terror, or other violent emotion of the mind: occaſionally permanent.

γ. Compreſſoria; from permanent compreſſion of the trachea.

δ. Catarrhalis; from neglected catarrh.

ε. Enervis; from ſimple debility of the larynx without any obvious cauſe. Dr. Good "has at this time a caſe under his care produced in this manner, in which the patient, about forty years old, and otherwiſe in good health, has never ſpoken, except in a whiſper, for the laſt ſix years."

2. Dyſphonia puberum, change of voice. The voice diſſonant and untrue to itſelf, irregularly alternating from harſh to ſhrill; confined to the age of puberty. This, we think, can hardly be conſidered as a diſeaſe. Sauvages and Cullen call it Paraphonia puberum.

3. Dyſphonia immodulata: the voice permanently depraved or inharmonious. The varieties are—

α. Rauca; naturally or habitually hoarſe, harſh, or rough.

β. Naſalis; ſent with a cracked and grating ſound through the noſtrils. Produced by habit, affectation, or naſal obſtruction.

γ. Clangens; ſhrill and ſqualling.

δ. Sibilans; with a whizzing or hiſſing ſound.

ε. Stertens; with a ſnorting, ſnoring, guttural, or ſtertorous, ſound. Uſually from relaxation of the glottis or velum palati.

ζ. Palatina; hoarſe, obſcure, indiſtinct; with a fiſſure or other defect in the palate. This defect is moſtly congenital; but occaſionally a ſequel of lues and ſome other diſorders.

Genus VI. *Pſelliſmus*, [Gr. to ſtammer.] Articulation imperfect or depraved. There are two ſpecies.

1. Pſelliſmus bambalia, ſtammering. The flow of the articulation diſturbed by irregular intermiſſions or ſnatches. Dr. Good makes two varieties.

α. Hæſitans, or heſitation: involuntary and tremulous retardation in articulating particular ſyllables.

β. Titubans, or ſtuttering: involuntary and tremulous reduplication of ſome ſyllables, alternating with a tremulous hurry of thoſe that follow.

Theſe two varieties of ſtammering are thus well deſcribed by Shakeſpeare: "I would thou couldſt ſtammer, that thou mighteſt pour out of thy mouth, as wine comes out of a narrow-mouthed bottle, either too much at once or none at all."

2. Pſelliſmus blæſitas. The enunciation vitious. Here we have no fewer than ſeven varieties.

α. Ringens; with a vibration or redoubling of the letter R.

β. Lallans; the letter L unduly liquid, or ſubſtituted for R. As when deluſive is pronounced delluſive, as though the *l* poſſeſſed the power of the ſpaniſh *ll*, or the Italian *gl*; or as when parable is pronounced pa*l*able.

Alcibiades is ſuppoſed to have laboured under this defect. It is alſo ſaid to be common to the Jews of China, who have dwelt among the Chineſe ſo long as to have loſt the ſound of R, in conſequence of its not exiſting in the Chineſe tongue.

γ. Emolliens; the harſh letters exchanged for ſoft, as in the ſubſtitution of anzel for angel; capidol for capitol; dat for that.

δ. Balbutiens; labials, as B, M, P, too frequently introduced, or uſed inſtead of other letters. So *V*eda is pronounced *B*eda, *V*enares *B*enares, in Bengal, the Bengalee having no V. So im*p*ringe is often uſed for in*f*ringe; i*b*ory for i*v*ory; though *b* and not *v* is here the radical letter, the Latin term being e*b*ur.

ε. Mogilalia; labials omitted or exchanged for other letters. Moſt commonly P for F, and F for V, as *f*ilfer for *p*ilfer; *v*iſh for *f*iſh. So the Latin fi*b*ilo is transformed by the French into fi*ff*ler.

ζ. Dentiloquens, liſping: dentals, as C, S, T, Z, too frequently employed; producing the effect of what is called, in common language, ſpeaking through the teeth.

η. Gutturalis; imperfect utterance of the guttural letters; as G, J, H, X. This, and indeed all the varieties of the preſent ſpecies, as well as many others that are connected with it, are moſt uſually the reſult of vicious habit, produced by want of attention to the articulation of ſounds in infancy, or to affectation. They are alſo ſometimes dependant upon a miſconſtruction of the vocal organs: of which the preſent variety furniſhes us with an example; for a defective utterance of the guttural letters muſt be a neceſſary conſequence of a fiſſure in the palate.

Order II. PNEUMONICA, [Gr. from πνευμα, breath.] Diſorders affecting the Lungs, their membranes, or motive power; and producing irregular, impeded, or painful, reſpiration.

The reſpiratory ſyſtem performs the taſk of preſenting to the blood a certain aerial matter neceſſary to that fluid ere it can perform many of the moſt important functions of the animal economy. The powers in uſe are, 1. Large ſponge-like maſſes called *lungs*, which paſſively receive and emit, and which in the remoteſt termination of their cells allow contact (or nearly ſo) between the blood and the atmoſphere. 2. Moving powers, or muſcles of reſpiration, which, alternately preſſing or removing preſſure from the lungs, allow the weight of the atmoſphere to inflate the ſponge, or on the other hand expel the air evidently changed in its properties. Between theſe two parts, viz. the mucous lining of the lungs and the reſpiratory muſcles, a ſtrong and perpetual ſympathy exiſts. No ſooner have the lungs become filled with air to a certain extent, than the ſtimulus applied is conveyed to the muſcles, which contract and empty thoſe organs, while the contraction of other muſcles occurs to dilate the cheſt again as ſoon as the uncharged blood, flowing into the lungs, produces an uneaſy ſenſation. This ſympathy brings to our conſideration the 3d agent concerned in reſpiration; viz. the nervous ſyſtem.

Theſe are the agents which apply the air to the blood. The power which applies the blood to the air, namely the *heart*, is likewiſe to be taken into conſideration, as this organ and the lungs are generally connected in diſeaſe and in health. Leaving out of the queſtion for the preſent the remote injury to the brain by deficiency of blood, and to the heart by depravation of the ſame fluid, and premiſing that no impediment exiſts to breathing in the mouth, noſtrils, or fauces; we remark, that the aerial change of the blood may be imperfectly or difficultly performed in conſequence of a want of the due expanſion of the lungs; from an altered action of the reſpiratory muſcles; or from an altered ſtate of the reſpired air.

The due expanſion of the lungs may be prevented by an alteration of ſtructure, whether of the tubes and cells, or of the ſubſtance, of the lungs; as by oſſification, by abſceſſes, by hydatids, by tumours, by condenſation of the lungs; by earthy concretions; by plethora of the blood-veſſels of the lungs generally, whether pulmonary or bronchial. The due expanſion of the lungs may alſo be prevented by anaſarca or by emphyſema of the cellular membrane which connects the bronchia; perhaps by adheſions of the pleuræ; by collections of fluid in the cavities of the pleuræ; by enlargement of the heart, or by enlargement of any of the parts ſo ſituated as to offer mechanical impediment to the enlargement of the thorax. Oſſification of the cartilages of the ribs; gibboſity; anchyloſis of the joints between the ribs and the ſpine; irregular action of the diaphragm; or obſtacles to its deſcent, as diſtention of the ſtomach or of the inteſtines, or paralyſma, or hydrops, may likewiſe be enumerated as capable of hindering the expanſion of the lungs.

The action of the reſpiratory muſcles may be diminiſhed by contractility in their fibres, or by want of nervous power. It will be increaſed by every circumſtance capable of irritating the mucous membrane of the lungs, and thus exciting ſympathy, in common with other muſcles, by the action of the brain, or by general increaſe of contractility.

The air which is reſpired, may be deficient as to quantity, or it may be too much rarified, or it may contain noxious particles, or it may conſiſt of ſome noxious gas; or, in ſhort, its compoſition may be altered in various ways from the natural conſtitution of the atmoſphere.

The firſt and moſt remarkable mode in which the reſpiratory ſyſtem is deranged is in what is called *coughing*. In this action a large quantity of air, furniſhed by a conſiderable inſpiration, is violently and ſuddenly expelled, with a conſiderable noiſe, by a very ſtrong and almoſt convulſive exſpiration, and in its paſſage clears away mucus, or any thing elſe which may happen to be in the air-paſſages. The air may be driven out at once or at ſeveral exſpirations: in the latter caſe the exſpirations are continued often as long as any air can be expelled, and the emptied cheſt is again ſupplied by an inſpiration accompanied with noiſe. It is obviouſly nothing but a ſudden and exalted diſplay of that ſympathy which produces reſpiration, and is generally produced by nervous excitement of the bronchial membrane. We muſt not forget however, that, as a ſympathy exiſts between the reſpiratory muſcles and other parts as well as the lungs, ſo coughing may be induced by other cauſes than the irritation of the latter organs. Thus diſorders of the viſcera of the abdomen, eſpecially of thoſe which lie in contact with the diaphragm, frequently bring on a cough. A ſhort dry cough is an invariable ſymptom of inflammation of the liver, whether acute or chronic, and accompanies the various tubercular and other obſtructions in that organ. Diſorders of the ſtomach are, alſo, often accompanied with a cough of the ſame dry and teazing nature, eſpecially when that organ is over-diſtended with food, or is in the oppoſite condition of emptineſs. In ſhort, there is ſcarcely a viſcus in the cavity of the abdomen, the irritation of which, in a ſtate of diſeaſe, has not excited cough. Diſorders of the ſpleen, pancreas, and even the kidneys, have all given riſe to this ſymptom; and external tumours, attached to them, have had the ſame effect. (See Morgagni Epiſt. xix. art. 57, 58, &c.) Thus, in the aſcites, or dropſy of the belly, the water; in tympanites, the air; in corpulency, the fat in the omentum; and, in pregnancy, the gravid uterus; have all, in ſome caſes, the effect of exciting cough.

Our readers ſhould bear in mind, however, that each of the cauſes here enumerated may injure the expanſion of the lungs permanently, and excite convulſive action of the reſpiratory muſcles only as a ſecondary reſult. But at preſent we are to confine ourſelves to the diſcuſſion of

thoſe cauſes of cough which have their ſeat in the lungs. Accordingly, in the order Pneumonica we have ſix genera.

Genus I. *Ber*, [Greek.] Cough. Catarrhus, *Cullen*. Generic character—Sudden and violent expulſion of air from the lungs. There are three ſpecies.

1. Bex humida, or common cough, is too well known to require a particular deſcription. There are four varieties.

α. B. mucoſa, uſually comes on with ſlight ſtuffing of the noſe, and ſenſe of fulneſs in the palate and contiguous parts; a flow of mucus follows, which unloads the ſecreting veſſels, and a ſpontaneous cure occurs. Its nature is ſo generally allowed to be the ſame as CATARRHUS, that to that genus we muſt refer the reader for a full account of the ſeverer forms.

β. B. anhelans. (Dyſpnœa catarrhalis, *Cull.*) The chronic cough of old age. This alſo can be conſidered in no other light than a conſequence of previous inflammation of the mucous membrane, and hence it were perhaps better to treat of it under CATARRHUS; but, as its very prolonged ſtage may be merely the reſult of increaſed exhalation, we ſhall not diſturb our noſologiſt's arrangement. We take a deſcription of it from the excellent work of Dr. Haſtings on Bronchitis. He ſays, "The cough generally attacks the patient in the commencement of the cold weather, and ſometimes continues throughout the whole of the winter months. The mucous membrane is ſo irritable, that the ſlighteſt change of temperature is ſenſibly felt. The reſpiration is always uneaſy, and a peculiar wheezing of the breath is often preſent. The cough is moſt violent in the morning, the patient never failing to cough for a conſiderable time after he awakes; and the fit ſeldom goes off till the air-cells are unloaded of the ſecretions which have collected there during the night. Throughout the day the cough is often quiet for ſeveral hours together, and only comes on in conſequence of increaſed exertion, or when the ſtomach is loaded with a hearty meal. The expectoration is copious, and uſually conſiſts of tenacious mucus mixed with a pus-like fluid. Sometimes, however, it is much leſs conſiſtent, and it is white and frothy. The patient has ſeldom any pain in the cheſt, and if he have, it is ſlight and tranſient. Some ſymptoms indicative of diſorder in the digeſtive organs are generally preſent. There is a ſenſe of weight in the epigaſtric region, and the patient is frequently affected with pain in that part. The tongue is white and loaded, and the appetite fails. The pulſe is quicker than natural, though rarely hard. The urine is often high-coloured, and not ſeldom ſcanty. The bowels are irregular. Such a combination of ſymptoms as that above ſtated is common; but we ſometimes meet with chronic bronchitis which has exiſted for ſome time without producing much conſtitutional ailment. The patient is affected with cough, copious expectoration, and uneaſy reſpiration; but there is no fever, and the pulſe is not at all accelerated. Theſe ſymptoms occaſionally become the foundation of hydrothorax; but more commonly, as the warm weather comes on, the cough ſubſides, and the patient's health is reſtored."

The chronic cough is however much modified, according to the degree of bronchial inflammation which preceded it. When this has happened in an intenſe degree, we do not obſerve, ſays Dr. Haſtings, the ſlow and gradual progreſs of the firſt ſtage, which is ſo remarkable when this diſeaſe ſupervenes under the forms of catarrh; for the acute inflammation has previouſly reduced the patient to the loweſt ſtate of debility, and the powers of life are ſunk. The reſpiration is oppreſſed and laborious, the cough is frequent and haraſſing, the pulſe rapid, and death is hourly expected. It however ſometimes happens, that the violence of theſe apparently-fatal ſymptoms is in ſome meaſure ſubdued, and the patient gains ſome ſtrength, ſo as to be enabled to ſit up for a ſhort time. The cough is mitigated, the reſpiration is leſs laborious, and the wheezing is not ſo perceptible. The expectoration, however, is increaſed, though the matter expectorated is not of the ſame nature throughout: ſome part of it is tenacious, tranſlucent, and cannot be diffuſed in water; other parts are opaque and purulent. Small quantities of blood are now alſo often intermixed with the ſputa: the pulſe loſes its hardneſs, but becomes weaker and much quicker. We have generally combined with theſe unpromiſing ſymptoms increaſed emaciation, and inability to make any muſcular exertion. Irregular ſweats break out, and a flushing of the cheeks occurs.

In ſome caſes, the untoward ſymptoms do not proceed further; they gradually amend. The expectoration diminiſhes, the cough is leſs haraſſing, and the reſpiration not ſo uneaſy. The patient begins to gather a little ſtrength, and the appetite returns. A change of air and favourable ſeaſons are particularly advantageous at this period, and by theſe means the patient frequently recovers his health, although months ſometimes elapſe before ſuch progreſs is made as enables us to ſpeak with any confidence as to ultimate recovery. But, if no ſuch alteration in the character of the diſorder take place, a greater degree of general debility occurs, with a further loſs of fleſh. The cough becomes extremely haraſſing, the reſpiration more quick and laborious. The expectoration increaſes, and is more purulent in its appearance. The pulſe is rapid. During the night general perſpiration breaks out, and the face in the day is often flushed. The patient can ſtill, for the moſt part, take a deep inſpiration without pain, and lying down does not produce much increaſe of dyſpnœa. He ſeldom complains of any ſhooting pain in the breaſt. Even from this almoſt hopeleſs ſtate patients occaſionally recover; but, when the diſeaſe has exiſted ſo long as to cauſe extreme emaciation and very copious pus-like expectoration, there is little or no hope. It ſometimes happens that dropſical ſymptoms come on before death.

In the *treatment* of this complaint, our firſt endeavour ſhould be directed to moderating the force of the circulation, which is ſometimes, though rarely, extraordinary; more frequently it will be merely neceſſary to diminiſh local plethora by leeches; after this, the irritable ſtate of the mucous membrane may be checked by bliſters and rubefacients, or iſſues, which may be ſteadily perſevered in. It is a remarkable fact, noticed by Dr. Haſtings, that, during the uſe of theſe counter-irritants, purulent expectoration is occaſionally converted into the ſecretion of natural mucus.

Emetics have often been recommended in that variety of chronic bronchitis which appears in old people, and is denominated tuſſis ſenilis. The cough and dyſpnœa are in ſuch caſes much aggravated by the accumulation of redundant ſecretion in the trachea, bronchia, and air-cells, which, by the action of vomiting, is frequently thrown up. Whenever, therefore, the lungs appear loaded with phlegm to any great degree, they may be relieved by an emetic: but this practice does not appear to have much effect in forwarding a radical cure. The tincture of meadow-ſaffron (Colchicum) poſſeſſes very remarkable powers in chronic cough. It allays the cough, promotes the flow of urine, and keeps up a regular alvine diſcharge. Moreover, from the power it poſſeſſes over the ſecretions, this medicine tends to relieve fever. The doſe generally preſcribed is twenty drops three times a-day. In ſome caſes this muſt be diminiſhed on account of its action on the bowels, ſevere diarrhœa being occaſionally brought on by its uſe. Sometimes the patient is not affected by twenty drops: if this ſhould happen, the doſe may be gradually increaſed, until the bowels, the ſkin, or the kidneys, are acted upon. Patients rarely bear more than thirty drops three times a-day without being a good deal purged, which is not to be deſired in prolonged caſes of this diſeaſe. If there be much

much quickneſs of the pulſe, eight or ten drops of the tincture of Digitalis, or foxglove, may be combined with this medicine; a combination by which the cough is more relieved, and the quickneſs of the pulſe more permanently diminiſhed, than by the ſeparate exhibition of either.

While we have reaſon to ſuſpect a congeſted ſtate of the capillaries of the mucous membrane, we muſt perſiſt in low regimen, the uſe of Digitalis, Colchicum, &c. as we ſhall mention when ſpeaking of catarrh; but, when the complaint preſents much irritation or relaxation of the ſecernent veſſels, more ſtimulating medicines are uſeful. In having recourſe to theſe, however, we muſt be careful not to ſtimulate too ſuddenly or too much, as we have to deal with a ſtate of parts much diſpoſed to reſume inflammatory action. It is therefore adviſable to begin with the mildeſt of this claſs. The powder of the bulbs of the Scilla maritima is often ſerviceable in chronic cough. Dr. Haſtings exhibited this powder in conjunction with ammoniacum, as directed in the compound ſquill-pill of the London Pharmocopœia; and in old people of phlegmatic habits, when there is not much fever, he found it very uſeful.

With the ſame view Dr. Haſtings has exhibited Cinchona chiefly in thoſe inſtances that ſucceed to acute bronchitis, where the debility brought on by the acute attack is very conſiderable. In ſuch caſes, if the dyſpnœa be not increaſed, the benefits ariſing from its exhibition are ſometimes very apparent. The profuſe perſpirations and other diſcharges are not only reſtrained by this remedy, but it occaſionally appears to alter the ſecretion from the mucous membrane of the lungs, and thus brings about a more healthy condition of that membrane, by invigorating its blood-veſſels and reſtoring their natural tone. In theſe caſes it may be combined with diluted ſulphuric acid, which alſo tends to reſtrain the colliquative ſweats that ſo often accompany this diſeaſe.

The uſe of mercury in ſome varieties of chronic bronchitis greatly aſſiſts the operation of other remedies; but it muſt be given in ſuch a way as to produce the leaſt poſſible debility of the ſyſtem. We have before noticed the efficacy of this medicine in bronchitis ariſing from gaſtric and fibrous diſturbance. But there are caſes in which it is advantageous in chronic bronchitis uncombined with any diſeaſe in the abdomen. Theſe ſometimes occur after meaſles, when the ſhrillneſs of the voice indicates conſiderable affection of the mucous membrane lining the trachea. Indeed the great advantage we derive from calomel in croup would lead us to adopt it very conſtantly in ſimple inflammation of the bronchial membrane. But the debility produced by this diſeaſe, when of a chronic nature, forbids the uſe of a remedy ſo debilitating.

In the latter ſtages of chronic bronchitis, where the quantity of matter expectorated is very large, and the cough very troubleſome, there is no remedy ſo powerful in allaying the uncomfortable irritation about the glottis as opium. But, valuable as this remedy is, it is not always free from inconvenience or danger, and conſequently other remedies of this claſs have been propoſed as ſubſtitutes for it. Dr. Duncan has ſtrongly recommended *lactucarium* when opium cannot be given. He ſays, "Of all the medicines which I have employed for alleviating cough in phthiſis, and indeed as a ſedative in many other diſeaſes, next to opium, I have found no article ſo beneficial as that ſubſtance which ſome have lately denominated lettuce-opium, and which I term *lactucarium*."

When inflammation is not apparent, inhalation of tar-water may be a gentle ſtimulus of ſome avail in altering the morbid action of the veſſels. The ſtricteſt attention ſhould be paid to the due performance of the digeſtive and excretory functions. The clothing muſt of courſe vary according to the ſeaſon and ſituation. The patient ſhould endeavour to obtain moderate but not oppreſſive warmth. In this climate, flannel next the ſkin during the ſpring and winter months, by ſlightly ſtimulating its veſſels, ſuſtains the circulation on the ſurface, and thus tends to relieve chronic inflammatory diſeaſes of the pulmonic ſyſtem. When the diſeaſe has ſeveral times returned, and is eaſily brought on by viciſſitudes of temperature, a removal to a warmer and more ſteady climate is proper. Under theſe circumſtances a pure and dry air ſhould be ſelected, as a hot ſituation conjoined with moiſture is always to be avoided. The ſea-air during the ſummer-months, in thoſe who live in an inland ſituation in this country, ſometimes invigorates the conſtitution, and reſtores the tone of the veſſels on the bronchial ſurface, ſo as to prevent a return of the diſeaſe, where former attacks have left a ſuſceptibility to inflammatory action.

The two following varieties are given on the authority of Dr. Good; but their ſeparate exiſtence, aſſumed on the different appearance of the fluid diſcharged, does not ſeem ſupported by practical writers. They are,

γ. B. acrida; the diſcharge thin, frothy, and ſaline; for the moſt part excreted with difficulty. It is in moſt inſtances an atonic affection of the lungs or of other organs that aſſociate in their action. Sometimes an attendant upon the gouty; more frequently upon inebriates labouring under a diſeaſed liver, to whom it is peculiarly troubleſome in the morning.

δ. B. periodica; recurring at ſtated periods: partly reſtrainable; diſcharge thin, but not acrid. Moſtly common to perſons of a nervous or hypochondriacal temperament.

2. Bex ſicca, or dry cough; i. e. unaccompanied with expectoration. Three varieties.

α. B. ingenerata; from irritation produced locally, as a ſcirrhous or calculous affection of the lungs. See Borelli, obſ. 6. and Zacut. obſ. 95.

β. B. extranea; from irritating materials inhaled from without, as minute particles of glaſs, lime-ſtone, and ſimilar bodies; and common to glaſs-cutters, hewers of free-ſtone or ſand-ſtone, workers of metals, and other mechanics.

In manufacturing towns, the preparers of yellow leather, and thoſe employed in ſome parts of the china manufactory, are often ſubject to ſevere attacks of this kind. They are expoſed during ſome parts of the proceſs to inhale an air loaded with duſt, which produces inflammation of the bronchial membrane of a chronic and peculiar nature. Dyſpnœa is generally the primary ſymptom, which is often neglected for many months. If the occupation, under theſe circumſtances, be continued, the diſeaſe is aggravated. The patient is not unfrequently ſeized with hæmoptyſis, which is occaſionally very profuſe, and is accompanied with a great increaſe of dyſpnœa, and ſevere cough. The pulſe too becomes accelerated, and is generally hard and ſtrong. The ſurface is hot, the tongue white, and there is conſiderable thirſt: occaſionally blueneſs of the lips and general lividity of the countenance alſo appear. It often happens that we can arreſt the hæmorrhage by blood-letting and aſtringents; but in moſt caſes of this deſcription, the hæmoptyſis is followed by very untoward ſymptoms. Whether hæmoptyſis have come on or not, if the bronchia be ſtill ſubjected to irritation, the cough increaſes, and is attended (for it is by no means true that extraneous ſubſtances always produce a dry cough,) with a copious expectoration of thick mucus, which is mixed with pus-like matter, and ſometimes ſtreaked with blood. "The patient complains of an uncomfortable tightneſs acroſs the cheſt, and the dyſpnœa does not abate. He loſes fleſh, the pulſe becomes quicker, the tongue continues loaded, and there is conſiderable thirſt. In by far the greater proportion of theſe caſes, if the occupation be relinquiſhed, theſe ſymptoms, by an appropriate treatment, diſappear, and the patient is reſtored to health. In others the termination

termination of the diſeaſe is not ſo happy. The patient emaciates; he has profuſe night-ſweats, and the cough haraſſes him to ſuch a degree as to prevent his reſting by night. The expectoration is prodigious, and becomes much more purulent. The dyſpnœa is greatly increaſed, the pulſe is very quick, and there are regular evening exacerbations. The patient at length dies exhauſted." Haſtings, 275.

δ. B. verminoſa; from worms in the inteſtines, liver, or other abdominal organs. Common to children with large bellies, and pale emaciated countenances; and ſtill more ſo to ſheep labouring under the diſeaſe called rot, and whoſe livers are uſually loaded with the Faſciola hepatica, or fluke.

3. Bex convulſiva, (Pertuſſis, *Cull.*) Whooping-cough; chin-cough, or more correctly kin-cough or kind-cough; literally "child's cough," from the German *kind*, a child. The cough convulſive, and ſuffocative, accompanied with a ſhrill reiterated whoop, and frequently with vomiting; contagious.

This malady commences as an ordinary catarrh. In the ſpace however of a fortnight or three weeks, the ſymptoms undergo a change, and the diſeaſe exhibits a convulſive cough, in which the expirations are made with ſo much rapidity and violence, and are ſo long and frequently repeated, that the whole air ſeems to be expelled from the lungs, and the patient appears to be in danger of ſuffocation. At length a full and violent inſpiration is neceſſarily made for his relief, which, from the unuſual velocity with which the air ruſhes in, or from the ſpaſmodic contraction of the glottis, produces a peculiar ſound or whoop: theſe actions alternate until mucus is expectorated, or the contents of the ſtomach partially ejected. Theſe evacuations commonly put an end to the coughing, and the patient remains free from it for ſome time after. But the duration of the paroxyſm and the relief obtained are very different in different inſtances. Frequently the expectoration or vomiting takes place after the firſt or ſecond coughing; but ſometimes this happens only after ſeveral alternate coughings and whoopings; and, in very ſevere caſes, the paroxyſm ends in the complete exhauſtion of the patient, without any diſcharge whatever.

The fits of coughing return at various intervals, rarely obſerving any exact period. They happen ſeveral times in the courſe of the day, and more frequently in the night. In general they come on without any obvious cauſe; but they are alſo brought on ſooner and more violently by various ſources of irritation, as by conſiderable bodily exertion, ſuch as running, or even laughing, turning from ſide to ſide in bed, diſtending the ſtomach by food, or irritating it by ſuch as is indigeſtible or acrimonious. Fretting and crying commonly bring on the fit. Though the paroxyſms come on ſuddenly, the patient has commonly ſome warning, which excites his alarm; and, to avoid the violent and painful concuſſion which the coughing occaſions to the whole body, he ſometimes throws himſelf on the ground, or clings faſt to any thing that is near him, or demands to be held faſt by any perſon that he can come at, and will even run acroſs the room for that purpoſe, with terror and ſupplication expreſſed in his countenance. In almoſt every caſe of the diſeaſe, dyſpnœa is preſent. Frequently there is a difficulty of breathing, not only immediately before and after the fits of coughing, but, in the more ſevere caſes, the patient pants on the leaſt exertion, as if he had run a race, or performed ſome feat of bodily ſtrength.

When there is little expectoration, and that of a thin mucus only, the fits of coughing are violent, and continue long: but, as the expectorated matter ſoon becomes conſiderable and very thick, as it is more readily expectorated, the fits of coughing are of ſhorter duration. If the fits are violent and long continued, they neceſſarily interrupt the free tranſmiſſion of the blood through the lungs, and conſequently the return of blood from the head. This gives riſe to turgeſcence and ſuffuſion of the face, and ſometimes occaſions hæmorrhage from the noſe.

Sydenham ſpeaks of the whooping-cough as unconnected with fever; Dr. Cullen remarks, that "It is conſtantly in ſome degree preſent; but with evident exacerbation towards evening, continuing till next morning." (Firſt Lines, MCCCCX.) Dr. Watt alſo obſerves upon this point, "as far as my experience goes, I am diſpoſed to believe, that, even in the mildeſt caſes, as long as the kinks (paroxyſms) continue, there is always ſome part of the day when the preſence of fever can be detected. It may be ſo ſlight as hardly to deſerve notice; but ſtill, to an attentive obſerver, who has opportunities of ſeeing the patient day and night, it is abundantly obvious. I have remarked it even in thoſe favourable caſes, where the appetite continued good, and where the patients ſeemed to ſuffer little or nothing in their general health."

Indeed the phenomena of increaſed heat and active pulſation have been ſo generally noted, that it ſeems ſurpriſing that they ſhould have eſcaped Sydenham's (uſually) cloſe obſervation.

With regard to the nature of whooping-cough, it ſeems evidently a ſpecies of bronchitis, or inflammation of the mucous membrane of the lungs, which has theſe circumſtances peculiar to it, that it elicits a ſecretion poſſeſſing contagious properties, and that it is connected with ſpaſmodic action of the muſcles of the glottis and of the cheſt. The low degree of febrile irritation it ſometimes produces will prevent many from according the term inflammation to the malady. This is however of no conſequence; the preſence of diſeaſed ſecretion no one will deny; and that the irritation this ariſes from is very prone to bring on unequivocal ſymptoms of inflammation, is equally indiſputable. Diſſection of fatal caſes has invariably ſhown redneſs and diſtention of capillaries on the nervous membrane, or effuſion of pus or flakes or coagulated lymph. In ſome caſes diſorganization has been propagated to the ſubſtance of the lungs. In ſome very young ſubjects, indeed, ſuffocation has occurred from the long irritation of the mucus having kept up coughing till the cheſt was emptied of air, and the glottis has been cloſed, firſt by the ſpaſm of its muſcles, and afterwards by the preſſure of the atmoſphere; and here diſſection has furniſhed little evidence of inflammation. The courſe and event of this diſeaſe are very uncertain. In the mildeſt form in which it appears, it commonly continues from one to three months; and, in the more ſevere, conſiderably longer. Even after it has nearly or wholly ceaſed, an accidental expoſure to cold occaſions a relapſe.

The *treatment* of Bex convulſiva follows clearly out of the views before taken of its nature. In the firſt place, we have to guard againſt inflammation ſpreading to any alarming extent. In proportion, therefore, as the dyſpnœa and fever are ſevere, and as the patient is ſtrong and plethoric, it becomes neceſſary to employ *blood-letting*, and even to repeat it according to the urgency of the circumſtances. Even in more delicate and younger children, ſome evacuation may be neceſſary by means of the lancet, in the commencement of the diſeaſe; and local bleeding, by leeches applied to the cheſt, may be reſorted to, where general blood-letting is deemed inadmiſſible. The difficulty of the tranſmiſſion of blood through the lungs ſhould be watched, and early attacked by this efficient remedy, or the diſeaſe will often baffle all the ſubſequent efforts that can be made. Moreover the treatment of dyſpepſia ſhould be kept cloſely in view. The inflammation of the membrane, and the convulſive action of the reſpiratory muſcles, are of courſe connected with nervous irritation; and hence we muſt be careful that all excitement of the nervous ſyſtem be withheld. Abſtemiouſneſs and the uſe of purgatives have the two-fold effect of inducing a right action of the chylopoïetic viſcera, and of diminiſhing inflammation.

Every practitioner must have observed the almost constant derangement of the excretions of the bowels, under any acute disease in children, but more especially under those affecting the lungs; and the relief obtained, even in respect to the original disorder, by regulating the alvine discharges. It is important, therefore, when the disease assumes an inflammatory type, to keep up a constant free state of the bowels from the first, by the repeated use of laxatives, especially of those which contain a portion of calomel. According to the state of actual constipation, or of mere derangement of the excretions, the purgatives will be used more actively at intervals, or more constantly in smaller doses.

Of all other remedies, *emetics* appear to be among the most useful in this disease; for they not only determine the fluids to the surface, and still more effectually relieve the lungs by promoting its secretions, but they also tend to interrupt the recurrence of the spasmodic affections.

As a secondary expedient, with a view to obviate or remove inflammatory determination to the lungs, when it occurs in this disease, the application of blisters is often beneficially resorted to. They do not, however, appear to act so beneficially in the relief of the pain and dyspnœa attending this disease, as in ordinary cases of catarrh; and ought not to be relied on, where the inflammatory congestion in the lungs is considerable. They are most beneficial, when this inflammatory condition has been already partly subdued by the more active evacuations.

The medicines generally in use in these complaints are the same as in the common forms of bronchitis; viz. digitalis, colchicum, &c. The alkalies, soda and potash, have also great influence on this complaint. To allay the nervous excitation, conium and hyoscíamus may be advantageously prescribed; the warm bath should be used occasionally, and rest absolutely enjoined; for, whether we view the mere symptom of dyspnœa, or extend our researches to the probable cause of its occurrence, we shall find ample reason to induce us to keep the lungs in as tranquil a state of action as possible. It is in this way indeed that bleeding in all pulmonary diseases must be principally useful; viz. that the diminished quantity of blood in the system calls for less activity in the respiring powers.

These rules apply, however, only to severe cases. In the usual mild forms, a regulated diet, pure air, and medicines of an aperient nature, with an occasional emetic, will accomplish all that is required in the first stage of the disorder.

In the after-stages, when the operation of the contagion may be supposed to have ceased, and the convulsive cough to be continued through the influence of habit, a different indication arises, and different remedies are to be employed. That the power of habit contributes to keep up the disease, after the influence of contagion has declined, is to be inferred from the circumstance that the symptoms have disappeared, like other nervous symptoms, in consequence of the impression of terror, or other strong emotions of the mind; which agents cannot be supposed to have the power either of correcting or expelling a morbific matter from the constitution, but which are evidently suited to change the state and habits of the nervous system; or, at all events, of inducing a change in the merely habitual disorder of the secernents. With this view, the inhalation of tar-vapour may be resorted to with advantage. Some authors have advised a variety of tonics; but their mode of action is obscure, and general experience has not confirmed the original accounts of their efficacy. A stimulant more congenial to the bronchial membrane is country air. Indeed *change of air* has been very generally deemed the most effectual remedy in the advanced stages of the disease. And so strong has this impression been made upon the public, that it has been generally believed, that any change of air, even from a better to a worse, is beneficial. This, however, seems improbable; and the fact perhaps is as Dr. Watt has stated it: "It no doubt frequently happens," says that writer, "that a child is better on being taken from one place to another, even when the air in the latter place is supposed to be worse than the former. Here, however, I should be disposed to attribute the good effects, not to coming into a more impure atmosphere, but to the child's *being abroad*, any atmosphere being better than confinement to the house." This advice is not of course meant to apply to any but cases in which the inflammatory tendency of the cough is perfectly subdued.

But we must not forget to mention, that a respectable author has opposed the notion that change of air is always beneficial to patients of whooping-cough. Dr. Robertson has seen some lamentable instances to the contrary. He thinks the removal should be but a short distance from home, "and the new abode should be chosen in every thing resembling the former one," avoiding elevated and exposed situations, as well as those that are too low and damp, or within the range of exhalations from stagnant waters or flooded meadows. Inland situations are preferable to the coasts. The advantages of change of air, he thinks, may sometimes be obtained by change of rooms and habits, at home. Upon the whole we are of opinion, that, as a general measure, change of air, or, at any rate, being much in the air, is advisable; but, like other good rules, it is liable to some exceptions.

Dr. Archer, an American physician, advises to relieve the whooping-cough by vaccination. This, of course, can be resorted to only under particular circumstances. Dr. A. says, "I have vaccined six or eight patients that had the whooping-cough, and in every case it has succeeded in curing this most distressing disease. The whooping-cough does not come to its height in less than six weeks from its commencement; and then, when a favourable termination is expected, the declension of the disease is gradual, and it does not terminate in less than six weeks more. To arrest this afflicting disorder in its progress, I would recommend vaccination in the second or third week of the whooping-cough, i. e. when the symptoms of the whooping cough are fully ascertained, then to vaccinate. Should the convulsive cough be violent, I should immediately vaccinate; being well assured that the distressing symptoms of the whooping cough are checked by vaccine disease. The termination of the vaccine disease will be the termination of the whooping-cough."

Genus II. *Dyspnœa*, [from δυς, bad, and πνεω, to breathe.] Anhelation. Permanent difficulty of breathing, with a sense of weight on the chest.

Dyspnœa is produced by so great a variety of causes, and from its very nature is so evidently symptomatic, as in fact Parr and the best systematic writers have always considered it, that we shall refer our readers to the original maladies which give rise to its varieties for the necessary details concerning it.

It may be practically useful, however, to remark, that an unremitting difficulty of breathing is common to some old persons, in whom its long continuance, and the absence of other symptoms, forbid us to suppose any organic change in the structure of the lungs or contiguous viscera, or indeed any merely mechanical obstruction, to have occurred. It differs but in a slight degree (as far as our own opportunities of seeing it have extended) from asthma: the point of difference between the two complaints is merely the regular and continuous disorder of respiration in the former disease, as antagonized to the paroxysms or exacerbations of the latter. There are two species.

1. Dyspnœa chronica, or short breath: breathing uniformly short and heavy, mostly accompanied with a cough. There are five varieties.

a. D.

α. D. extranea, (D. terrea, *Cull.*) From calculous or other earthy ſecretions in the ſubſtance of the lungs thrown up by coughing. See *Catarrhus*, in this article.

β. D. phlegmatica, (D. aquoſa, *Cull.*) The habit phlegmatic or cachectic, with ſcanty ſecretion of urine, and moſtly œdematous extremities. See *Hydrops*, in this article.

γ. D. pinguedinoſa, or purſineſs; accompanied with oppreſſive fatneſs. See *Corpulence*, in this article.

δ. D. organica, (D. thoracica, *Cull.*) From deformity or organic defect, or injury.

ε. D. vaporoſa; from the miſchievous action of metals or other poiſons.

2. Dyſpnœa exacerbans: ſubject to ſudden and irregular exacerbations: the breathing deep, ſtertorous, acute, and ſuffocative; relieved by an erect poſition. This, when not ſymptomatic, is the ſame as the following genus, varying from it only in its acuteneſs and violence: it requires a ſimilar treatment. Found, alſo, under the one or the other ſpecies, as a ſymptom in aneuriſms, polypous concretions, and other affections of the heart and larger veſſels; in enlargements and other affections of the abdominal viſcera; in empyema, hydrothorax, worms, peripneumony, baſtard peripneumony, ſmall-pox, and occaſionally in ſevere attacks of intermitting fevers.

Some authors have explained the term Catarrhus ſuffocativus (the name by which this ſpecies is called by Baglivi and others) as ſynonymous with croup.

Genus III. *Aſthma*, [probably from ἄω, I breathe.] Difficulty of breathing, temporary, recurrent; accompanied with a wheezing ſound, and ſenſe of conſtriction in the cheſt; with cough and expectoration. Theſe generic characters are ſubject to great variations. Aſthma has of late years been traced in a very large proportion of caſes to organic changes in the thoracic viſcera. As there ſeems good reaſon, however, to believe, that the majority of aſthmatic patients (perhaps nearly all where the complaint is not of long ſtanding or of peculiar violence) ſuffer from functional impediment only, we confine ourſelves to the conſideration of aſthma of this latter kind.

The exact nature of aſthma is not ſettled. Among the old writers, Floyer paid much attention to this diſeaſe, with which he was ſeverely afflicted; but his opinions as to its cauſe are ſo much tainted with the humoral doctrines, that it is uſeleſs to diſcuſs them. He has left, however, a very good deſcription of the ſymptoms of one kind of aſthma. Cullen ſuppoſed it to conſiſt in a ſpaſmodic conſtriction of the muſcular fibres of the bronchia, preventing the free ingreſs and egreſs of the air, and conſequently the due expanſion of the lungs. This opinion, however, is not reconcileable with the known ſtructure of the bronchia, and has accordingly been laid aſide. The ſame author mentions ſeveral varieties of it, as exanthematicum, ſimplex, phlegmaticum, plethoricum, &c. ariſing from remote and diſtinct cauſes. Theſe Dr. Good has adopted in his Noſology; but the ſimplified arrangements of practical writers ſeem to warrant the diſmiſſal of ſuch diviſions. Dr. Bree, in the beſt treatiſe on this ſubject which we know of, conſiders aſthma, properly ſpeaking, and as diſtinguiſhed from mechanical preſſure of all kinds, whether tumors, concretions, or other conſequences of inflammation, to be a material irritant applied to the air-cells of the lungs, and exciting the contraction of the reſpiratory muſcles for its removal. To take in his juſt and more extended view of the diſeaſe, we quote his own words. He ſays, "If it be neceſſary to define the diſeaſe, I would ſay, agreeably to the principles of the following inquiry, Aſthma is an exceſſive contraction of the muſcles of reſpiration, without acute fever, excited by an irritation in ſome of the viſcera whoſe functions theſe muſcles are intended to ſerve. Under this generic definition are comprehended all affections not febrile, attended by an uncommon action of the muſcles uſed in reſpiration; the influence on theſe muſcles being the ſame in kind, though diſtinct by ſituation and quantity of force, as it may exiſt in ſome of the lower viſcera, or in the lungs."

Now, as far as regards the lungs, the material irritant productive of aſthma is ſuppoſed to be a mucous ſecretion. Dr. Bree deduces, from a vaſt ſtore of ancient and modern authors, obſervations tending to ſhow, that the paroxyſm of aſthma is almoſt invariably connected with, and terminated by, the expectoration of mucus or ſerum: and he infers, that the impediment to reſpiration ariſes from the gradual collection of this fluid in the air-cells. There it may exiſt for a certain time without producing diſturbance; but at length the filling up of the remote terminations of the bronchiæ impedes the changes of the blood, and calls into forcible action the reſpiratory muſcles; whereas the lymph accumulated in the air-cells is rather oppreſſive than acrimonious, and the ſenſibility of their membrane is leſs than that of any part of the bronchia and trachea. Moreover the veſicle cannot collapſe in the attempt at expiration, becauſe its cavity is filled with lymph. Hence Dr. Bree thinks ariſes the true cauſe of a paroxyſm, "beginning with little or no cough, and that ſeemingly impeded;" but, after the fluid has been leſſened by abſorption, ſtill more may be diſcharged in the vapour of expiration, and, the elaſticity of the bronchia being thus reſtored, the much-deſired ſpitting of mucus may take place.

We copy from this author the following lucid account of his opinions as to the production and nature of this ſecretion. "It is obvious, that mucus could not have been expectorated without a previous ſecretion of ſerum. But, as this mucus is copiouſly diſcharged, the effuſion of ſerum muſt have been conſiderable: it may be therefore proper to inquire in what ſtate of the lungs ſuch an effuſion can take place. It is known that the glandules of the trachea and bronchia are ſubject to inflammation, and that in catarrh an excretion of mucus is conſiderable from this condition of their veſſels; but practitioners have generally teſtified, that pyrexia and ſymptoms of inflammation are not preſent in ſpaſmodic aſthma. We muſt then look farther for the ſource of this copious ſecretion, and we ſhall find it in the veſſels with exhalent orifices at the extremities of the air-pipes; the conſtruction of which is not complex like that of the mucous glandules; and they have not follicles in which they may depoſit their lymph till it be excreted. There are many reaſons for believing this to be the principal, if not the only, ſource of the copious expectoration in aſthma."

In conſequence of the condition of the habit in aſthma, the matter of heat is not given out in this as in other inſtances of glandular ſecretion. The capillary veſſels are paſſive in this diſeaſe; and, not contracting ſo narrowly as to detain the groſs part of the current, they permit lymph to paſs inſtead of exhaling only a thin vapour.

It ſeems that, in the early periods of aſthma, and while ſerum is not very abundantly effuſed, a quickneſs of reſpiration commonly precedes the paroxyſm, and the expirations carry off, in vapour, that fluid from the cavities: the action of the abſorbents is probably alſo quickened, ſo that, by the united powers of theſe inſtruments, the balance may be reſtored between abſorption and exhalation.

There can be little difficulty in according to Dr. Bree, that this explanation is very plauſible and ſatisfactory, and that irritation of mucus on the nerves of the bronchia is no doubt in many caſes the proximate cauſe of aſthma. Every one muſt allow, however, that any circumſtance inducing an irritable ſtate of the nerves will as ſurely produce the diſeaſe as the ſecretion does; and it is of little conſequence what irritant is applied to theſe nerves, ſince we find cough and difficulty of breathing produced by a variety of ailments, as in the liver, womb, kidneys, &c. We therefore conſider aſthma the reſult of

irritation

irritation of all thoſe parts which hold a ſympathy with the reſpiratory muſcles. Indeed Dr. Bree's opinion does not differ widely from this, as he has allowed that aſthma frequently has its origin in bilious and gaſtric diſturbance. A further evidence in favour of this notion is, that ſome aſthmatic patients do not, notwithſtanding violent efforts, expectorate ſerum or lymph.

The wheezing noiſe, and the ſtraitneſs and anxiety, gave Cullen reaſon to ſuppoſe that a conſtriction of the bronchiæ took place in aſthma. Dr. Bree thinks their ſymptoms may be more ſatisfactorily traced to diſtention of the ſtomach and œſophagus; when in the former part, preventing free inſpiration by hindering the deſcent of the diaphragm; when in the latter, narrowing the bronchiæ by preſſure. But the moſt dyſpeptic patients of aſthma do not invariably ſuffer the above ſymptoms in the higheſt degree. It ſeems clear therefore, that, though contraction of the bronchia is almoſt impoſſible, a partial cloſure of the glottis may occur from ſpaſm of its muſcles, and produce the phenomena in queſtion. Indeed theſe muſcles are as intimately involved in ſympathy with the bronchial membrane as the external muſcles of reſpiration, and conſequently are liable like them to have this ſympathy when kept up for too long a period by irregularity or diſturbance in the *times* of their contraction and relaxation. We now come to ſpeak more particularly of the two ſpecies into which Aſthma is divided.

1. Aſthma ſiccum, dry, nervous, or convulſive, aſthma: paroxyſm ſudden, violent, and of ſhort duration; conſtriction hard, dry, ſpaſmodic; cough ſlight; expectoration ſcanty, and only appearing towards the cloſe of the fit.

We have before ſtated that the convulſive efforts of the muſcles of reſpiration in this complaint may be called into play by irritation of any part of the body the nerves of which have influence over thoſe muſcles in a ſtate of health; ſo that dyſpepſia, or diſturbance in the liver or in the bowels, or even in the uterus, may give riſe to difficulty of breathing by impeding the deſcent of the diaphragm, or by increaſing or diminiſhing the ſympathetic motion of any of the other reſpiratory muſcles; and, as the actions of the former viſcera are periodical in health and in diſeaſe, the periodic occurrence of nervous irritation will influence in the ſame irregular mode the dyſpnœa, and cauſe aſthma.

It is in aſthma ariſing from theſe abdominal irritations that many anomalous ſymptoms occur. General nervouſneſs, itching of the ſkin, flushes of heat, diabetes, hyſteria, &c. are of no uncommon occurrence; but the complaint is too ſtrongly diſtinguiſhed from any of thoſe complaints to render us liable to miſtake in our diagnoſis.

From what has been before ſtated, it ſeems that the cauſes of aſthma are, nervous irritation of the bronchiæ, affecting by ſympathy the muſcles of the cheſt and glottis; or the ſame irritation of other nerves ſimilarly connected. The ſecond cauſes are embraced in the extenſive views we have taken of dyſpepſia: the former can ariſe only from the peculiar ſtate of the bronchial exhalants already mentioned, or the bad ſtate of the air inhaled.

It remains therefore only to ſpeak of aerial irritation. In the firſt place, it muſt be remarked, that the ſtate of the bronchial membrane will much alter the nature and force of the impreſſions it receives from the air. Dr. Bree ſays, the ſenſible membrane of the trachea is naturally defended by its lymph from the attack of aerial acrimony, as far as the condition of bodies varying in ſenſibility to external impreſſions will admit of this defence. Other things being equal, this guard is ſufficient, and anſwers the purpoſe for which it was deſigned. But, if the ſecretion of lymph from this membrane be deficient, and the abſorbing power be active, the ſurface of the membrane may be irritated by a thouſand imperceptible points which the air conveys in the act of inſpiration.

The ſtate of air moſt congenial to the aſthmatic patient appears to be that of denſity, a ſtate which more than counterbalances the ill effects of foreign particles with which it is often loaded; and hence, in the majority of caſes, the air in low ſituations is more favourable to the lungs of aſthmatic patients than that of the high lands. It ſeems moreover, that, even if impurities of the air ought to be conſidered as the aerial cauſe of aſthma, theſe are more ſtrongly applied to the lungs in rare than in denſe ſtates of the atmoſphere, ſince in the latter they are ſuſpended at an altitude ſuperior to that of the human frame.

Dr. Bree accounts for the good influence of denſe air on aſthma by ſtating, that a certain weight of air is neceſſary to inflate the lungs fully; and that, the greater the force of preſſure thus applied, the more perfectly will the aerial particles required for the blood be forced through the bronchial membrane, or through the collections of ſerum which its tubes may contain. He mentions experiments on animals, in which the abſorption of oxygen was effected with great ſpeed when artificial preſſure was applied. He ſays, moreover, that, "the uſual denſity of the air being leſſened, a certain volume will not only poſſeſs leſs weight, and preſs leſs againſt the membrane, but it will alſo contain leſs oxygen to enter into the new affinity."

So much for the ſtate of the air as far as regards its immediate tranſmiſſion to the bronchial membrane. Its temperature exerts itſelf with equal power on the ſkin. Cold and moiſture check cutaneous perſpiration, when the body is under their influence: there is therefore additional fluid circulating to the pulmonary exhalents, and there is leſs expiration of vapour in breathing; ſo that we have, in this ſtate of the atmoſphere, an exciting cauſe of aſthma as frequently as in that of moiſture with rarity of air. Cold alone will ſometimes, but not commonly, excite the paroxyſm; for there may be ſtates of the atmoſphere inducing great torpor on the pulmonary exhalents, without the preſence of aqueous vapour, or moiſture. Thus, the eaſt and north-eaſt winds would exert the beneficial influence which coldneſs, ſimply united with denſity of air, has on reſpiration, were it not that theſe penetrating winds check cutaneous perſpiration, and thereby induce another cauſe of aſthma by this matter being turned upon the lungs. So on the other hand, in ſummer and autumn the atmoſphere is rare, and ſo far hoſtile to the aſthmatic; but, to leſſen this inconvenience, he enjoys the grateful ſenſe of a warm ſkin, and general perſpiration, as the circulation is determined to the ſurface during theſe ſeaſons. "If (ſays Dr. Bree) it were not for this diverſion in favour of the lungs, the patient would perceive much more of his complaint than he really does in the warm ſeaſon; for many circumſtances operate againſt him then which do not in winter." The exhalation from the pulmonary veſſels, decidedly increaſed by exerciſe or other cauſes, will oftener be profuſe in the hot months; and be more ſuddenly followed by the coldneſs, which is known to come upon ſurfaces in proportion to the evaporation made from them, than happens at cold periods of the year.

This view of the modus operandi of the atmoſphere is more conſonant with legitimate deduction from facts than the old notion that vapours in the air were all the offending agents to be looked to, ſince it is notorious that many aſthmatic people live better in the crowded and ſmoky precincts of a large city than in the open air of the country. Sometimes, indeed, fumes, duſt, &c. are eaſily proved to lead to, or aggravate, an aſthma; but generally we cannot well conſider aerial impreſſions to be the exciting cauſes of the paroxyſms of this malady, ſince, ſuch impreſſions being conſtant, the cough and difficulty of breathing would be equally ſo. We muſt therefore conclude, that the particles of matter contained in foul air accumulate in the bronchia, and aſſimilate with its ſecretions, until their bulk brings on the dyſpnœic paroxyſm.

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We ſhall tranſcribe Dr. Bree's account of the ſymptoms of this complaint. It bears a cloſe reſemblance to the noted deſcription given by Floyer, but is perhaps more amply detailed. "The attack of a paroxyſm of periodic or convulſive aſthma is preceded very generally by dyſpepſia, and the circumſtances which occur to a relaxed habit. This condition of the body may have prevailed for months or years before it takes the additional form of aſthma; but, when that diſeaſe appears, dyſpepſia never fails to be aggravated, and to ſhow itſelf with violence before the fit.

"The firſt ſymptoms are flatulence and diſtention of the ſtomach and bowels; a heavy pain over the forehead and eyes; eructation of wind, with water which is ſometimes inſipid, at others ſour. When the evening approaches, this weight over the eyes becomes more oppreſſive, and the patient is very ſleepy. Occaſionally, if he be particularly animated by company and converſation, the drowſineſs does not take place, but a ſhortneſs of breathing is perceived, and ſoon after much anxiety of the præcordia, with great reſtleſſneſs. The preſence of company then becomes irkſome, as it ſeems to increaſe a certain heat of the body, a want of free reſpiration, and an irritability which repels the moſt cautious attentions of friends. Frequently at this period there is a tingling and heat in the ears, neck, and breaſt, and a motion to expel the contents of the bowels is attempted with ſome violence, and with great uneaſineſs of the abdominal muſcles. When an aſthmatic feels theſe warnings, he may be convinced that his enemy is at hand. At ſome uncertain hour before midnight the patient becomes ſuddenly ſenſible of the increaſed violence of the diſorder; moſt frequently after a ſlumber in bed he awakes with great difficulty of breathing, and he feels the neceſſity of a more erect poſture of his body. Inſpiration is performed with great effort of the muſcles, but is never perfectly deep, and the diaphragm ſeems to deſcend with great difficulty againſt an oppoſing force. There is now a deſire of free air, ſpeaking becomes diſtreſſing, and the irritability of the mind continues, but is not ſo acute as in the approach of the fit. There is a great ſtraitneſs of the cheſt, and a wheezing ſound in reſpiration. An inclination to cough ſhows itſelf, but this is ſmall and interrupted. The pulſe is increaſed in quickneſs a few ſtrokes, but without hardneſs. There is no preternatural thirſt, unleſs, as often happens, the fit be excited by indigeſtible matter in the firſt paſſages. There is a propenſity to make water, which is copious and pale, and frequently diſcharged. After ſome hours of diſtreſs the patient perceives his anxiety to be leſs, the breathing is leſs quick and laborious, the inſpirations are longer and more full, the expirations are ſtill attended with wheezing; the pulſe is not ſo quick, but more full; irritation is leſs acute. The cough probably brings up a portion of phlegm, and a very ſenſible relief follows that excretion. Then the tranquil ſtate of the feelings introduces ſleep, but not unaccompanied by wheezing, which continues almoſt always through the firſt night, and until, by the progreſs of the fit on the ſecond or third day, a more conſiderable expectoration of mucus takes place.

"The ſecond day is uſhered in by a remiſſion of the ſymptoms, which the patient perceives from the time of awaking in the morning. No change of poſture is, however, yet made with impunity; and particular diſtreſs affects him, if he engage in the fatigue of dreſſing whilſt the ſtomach is empty. The pulſe will be accelerated more than it was in the acmé of the paroxyſm; and motion muſt frequently be ſuſpended, or a vehement agony for breath will certainly come on. During the day, if no particular hurry occur, the breathing becomes gradually more free till the evening; an inexperienced aſthmatic even flatters himſelf that his diſeaſe is leaving him, but he finds at the approach of night that he muſt ſuſtain a new attack. The paroxyſm recommences with the uſual ſymptoms, and the night is paſſed nearly as the former; but the ſleep is more perfect, and productive of more relief.

"The third day, the remiſſion is more complete; there is ſome additional expectoration; and bodily motion is performed with leſs diſtreſs, but ſtill with great inconvenience. After the paroxyſm has been renewed in this manner for three nights, the expectoration generally becomes free, but there is no certain termination of the fit at a fixed period. However, except in particular caſes, it goes off after a few days; and, as the daily remiſſions become more perfect, the urine is higher coloured, and in ſmaller quantities; the expectorated mucus is more copious and digeſted; ſtrength of pulſe and vigour of action increaſe, and good humour again enlivens the mind.

"The expectorated mucus has been ſaid to be ſtreaked with black, or to have a blackiſh tinge; and this appearance certainly prevails in many inſtances, but not invariably. The taſte of the expectorated mucus is alſo equally uncertain; it is ſometimes ſweetiſh, but more frequently it is ſaline, and it is occaſionally coloured minutely with blood. There is a conſiderable variation in the periods of the acceſſion of the paroxyſm, and in its duration, in the intervals of the fits, the quantity of mucus expectorated, and the freedom of that diſcharge. Theſe circumſtances of the diſeaſe will be influenced by the prediſpoſing cauſes, and by occaſional accidents." Dr. Bree's Practical Inquiry into Diſordered Reſpiration.

Aſthma may occur at any age; but except where there is a mal-conformation of the cheſt, it ſeldom attacks in early life. It uſually affliſts perſons of mature or advanced age. People who follow certain occupations are more liable to it than others; ſuch as millers, maltſters, ſtone-cutters, wool-combers, flax-dreſſers, &c. Many of theſe inſtances, however, of ſhort breathing, belong rather to Dyſpnœa than to Aſthma. Although the attacks are ſo ſevere and diſtreſſing for the time, yet in the intervals the patient commonly enjoys a tolerable ſhare of health, and is able to engage in the purſuits of buſineſs or pleaſure, according to his ſtation in life; nor do they ſeem, in numerous inſtances, to have much effect in ſhortening the natural period of human exiſtence, many aſthmatics having been known to live to the age of ſeventy and upwards. The diſeaſe, however, terminates at length in peripneumony, conſumption, dropſy, lethargy, or apoplexy.

In the *treatment* of aſthma, we have two purpoſes to effect; viz. to relieve the paroxyſm on the one hand, and to rectify the morbid condition of the pulmonary organs on the other.

We have ſeen that the paroxyſm is moſt frequently excited by diſtention of the ſtomach and bowels, or by the accumulation of irritating ſecretion in the bronchial tubes. Hence we muſt labour to evacuate the offending matter from each cavity; we muſt further allay, by antiſpaſmodic medicines, the irregular action of the muſcular parts. An emetic is the firſt remedy to be applied. By gentle vomiting we may obtain ſome knowledge of the ſtate of the firſt paſſages; and the paroxyſm will go on with milder exacerbations, if irritating matter be removed from the ſtomach and duodenum. Further than this, nauſea and vomiting diſcharge the ſubtil and acrid particles which have been received in inſpiration, by promoting ſuch a ſecretion of lymph as may envelope them, and excite expectoration; beſides which, this dilution probably defends the membrane from further irritation. Afterwards a draught with one ounce of diſtilled vinegar, and from one to three grains of pulv. ipecac. in pure water, may be taken every four hours, as a means of determining to the ſurface of the body, and promoting abſorption and exhalation. If coſtiveneſs prevail, it will be neceſſary to remove it, by the uſe of rhubarb or infuſion of ſenna; but we muſt avoid full purging. If acid eructations are frequent, then, inſtead of the acetous draughts with ipecac. chalk or magneſia uſta in a draught

of mint-water, with the ſame nauſeating ingredient, will anſwer better. Dr. Bree ſtates, that "it has happened in ſeveral inſtances, after various means intended to mitigate the diſtreſs of the fit had failed, that the Rubigo ferri, or carbonate of iron, in doſes of ten grains every four hours, appeared moſt clearly to remove the paroxyſm." This effect can only, he thinks, be accounted for by looking to the inert condition of the ſtomach and lungs, and to the languid ſtate of the circulation in the thoracic and abdominal viſcera. He adds, "Whatever in ſuch circumſtances can haſten the paſſage of the blood through the lungs, and promote a quicker return to the heart from the lower viſcera, muſt be uſeful in the intention of preſent relief, as well as of actual cure." It is in aid of this acceleration of blood to the lungs that inhaling oxygen, as recommended by Dr. Beddoes, is an uſeful meaſure. See *Therapeutics* in this article.

"In the morning, the patient ſhould take clear coffee as ſoon as he awakes, which ſhould be repeated at intervals with dry toaſt; and this drink, which ſeems to act medicinally on aſthma, may be adminiſtered, during the remiſſion alſo, with a few drops of tinct. opii, every three hours, the nauſeating draught being ſuſpended between the exacerbations. At the beginning of the ſecond exacerbation the nauſeating draught ſhould be repeated, at firſt with a ſufficient proportion of ipecacuhan to excite puking, and afterwards with a leſs doſe that may only occaſion nauſea. In the ſecond remiſſion, the plan purſued in the former ſhould be reſumed. The third exacerbation will probably be mild, ſo that the ipecacuhan draughts may be ſuſpended, or they may be united with æther and tincture of columbo in place of the ipecacuhan. With this plan there will appear on the third day a conſiderable tendency to expectorate, which ſhould be promoted by ammoniac, and vinegar of ſquill with tinct. opii, or with volatile ſalts. Ammoniac is called an expectorant; but the patient, before this period, too frequently takes this nauſeous medicine without uſe." Bree, p. 283. 5th edit.

From this time we have to turn our attention to the cure of the complaint during its remiſſion; and what can be effected for this purpoſe may be ſtated in a very few words. It is ſcarcely neceſſary to mention the removal of the exciting cauſe. If bad air, a removal to a better ſituation; if gaſtric or inteſtinal diſturbance, (no doubt the primary cauſe in the major proportion of caſes,) a rigid adoption of the treatment of Dyſpepſia (which ſee) muſt be followed. We may remark here, that, having fully entered into the conſideration of diet, &c. under that head, we ſhall feel it unneceſſary to reſume the ſubject in our account of every one of thoſe diſeaſes to which ſimilar regulations are applicable.

In aſthma theſe regulations ſhould be fulfilled with much diligence and attention; but they will always require accommodation to individual caſes, particularly to patients with nervous ailments. We may remark, that cordial and ſtimulating bitters are particularly indicated in aſthma. Theſe remedies will require a long continuance in their uſe, and frequent change of the varieties.

With regard to the management of the ſanguineous ſyſtem in this complaint, it is to be borne in mind, that a great number of caſes are on record in which it was connected with organic changes in the thoracic viſcera. To prevent therefore ſuch occurrences, it is of importance that we by no means neglect to moderate the force of the circulating powers. In effecting this purpoſe, we muſt be guided by the pulſe, with little reference to the noſological diviſion of diſeaſe.

Unleſs from the above conſideration, bleeding ſhould be cautiouſly reſorted to. Dr. Bree ſtates, that, "under conſiderable evacuations of blood, the ſudden depletion of the veſſels may leave their coats without the ſtimulus neceſſary to produce a contraction equal to the ſpace which the blood had occupied; the heart will participate in the injury, and will alſo be deficient in vigour of contraction. If, therefore, blood be taken, it ſhould be drawn from the veſſels at intervals, and in ſmall portions, which would allow of a contractile power being exerted, in proportion as the veſſel loſes its contents; and ſo much fluid would not finally be taken away as to leave it without the ſtimulus of diſtention, ſo eſſential to its return of health." He ſays alſo, that, "before the pulmonary veſſels have relieved themſelves by their exhaling orifices, blood may poſſibly be drawn with ſome advantage; but, when effuſion has taken place, a certain debility follows, and a loſs of contractile power in the veſſels."

The ſame purpoſe is alſo effected by digitalis, though the good effect of this remedy is atteſted by ſome in caſes where no extraordinary degree of pulſation was manifeſt in the arteries. The action of this remedy is by no means well underſtood. It is of much importance to excite the minute parts of the circulatory ſyſtem, for the purpoſe of unloading the great veſſels. From what we obſerve in other complaints, we ſhould be inclined to uſe the warm bath; but Dr. Bree reports unfavourably of it: it ſeemed, in this one caſe eſpecially, to aggravate the malady. Of the cold bath this author, in common with many others, ſpeaks favourably. The firſt effect of the bath ſeems to be painful and injurious: but, when re-action follows, (and it ſhould only be uſed when this does follow,) the cutaneous capillaries are excited, and thus unload the circulation; independently of which, they communicate a ſympathetic vigour to the pulmonary exhalants.

The tendency to ſpitting ſhould be promoted by the exhibition of expectorating medicines; ſuch as ipecacuanha, oxymel of ſquill, and ammoniacum. Of the firſt of theſe, not more than two or three grains ſhould be given for a doſe, ſo as to excite, in this ſtage of the diſorder, merely nauſea, but not vomiting; the two others ſhould be joined together in the form of a draught or mixture, with or without the addition of æther.

A dry and pure air, but not that of an elevated ſituation, is in general beſt ſuited to aſthmatics; there are, however, as before ſtated, frequent exceptions to this obſervation. The bowels ſhould be kept regular, by rhubarb and aloetic aperients. Small doſes of calomel may be given with great advantage, in many caſes; and eſpecially where the aſthmatic affection is connected with a diſeaſe of the ſkin. Whenever the patient's feelings warn him of an approaching attack, he ſhould take an emetic, and after its operation an opiate: and at all times he ſhould encourage expectoration; but oleaginous emulſions and ſweet mixtures ſhould be proſcribed. Iſſues have been recommended by ſome practitioners for leſſening the frequency and violence of the paroxyſms. It is ſaid that king William continued perfectly free from his aſthmatic complaint, during the whole of the time that the wound he received on his ſhoulder, in the battle of the Boyne, kept open and diſcharged matter.

The utility of counter-irritants ſeems here very equivocal, eſpecially in young ſubjects. Dr. Bree ſays, "In very old aſthmatics, iſſues are ſometimes neceſſary. In younger ſubjects, when the diſeaſe is not yet inveterate, they may occaſionally be uſeful, by diverting aqueous humour from the lungs, and giving a better opportunity for the operation of tonic remedies."

Diuretics have been very generally reſorted to, often perhaps becauſe in this complaint the urinary ſecretion is diſordered; but this is generally traceable to the dyſpeptic ſymptoms to which our attention ſhould be principally directed. There are caſes, however, in which diuretics are plainly indicated. When Dyſpnœa remains after the fit, and the urine is at the ſame time ſmall in quantity, and high coloured, ſaline diuretics ſhould be given; and mercurials are alſo then uſefully combined, as the caſe is probably complicated with viſceral obſtructions.

obſtructions. Diaphoretics are of much uſe in the earlier ſtages of aſthma; but, when the malady is of long ſtanding, their utility is often doubtful. Whenever they are employed, gentle perſpiration, not ſweating, ſhould be elicited. Stimulating ſudorifics are for the moſt part improper. The pulv. ipecac. comp. will be found a uſeful diaphoretic in aſthma. It is generally allowed to be a very innocent form of exhibiting opium; and the uſe of this article is often called for by the deranged ſtate of the nerves, as much as the action of the ſkin is required to be promoted by its diaphoretic property. The inhalation of ſteam ariſing from various herbs, as hemlock, ſtramonium, &c. appears to be rather hurtful. Indeed from what has been before ſaid of the cauſe of aſthma, it is evident, that heat and moiſture conveyed into the lungs is by no means likely to cure an aſthma. A regular uſe of oxygen between the paroxyſms, and when inflammatory tendency exiſts, will be found more uſeful.

2. Aſthma humidum, humoral aſthma. Under this term ſome phyſicians have comprehended the anaſarca of the lungs; but we deſignate by it that ſpecies or variety of ſhortneſs of breath or wheezing, which is accompanied with a conſtant cough, and expectoration of mucus, and which is diſtinguiſhed from phthiſis and catarrh by being unattended with fever. It is diſtinguiſhed from a dropſy of the cheſt, by the abſence of a numbneſs of the arms, and (after the ceſſation of a temporary aggravation of the ſhort-breathing from accidental cauſes) by the patient being able to bear the horizontal poſture. It is the *pituitous aſthma* of ſome writers. It generally begins under the form of the firſt ſpecies, or convulſive aſthma; and, like it, is liable to accidental aggravations from changes of the weather, and the other exciting cauſes before mentioned. In regard to its therapeutical treatment, we ſhould adminiſter emetics and expectorants joined with æther and other antiſpaſmodics. Bliſters and iſſues are more ſerviceable here than in the convulſive aſthma; but the employment of diuretics is more particularly indicated; ſuch as ſquill, acetated kali, and digitalis. Ten or fifteen drops of the tincture of foxglove, or one grain or a grain and a half of the powdered leaves, joined with a fourth part of opium, ſhould be given at a doſe, and repeated twice in twelve or fourteen hours, until the ſhortneſs of the breath is relieved by a flow of urine, or until ſuch an effect is produced on the pulſe, the head, or the bowels, as ſhall make it neceſſary to ſuſpend the uſe of the medicine. Decoctions of ſeneka or dulcamara (ſee Practical Synopſis of the Materia Medica, vol. i. p. 152, 233.) may be preſcribed in place of the digitalis, where this laſt ſhall be found to diſagree. The patient ſhould be directed to wear flannel next his ſkin, and to keep his feet warm and dry.

It is worthy of remark, that aſthma is often prolonged by the habitual ill-action of the reſpiratory muſcles, their nerves, or the bronchial exhalants, when the general health is otherwiſe tolerably good, and the patient free from the external agents which firſt cauſed the malady. When the diſeaſe aſſumes this form, the paroxyſm is liable to be brought on by mental emotion, or any extraordinary impulſe on the nervous ſyſtem. As the action of muſcles in general, by frequent repetition, produces in them a great mobility, or proneneſs to contract, ſo thoſe of the glottis and cheſt equally obey this law. It is to the muſcles therefore that Dr. Bree referred the ſeat of this aſthma from habit. Others deem it a want of energy in the nerves; and this ſeems a very probable account of it in ſome caſes.

The complaint is to be cured by thoſe meaſures likely to break the aſſociated chain of morbid actions; as, employment of an intereſting kind when the paroxyſm is ſlightly threatened; a complete change of air and occupation, a uſe of ſtimulants of higher order than is admiſſible in the preceding forms of aſthma, tolerably good living, and active exerciſe. But galvaniſm is a remedy of the firſt importance. Dr. W. Philip having uſed this meaſure with great ſucceſs, we quote his account of its adminiſtration.

"I have employed galvaniſm in many caſes of habitual aſthma, and almoſt uniformly with relief; and have found the affection of the breathing as readily relieved when it appeared as a primary diſeaſe, as when it ſucceeded to indigeſtion. The time, during which the galvaniſm was applied before the patient ſaid that his breathing was eaſy, has varied from five minutes to a quarter of an hour. I ſpeak of its application in as great a degree as the patient could bear without complaint. For this effect I latterly found from eight to ſixteen four-inch plates of zinc and copper, the fluid employed being one part of muriatic acid, and a hundred and twenty of water, ſufficient. Some require more than ſixteen plates, and a few cannot bear ſo many as eight; for the ſenſibility of different individuals to galvaniſm is very different. It is curious, and not eaſily accounted for, that a conſiderable power, that perhaps of twenty-five or thirty plates, is often neceſſary, on firſt applying the galvaniſm, in order to excite any ſenſation; yet, after the ſenſation is once excited, the patient ſhall not, perhaps, particularly at firſt, be able to bear more than ſix or eight plates. The ſtronger the ſenſation excited, the more ſpeedy in general is the relief. I have known the breathing inſtantly relieved by a very ſtrong power. It has generally been made a rule to begin with a very weak one, and increaſe it gradually at the patient's requeſt, by moving one of the wires from one diviſion of the trough to another, and moving it back again when he complained of the ſenſation being too ſtrong. It is convenient for this purpoſe to charge with the fluid about thirty plates.

"The galvaniſm was applied in the following manner. Two thin plates of metal, about two or three inches in diameter, dipped in water, were applied, one to the nape of the neck, the other to the lower part of the epigaſtric region. The wires, from the different ends of the trough, were brought into contact with theſe plates, and, as obſerved above, as great a galvanic power maintained as the patient could bear without complaint. In this way the galvanic influence was ſent through the lungs, as much as poſſible, in the direction of their nerves. It is proper, conſtantly to move the wires upon the metal plates, particularly the negative wire, otherwiſe the cuticle is injured in the places on which they reſt. The relief ſeemed much the ſame, whether the poſitive wire was applied to the nape of the neck, or the pit of the ſtomach. The negative wire generally excites the ſtrongeſt ſenſation. Some patients thought that the relief was moſt ſpeedy, when it was applied to the epigaſtric region. The galvaniſm was diſcontinued as ſoon as the patient ſaid that his breathing was eaſy. In the firſt caſes in which I uſed it, I ſometimes prolonged its application for a quarter of an hour or twenty minutes after the patient ſaid he was perfectly relieved, in the hope of preventing the early recurrence of the dyſpnœa; but I did not find that it had this effect. It is remarkable, that, in ſeveral who had laboured under oppreſſed breathing for from ten to twenty years, it gave relief quite as readily as in more recent caſes; which proves, that this habitual difficulty of breathing, even in the moſt protracted caſes, is not (always) aſcribable to any change having taken place in the more evident mechaniſm of the lungs." Philip on Indigeſtion, p. 372.

Genus IV. *Ephialtes*, [Gr. a leaper, becauſe it was thought a demon "leaped" upon the breaſt.] Incubus, or Nightmare. Generic characters—Sighing ſuffocative anhelation, with intercepted utterance, and a ſenſe of ſome external ſubſtance preſſing heavily on the cheſt: tranſitory. This genus has two ſpecies, both of which are ſomewhat allied to epilepſy.

1. Ephialtes vigilantium: produced during wakefulneſs;

neſs; the preſſure ſevere, and extending over the abdomen; reſpiration frequent, laborious conſtricted; eyes fixed; ſighing deep and violent; intellect undiſturbed.

E. vigilantium is entered on the authority of Rhodius and Sauvages. Sauvages gives us three other ſpecies, but theſe are evidently ſymptomatic of other affections. It is a diſeaſe rarely met with, and generally ariſing from ſevere irritation of the nerves of the ſtomach.

2. Ephialtes nocturnus, (Oneirodynia gravans, *Cullen.*) Nightmare, or elf-ſquatting: produced during ſleep, and interrupting it with violent ſtruggle and tremor; the preſſure on the cheſt ſeeming to be that of ſome hideous monſter or phantom. This latter ſymptom has given riſe to the various popular names, which, however different in different countries, all agree in expreſſing the preſence of ſome phantom, wizard, or goblin; and which, as Dryden ſays,

Seeks ſome love-wilder'd maid with ſleep oppreſs'd,
Alights, and grinning ſits upon her breaſt.

Beſides the deluſion of ſupernatural ſpirits, the imagination at times diſplays the calamities of life. The patient fancies himſelf to be ſtruggling with ſtrong men, or to be in a houſe on fire, or in danger of being drowned; and, in attempting to run away from danger, or climb up a hill, he fancies he falls back as much after every ſtep as he had advanced before. After he awakes, the terror excited by theſe frightful ideas leaves often a palpitation of the heart, with great anxiety and languor, and ſometimes a tingling of the ears, and a general tremor. Many abſurd explanations have been given of the phenomenon of incubus, which we ſhall not ſtop to detail. It is now generally agreed that the ſeat of the nightmare is principally in the ſtomach. It is well aſcertained that ſome forms of epilepſy, and of hyſterical fits, originate from diſorder in that viſcus; and ſo great a ſimilarity exiſts between the diſeaſes, that Galen conſidered the incubus as a nocturnal or ſlight epilepſy. People troubled with nervous and hypochondriac affections, and who have delicate or flatulent ſtomachs, are more peculiarly ſubject to this diſorder; and it is obſerved, that a heavy or flatulent ſupper greatly aggravates the nightmare in thoſe who are prediſpoſed to it. The ſympathy of the ſtomach with the head, heart, lungs, and diaphragm, is ſo remarkable, that there can be no difficulty in referring the ſeveral ſymptoms of the incubus to a diſagreeable irritation of the nerves of the ſtomach.

The incubus is moſt apt to ſeize perſons when lying on their back, becauſe, in this poſition, on account of the ſtomach and other abdominal viſcera preſſing more upon the diaphragm, we cannot inſpire with the ſame eaſe as when we ſit up or lie on one ſide. Further, in that ſituation of the body the food ſeems to lie heavier on the ſtomach, and wind in it does not ſeparate ſo readily by the œſophagus and pylorus as in an erect poſture, when theſe orifices are higher than the other parts of the ſtomach. The nightmare occurs in the time of ſleep, becauſe the ſtrange ideas excited in the mind, in conſequence of the diſordered feelings of the ſtomach, are not then corrected by the external ſenſes as they are when we are awake; nor do we, by an increaſed reſpiration or other motions of the body, endeavour to ſhake off any beginning uneaſy ſenſation about the ſtomach or breaſt. The incubus generally occurs in the firſt ſleep, and ſeldom towards morning, becauſe at the earlier period the ſtomach is more loaded with food, and that in a more crude and indigeſted ſtate than in the morning. A leſs degree, amounting only to frightful dreams, is almoſt a conſtant concomitant of overloaded ſtomach in ſome habits; and requires the ſame treatment as *Dyſpepſia*, which ſee.

Genus V. *Sternalgia*, [from στέρνον, the breaſt-bone, and ἄλγος, pain.] Violent pain about the ſternum, extending towards the arms; anxiety, difficulty of breathing, and ſenſe of ſuffocation. (Angina pectoris, *Heberden* and *Cullen.*) Our noſologiſts have given us two ſpecies; but we are not ſatisfied with their reaſons for the diſtinction. They are,

1. Sternalgia ambulantium, (Aſthma arthriticum, *Schmidt.* Diaphragmatic gout, *Butler.*) Supervening ſuddenly during exerciſe; with tendency to ſyncope; relieved by reſt.

2. Sternalgia chronica. (Orthopnœa cardiaca, *Sauv.* Syncope anginoſa, *Duncan* and *Parry.*) The paroxyſms leſs violent, but of longer continuance; recurring frequently with great palpitation of the heart, excited by ſlight, and often unknown, cauſes; and not relieved by reſt.

This dreadful diſorder is found to attack men much more frequently than women, particularly thoſe who have ſhort necks, and are plethoric or corpulent. Although it is ſometimes met with in perſons under the age of twenty, it more frequently occurs in thoſe who are between forty and fifty. In ſlight caſes, and in the firſt ſtage of the diſorder, the fit comes on by going up-hill, up-ſtairs, or by walking at a quick pace after a hearty meal; but as the diſeaſe advances, or becomes more violent, the paroxyſms are eaſily excited by paſſions of the mind; by exerciſe even of the moderate kind; by ſneezing, coughing, or ſtraining at ſtool. In ſome caſes, the patient is attacked whilſt ſitting or ſtanding, without any previous exertion or obvious cauſe. On a ſudden, he is ſeized with an acute pain or tightneſs at the extremity of the ſternum, inclining to the left ſide, and extending up into the arm, as far as the inſertion of the deltoid muſcle, accompanied by a ſenſe of ſuffocation, great anxiety, and a dreadful conviction of the fatal tendency of this malady. This commonly continues for the ſpace of an hour.

In the firſt ſtage of the diſeaſe, the uneaſy ſenſation at the end of the ſternum, with the other unpleaſant ſymptoms, which ſeemed to threaten a ſuſpenſion of life by a perſeverance in exertion, uſually go off upon the perſon's ſtanding ſtill, or turning from the wind. Dr. Parry ſtates, that bending the body in ſome caſes increaſes the pain; and therefore the patient draws himſelf up ſtraight, with the head ſomewhat bent backwards.

In a more advanced ſtage, the paroxyſms do not ſo readily recede, and are much more violent. During the fit, the pulſe ſinks in a greater or leſs degree, and becomes irregular; the face and extremities are pale, and bathed in a cold ſweat; and, for a while, the patient is perhaps deprived of the powers of ſenſe and voluntary motion. People affected with this complaint often die ſuddenly, but ſome continue ſubject to it for upwards of twenty years.

The *cauſe* of this diſtreſſing malady is not clearly underſtood; it was formerly ſuppoſed to be either a ſpaſmodic affection, or a caries of the ſternum; after this, Dr. Parry ſtated that it was an oſſification of the coronary arteries which ſupply the muſcular ſubſtance of the heart with blood. This change of ſtructure muſt certainly render the heart unequal to the taſk of circulating the unuſual quantity of blood thrown upon it by bodily exertions or paſſions of the mind; and, as the oſſification increaſes, it muſt at all times impede the circulation. Dr. Parry ſupports this notion by diſſections; but it is clear that Angina pectoris often occurs and amends ſpontaneouſly, or is removed by medicines; a conſummation not poſſible if the coronary arteries were oſſified.

Dr. Reeder, in his work on the Diſeaſes of the Heart, divides the cauſes of Sternalgia into four claſſes. 1. An oſſified, or otherwiſe diſeaſed, ſtate of the coronary arteries, whereby their calibre becomes much diminiſhed; or an oſſified condition of that portion of the aorta whereat theſe veſſels are given off, ſo as to leſſen the diameter of their aortal orifices. 2. Oſſification and enlargement of the valves of the heart, and of thoſe placed at the origin of the aorta and pulmonary artery; alſo morbid contraction of the different apertures to which they are attached; and

and enlargement of the heart accompanying these morbid states. 3. Aneurism and ossification of the thoracic portion of the aorta. 4. A disordered state of the chylopoïetic organs, more especially of the stomach, producing indigestion.

When Sternalgia arises from organic derangement, it admits only of palliation; and, when sympathetic only, the disease producing the sympathetic manifestation should be removed. On this account, to distinguish between the two causes is of the utmost consequence. Dr. Powell, in the Transactions of the College of Physicians, thus details the distinguishing symptoms: "When a patient complains of a slight difficulty in respiration, increased by exercise, and aggravated by a recumbent posture; if the pulse does not beat with intermissions, and the several strokes are not unequal in force, although the pulsations may be preternaturally slow, or, on the contrary, more than usually quick; I know, from actual examination after death under these different circumstances, that there sometimes is not any organic disease in the thorax. If respiration be uneasy, and the patient, at first experiencing some difficulty in lying down, shall in a little while so adjust his position as to sleep comfortably, I believe there cannot be any organic mischief in the thorax, although possibly there may be effusion. If the patient cannot sleep in a recumbent posture, or, when asleep, if, sliding down gradually into his bed, he is suddenly awaked with a sense of spasmodic stricture and strangulation, provided there hath not been previously observed an irregular and an intermittent pulse, I should suspect effusion within the chest, rather than any disease of structure. And if, in addition to the above circumstances, there should be anasarcous swellings of the legs, and the countenance should be bloated and purple-coloured, the chest is certainly labouring under an effusion of fluid; but even then it is not absolutely clear that hydrothorax is actually produced by mal-organization in the thoracic viscera."

Dr. Hutchinson, the late editor of the London Medical Journal, has remarked the singular and characteristic symptoms of swelling of the throat, painful deglutition, and hoarseness, as attendant diseases of the heart which exhibit the form of Angina pectoris. None of the diagnostics are however infallible; and indeed the distinction between nervous and organic diseases of the thorax is one of the greatest difficulties in the whole list of human maladies.

In the *treatment* of Angina, we have to consider its palliation during the paroxysm, and its effectual removal. Antispasmodics are the usual agents employed for the former purpose. Dr. Reeder, in his treatise quoted before, objects to the use of internal stimuli, unless the heart appear unable, after the lapse of some time, to regain its usual action, when weak wine and water, a small quantity of æther or spirit of ammonia diluted, may be given. Some patients experience immediate relief by strong brandy and water. Should not these succeed, we should apply a blister over the cardiac region, and immerse the arm, when much affected, in hot water, and afterwards direct it to be rubbed with some stimulant and anodyne liniment. Opium may be given with advantage in a protracted paroxysm; and this medicine, or the extract of hyoscíamus, often prevents nocturnal attacks, when given at bed-time. Should the syncope remain an undue length of time, it will be necessary to transmit electric or galvanic shocks through the region of the heart, and to inflate the lungs by proper bellows, so as to establish an artificial pulmonary and aortal circulation.

A few drops of hydrocyanic acid have been said to relieve the paroxysm of Sternalgia very rapidly. In the intervals between the paroxysms, much may be effected to prevent their accession, by the patient observing proper rules with respect to exercise and diet, and by avoiding exciting causes. Exercise, particularly on horseback, should not be had recourse to when the stomach is full, Dr. R. advises his patients to drink water, and to eat sparingly; to keep the bowels open; to regulate the temperature of the body by clothing, and to avoid heated rooms and an impure atmosphere. Occasional plethora should be removed by bleeding in the recumbent position, or by cupping; and its recurrence prevented as much as possible by the almost exclusive use of farinaceous food. Issues in the thighs or arms may be used, as well as the tartrite of antimony, to excite a pustular eruption; but an occasional blister will generally answer every purpose, with much less inconvenience to the patient.

Genus VI. *Pleuralgia*, [πλευρα, the side, and αλγος, pain.] Sharp pain, or stitch, in the side; difficulty of breathing, without fever or inflammation; and thus distinguished from Pleuritis, or pleurisy.

A stitch or pain in the side often occurs, independently of any acute inflammation of the lungs, pleura, or contiguous organs, and it is generally increased by the action of breathing. It has been often denominated a false or spurious pleurisy. The pain, however, is seldom seated in the membrane called the pleura, but often in the muscles of the chest, sometimes in the other membranous parts; and it may arise from rheumatism affecting those parts, from spasm or cramp, from a plethoric condition, or from a nervous and hysterical state, in which the circulation is languid and irregular: it may also be connected with a gouty, syphilitic, or scorbutic, habit. Sauvages has distributed the Pleurodyne (his name for this genus) into eighteen species, according to its origin from one or other of these causes. But Dr. Good gives us only two species.

1. Pleuralgia acuta: sudden and temporary; supervening on muscular exercise; relieved by pressure.

2. Chronica: permanent: augmented by pressure; inability of lying on the side affected.

The first species found also frequently as a symptom in flatulence, hysteria, and hypochondriasis. The second in plethora, worms, syphilis, phthisis, rickets, catarrh, and rheumatism. See *Pleuritis*.

Class III. HÆMATICA, [from the Gr. αιμα, blood.]

Diseases of the Sanguineous Function.

The chief modes in which the sanguineous system is influenced in disease is in regard to the state of the contained fluid on the one hand, or the state of the containing vessels on the other. The consideration of the first occupied, as is well known, for a long time, the medical world; and the most famous hypotheses of the seventeenth and early part of the eighteenth centuries were founded on supposed chemical changes in the blood during diseased states. (See the historical section of this article, p. 13—16.) At present, though it is acknowledged that the contained fluids vary much as to their nature in different persons and diseases, and that the introduction of foreign bodies in an *unassimilated* state is followed by violent symptoms, yet we have also ascertained that the constitution accommodates itself in a great degree to those insensible changes which unusual food or indigestion produces, and that the blood exhibits a variety in the proportion of its constituent parts even in healthy individuals. There can be no doubt that a general bad state of the fluid of the body exists in some diseases; and these are necessarily accompanied with alteration in the contractile power of the blood-vessels. Of the nature, however, of this morbid alteration of the blood, we know scarcely any thing. We shall mention the scanty stock of facts we are furnished with on this subject when treating of the last order of this class, *Dyspeptica*, or Cachexies.

The quantity of the blood in the animal frame varies in most diseases, and often without our being able to trace any very manifest causes of this variation. Some

diſtinguiſhed authors have adduced the fact of general inordinate habits of eating as an explanation of the frequency of plethora; but as, from the facts we have noticed under *Dyſpepſia*, it is clear that gluttony muſt lead for the moſt part to indigeſtion, and that to deficient nutrition we ſhould be tempted to look for the cauſe of this ſtate. In the general diminution of ſecretion, and in fact in fevers where this diminution is very apparent, a full ſtate of the blood-veſſels is the moſt formidable ſymptom, and one which the moſt copious abſtraction of blood in many caſes ſcarcely abates.

The plethoric ſtate may (though it rarely does) exiſt in the ſame degree in the ſanguineous ſyſtem generally; or it may be exceſſive in all parts, but much more ſo in one or more peculiar ſtructures; or, which is more common, it may be exceſſive in one part, and deficient in the reſt. Under each of theſe circumſtances, the blood-veſſels are diſturbed in their functions; which brings us to the conſideration of theſe latter parts.

At page 28, we have detailed briefly the agents of the circulation, and have not heſitated to mention the contractility of arteries as one of them. In doing this, however, we were perfectly aware, that we were oppoſed by the opinions and experiments of ſome of our beſt pathologiſts; yet, on the other hand, men of equal talent, and the authors of experiments apparently conducted with equal preciſion, ſtrongly corroborate our view of the queſtion. For our own parts, we pay little deference to theſe experiments which, from their very nature, can never be concluſive. Whoever will take the trouble to read over with attention the numerous hiſtories of experiments detailed by Dr. Haſtings, the laſt author who has performed experiments on this ſubject, will concur with us in this opinion. They will find, that in ſome experiments the dilatation and contraction was not manifeſt at all; in others, not for ſome time; and in others immediately and unequivocally. Indeed we ſhould naturally expect that theſe circumſtances would occur to parts ſtimulated by unnatural means; and deprived no doubt of much of the fluid of the vaſa vacoſum by the diſſection neceſſary for their expoſure.

We think, however, that this matter may be more ſatisfactorily ſettled by analogical reaſoning than by the evidence of the ſenſes, when that evidence produces ſuch various appearances. By thoſe who ſuppoſe that arteries aid the motion of the blood, it has been aſſerted, that the heart cannot propel that fluid through the round of the circulation; but this aſſertion has neither been proved nor diſproved. One party ſays that the heart has this power, for this reaſon; it is not required to drive the blood through the whole of the arterial and venous ſyſtems, ſince an impreſſion on the aorta by means of the left ventricle (the column of blood being continuous) muſt immediately, and without the hindrance of friction, be tranſmitted to that portion which the venous ſyſtem is pouring into the oppoſite ſide of the heart. But it is certain that this continuous column is liable to much variation; and hence it would ſeem more probable that the arteries lent ſome aſſiſtance to the heart. That the arteries have this power in ſome animals is demonſtrated, becauſe they have no heart; and, though Dr. Parry may ſay, that "if the circulation is carried on by any central force of whatever deſcription, the apparatus in which that force reſides is to all intents and purpoſes a *heart*;" he muſt in this caſe ſhow how the ſtructure in queſtion differs from arteries in common; and that it does differ, the reſearches of the accurate Sir Everard Home ſeem to deny. It might appear, that the dependence ſome arteries have on the nervous ſyſtem, and that excluſively of the heart, was a ſtrong argument in favour of the contractility of theſe veſſels; but thoſe who diſcredit the exiſtence of this property aſſert, that this independent action of the artery ariſes from the debility of its parietes, which gives way to the impulſe of the heart, and admits a greater flow of blood; this debility expreſſing, according to them, a loſs of *tonicity*, or that degree of contraction which an artery is at all times exerting on its contents.

We cannot help thinking that the truth of this reſolutely-conteſted point lies between. For, upon examining the probable action of tonicity, little difference will be ſeen between it and the phenomena of contractility. We muſt remark, that *tonicity* is uſed by one party to denominate a perpetual tendency to diminiſh the calibre of the artery: *contractility* is uſed by the other ſect to deſignate alternate contractions followed by active dilatation. Active dilatation is by no means probable, ſince it is unlike the phenomena we obſerve in other contractile ſtructures of the body; ſo that this muſt be conſidered the reſult of the heart's action. But, with regard to the *tonicity* which Parry and others allow to arteries, they ſay, that this is not the "contractilité par défaut d'extenſion" of Bichat, but a vital power. If ſo, is it too much to aſſert that a vital contractile ſtructure, which is expanded, will recover a ſmaller calibre than it had originally? To exemplify this, we ſuppoſe the ſize of an artery equal to 3, and that the impulſe of blood injected into it ſtretches it to 4. It may be inferred from the known power of contracting fibres in other parts of the body, that, the preſſure being removed, it will reduce its circumference to (ſay) 2½: and this overcomes another objection that has been made to ſuppoſing the contraction and dilatation of arteries; viz. that this dilatation might impede as much as accelerate the progreſs of the blood, ſince it might exiſt over the whole arterial ſyſtem juſt at the time the left ventricle contracted. But, if the contraction be brought about in the manner we have ſtated, it muſt of courſe obſerve the ſame time in its contraction as the heart itſelf, and conſequently may materially aſſiſt the circulation.

We ſhall aſſume, therefore, in our ſpeculations on the Hæmatica, the contractility of arteries, uſing this term with the reſtriction before ſtated. We have before ſaid, that at the extreme branches of the arteries a motion is derived from a capillary attraction exiſting between theſe veſſels and the blood. This of courſe is no explanation, becauſe we do not know any thing about capillary attraction. It may be uſed, however, to denote that the ſame law governs the motions of the blood in theſe living tubes (to a degree) as in inanimate veſſels. A motive power is again to be found in the ſecernent ſyſtem: and here the data of reaſoning become fewer than thoſe on which it is founded, even with regard to the capillary arteries; and we can only conjecture, plauſibly, that an attraction exiſts between certain parts only of the blood and the ſides of the veſſels; and that the addition of a ſomething from the nerves is neceſſary to change theſe parts of elements to the form they exhibit on ſecreting ſurfaces, or outlets. The paſſage of fluids in the larger abſorbents, and in veins, we have before noticed. It was neceſſary to recapitulate theſe circumſtances, that the whole of them might be borne in mind while treating of the diſeaſes of this ſyſtem.

With regard to diſeaſes from *quantity* of blood, it is to be noticed, that an increaſe in the maſs of blood ſeldom exiſts unaccompanied by an increaſe of the action of the heart; when this does occur, the blood, although its quantity is increaſed, will have its rate of motion diminiſhed. In ſuch a caſe, the ſmaller arteries, in which, as before ſtated, the contractility is greater, in proportion to the ſize of the veſſel, than it is in the larger arteries, will, from the want of dilatation by means of the heart's contraction, leſſen their ſphere of contraction, ſo that an increaſed proportion of the general maſs of blood will be contained in the larger arterial trunks, in the veins, and in the cavities of the heart. The whole round of the circulation will be obſtructed. The action of the heart will conſiſt of ſlow feeble contractions, or of ineffectual flutterings. The pulmonic proceſs will be imperfectly performed: hence reſpiration will be laborious and hurried,

The antivascular Physiologists say- that the fibres found in an artery r not muscular because they dont contract when stimulated in experiments The opponents ably no because in your experiments you put them in an unnatural state and destroy their properties. - Hastings thought he did see contraction & dilatation always but occasionally. - The anti. Phil: say if the motion of the blood depended on the 9th arteries there would be a continued motion in the latter † The case. Soy but the heart has been found quite ossified or of a tumor growing to its surface ††. † They deny consentaneous & uniformity in the arterial beats.

The say the blood gets out of the cellulary tubes is sponging.

2y Resilience of the lungs.

† I don't know why. †† The fact of these cases though very conclusive as to the heart might not move though enclosed by a tumor.

Arteries of the larger size are found empty after death. Is it that the resilience of the lungs by drawing the blood into the ~~arteries~~ veins produces ~~by~~ this effect or that ~~the attraction in the nerves influences~~ ~~hinders~~ the action of the capillaries continuing longer than that of the heart. and thus sucking the blood from the arteries into the veins. — —

"The blood in some kinds of Asphyxia" (not kinds) ~~(were not)~~ is retained fluid in the arteries ~~hence~~ what is the cause.

hurried, the colour of the blood will be changed, and temperature diminiſhed.

From the circulation of this blood of unnatural quality, diſorder of the whole of the nervous ſyſtem, and hence of every function in the body, may enſue. If the maſs of blood be increaſed, and if the action of the heart be alſo increaſed, ſo as to propel the greater maſs with freedom; in ſuch a caſe, the contractility of the ſmaller arteries being more powerfully oppoſed, theſe veſſels will yield more readily to the current of the blood; they will therefore receive a greater quantity of that fluid, and conſequently an increaſed quantity muſt paſs by their termination. The quantity of ſecreted and of exhaled fluids will be increaſed; the blood will flow with greater force, and in greater quantity, throughout the whole round of the circulation. As an increaſed quantity of blood will paſs, in a given time, through the pulmonic circuit, reſpiration muſt be more quickly performed, otherwiſe that fluid will not duly undergo the pulmonic proceſs. The ſenſibility of the nervous ſyſtem may be increaſed, and the functions of that ſyſtem may be more freely performed. Hence all the functions dependent on nervous influence will be exalted.

The diminution of quantity in the blood generally manifeſts itſelf by the want of action in the nervous ſyſtem, and hence of all the ſecretions. But this ſtate is not likely to laſt long; and indeed generally remedies itſelf, except when the aſſimilating organs of the body are diſeaſed.

Paſſing over theſe plethoric ſtates, we come to the conſideration of an alteration in the contractility of the blood-veſſels, or of the common malady called INFLAMMATION.

When a violent blow is given to an external part of the body, the four following circumſtances are after a time obſervable; viz. redneſs, tumefaction, pain, and heat. Preſently a throbbing is felt in the arteries going to the part, and a diſturbance takes place in the vaſcular and nervous ſyſtem, conciſely called *fever*, and a change in the quality of the blood. To account for theſe ſimple appearances has puzzled the medical philoſophers of every age, and it puzzles them ſtill. In our Introduction we have noticed the wild ſpeculations of the earlier phyſicians. Paſſing over Boerhaave's notion, that viſcidity of blood was the cauſe of inflammation, and that of Cullen, which, like this theory of fever, reſts on the aſſumption of a ſpaſm of the extreme arteries, we proceed to notice the celebrated opinions of Mr. John Hunter. According to him, *inflammation* is to be conſidered only as a diſturbed ſtate of parts, which requires a new but ſalutary mode of action to reſtore them to that ſtate wherein a natural mode of action alone is neceſſary. From ſuch a view of the ſubject, therefore, inflammation in itſelf is not to be conſidered as a diſeaſe, but as a ſalutary operation, conſequent either to ſome violence or to ſome diſeaſe. Elſewhere the author remarks, the act of inflammation is to be conſidered as an increaſed action of the veſſels, which, at firſt, conſiſts ſimply in an increaſe or diſtention beyond their natural ſize. This increaſe ſeems to depend upon a diminution of the muſcular power of the veſſels, at the ſame time that the elaſtic power of the artery muſt be dilated in the ſame proportion. Owing to this dilatation, there is a greater quantity of blood circulating in the part, which is according to the common rules of the animal economy: for, whenever a part has more to do than ſimply to ſupport itſelf, the blood is there collected in larger quantity. The *ſwelling* is produced by an extravaſation of coagulable lymph, with ſome ſerum; but this lymph differs from the common lymph, in conſequence of paſſing through inflamed veſſels; it is this lymph which becomes the uniting medium of inflamed parts; veſſels ſhoot into it, and it has even the power of becoming vaſcular itſelf. The *pain* proceeds from ſpaſm. The *redneſs* is produced either by the arteries being more dilated than the veins, or becauſe the blood is not changed in the veins. When, after an injury, a part cannot be reſtored to health by inflammation alone, or by adheſion, then ſuppuration, as a preparatory ſtep to the formation of granulations, and the conſequent reſtoration of the part, takes place. The veſſels are nearly in the ſame ſtate as in inflammation; but they are more quieſcent, and have acquired a new mode of action. See Hunter on the Blood, Inflammation, &c.

That the capillaries are diſtended in inflammation is pretty generally agreed; and, this allowed, we clearly explain the increaſed ſize of the part, without admitting that lymph is extravaſated, a fact of which we have no proof.

We have not ſpace to enter at full into the proofs of the diſtended ſtate of the capillaries. There is leſs diſcuſſion required about this diſtention, however, than it has been the faſhion to enter into; for it is viſible to the naked eye, and is ſtill more clearly ſhown by the microſcope. The independence of this diſtention on the heart is alſo pretty clearly eſtabliſhed; for we obſerve bluſhing from ſhame or ire, and a redneſs in various parts of the body, without general accelerated pulſe. But, though the diſtention of the capillaries in inflammation is pretty generally allowed, pathologiſts are by no means agreed as to the rate of motion which the blood undergoes in them; ſome, as Wilſon, aſſerting that the velocity of the blood through an inflamed part is diminiſhed; others ſtating that it is increaſed. Dr. Parry ſhows very clearly, that this is of little conſequence to our ſpeculations on this ſubject; but properly remarks, that, if the *velocity* be diminiſhed, yet, the *quantity* being increaſed, the momentum muſt ſtill be greater than ordinary. Again; a queſtion ariſes, whether the arteries retain during inflammation the alternately-contracting force which we have aſſigned to them in health, or whether this power is loſt. The proofs of the firſt alternative reſt on what is obſerved by means of the microſcope on the tranſparent parts of cold-blooded animals; as, for inſtance, on the web of a frog's foot. It is there ſeen, that, on the application of ſtimuli to a certain degree of force and for a certain time, a permanent or unvarying dilatation of the capillaries ſupervenes, and the blood ſeems to move ſlowly. This obſervation is not worth much, however, becauſe even the alternate contractions of the capillaries are not viſible in the ſituation above mentioned, on account of the ſmall ſize of the veſſel. We may adduce a pathological obſervation more ſtrongly corroborative of the inert dilatation of the capillaries in inflammation; which is, that, whereas the exhauſtion of the contents of arteries (not having been thus affected) is met with almoſt invariably, inflamed arteries are not exhauſted of their blood.

The *pain* in inflammation is not eaſily accounted for. That the ſenſibility of the nerves is much increaſed is evident from the extreme uneaſineſs which ordinary impreſſions produce on them when in a ſtate of inflammation; but we are ignorant by what means this pain is produced. It has been attributed to the preſſure of the diſtended capillaries; and this appears plauſible at firſt view; but the idea is oppoſed by the facts, that many parts ſuffer diſtention of their capillary veſſels without pain occurring; and that the pain is often moſt ſevere before this diſtention begins; as for inſtance, after a blow, or in the caſe of gout, in which diſeaſe, as is well known, the coming-on of redneſs and ſwelling often relieves the excruciating pain of the firſt attack; ſo that we are compelled to ſtate increaſed ſenſibility as one of the eſſential circumſtances of inflammation, but we cannot trace the cauſe of its production. The increaſed warmth of the part has been ſuppoſed to depend upon the preſence of an increaſed quantity of blood. But, as the extrication of heat is a proceſs which is dependent upon the nervous ſyſtem, and conſequently influenced by altered conditions of that ſyſtem, the increaſed warmth, and the increaſed evolution of heat, which accompany inflammation,

tion, may be chiefly attributed to the irritated ſtate of the nerves. And accordingly we find, as Mr. Hunter's well-known experiments teſtify, that the heat of internal parts (to which the office of extricating heat does not belong) have not their temperature increaſed during inflammation. It is worthy of remark, that the real increaſe of heat in the inflamed part is not ſo great as the feelings of the ſufferer might lead us to ſuppoſe, the thermometer ſeldom indicating very remarkable changes in this reſpect. To the irritated ſtate of the nerves we muſt therefore look for this ſenſation of exalted temperature.

Mr. Hunter's account of the *redneſs* of the part ſeems very probable, eſpecially if we add to what he has ſaid on the ſubject, that the total want of ſecretion muſt prevent the chemical change on which the darkened colour depends. It appears then, that the two ſtates of exalted ſenſibility of nerves on the one hand, and plethora of the capillary veſſels on the other, account for the four firſt phenomena of inflammation; and it would perhaps preſerve us from much obſcurity in our ſpeculations, if we aſſumed the exiſtence of theſe ſtates without endeavouring to penetrate into the mode of their production.

The two ſtates of altered nervous ſenſibility and altered muſcular or vaſcular contractility, are capable of ſeparate exiſtence. Plethora is well known to produce ſometimes no pain; and the moſt excruciating pain, as for inſtance in tic doulereux, is often unaccompanied by inflammation. In the majority of caſes, however, theſe ſtates ſeem to follow each other. The obſtruction of the circulation in a limb cauſes pain and inflammation; and impreſſions which can only act through the medium of the nerves cauſe the ſame action.

The primary impreſſions which diſorder the properties of an artery, muſt occur through the medium of the nerves, or of the contained blood. From what we obſerve of the effects of an undue degree of nervous influence being tranſmitted to one part, as in caſes of fatigue, &c. we are led to infer, that the exceſſive tranſmiſſion of nervous power brings on two kinds of alteration in the contractility of an artery. It may produce increaſed contraction; and this will ſurely be followed by ſuch a diminution of that force as accords with this remarkable and well-known law obſerved in contractile fibres over the whole body; that they, having exerted their function beyond a certain point, loſe their contractility for a given time. Again; the nature of the nervous impreſſion may be ſuch as to weaken or directly impair the contractility of the veſſel, and thus diſtention of the arteries may occur without any previous contraction.

The alterations induced by the bad *quality* of the blood will be of the ſame two kinds; a direct diminution or direct increaſe of the contractility of the veſſel; the former being leſs uniformly followed by the latter ſtate than when it ariſes from nervous influence. Theſe facts form the baſis of our theory.

It muſt not be forgotten, that this reaſoning with regard to the ſtate of veſſels in inflammation has been thought to be overthrown by ſome, becauſe it is inadequate to explain the various appearances and products; as of inflammation, the different cutaneous phlogoſes, eryſipelas, terminations in gangrene, ulceration, &c. And theſe authors have talked of various kinds of inflammation; as that ariſing from different morbid poiſons, &c. To this we reply, that we do not take inflammation in this wide ſenſe: all we know of the function of the vaſcular ſyſtem of red blood demonſtrates that this ſyſtem is capable only of a change of the contractility of its veſſels; and no diminution or increaſe (and diminution or increaſe are the only changes in contractility of which we can form any clear notion) will account for a variety in the appearance of inflammation. We muſt therefore look to the ſecernent ſyſtem for the various forms of inflammation; and, though the little we know of theſe veſſels keeps us ſtill much in the dark on the ſubject, yet the phenomena in queſtion admit of our forming plauſible and general deductions from the inferred properties of the white veſſels. Indeed the effects of inflammation depend much upon the nature of the ſecretion carried on in particular parts. Thus, when inflammation is ſeated in a mucous ſurface, (i. e. on a ſurface poſſeſſing veſſels which ſecrete and pour out mucus,) an increaſed quantity of mucous fluid will be poured out. When a ſurface upon which exhalants open (or, in other words, a ſerous ſurface) is the ſeat of inflammation, that ſtate is, in many inſtances, followed by increaſed flow from thoſe veſſels. The irritated ſtate of the nerves alone would diſpoſe the exhalants to give paſſage to an increaſed quantity of fluid; and the ſame effect might reſult from ſimple plethora. There are other fluids which are the products of ſuch veſſels as are ſituated in an inflamed part. As the blood furniſhes the materials for all ſuch fluids, ſo will the plethoric ſtate of the blood-veſſels, during inflammation, furniſh an increaſed quantity of thoſe materials, while the ſeparation of them from the blood is influenced, or produced, by the ſtate of the nerves. In each of theſe caſes, we have ſtrong evidence that the ſecernents are the parts peculiarly affected, while the ſtate of the capillaries is the ſame; ſo that we may conclude, that inflammation is in all parts and ſtructures the ſame; i. e. a dilatation of the capillaries, while its various appearances ariſe from the changes which the ſecernents undergo, whether that change be in the pouring-forth of unnatural products, or aſſimilating and retaining thoſe products in their cavities. In other words, that variety of ſecretions is the concomitant, not the eſſential, circumſtance of inflammation. The ſame notion may be extended to ſurfaces in which ſecretions are not poured out, but depoſited in the cellular ſubſtance; as eryſipelas, and various unbroken cutaneous defædations.

We have ſaid, that diſtended capillaries and the extreme ſenſibility of nerves account for the four local phenomena of inflammation—heat, redneſs, ſwelling, and pain. We muſt not forget to mention, that the diſtention of the capillaries is, as Dr. Haſtings has ſhown, generally preceded by increaſed action or excitement, in which the veſſels are ſmaller, and contract probably with greater frequency. This is ſo clearly proved by Dr. H. that we ſhall not relate his experiments or repeat his obſervations, but refer the reader to the ſeries of experiments which he has publiſhed (on bronchitis); the fact is of importance, ſince it ſhows that excitement, which we have been wont to conſider a minor ſpecies of inflammation, is really an oppoſite proceſs.

The diſcuſſion of the general phenomena of inflammation, fever, and the buffy appearance of the blood, requires us to ſhow in what the ſtate denominated *fever* conſiſts, how it is connected with local inflammation, and how a general change in the quality of the circulating fluids ariſes, from the local inflammation or from the general diſturbance.

With regard to the altered quality of the blood, this fluid, taken from a patient labouring under inflammation, exhibits peculiar appearances. The blood, when it has eſcaped out of the living veſſels, ſpontaneouſly ſeparates into two diſtinct parts, the ſerum and the craſſamentum. The laſt is a compound ſubſtance, conſiſting chiefly of coagulating lymph and red globules, the moſt heavy ingredients in the blood. Now it is to be obſerved, that blood taken away from perſons affected with inflammation, is longer in coagulating, and coagulates more firmly, than when drawn from people in other circumſtances: hence the red globules, which are very heavy, not being ſo ſoon entangled in the lymph, deſcend by their gravity more deeply from its ſurface, which, being in this manner more or leſs diveſted of the red colouring matter, is, from its appearance, termed the *buffy coat*, or *inflammatory craſſ*. The firmer and more compact coagulation of the lymph

lymph compreſſes out an unuſual quantity of ſerum from it, and the ſurface of the *ſizy* blood, as it is frequently called, is often formed into a hollow, the edges being drawn inwards. Theſe changes in the blood are, in ſome caſes, a more infallible proof of the exiſtence of inflammation than the pulſe itſelf. In peritoneal inflammation, the patient ſometimes ſeems to be in the moſt feeble ſtate, and the pulſe, abſtractedly conſidered, would rather induce the practitioner to employ tonics and ſtimulants than evacuations; but, ſhould the continuance or exaſperation of the diſorder, or any other reaſon, lead the ſurgeon to uſe the lancet, then the *buffy coat*, the *concave ſurface* of the blood, and the *large quantity of ſerum*, clear away all doubt concerning the exiſtence of inflammation. It is important, therefore, always to inſpect the blood after it is cooled, with a view to the detection of this unnatural ſtate. But every practitioner ought to bear in mind, that, in pregnant women, and in a few anomalous conſtitutions, the blood, taken away by the lancet, always exhibits the foregoing peculiarities, though inflammation may not prevail.

The above alteration in the quality of the blood has never been accounted for. As it is only obſervable in conſtitutions where ſome ſource of nervous irritation is preſent, we ſhould be inclined to refer its appearance to that irritation. We ſhall hereafter have occaſion to ſhow how important a part nervous excitement plays in developing the phenomena of fever; and it is to be remarked, that, while inflammation is merely local, no change takes place in the ſtate of blood in general; but no ſooner has fever become eſtabliſhed, than the blood exhibits the buffy coat. Now, in the inſtance of pregnancy, it will be allowed on all hands, that the gravid uterus is a perpetual ſource of nervous irritation to moſt females; and it has been remarked, that thoſe anomalous conſtitutions in whom this appearance has been always met with have been perſons who exhibited exceſſive ſenſibility in the nervous ſyſtem, or were, in other words, of the nervous temperament.

The action of the nervous ſyſtem may produce this change in the blood by the diſproportionate evacuation of the elements of the blood, as in exceſſive ſecretion, or by the undue retention of ſome of theſe parts; both of theſe diſturbances being of courſe effected by the action of the nerves on the ſecreting veſſels. The preſent ſtate of our knowledge does not permit us, however, to ſhow in what ſtructures this conjectured deprivation or retention is effected.

In conſidering the next general ſymptom of inflammation, *fever*, we ſhall enter into a full account of the febrile ſtate, both idiopathic and ariſing from this action, or, as it is termed by ſurgeons, ſymptomatic fever. We have gone ſo far into the ſubject of inflammation, becauſe it was neceſſary to the right underſtanding of the febrile phenomena we have next to explain. Theſe general views having been taken, we ſhall trace the various forms inflammation exhibits in the different ſtructures, and the different changes in ſecretion which accompany it, when ſpeaking of Phlogotica, the ſecond order of this claſs.

It is generally allowed that no general definition of fever, capable of embracing all its varieties, has been given. A general alteration is found in the organic, oftentimes in the animal, functions, the former ſuffering the firſt changes. The ſanguineous and muſcular ſyſtems are alſo altered; and, when the diſeaſe is eſtabliſhed, all the functions ſeem impeded together. This ſtatement, that fever conſiſts in an alteration ſolely of almoſt all the functions of the body, is, it muſt be confeſſed, extremely vague; yet it is the only one which will embrace all the varieties of fever; for caſes are recorded where the heat was not exalted without the pulſe being ſenſibly augmented, and vice-verſa; and ſo on of every other function.

Order I. PYRECTICA, [πυρέλος, Gr. from πυρ, fire.] Fevers.

Here we have the heat and number of the pulſe preternaturally augmented; uſually preceded by rigor, and followed by perſpiration; pains fixed and wandering; laſſitude, debility of mind and of the voluntary muſcles.

In our introduction we have mentioned ſome of the moſt remarkable opinions as to the eſſential nature of fever. The ſpeculations of Brown and Darwin were noticed; and many have ariſen ſince; but there are few which we now deem worth detailing. The firſt which, from the ſtrong facts by which it is ſupported, is deſerving of notice, is the theory of Dr. Clutterbuck. We ſhall copy from the article FEVER of Dr. Rees's Cyclopædia, Dr. Bateman's (this gentleman being underſtood to be the writer of that article) expoſition of Dr. Clutterbuck's theory, and his luminous objections; reſerving our own remarks for the end of it.

Dr. Clutterbuck's Theory.—Fever has uſually been called a *general* diſeaſe, affecting all the functions, in contradiſtinction from *local* diſeaſes, in which ſome particular organ is the primary ſeat of the diſorder, and the affections of the other functions are ſecondary or ſymptomatic. But Dr. Clutterbuck denies the exiſtence of general diſeaſe, and maintains that all general or extenſive derangement of the animal ſyſtem is referrible to local derangement in ſome one organ. The organ univerſally affected in all the varieties of idiopathic fever, which differ but in degree, as well as in thoſe which ariſe from ſpecific contagion, as malignant ſore throat, ſcarlet fever, ſmall pox, &c. is, in the author's opinion, the *brain*. This is manifeſt, he contends, from the ſymptoms, as the head-ache, the depreſſion of ſtrength, and other derangement of the animal functions, the delirium, the tremors, failure of viſion, &c. It is manifeſt from the nature of the remote cauſes which act chiefly on the brain and nervous ſyſtem, as intoxication, fear, grief, and other paſſions, external irritation, not to mention miaſmata and contagion, of the operation of which we are ignorant; as well as from the prediſpoſing cauſes, which probably conſiſt in a deficiency of ſenſibility, as in idiots, negroes, old people, and *infants*: but it is more particularly manifeſt from the conſequences of fever, whether after recovery, or after death, aſcertained in the latter caſe by diſſection. Among the conſequences of fever, which are not uncommon after recovery, are an impaired condition of the ſenſes; ſuch as deafneſs, imperfect viſion, depraved taſte; paralytic affections, or convulſive complaints, as epilepſy and chorea; derangement or loſs of the mental powers, ſuch as melancholy, great irritability of mind, loſs of memory, or even complete fatuity. The conſequences obſerved on diſſection, after death occaſioned by fever, are frequently viſible diſeaſe of the brain, of which ſeveral examples are quoted by the author. He then proceeds to ſhow, that the local affection of the brain, thus manifeſt, is in fact *inflammation* of that organ; or that fever, therefore, "is nothing leſs than a ſpecies of *phrenitis*, or topical inflammation of the brain," and ſhould be arranged in the order of *Phlegmaſiæ*, with pleuriſy, enteritis, and other ſymptomatic fevers: but, as *Phrenitis* has been generally applied to a particular form of inflammation of the brain, and implies delirium, which does not always occur in fever, although it is a frequent ſymptom, Dr. Clutterbuck propoſes the term *Encephalitis* as the denomination for fever. The arguments adduced in proof of the notion that the topical affection of the brain, in fever, is inflammation, are, 1. The analogy between the ſymptoms of fever and thoſe of inflammation, viz. pain, heat, throbbing, acute ſenſibility, &c. being common to both. 2. The occaſional buff of the blood in both. 3. The ſimilarity of ſeveral of the exciting cauſes of both. 4. The occaſional alternation of fever with inflammation. 5. The analogy in regard to the cure of the two diſeaſes generally, as by means of blood-letting, vomiting, ſweating, purging, bliſtering, and the application of cold. 6. The ſymptoms

of fever not being diſtinguiſhable, on the whole, from thoſe which belong to phrenitis, as deſcribed by authors. 7. That the morbid condition of the brain, diſcovered by diſſection, is ſuch as implied previous inflammation.

"In the firſt place," ſays Dr. Bateman, "Dr. Clutterbuck, like other theoriſts enamoured of a favourite doctrine, appears to have laid too great ſtreſs upon thoſe phenomena which ſupport that doctrine, and to have conceded leſs to oppoſing facts than they are entitled to claim. Hence, in retracing the delineations of fever, in the words of the moſt creditable writers, he has diſtinguiſhed by italics all thoſe ſigns which indicate derangement of the encephalon, by which they are made to ſtand the moſt prominent features in the picture. Hence, alſo, he has aſſumed the poſition, that the derangements of the natural and vital functions, which are nearly, if not altogether, as univerſal concomitants of fever as the diſorders of the animal functions, are nevertheleſs, in all caſes, ſecondary ſymptoms, originating from the primary affection of the brain. Thus the nauſea, the vomiting, the total loſs of appetite and of the digeſtive power, are believed to be always ſympathetic of the affection of that organ; ſo likewiſe is the quickened action of the heart and arteries, and of the reſpiration. That this, however, is a gratuitous aſſumption, may be ſhown, 1. By attending to the very hiſtories which Dr. Clutterbuck has quoted, in which the occurrence of the deranged condition of the ſtomach is as conſtantly mentioned as that of the diſorder of the encephalon. 2. By obſerving, that the ſympathy between the brain and the ſtomach is perfectly reciprocal; ſo that the brain ſuffers in ſympathy with the ſtomach, not leſs manifeſtly than the ſtomach with the brain. 3. By remarking, that the ſymptoms of diſordered ſtomach are capable of being relieved or removed, while the ſuppoſed cauſe (affection of the brain) remains; the thirſt being allayed, and the ſickneſs removed, by changing the ſtate of the ſkin only, the former by moiſtening it with water, the latter by exciting ſweat, as obſerved by Sydenham. Whence Drs. Cullen and Darwin ſeem to be rather juſtified in attributing the derangement of the ſtomach, when it is affected ſecondarily, more frequently to its ſympathy with the ſtate of the ſkin than of the brain.

"Farther, the connexion of many of the leading ſymptoms with ſome diſorder of the brain, or common ſenſorium, is admitted by all, and equally favours the hypotheſis of the other authors, as well as that of Dr. Clutterbuck; ſince, whether the brain is primarily or ſecondarily affected, certain phenomena in the nervous ſyſtem muſt neceſſarily enſue. We have juſt ſtated ſome reaſons for believing that it is often thus ſecondarily affected; and it now remains to offer our reaſons for ſuppoſing that inflammation of the brain, when it does occur in fever, (to which we cannot conſider it as eſſential,) is commonly ſecondary likewiſe.

"The firſt ſymptoms of the affection of the brain are by no means thoſe which indicate inflammation or unuſual excitement of the ſenſorium; on the contrary, they are ſuch as indicate an oppoſite ſtate, which Dr. Cullen has termed *atony* and *collapſe*, and Dr. Darwin *torpor*; the head-ache itſelf, according to the obſervation of Dr. Fordyce, is altogether diſtinct from the head-ache of inflammatory excitement, or of the hot ſtage. Any ſymptoms that can be interpreted as indications of local inflammations, ſuch as redneſs of the eyes, protruſion of the features, flushed countenance, throbbing of the arteries, and even delirium, are the appearances belonging to a ſubſequent period of the fever. But at this ſubſequent period, inflammatory congeſtions are liable to occur in the other viſcera, if not ſo frequently, at leaſt not unfrequently; as in the ſtomach, for example, the inteſtines, the lungs, and other organs. This fact has been noticed by many phyſicians of accurate obſervation. Riverius long ago remarked, that acute and malignant fevers ſcarcely ever occur unaccompanied by inflammation in ſome one of the viſcera; and he has ſtated in another place in moſt diſtinct terms, that we ought aſſiduouſly to recollect, that all thoſe fevers, with which local inflammation is conjoined, are not ſymptomatic, but often idiopathic, and that the inflammation ſupervenes, not being the cauſe but the conſequence of the fever; *quæ febrem iſtam non efficit, ſed illi potius ſuccedanea eſt.* Thus, he adds, 'We frequently obſerve in practice, that patients labour under continued fever for a day or two before pain of the ſide and other ſymptoms of pleuriſy appear; thus alſo many perſons on the third or fourth day of fever fall into inflammation of the brain, &c. *Sic nobis frequenter in uſu practico videre licet ægrotantes, ab initio febre continua laborantes per unam aut alteram diem antequam dolor lateris et alia pleuritidis ſigna apparcant: ſic* multi *tertia vel quarta febris die in* phrenitidem *incidunt, &c.*' (River. Prax. Med. lib. xvii. cap. i.) Dr. Donald Monro, whoſe teſtimony on ſubjects of morbid anatomy is of conſiderable weight with Dr. Clutterbuck, remarks, when ſpeaking of malignant fever, that 'this fever occaſions in general more or leſs redneſs (I do not know that we can properly call it true acute inflammation) of the membranes; and the febrile matter is apt to fall on particular parts, and there to create abſceſſes, particularly in the brain, the lungs, and the glandular organs.' (Treatiſe on Military Hoſp. vol. i. p. 237. and Dr. Clutterbuck's Treatiſe, p. 172.) Obſervations to this effect might be eaſily multiplied, and we have already enumerated ſeveral in a former part of this article. It is ſomewhat ſingular, that Dr. Clutterbuck, who quotes the remark of Dr. Monro, ſhould deem it favourable to his hypotheſis of excluſive inflammation of the brain; ſince it obviouſly proves an equal liability to inflammation in other organs, if it proves any thing. Now, it muſt be admitted, that, if fever depends upon inflammation of the brain, and is merely ſymptomatic of ſuch a ſtate, this ſtate muſt be always preſent, when the ſymptoms of fever occur; one clear negative example is ſurely fatal to the theory. Dr. Beddoes collected a conſiderable quantity of evidence from the hiſtories of diſſections, made during the prevalence of ſeveral epidemic fevers on the continent; from which it is proved, indeed, that congeſtion, or ſome other morbid appearance, was frequently obſerved in the brain or its membranes; but it is alſo ſhowing, that abſceſſes, gangrene, or other marks of inflammation, were not leſs frequently found in the viſcera of the thorax and of the abdomen, eſpecially in the ſtomach and liver. Theſe facts we have detailed, when ſpeaking of the conſequences of fatal fevers, as diſcovered by diſſection; and it is unneceſſary to repeat them here. Dr. Beddoes is fairly led (ſuppoſing the facts accurately repreſented) to this inference, that, in idiopathic fever, the ſtomach and contiguous parts have been found more conſtantly and more deeply affected with inflammation, than the brain and its membranes. (Reſearches, Anatomical and Practical, concerning Fever, &c. by T. Beddoes, M. D. publiſhed in 1807.) But, leſt the teſtimony of authors of little note may be queſtioned, we ſhall quote that of one of the moſt able and experienced of our hoſpital-phyſicians, Dr. Lind of Haſlar. Speaking of a deſtructive contagious typhus, which prevailed in the French fleet in 1757, he ſays, 'the ſymptoms of the fever were the ſame as we have already given in the deſcription of the gaol-diſtemper. On diſſection, the *brain* of thoſe who died was found *perfectly ſound*, though during their ſickneſs the head had always ſeemed greatly affected: in two caſes only, out of twenty which were inſpected, the blood-veſſels of it appeared a little enlarged. The *lungs* were generally found gorged with blood, and ſeemed to have a gangrenous diſpoſition. The *abdomen* more immediately ſuffered by the diſeaſe, particularly the *liver*, *ſtomach*, and *inteſtines*; in the inteſtines there was often found a green offenſive liquor, ſometimes worms.' (See Lind on Fevers and Infections, chap. iv. ſect. 3.)"

For

For theſe reaſons Dr. B. concludes, "that inflammation occurs only occaſionally in the brain; that this organ is liable to inflammation only in common with the other viſcera; and that inflammation is in all the organs a ſecondary reſult of fever, and not its eſſential cauſe. In this view of the ſubject, all the arguments from analogy between fever and inflammation, which Dr. Clutterbuck has brought forward, may be (and indeed muſt be) admitted; while, at the ſame time, they add no weight to his theory: for the analogy is equally favourable to the notion of a ſecondary as of a primary occurrence of inflammation. And we cannot but obſerve, before we take leave of theſe doctrines, that the analogies which Dr. Clutterbuck has pointed out, as well as the various facts which we have quoted from Riverius, Monro, Beddoes, and Lind, tend to confirm the hypotheſis of Darwin, under which theſe facts, contradictory as they are, to the opinions of Dr. Clutterbuck, are reduced to a perfect conſiſtency." It may be added, that a doctrine, according moſt accurately with that of Dr. Cl. is taught by Dr. Ploucquet, in the univerſity of Tubingen.

Now, ſpeculating upon this contention between the two moſt eminent writers on the fever of this country, it will appear, that Dr. Clutterbuck's hypotheſis is neither proved by himſelf nor refuted by his antagoniſt. For, ſuch is the ſympathy between all parts of the body, that, if inflammation of the brain be produced, a general increaſed action of the heart and arteries occurs, and thoſe parts prediſpoſed to inflammation will take on that action, or inflammation ariſing on other parts will as ſurely diſturb the cerebral. The ſucceſſion of ſymptoms does not overthrow this theory, becauſe, though the firſt ſymptoms denote diminiſhed energy of the brain, ſuch a ſtate is, according to a law before laid down, moſt likely to be followed by the oppoſite ſtate.

To the teſtimony of Lind and others, Dr. Clutterbuck objects, that we are not acquainted with the appearance of a brain perfectly ſound; and the changes in that delicate ſtructure muſt often be inſcrutable; and he thinks that few perſons die without ſome morbidity of the brain. We are not, however, diſpoſed to advocate the opinion of Dr. Clutterbuck (principally for the laſt objection, which his anſwer does not overthrow), but to ſhow that it is not much affected by the arguments in queſtion; and we have no heſitation in ſaying, that, whether as a cauſe or a conſequence, inflammation of the brain is more generally found in the fevers of this country than anyother kind of leſion, as indeed we ſhould naturally expect to find in civilized ſociety, where the brains of the inhabitants are for the moſt part in a ſtate of unnatural excitation. We ſhould therefore pay the greateſt attention (at leaſt in fevers of this country) to the occurrence of inflammation of the brain.

With reſpect to the *gaſtric* origin of fever, hinted at by Dr. Bateman in the preceding extract, and which when firſt promulgated obtained few ſupporters; it is remarkable, that it is now believed in (with ſome modification) by many of the moſt eminent continental pathologiſts, among the firſt of whom is Brouſſais. This author conceives that the plague, and all varieties of fever, whether adynamic, ataxic, typhous, or yellow, are nothing elſe than various ſpecies of inflammation of the mucous membranes of the ſtomach and ſmall inteſtines, differing in their degrees of violence, as well from the peculiar conſtitution of the patient, as the cauſes which may have produced them. M. Brouſſais terms theſe maladies *gaſtro-enterites*, not becauſe he believes that, in all caſes, the ſtomach and inteſtines are irritated in the ſame degree, but becauſe the affection which commences almoſt conſtantly in the firſt of theſe organs is quickly propagated to the ſecond; and from the curative indications being the ſame, whatever may be the part moſt violently affected. He endeavours to point out, from the ſymptoms, the principal ſeat of irritation in the different ſtages of the diſeaſe. When it is violent, and has continued for a certain length of time, he has conſtantly obſerved that it has been communicated throughout the whole extent of the ſuperior portion of the digeſtive canal. The large inteſtines are, however, ordinarily free from diſorder; and, when they are implicated, the particular ſymptoms give notice of it to the attentive practitioner. In proof of this theory, Brouſſais aſſerts that all the modifications of the *gaſtro-enteritis* preſent the following ſymptoms: loſs of appetite; more or leſs of urgent thirſt; on the centre of the tongue a coating, which is variable in thickneſs, denſity, and colour; and, about the point and lateral parts of that organ, a redneſs that varies in colour from a roſe-tint to the moſt fiery hue: appearances always noticed by authors who have written of fever, but which M. Brouſſais conſiders as moſt poſitive and conſtant ſigns of gaſtric irritation. The heat of the ſkin being increaſed, particularly about the abdomen and the epigaſtric region, and its conveying a ſenſation of roughneſs to the hand, is generally, according to this author, the effect of irritation of the mucous membrane of the digeſtive organs. The morbid actions, manifeſted in the nerves and the brain, as depreſſion of ſpirits, moroſity, cephalalgia, even the moſt profound ſtupor and depreſſion of the nervous power, or, on the contrary, the moſt furious delirium, are conſidered to be the reſult of ſympathy with the ſtomach and ſmall inteſtines; as alſo the violent and almoſt inſupportable pains in the joints which attend ſome fevers.

In examining the moſt frequent cauſes of febrile diſeaſes, M. Brouſſais thinks we find evidence of exiſting irritation of the mucous membrane of the ſtomach and ſmall inteſtines, becauſe thoſe cauſes act, either directly or indirectly, on the digeſtive ſyſtem. Thus, repeated errors of regimen, the ingeſtion of acrid and irritating ſubſtances, the influence of putrid miaſmata, &c. appear in the firſt order; amongſt thoſe of the ſecond may be counted thoſe miaſmata which, being received into the ſyſtem through the ſkin, or by the reſpiratory or digeſtive organs, always evince their influence on the latter; exceſſive heat of the atmoſphere, which excites the ſkin, and ſympathetically the ſtomach and ſmall inteſtines, &c. Moreover, gaſtric irritation, as all authors have obſerved, is very often the precurſor of *gaſtritis*, in the common application of this term, or of gaſtric, mucous, and ataxic fevers, which ſucceed each other in the above order in the ſame individual. The cauſes that produce typhus, yellow fever, and plague, ſometimes confine their influence to the determination of a ſlight degree of gaſtric irritation. In the progreſſive increaſe of the ſymptoms which characterize the paſſage of the malady from the moſt trifling to the moſt violent form, Brouſſais thinks it is abſolutely impoſſible to obſerve any exact period at which the affection preciſely changes in its nature: every thing, on the contrary, indicates that it is the ſame organic leſion, acquiring more intenſity, and producing more alarming ſympathetic affections. He therefore ſees no reaſon which ſhould authorize us to divide the collection of ſymptoms into two, three, or more, ſections, and to ſay that two or three different maladies have ſucceeded to each other.

From the effects of medicines, which may lead us to recognize the nature of diſeaſes he ſtill ſees further corroboration of the theory in queſtion. Having ſhown that antiphlogiſtic meaſures are thoſe which moſt frequently ſucceed in the maladies of which we treat, and that, the fortunate reſults he has obtained from their application are beyond any compariſon in extent with the ſucceſs that has enſued from contrary modes of treatment; he raſhly infers, that tonics and ſtimulants increaſe the febrile commotion, becauſe they ſtimulate the inflamed ſurface. But the ſtrongeſt evidence of the theory of Brouſſais is drawn from his numerous diſſections. "On the termination of gaſtro-enteritis, or of the numerous maladies which

which repreſent the different degrees of that affection, we always find the conſequences of inflammation of the digeſtive canal; but the aſpect and nature of theſe remains of organic irritation preſent ſeveral varieties, the knowledge of which is of conſiderable importance. When the diſeaſe has been but of ſhort duration, we ſometimes find the tunics of the ſtomach and inteſtines injected with blood, and preſenting throughout their whole extent, even on their external ſurface, a roſe-coloured hue that is not natural to them, without diſcovering manifeſt inflammation of any determined portion of the mucous membrane. This ſhows that theſe organs have been the ſeat of irritation that has occaſioned an inordinate afflux of blood to thoſe parts, but that inflammation had not developed itſelf. We may compare this ſtate to that of apoplexy, where the veſſels of the brain are found diſtended with blood, without any effuſion having taken place. It would not, however, be right to repreſent to ourſelves the mucous membrane as little coloured with blood during life as we may find it after death: the tongue is very often of a bright red colour in the patient, but becomes pale and diſcoloured in the dead body. It ſeems that irritation muſt have continued for a conſiderable length of time to render the colour of the parts permanent after death; that is to ſay, to combine a certain quantity of the red fluid with their tiſſue."

In general, whatever may have been the diſorder obſerved in the ſuperior parts of the inteſtinal canal, the inferior portion (that is, the large inteſtines) is unaffected. But, when gaſtro-enteritis has been accompanied with diarrhœa or dyſentery, we find traces of inflammation of the latter parts alſo; this extent and complication of organic leſion conſtitutes the epidemic dyſentery.

A theory ſimilar to this has much obtained in America. Dr. Chapman, profeſſor of medicine in the univerſity of Pennſylvania, (in his Elements of Therapeutics,) ſtates, that "fever, whatever may be the cauſe, is always a diſeaſe of *ſympathy*, having the primary link of its ultimately lengthened and complex chain in the ſtomach. It is upon this organ that contagion, marſh-effluvia, and other noxious matters, act; and hence, preciſely as in the caſes of poiſon, a local irritation at firſt occurs, which, if not at once arreſted, ſpreads itſelf, by multiplying the trains of morbid aſſociation, till the diſeaſe becomes general, involving more or leſs every part of the animal economy."

Dr. Harriſon (in the Gulſtonian Lecture for the year 1820) has adopted a theory identical with that of Brouſſais. He ſays, "Fever I conſider to be a derangement of certain functions of the body, dependant on irritation of ſome particular part, which becomes a cauſe of diſturbance to the reſt of the ſyſtem by means of the ſympathy exiſting between its ſeveral organs. But irritation of any part will not give riſe to fever; and it appears, that it is irritation of *one organ ſolely* that will produce this effect, and that organ is the *mucous membrane*. The functions deranged in fever are thoſe of the ſecretory organs: hence the morbid ſtate of the ſecreted fluids, and the alteration of the temperature of the body. From the derangement of theſe functions ariſe all the eſſential phenomena of fever. The increaſed frequency of the action of the heart and arteries, and the *diſturbance of the intellects*, which ordinarily accompany it, *are accidental phenomena*, and are not neceſſary in order to conſtitute fever. The intellects are often not diſordered; and we not unfrequently obſerve typhous fever run its whole courſe without any increaſed frequency of the pulſe.

"Diſturbance of the functions of the brain is a *general attendant* on all ſevere febrile diſorders, and, as it is here ſhown, is an effect of the local diſeaſe already deſcribed; the delirium being *in a direct ratio* with the inflammation of the mucous membranes; as indicated by the inflamed conjunctiva, and other evidences of this ſtate." Dr. H. likewiſe aſſerts, that the moſt ſtrongly marked caſes of inflammation of the mucous membrane of the ſtomach often commence in this way. The patient at firſt ſuffers an inordinate craving for food, which is not immediately removed by the introduction of aliment into the ſtomach; it however uſually ſubſides in about half an hour or ſo; but it re-appears ſoon afterwards with increaſed violence; and in a ſhort time, as a few days, eſpecially if ſtimulating food is taken, it becomes a ſenſe of abſolute pain, attended with nauſea, vomiting, and diſguſt for every kind of alimentary matter, except cool and unirritating liquids. This has often been obſerved in yellow-fever, the origin of which is one of the moſt ſevere forms of inflammation of the mucous membrane of the ſtomach and duodenum. The diſorder of the ſtomach above deſcribed is not unfrequently the only ſign of the approaching diſeaſe for one or two days; and we may often witneſs the ſame circumſtances in the ſeveral forms of fever that occur in our own climate.

"Fever does not immediately reſult from irritation of any other part. We find extenſive and very ſevere inflammation of ſerous and cellular membranes, and of the fibrous and bony ſtructures, and no fever exiſts: but, if the irritation of any of thoſe parts be participated by the mucous membranes, all the phenomena of fever immediately appear."

This theory has been by ſome confounded with the luminous one of Dr. Jackſon; but it certainly differs widely in this point. Dr. Jackſon ſhows that the mucous membrane of the ſtomach is the part which ordinarily receives the impreſſion of contagious effluvia, and that the ſame membrane does frequently take an inflammatory action; but he is far from aſſerting with Brouſſais and Harriſon, that inflammation of this membrane is the eſſential cauſe of fever; i. e. that without which it cannot exiſt. Again, M. Brouſſais is conſcious that the firſt impreſſion giving riſe to the phenomena of fever always affects the *mucous membrane of the ſtomach*, either from the exciting cauſe having been immediately applied to this organ, or from its ſympathiſing with ſome remote part in a ſtate of irritation; and, unleſs ſuch a ſympathy happens in the latter caſe, he conſiders that real fever cannot ariſe. Dr. Jackſon equally inculcates the doctrine of the local origin of contagious fever, but he does not fix this origin in any part excluſively; and he, beſides, conſiders that *the ſkin itſelf*, properly ſpeaking, or the cutaneous envelopment of the exterior of the body, as well as the mucous membrane of the lungs and alimentary canal, may be the part firſt affected; and that the irritation of this organ may excite in the ſyſtem the whole of the phenomena to which the generic term *fever* has been applied, without the mucous membrane of the ſtomach being neceſſarily intereſted in the production of the ſeries of ſymptoms; though he ſtates that ſuch an implication does take place in by far the greater proportion of inſtances.

The other point of difference, is the part of the nervous ſyſtem which forms the medium through which the ſymptoms are developed; though the reality of a difference in this reſpect is not very evident. Dr. Jackſon deſignates it as the *ſenſorium;* by which it appears he means the cerebral ſyſtem: though he may intend only to ſignify the *principle of ſenſibility* generally, without ſpecifying the particular parts in which it may be ſeated. M. Brouſſais conſiders the ganglionic nerves as the eſſential organs by which the ſympathies in queſtion are produced.

The next pathologiſt whoſe theory of fever demands our attention is Dr. Nicholls. We quote from his excellent "Pathology." A particular and methodic analyſis of the ſymptoms which conſtitute the ſeveral ſtages of the morbid condition of the ſyſtem which is thus termed, leads him to conclude that the *early ſtage* of it reſults

reſults from "diminiſhed ſenſibility of the nervous ſyſtem; diminiſhed action of the heart; a contracted ſtate of the ſmall arteries." The *height* of it, from "increaſed ſenſibility of the nervous ſyſtem; increaſed action of the heart; increaſed flow of blood through the ſmaller arteries, the oppoſition which is made by the exertion of the contractile power of theſe veſſels being overcome by the increaſed action of the heart." The *decline* from "diminiſhed ſenſibility of the nervous ſyſtem; enfeebled action of the heart; relaxed ſtate of the ſmall arteries."

The reſpective ſtates of the ſeveral ſtages above enumerated, Dr. Nicholl conſiders, may occur in either of the three following orders: "1. Contraction of the ſmall arteries; diminiſhed action of the heart; torpor of the nervous ſyſtem. 2. Diminiſhed action of the heart; torpor of the nervous ſyſtem; contraction of the ſmall arteries. 3. Torpor of the nervous ſyſtem; contraction of the ſmall arteries; diminiſhed action of the heart."

Adverting then to the ſubſequent phenomena, Dr. Nicholl ſays, that "theſe three ſtates having exiſted an uncertain time, a new order of ſtates ariſes. The action of the heart becomes increaſed, increaſed ſenſibility of of the nervous ſyſtem takes place, and an increaſed quantity of blood is received by the ſmall arteries. Theſe three changes may take place in varied order; for inſtance: the increaſed action of the heart may firſt ariſe: this may produce a removal of the torpor of the nervous ſyſtem; and it may, by increaſing the momentum of the blood, overcome the reſiſtance which is offered by the exertion of the contractile power of the ſmall arteries to that fluid. Or, the ſenſibility of the nervous ſyſtem may become increaſed; and to this altered ſtate of that ſyſtem may ſucceed increaſed action of the heart, and a more copious flow of blood through the ſmall arteries. Or, if the contracted ſtate of the ſmall arteries give way, a more free and powerful action of the heart may follow, and the torpor of the nervous ſyſtem may be removed."

The ſtates which produce the ſymptoms of the ſecond ſtage of fever may, then, occur in either of the three following orders, viz. 1. Increaſed action of the heart; increaſed flow through ſmall arteries; increaſed ſenſibility of nervous ſyſtem. 2. Increaſed ſenſibility of nervous ſyſtem; increaſed action of heart; increaſed flow through ſmall arteries. 3. Diminiſhed contraction of ſmall arteries; increaſed action of heart; increaſed ſenſibility of nervous ſyſtem.

"Having arrived thus far in our inquiry, let us return to the ſtates which produce the ſymptoms of the firſt ſtage of fever. Let us ſuppoſe a caſe in which *increaſed contraction of the ſmall arteries* is the firſt effect of the primary cauſe of fever. In ſuch a caſe, the reſiſtance offered by thoſe arteries to the current of the blood may induce an obſtructed ſtate of the general round of the circulation, whence will enſue a turgid condition of the larger arterial and venous trunks, and of the cavities of the heart; and from theſe effects will ariſe an oppreſſed and an over-powered ſtate of the action of the heart. The obſtructed ſtate of the circulation will lead to a turgid ſtate of the cerebral blood-veſſels; which effect, as well as the want of a free ſupply by thoſe veſſels of blood which has duly undergone the pulmonic proceſs, will induce torpor of the cerebral ſtructures, and, from the torpid ſtate of thoſe ſtructures, as well as from the diminution of the quantity of blood received by the ſmall arteries, will enſue diminiſhed ſenſibility of the nerves in general. Thus will the ſeveral cauſes of the ſymptoms of the *early ſtage* of fever be preſent.

"The action of the heart, at firſt overpowered by the reſiſtance offered to the blood by the ſmall arteries, and ſtill more enfeebled in conſequence of the diminiſhed ſenſibility of the nervous ſyſtem, may gradually become increaſed. It may become increaſed, poſſibly, from its own powers of contraction having acquired an accumulation of energy during its oppreſſed ſtate, or in conſequence of increaſed ſenſibility of the nervous ſyſtem; or perhaps, in ſome inſtances, owing to a diminution of the contraction of the ſmall arteries, and a conſequent diminution of oppoſition to the action of the heart. Should the action of the heart become increaſed, the momentum of the blood will be increaſed, and conſequently the reſiſtance offered by the ſmall arteries may be borne down; in which caſe the freedom of the circulation will be reſtored. The removal of the obſtructed ſtate of the circulation, and the diſtribution of an increaſed quantity of blood throughout the nervous ſyſtem in general, will remove the cauſes of torpor of that ſyſtem. Torpor of the cranial brain is, in many inſtances, ſucceeded by a degree of ſenſibility of that ſtructure greater even than that which immediately preceded the inſenſible ſtate of it. This is conſtantly the caſe after ſleep. So alſo an inſenſible ſtate of the nerves in general is, in many inſtances, ſucceeded by a degree of ſenſibility greater than that which immediately preceded the inſenſible ſtate. In the caſe under conſideration, then, it may happen that the torpor which prevailed in the early ſtage of fever may, after it has exiſted for ſome time, gradually be reſolved into a ſtate of increaſed ſenſibility. The preſence of increaſed ſenſibility of the nervous ſyſtem will be followed by increaſed action of the heart, and by the flow of an increaſed quantity of blood through the ſmall arteries. Thus may thoſe ſtates be formed which give riſe to the ſymptoms attendant on the *ſecond ſtage* of fever.

"Suppoſe that torpor of the cerebral ſtructure is the firſt effect of the primary cauſe of fever. Such a ſtate will give riſe to general inſenſibility. The action of the heart will be diminiſhed, and the contraction of the ſmall arteries will be increaſed. The increaſed contraction of theſe arteries will, as we have ſeen, tend to produce an enfeebled action of the heart; and a diminution of the action of the heart leads, as we have alſo ſeen, to increaſed contraction of the ſmall arteries. Thus may the cauſes of thoſe ſymptoms which attend the early ſtage of fever be preſent.

"If the torpor of the cerebral ſtructures, after it has exiſted for an uncertain time, ſubſides, and is ſucceeded by a degree of ſenſibility even greater in degree than that which preceded it, ſuch new condition of the cerebral ſtructures will be attended by increaſed ſenſibility throughout the nervous ſyſtem generally: increaſed quantity of blood will flow through the ſmall arteries. Thus thoſe ſtates will be eſtabliſhed which give riſe to the ſymptoms attendant on the ſecond ſtage of fever.

"If diminiſhed action of the heart be the firſt effect of the cauſe of fever, diminution of the momentum of the blood will enſue, to which will ſucceed increaſed contraction of the ſmall arteries and torpor of the cerebral ſtructures, and conſequently, a general diminution of the ſenſibility of the nervous ſyſtem. And thus thoſe ſtates will be formed which produce the ſymptoms of the early ſtage of fever.

"When theſe ſtates have exiſted an uncertain time, if, as we have ſuppoſed, the heart be enabled, from changes which take place within itſelf during its ſtate of inactivity, to act with a degree of force even greater than before; the momentum of the blood will be increaſed, and the reſiſtance of the ſmaller arteries will be overcome The torpor of the cerebral ſtructures will be removed, and a preternatural degree of ſenſibility of thoſe ſtructures may ariſe, not only as a conſequence of an increaſed flow of blood through their blood-veſſels, but poſſibly, as we have ſuppoſed, as a conſequence of the previous ſtate of torpor. The increaſed ſenſibility of the cerebral ſtructures will induce a general increaſe of ſenſibility throughout the nervous ſyſtem, and will cauſe the action of the heart to be ſtill more forcibly exerted. Thus, in various ways, thoſe ſeveral ſtates which characterize the ſecond ſtage of fever will be eſtabliſhed. During the exiſtence of the ſecond ſtage of fever, although an increaſed quantity of blood flows through the ſmall arteries, yet this increaſed flow appears to ariſe, in the

generality of caſes, not from ceſſation or diminution of contraction in thoſe veſſels, but from the increaſed action of the heart enabling the blood to force its way into, and through, theſe arteries, in ſpite of the oppoſition which is offered by their contractile power to that fluid. So that, in the ſecond ſtage of fever, there is, as it were, a continued conteſt and ſtruggle between the action of the heart and the contractile power of the ſmall arteries, the balance of power being conſtantly in favour of the former.

"We now proceed to the conſideration of the laſt ſtage, or the *decline* of fever. We obſerve that, whenever a high degree of ſenſibility of the nervous ſyſtem has exiſted for ſome time, it is, ſooner or later, ſucceeded by a ſtate of torpor, the degree of which is proportionate to the duration and the degree of the preceding ſenſibility. We alſo find that, when a high degree of action has been kept up for ſome time by the heart, a languid action of that organ ſooner or later ſucceeds; the degree of languor being proportionate to the duration and the degree of the preceding ſtrength of action. When a high degree of reſiſtance to the momentum of the blood has been offered, for a length of time, by the contractile power of the ſmall arteries, the exertion of that power will, ſooner or later, become enfeebled, or will be ſuſpended; the diminution of that exertion being proportionate to the degree and duration of its previous activity.

"We have traced the various ways in which thoſe ſtates which characterize the ſecond ſtage of fever may be formed. Let us ſuppoſe that, in either of thoſe ways, theſe ſtates have been produced. The high degree of ſenſibility of the nervous ſyſtem; the high degree of action on the part of the heart; the ſtrong, but unavailing, reſiſtance of the ſmall arteries, may ſeverally laſt an uncertain time. The natural conſequence of each of theſe ſtates will be, as we have juſt ſeen, the formation of an oppoſite ſtate. The high degree of ſenſibility will give place to torpor; the powerful action of the heart will ſubſide into feeble contraction; the ſtubborn reſiſtance of the ſmall arteries will give way. Accordingly we find that theſe natural conſequences are preciſely the occurrences which are met with in the laſt ſtage of fever. The ſenſibility of the nervous ſyſtem becomes diminiſhed in proportion to the duration and degree of its previous increaſe. The action of the heart becomes feeble. Both theſe new ſtates favour the increaſe of each other. The contraction of the ſmall arteries gives way; the ſtruggle between theſe veſſels and the heart is at an end, ſo that the contraction of the heart, although enfeebled, may ſtill be able to carry on the circulation of the blood; and thus an obſtructed, or a ſtagnant, ſtate of the round of the circulation, which would otherwiſe reſult from the languid action of the heart, may be prevented.

"It appears, then, that both in the firſt and in the laſt ſtages of fever, the ſenſibility of the nervous ſyſtem and the action of the heart are diminiſhed; while, in the early ſtage, the contraction of the ſmall arteries is increaſed; whereas, in the decline of fever, it is diminiſhed or altogether ſuſpended. The different ſtate of the contractile power of the ſmall arteries, then, appears to conſtitute the leading diſtinction between the character of theſe two ſtages of fever. From the reſult of our inveſtigation, it appears that the ſtates which characterize the ſecond ſtage of fever are the conſequences of thoſe ſtates which uſher in fever; and that the ſtates which conſtitute the third ſtage are the natural reſults of thoſe which are met with in the ſecond ſtage. It follows then that the ſtates attendant on the third ſtage, as well as thoſe which mark the ſecond ſtage, are the conſequences of thoſe ſtates which appear in the firſt ſtage of fever."

Before we proceed to examine the juſtneſs of theſe views of fever, we ſhall preſent to our readers a hiſtory of thoſe phenomena. It is now pretty generally acknowledged, that the diviſion of the fevers of this country into ſynocha, ſynochus, and typhus, is not founded in nature, but engendered by hypothetical notions in the brain of Cullen. On this account we ſhall proceed to ſay, that, of fevers in general, the commencement is commonly marked by ſome degree of languor, laſſitude, and general uneaſineſs; the patient feels himſelf ill, without being able to refer his uneaſy feelings to any particular part of the body. There is alſo a liſtleſſneſs, or a deſire frequently to change the poſture, but at the ſame time the ſenſe of wearineſs diſpoſes the patient to reſiſt this inclination; the motions when made are ſluggiſh, and frequent yawning and ſtretching accompany the attempt. The mind is affected in a ſimilar way; it cannot reſt upon any object; the attention is not under the command of the will, but wanders from one ſubject to another; and, as the ability of exerting the muſcular powers becomes diminiſhed, there is likewiſe an inability of exerciſing the faculties of the mind; the patient cannot think or reaſon, even upon his ordinary affairs, with his uſual eaſe. Along with theſe ſymptoms, but more frequently after them, he feels a ſenſation of cold, commonly firſt in his back, but afterwards over the whole body; the ſame kind of ſenſation that he feels when ſurrounded by a colder medium than he is accuſtomed to: he wiſhes, therefore, to go near a fire, or into the rays of the ſun, or to put on warmer clothing. At the ſame time the face and extremities are obſerved to be pale, the features ſhrink, the bulk of every external part is diminiſhed, and the ſkin over the whole body appears conſtricted, as if cold had been applied to it. This ſenſation of cold varies much more in different inſtances of incipient fever than the languor and laſſitude before mentioned; in ſome caſes it is very ſlight, in others not at all felt or noticed; whilſt in many inſtances, particularly in the intermittent fevers, it becomes ſo great as to produce a tremor or ſhaking in all the limbs, with a chattering of the teeth and frequent rigors of the trunk of the body. In this ſtate, the actual heat of the ſurface, whether meaſured by the ſenſations of a by-ſtander or a thermometer, is conſiderably diminiſhed; in the extremities in particular it is many degrees below the ſtandard of health. Not only on the ſurface, as is generally imagined, but even over the whole ſyſtem, the heat is probably diminiſhed; the air expired from the lungs feels cool to the back of the hand, held near the mouth. Dr. Currie ſtates, that he has found the heat under the tongue, and at the axilla, as low as 94, 93, and 92, degrees of Fahrenheit's thermometer. (The healthy temperature of the human body, it may be obſerved, is about 98° of the ſame thermometer.) Dr. Fordyce affirms, that 94° was the loweſt degree of heat that he had witneſſed under the ſame circumſtances. (Firſt Diſſertation on Fever, p. 40.) The ſenſations of the patient, however, do not always correſpond with the actual degree of cold, as meaſured by the thermometer, or by the ſenſations of others; for it has been remarked, eſpecially towards the termination of the cold ſtage of the fever, that the patient feels himſelf cold, even on thoſe parts of the body which are ſhown, by the application of a thermometer, to be of the natural heat, or even hotter than they uſually are in health. With this ſtate of coldneſs, the ſenſibility of the body is conſiderably diminiſhed; all the ſenſations, but eſpecially thoſe of touch and taſte, are leſs accurate and diſtinct than in the healthy ſtate. Dr. Fordyce remarks, that, "in the attack of fever, ſuch a degree of inſenſibility, with a feel of coldneſs, has in many caſes taken place, that even hot ſubſtances have been applied in ſuch manner as to coagulate, nay perform the chemical analyſis of the part, without any ſenſation of heat having ariſen in the mind of the patient." (Loc. Cit. p. 49.) The diminution of the faculty of ſenſation is very various in different inſtances of the attack of fever.

Upon the firſt approach of febrile languor the pulſe is not always altered in reſpect to frequency, but it always becomes weaker than before; ſometimes it is alſo ſlower

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than in health for a ſhort time; but, as the ſenſe of cold increaſes, it becomes ſmaller, and gradually more and more frequent, and often irregular. While the contractions of the heart and arteries are thus feeble, all the ſecretions of the ſyſtem are likewiſe diminiſhed. The tongue and mouth become dry and clammy, in conſequence of the diminiſhed ſupply of ſaliva and of the mucus of thoſe parts; the ſkin alſo becomes dry, as well as pale and cold, there being little or no matter of perſpiration poured out. The changes in the urine are ſtill more remarkable; the impaired action of the ſecretory veſſels of the kidneys is evinced by the diminiſhed quantity of the urine at this period of fever, as well as by the paleneſs of its colour, in conſequence of its holding leſs of the mucilaginous and ſaline parts in ſolution than in health, and by the abſence of any cloudineſs or depoſition when it cools. There is generally alſo a ſmaller quantity of feculent matter evacuated from the inteſtines at the commencement of fever, or in other words a degree of conſtipation, which implies a deficiency of the fluids ſecreted from the inner ſurface of the alimentary canal, as well as of the bile and pancreatic liquor, by which the fæces are rendered more liquid and moveable, and the bowels are ſtimulated to action. Analogous to theſe changes in the ſtate of the ſecretions are the ſudden and conſiderable detumeſcence of ſwellings, which may happen to ſubſiſt on the ſurface of the body, and the drying-up or ceſſation of the diſcharges from ulcers and wounds, during the cold ſtage of fever.

The reſpiration alſo ſuffers ſome change in the attack of fever, being often ſhort and frequent, and ſometimes attended with a cough, more particularly in intermittent fevers. There is at the ſame time a great anxiety, or a ſenſe of weight, fullneſs, and great uneaſineſs, in the breaſt. This diſtreſſing feeling, which has been thought by ſome phyſicians a pathognomonic ſymptom of fever, and hence denominated *febrile anxiety*, is totally different from, and independent of, the general uneaſineſs all over the body, which was before mentioned, and often occurs in a very diſproportionate degree. It reſembles that anxiety which takes place from grief, fear, and other depreſſing paſſions of the mind, and which is alſo accompanied by paleneſs, and diminution of ſize of the veins which are ſeen on the ſurface. The patient likewiſe reſpires irregularly, as one under the influence of the paſſions juſt noticed, and frequently ſighs deeply, as if to free himſelf from the load that oppreſſes the region of the heart.

At the beginning of the attack of fever, ſometimes as the very firſt ſymptom, but often later, a dull pain is felt in the ſmall of the back, which ſeems to occupy the lumbar vertebræ, but is not accurately referred to any particular point. It is very ſimilar to the pain which ariſes from weakneſs or fatigue; but, unlike that, according to Dr. Fordyce, it is equally felt in the horizontal as in the erect poſture of the body. The head at the ſame time is affected with pain, which is commonly ſeated in the forehead over the eyes, and feels to the patient as external; ſometimes it likewiſe occupies the back part of the head; and occaſionally it is felt all round the head. It varies much in degree, but commonly increaſes as the attack proceeds; it is uſually attended with a ſenſe of weight, and is often augmented by light falling upon the eyes. A ſimilar pain generally ariſes all over the body, which the patient often deſcribes as ſeated in all his bones, without being able to particularize in what part of the body it is felt. Sometimes it is more particularly confined to the larger joints; and it is occaſionally attended with great ſoreneſs, as from over-fatigue. Such ſoreneſs, however, is more commonly confined to the ſubſequent periods of the diſeaſe.

From the commencement of the attack of fever the natural functions are always deranged. The changes in the appearance of the tongue are among the firſt indications of this derangement. At firſt the tongue appears to be thinly covered on its upper ſurface with an extremely viſcid fluid, eſpecially in the middle and towards the root, the edges and point being nearly free from it. The under ſurface of the tongue, below the point, is ſcarcely ever covered with this matter. Sometimes, at the very beginning of the diſorder, the covering of the tongue is a ſolid cruſt of a whitiſh colour, adhering ſo firmly as to be incapable of being ſcraped off; ſometimes it verges towards a brown colour. At the approach of the cold ſtage of fever the ſtomach is commonly affected; the appetite for food ceaſes, and averſion even to the ſight or ſmell of meat often takes place. Dr. Fordyce remarks, that he "has known ſeveral inſtances where perſons, ſitting down to the table with a ſtrong appetite, an attack of fever having ſuddenly taken place, in leſs than two minutes they have been unable to eat any thing, and have been ſeized with perfect averſion even to the ſmell of food." (Loc. cit. p. 93.) Sickneſs at the ſtomach often comes on at the firſt attack, and this is increaſed occaſionally to ſuch a degree as to produce vomiting. More commonly, however, this does not take place at the very commencement; but the diſinclination to food increaſes gradually to nauſea, then to vomiting, which in ſome caſes is very ſevere, not only the contents of the ſtomach being evacuated, but likewiſe thoſe of the duodenum, and of the glands, the ſecretory ducts of which open into it. Bile, therefore, and the pancreatic juice, are thrown up, together with the contents of the ſtomach, and the other fluids ſecreted into the ſtomach and duodenum. Of theſe fluids, however, the bile is the moſt conſpicuous from its colour, taſte, and ſmell; and it has therefore often been obſerved by practitioners, while the gaſtric and pancreatic and other juices ſecreted into the duodenum, as they are not very conſpicuous from their ſenſible qualities, have not been taken into the account. Combined with the ſickneſs and averſion to food, there is generally a conſiderable degree of thirſt.

Few other ſymptoms, which are obſervable at the commencement of fever, remain to be mentioned. The ſtate of the countenance is very peculiar and characteriſtic, from the moment of the attack. It not only becomes pallid, or of a dirty hue, in common with the reſt of the ſurface of the body, but it aſſumes an expreſſion of dullneſs or heavineſs, partly in conſequence of the languid action or relaxed condition of the muſcles of the face, and partly from the ſame condition of the muſcles of the eye-ball, by which its form and motion are altered, and its uſual brightneſs and quickneſs are impaired. The diſpoſition to ſleep is diminiſhed or loſt; or, if it occurs, the repoſe is ſhort and interrupted, and very imperfect, ſo that there is much dreaming, during which the ideas that preſent themſelves are moſtly of an unpleaſant kind.

When the ſenſation of cold, and the attendant ſymptoms, have continued for ſome time, (the period being very various in the different kinds of fever,) the cold becomes leſs violent, and is alternated with fluſhes of heat. In the more ſevere continued fevers, it frequently happens that the cold is not permanent for any length of time, but that this alternation of chills and heat takes place from the beginning. By degrees the cold goes off entirely, and a heat greater than natural is extended, at firſt unequally in different parts, but at length generally over the whole body; but even when it is ſo far advanced, that the heat, meaſured at the axilla or under the tongue, is greater than the ſtandard of health, a ſlight acceſſion of external cold will produce a general chilline ſs. There is no regularity in the reſtoration of the heat to the ſurface; in ſome parts the heat is above what is natural, while in others it remains below this ſtandard; and hence ariſes that mixed ſenſation of cold and heat, which every one acquainted with fever has experienced, in the tranſition from the cold to the hot ſtage of the paroxyſm. This inequality of the diſtribution of the heat is leſs in the ſimpler forms of fever, and greater in thoſe which

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are more complicated and irregular. In general the ſenſe of cold predominates, even after a morbid heat has taken place at the axilla, under the tongue, and in different parts of the thorax and abdomen. At length, however, the heat of the ſurface becomes general and uniform, riſing to 102, 103, 104, and ſometimes 105, of Fahrenheit's thermometer. Different authors indeed ſpeak of febrile heat four or even five degrees higher than this; but ſuch heat never occurred under the obſervation of Dr. Fordyce or Dr. Currie, the beſt authority on this ſubject: Dr. Bateman alſo had frequently employed the thermometer, in caſes of continued fever, and never obſerved a higher temperature of the body than 104 in intermittent or continued fever, the patients being in cool apartments, with very light bed-coverings. The ſenſation of heat becomes at length ſtrong and ſteady, and the acceſſion of external air does not produce a return of chilline's as before; this ſenſation is moſt powerful in the extremities, particularly on the palms of the hands and ſoles of the feet.

The increaſe of the circulation takes place at the ſame time as the returning heat, and often in the ſame unequal manner, being evidently greater in ſome particular parts than in others. Thus it frequently happens, that one part ſhall become red and enlarged, one arm, for inſtance, while the other is pale and contracted; the veins of the one being full, and the blood flowing in them more rapidly, while thoſe in the other remain contracted. This ſhall continue for ſome time, when the parts become affected in the oppoſite way; the arm which was florid and diſtended becoming pale and contracted, and *vice verſâ*. This ſhifting, however, remains but a ſhort time in *ſimple fever*, perhaps not above half an hour; in the paroxyſms of *intermittents* it continues longer, and ſtill longer in the firſt attack of *continued fever*. Univerſal redneſs at length takes place; the features of the face and other parts of the body recover their uſual ſize, and become even more turgid; and the ſuperficial veins evince the greater circulation now going on through them by their fullneſs and increaſed ſize. The ſkin is relaxed and ſmooth, no longer exhibiting the gooſe-ſkin appearance by its contraction round the little glands and roots of the hair; but it continues for ſome time dry. The pulſe now becomes fuller and ſtronger, and its frequency continues or is ſtill farther increaſed; in ſimple fevers, it beats occaſionally at the rate of 140 or 150 ſtrokes in a minute, with a conſiderable degree of fullneſs and hardneſs (Fordyce); but in the hot ſtage of intermittents, and in the heat of continued fevers, it is moſt commonly from 90 to 110 at this early period of the diſeaſe; ſubject, however, to great variation according to the conſtitution of the patient, and the type of the fever. The reſpiration, though more free than during the chilline's, continues ſtill frequent, and accompanied by a ſenſe of load and anxiety, which the patient endeavours to remove by occaſional laborious efforts, and deep ſighing. The ſecretions ſtill remain diminiſhed; the ſkin is parched, no perſpiration breaks forth; the tongue and mouth are alſo dry and parched, and the fur on the former becomes thicker; the urine, though it becomes higher coloured than in the cold ſtage, remains tranſparent, and depoſits no ſediment; and the bowels are coſtive. The thirſt is conſiderably increaſed as the heat advances; the nauſea and vomiting gradually diminiſh, but the averſion to food is augmented.

The corporeal ſtrength and the mental powers become more oppreſſed; the ſenſibility, however, is reſtored in general with the returning circulation and warmth of the ſurface; ſometimes it becomes even more acute than in the healthy ſtate, ſo that the ſkin is more eaſily irritated, the eyes are offended with the light, and the leaſt noiſe is heard with pain, and greatly diſturbs the feelings of the patient. The attention becomes leſs under the control of the will, and the faculty of recollection and the reaſoning power are exerted with difficulty, and imperfectly, ſo that ſome confuſion of thought takes place, which often ariſes to delirium, when the hot ſtage is completely formed: occaſionally, indeed, a degree of delirium occurs in the beginning of the cold ſtage, but more frequently in the ſubſequent periods of the fever. The numerous and diſtreſſing dreams, which conſtantly recur in the diſturbed and unrefreſhing ſleep which takes place in the firſt ſtages of fever, may be conſidered as the ſlighteſt degree of delirium. In the next degree, the patient, when he awakes, is ſome time before he can attend to the impreſſions made on the organs of ſenſe: he does not know his bed, his bed-chamber, or his attendants, for a few minutes, but ſeems to awake as it were a ſecond time, and becomes perfectly ſenſible. If the delirium is in a little greater degree, the ordinary impreſſions of external objects produce no effect: the ideas, which float in the mind rapidly, ſeem to be excited without train or connexion; the aſſociation being carried on by the internal impreſſions alone. If the attention of the patient, however, be ſtrongly excited by external impreſſion, he is capable of diſtinguiſhing the ſurrounding objects, and of returning correct anſwers to queſtions put to him; but, that ſtrong impreſſion being withdrawn, he relapſes into his delirious dream. As the delirium increaſes, with the advance of the fever, the faculty of diſtinguiſhing the objects that ſurround him gradually diminiſhes; he begins to expreſs his ideas in words, i. e. to talk incoherently; the ideas which preſent themſelves rapidly, and without apparent connexion, are generally diſagreeable and diſtreſſing. He is ſometimes in a church-yard among tombs, ſometimes falling from a precipice, ſometimes purſued by wild beaſts, in the midſt of conflagrations, &c. The delirium increaſing, he becomes completely inſenſible to external objects. This is a common progreſs of the alienation of mind in fever, beginning on the ſecond or third day, or later, and increaſing to the fourteenth or fifteenth, if the patient ſurvive ſo long; at firſt being only obvious in the night, or during the imperfect ſlumbers, or in the waking moments, when external impreſſions are fewer, or almoſt entirely excluded; but afterwards continuing night and day without intermiſſion.

With the beginning of the hot ſtage, the head-ache is commonly increaſed, and appears to be diſſimilar from that which took place in the cold ſtage. The latter pain, Dr. Fordyce remarks, "always feels to the patient as external; it is clearly a pain affecting the integuments of the head, perhaps the ſkin alone, at moſt the pericranium; but the pain which ariſes in the ſecond ſtage is felt by the patient internally, and gives him the idea that there is ſomething diſtending the head or the brain, ſo as to attempt to burſt the cranium." (Firſt Diſſ. on Fever, pp. 85 and 228.) In the mean time the carotid and temporal arteries beat full and ſtrong, the eyes are rather red, and the face is flu̇ſhed. Connected with theſe ſymptoms, which obviouſly imply an increaſed quantity and impetus of the blood carried to the brain, the organs of ſenſation, while fully capable of conveying impreſſions to the mind, nevertheleſs produce ſometimes erroneous impreſſions. Thus the patient can ſee, but he miſtakes objects; he fancies one individual is another, or that a man is a poſt: and his organs of hearing, which are alſo more readily affected, do not convey the ſame perceptions which the ſame ſounds would excite in health. The ſame thing happens with regard to his other ſenſes.

All the ſymptoms above enumerated increaſe from the ſecond day of fever. The tongue grows more foul, and the cruſt which forms upon it thicker, until the middle of the ſecond week. Towards the end of the ſecond week this cruſt often diſappears more or leſs, and the ſurface of the tongue looks raw when moiſt, and when dry has a poliſhed glaze, eſpecially about the middle, ſome of the cruſt remaining upon the ſides towards the edges.

Before theſe ſymptoms, however, have advanced to the degree

degree juſt deſcribed, and after the general heat has continued for an indefinite time, (in the ephemeral and intermittent fevers a few hours, in continued fevers ſeveral days,) it often happens, that a partial moiſture begins to appear on the ſkin, generally on the forehead, which extends gradually downwards to the neck and breaſt, and at length a free ſweat takes place from the whole ſurface of the body. At the ſame time the ſymptoms of the firſt ſtage of the fever begin to abate, ſometimes one giving way firſt, and ſometimes another, ſo that it cannot be ſaid which has the priority: ſometimes the weight and anxiety about the præcordia are firſt obſerved to diminiſh, ſometimes the change of the pulſe from hardneſs to ſoftneſs is the firſt obvious amendment, and ſometimes the relaxation of one or other ſet of ſecretory veſſels, &c. Such a change of the ſymptoms, terminating ſpeedily in a reſtoration of the health, has been called, by a term borrowed from the Greek, a *criſis*; and the excreted fluids, which are poured forth at the time of this change, have hence been denominated *critical* diſcharges. The moſt ſtriking appearance, both to the patient and by-ſtander, is the perſpiration, which is frequently carried to the extent of profuſe ſweating in intermittents and the ſimpler forms of fever, but ſometimes amounts only to gentle moiſture. While the ſweating continues, all the ſymptoms of the previous ſtages abate: the preternatural heat is gradually diminiſhed; the pulſe becomes ſofter and leſs frequent; the breathing is likewiſe frequent, and more free, and is unaccompanied by ſighing; and the anxiety and heavineſs in the cheſt are greatly alleviated. The head ache gradually goes off, and the pains of the loins and extremities ceaſe; the naufea and vomiting no longer diſtreſs the patient, who now acquires a reliſh for light nouriſhment; the thirſt is removed; the mouth and tongue become moiſt, as the ſalivary and mucous glands pour out their fluids, and the tongue becomes gradually clean, firſt upon the edges, afterwards in the middle and near the root; the cruſt, which had formed upon it, coming off in ſmall flakes, until the whole ſurface is in its ordinary ſtate. The ſecretions of the liver, pancreas, and inteſtinal glands, being reſtored, the bowels begin to act, and the evacuation from them comes to its ordinary quantity. A looſe ſtool is commonly paſſed at the end of a paroxyſm of intermittent fever; and ſometimes a diarrhœa comes on in continued fever, and, being the moſt obvious, is then conſidered as the critical diſcharge. The urine generally undergoes ſome peculiar changes in the criſis of fever: it is not only ſecreted in larger quantity, but, although bright and tranſparent when diſcharged, if allowed to remain for ſome time it is obſerved to grow turbid, as if containing a quantity of a yelloviſh-red powder, and at length to depoſit flaky cryſtals of a dirty red colour, commonly termed a *lateritious* ſediment. Tumours, which were diminiſhed during the cold, and more painful in the hot, ſtage, return to their uſual ſize during the ſweat, and ulcers again begin to diſcharge matter. The intellectual functions are alſo reſtored during the criſis; the attention of the patient is no longer abſorbed by his uneaſy feelings, the confuſion of his head is relieved, and he is not haraſſed by the perpetual recurrence of diſtreſſing images to the mind, eſpecially in his ſlumbers; a diſpoſition to calm ſleep returns; and the countenance reſumes its natural expreſſion.

It was remarked by Hippocrates, and the majority of the ancient phyſicians, that theſe *criſes* occurred more frequently on particular days of the fever, which they, therefore, obſerved with great care, as affording both particular indications in practice, and the means of prognoſticating the phenomena of the ſubſequent periods of the diſeaſe. Hence they called theſe days *critical days*. Theſe periodical changes, happening on particular days, are however ſeldom diſtinctly noticed in this country; they ſeem to occur more decidedly in warm climates, where all fevers have a greater tendency to aſſume the remittent form. Dr. Cullen, who believed that even in this country theſe critical days were obſervable, though leſs diſtinctly than in hot climates, explained their occurrence upon the principle, that continued fevers were in ſome degree diſpoſed to take on the types of intermittents; and in this principle he has been followed by Dr. Fordyce. (See Cullen, Firſt Lines, § cxix. Fordyce, Third Diſſert. on Fever, p. 120.) But it muſt be remarked, that the doctrine of critical days, as taught by Hippocrates, was ridiculed by Aſclepiades and Celſus, who practiſed in the ſame climate with Hippocrates, and in the ſame city with Galen; and Herophilus altogether denied its truth.

In this country, and in cold climates in general, continued fevers are ſeldom terminated by criſis. Some practitioners have maintained, that a criſis never takes place, whilſt others have inſiſted that criſes happen in all continued fevers. Dr. Fordyce juſtly remarks, that theſe extremes of opinion are both inconſiſtent with correct obſervation. It is admitted, however, that criſes occur much leſs frequently in this climate than in hotter countries; and we think that the phyſician juſt mentioned conſiderably over-rated the proportion when he ſays, that "not above one-third part of the fevers which happen in London are terminated by a criſis." (Loc. cit. p. 126.) We believe the proportion to be very far below this ſtatement. In the great number of inſtances of fever, no criſis takes place; but the diſeaſe terminates in a more ſlow recovery, or in death.

The ſymptoms before enumerated increaſe gradually to the end of the firſt, or middle of the ſecond, week; ſometimes by the ſeventh day the ſymptoms have attained their greateſt ſeverity; ſometimes, too, the ſecond week is gone through without very ſevere ſymptoms, and in other caſes ſymptoms of the greateſt diſtreſs and danger then occur; and there are all gradations between theſe extremes. The appearances in the ſecond week, when the fever is not extremely ſevere, are often as follows. The pulſe is frequent, beating from 100 to 110 in the evening, and in the morning ſomewhat leſs; the ſkin continues dry and hot, in various degrees; the tongue is covered with a browniſh fur; the appetite is often totally loſt; thirſt continues, but is often complained of leſs during the ſecond than during the firſt week; and the depreſſion of ſtrength is conſiderable. The ſleep is diſturbed and ſhort, and the delirium is manifeſted in the intervals by the incoherence of the obſervations of the patient, until he is completely roufed by ſome ſtrong impreſſion on the ſenſes. In the morning the delirium is leſs than in the early part of the night, and the ſleep ſometimes tolerably quiet; even during the day there is conſiderable confuſion, and occaſionally much flowneſs of intellect. Hence perhaps the thirſt, as well as the head-ache, and pains of the back and limbs, are leſs complained of, rather than from actual relief or diminution of theſe ſymptoms. The eyes have a dull and confuſed appearance, and commonly ſome degree of redneſs, from a number of ſmall veſſels diſtended with blood. Sometimes a degree of ſtupor comes on in the morning, and continues till the more active delirium of the night. If this ſtate ſhould remain, Dr. Fordyce obſerves, till about the fourteenth day, the evening attacks become by degrees leſs, but the ſtupor continues, with deafneſs, and inattention to external objects; and theſe appearances remain the very laſt ſymptoms of the diſeaſe.

Very frequently about the end of the ſecond week, and often ſooner, the ſymptoms begin gradually to diminiſh in ſeverity. The firſt appearance of this abatement is not uncommonly a cleanneſs and healthy look about the edges of the tongue; ſometimes, although not very generally, ſweating takes place all over the body, and the ſkin afterwards continues moiſt; more commonly the moiſture and ſoftneſs of the ſkin appear in a leſs marked manner. The delirium abates altogether in the day, and

returns leſs ſeverely at night; or, if the patient be deaf with ſome ſtupor, theſe ſymptoms are little changed in the twenty-four hours, but remain until the whole of the diſeaſe has diſappeared. The depreſſion of ſtrength goes off, but leaves real weakneſs behind. The urine depoſits ſometimes a copious lateritious ſediment for a day or two, and afterwards returns to its natural appearance. Sometimes there is a copious lateritious ſediment in the urine made in the night, and a mucous one in that made in the day-time. The coſtiveneſs goes off, and the fæces return to their ordinary appearance; and all the ſecretions become gradually increaſed, not equally, but ſometimes one more ſpeedily, ſometimes another. The eyes, unleſs when the delirium has ended in ſtupor, begin to have a more healthy appearance, are more compoſed and clearer, and expreſs a greater attention to the objects around them. The ſleep returns, but not equally; the patient ſometimes paſſing a quiet, at others a reſtleſs, night. The appetite returns, although ſeldom regularly; ſometimes it is voracious, but the patient is notwithſtanding ſatisfied with a very ſmall quantity of food; in the other caſes it returns very ſlowly. Although the depreſſion of ſtrength ſometimes goes off almoſt at once, yet it leaves the patient often with a greater feeling of weakneſs. Thus, however, the whole diſeaſe diſappears, and the patient recovers his ſtrength very quickly.

But, although this favourable termination of fever occurs in a large majority of inſtances in this country, it is nevertheleſs a diſeaſe frequently fatal, and, under particular circumſtances, the cauſe of great mortality. When fever terminates fatally, the ſymptoms preſent themſelves chiefly under two different aſpects, but variouſly modified, approaching to each other, or even partially combined. The individual varieties it is impoſſible to depict; a knowledge of them can only be attained by perſonal obſervation of numerous caſes at the bed-ſide of the ſick. One of the forms, juſt alluded to, conſiſts principally of a great aggravation of the ſymptoms of the hot ſtage. The heat of the ſkin continues great and pungent, and its ſurface dry and parched; the countenance is flushed, and the eye ſuffuſed with redneſs, and intolerant of light; the head-ache is ſevere, little or no ſleep is obtained, the delirium is augmented, and is accompanied with extreme reſtleſſneſs, often with vociferation, and even great muſcular ſtrength, ſo that the patient is with difficulty confined in bed; and the pulſe is frequent, with conſiderable hardneſs. About the end of the ſecond week theſe ſymptoms ſuddenly change; the delirium ends in an indiſtinctneſs or confuſion approaching to ſtupor, the articulation becomes indiſtinct, the breathing laborious, the ſtrength ſinks rapidly, cold ſweats and convulſive motions enſue, and the patient is cut off in a few hours. Sometimes ſymptoms of inflammation of the lungs ſupervene, and, continuing together with the delirium, hot ſkin, frequent pulſe, and brown tongue, the patient dies with ſymptoms of ſuffocation; and ſometimes inflammation of the inteſtines, or other important organs, being ſuperadded to the original fever, accelerates and modifies the fatal termination. This has been called *inflammatory fever*. The other form of the diſeaſe, above mentioned, is extended more commonly to the third week, ſometimes later, and the progreſs of the ſymptoms is more gradual. The depreſſion of the muſcular powers continues to increaſe with the diſeaſe: the eyes become ſunk, dull, and liſtleſs; the countenance dejected, and of a duſky hue; the delirium is attended with a low muttering, and the patient lies without the diſpoſition or the power of making any exertion, or he picks the bedclothes; the tongue becomes cruſted with a dark-brown or black matter, a ſimilar ſordes collects upon his teeth and lips; the pulſe is frequent, beating from 120 to 130 times in a minute, and is at the ſame time ſmall and feeble; the reſpiration is alſo weak, generally frequent, and interrupted with ſighing or a dry cough; the voice becomes indiſtinct or inarticulate; and there are ſlight convulſive twitches, or ſubſultus tendinum. At length the proſtration of ſtrength becomes extreme; the patient lies on his back, being unable to ſupport himſelf in any other poſition, and even ſlides down towards the bottom of the bed; he is altogether inſenſible to external impreſſions; the ſphincters, as well as the muſcles of voluntary motion, are relaxed, and he paſſes his ſtools and urine involuntarily in bed; the pulſe becomes very feeble, tremulous, and ſcarcely to be felt at the wriſt; partial clammy ſweats break out; the eyes appear glazed and fixed, and the other features ſhrink; the patient is unable to ſwallow; his breathing becomes irregular and laborious, attended with ſome noiſe in the throat, as the fatal event approaches; the extremities grow cold; and, often after ſome hours, the functions of life finally ceaſe. When fever aſſumes this form, it conſtitutes *typhus*, or the nervous, malignant, &c. fevers of authors.

There are ſome other appearances, which, though not the ordinary attendants on fever, occaſionally occur, eſpecially when the diſeaſe is of a ſevere kind, and which have been conſidered as evidence of malignancy, or of putreſcence. Generally in the ſecond week of the diſeaſe, but ſometimes as early as the fourth or fifth day, (ſee Pringle on Diſeaſes of the Army, part iii. chap. 7. and Huxham on Fevers, chap. vii.) an eruption of ſpots, not elevating the cuticle, of a red colour, ſometimes pale, often darker, or even of a livid or purple hue, appears on the ſkin: theſe ſpots, or *petechiæ*, are thickeſt on the breaſt and back, leſs numerous on the legs and arms, and are ſeldom, if ever, ſeen on the face. They were firſt deſcribed, among the moderns, by Ingraſſia of Naples, afterwards more particularly by Fracaſtorius, under the names of *lenticulæ*, *punctulæ*, or *peticulæ*; whence alſo the ſame appellations were given to the fevers themſelves. (See Fracaſtorius de Morb. Contag. lib. ii. cap. 6.) Petechiæ appear in fever, moſt frequently in cloſe and crowded ſituations; formerly they were very frequent attendants on the fevers which occurred in the perſons under confinement in cloſe cells, or crowded apartments in our priſons. Dr. Willan has ſtated, however, upon the authority of the ſurgeon of Newgate, that, ſince a general attention to ventilation and cleanlineſs has been adopted, petechiæ do not now appear in more than one caſe of fever in thirty in that priſon. He has alſo added, from the obſervation of Dr. Bateman, phyſician of the Fever Inſtitution in London, that the proportion of caſes, in which petechiæ occur in that inſtitution, is about one in forty-two. (See Willan on Cutaneous Diſeaſes, order iii. p. 468.) Sometimes the purple ſpots are of a large ſize; in which caſe there are often alſo livid blotches, or ſtripes like the ſtrokes of a whip, *vibices*, and hæmorrhages, break forth from the internal parts, as the bowels, lungs, ſtomach, and wherever the ſurface is covered with a very thin cuticle, as from the noſtrils, the gums and mouth, &c.

A raſh of a different ſpecies, which Dr. Willan has termed *roſeola*, "a roſe-coloured efflorescence, variouſly figured, without wheals or papulæ, and not contagious," (Loc. cit. order iii. genus 4.) ſometimes makes its appearance in fever of the typhous type: ſometimes it precedes the formation of purple ſpots and vibices, and in other caſes it is ſeen early in the fever, but remains only for a ſhort time without any material conſequences. Some other cutaneous appearances occaſionally occur, as mentioned by Huxham, (Loc. cit. p. 97.) ſuch as miliary puſtules, a ſcabby eruption about the lips and noſe, and aphthæ.

We have thus laid before our readers an ample account of the phenomena of fever, in order that the relation between thoſe phenomena and our explanation of them may be more clearly ſeen. We proceed to examine the merits of the gaſtric theory of fever. In the firſt place, the aſſertion of Brouſſais, that a furred tongue and other appearances of the mouth indicate inflammation, by no means

reſts

reſts on a ſtable foundation, becauſe thoſe diſordered ſecretions may be the reſult of diſturbance in the brain. It muſt be granted, however, that the red appearance of the edges of the tongue, a ſymptom this author particularly dwells upon, is a ſign of inflammation; but every one knows that this ſymptom is often wanting in fevers; and, that all other appearances of the tongue may be produced by nervous irritation, altering the ſecretion on the ſurface of that organ, is clear enough, from the obſerved and well-known effects which the artificial interruption of nervous power to a ſecreting ſurface invariably occaſions. Now that inflammation of the mucous membrane itſelf may produce the various appearances of the tongue in fever, we cannot admit, becauſe local applications, known to be capable of bringing on inflammation, do not cauſe the diſplay of ſimilar appearances. Moreover, if it were allowed that inflammation of the mucous membrane do exiſt, it were ſtill impoſſible to ſhow by what influence general febrile commotion is produced; becauſe inflammation in one part muſt be the ſame as in another to a certain degree; and hence fever might reſult from inflammation of any organ of the body without implicating the digeſtive tube, which does away with the theory. The effect of ſtimulants and tonics in fever does not require us to believe this theory, ſince the intimate ſympathy between the ſtomach and brain offers a ready explanation of the fact. Independently of this, a few caſes have occurred in debilitated and generally-diſeaſed patients, in whom the exhibition of gentle ſtimulants has produced highly favourable conſequences.

The ſtrongeſt facts adduced in favour of the doctrine of Brouſſais, is the red appearance of the inſide of the ſtomach on diſſection, becauſe his opportunities for carrying on diſſections of that kind have been almoſt unlimited; but we think whoever attends to the claſs of patients from whom theſe diſſections were made, and the climate they exiſted under, will have no heſitation in believing, with us, that this author has been led to form this ſweeping concluſion as to the general ſources of febrile ailments from having principally had under his care the gaſtric form of fever, i. e. a complication (very frequently met with) in which the ſtomach, ſometimes ſolely, ſometimes in common with other organs, is in a ſtate of phlogoſis. We have ſeen patients who have died of fever, in whom redneſs of the mucous membranes in the ſtomach was *not* found; and, though our very limited experience would feebly indeed counterbalance that of a Brouſſais, we conceive that a very few unequivocal caſes overthrow the whole theory as to the eſſential cauſe of fever.

We have no heſitation in contradicting Dr. Harriſon's aſſertion, that the intenſity of fever is in direct ratio to gaſtric inflammation. We deny this from diſſections; and we leave this and the above aſſertion, which we have made in oppoſition to Brouſſais, to be corroborated by the experience of our medical brethren.

It muſt be granted, after all, that gaſtritis in various degrees of ſeverity, though uſually mild, is (moſt probably from the ſame cauſe which produces heat and redneſs of the external ſkin) a frequent concomitant of continued fever; and that it always exiſts in the Exanthematicæ, or eruptive fevers.

It will be ſeen, that Dr. Nicholls's rationale of febrile phenomena is principally derived from the application of the two laws, that diminiſhed ſenſibility is followed by exceſs of ſenſibility, and the ſame of contractility (or, as he ſtyles it, *tonicity*). The extenſive and accurate manner in which he has traced their operation in the long quotation we have given, will ſave us from pointing them out further. It will be ſeen, however, that this author by no means enters into thoſe queſtions which the majority of writers have contended about, and which we have before detailed. There are moreover many concluſions ſtated of which Dr. Nicholls has adduced no proof; as where he ſays, in ſpeaking of the firſt ſtage of fever, that fulneſs of blood in the head will ariſe from want of action in the heart; and it is on this aſſumption that many of his reaſonings turn.

Upon reviewing theſe various theories of fever, not one of which has maintained altogether its ground, we nevertheleſs ſee much to admire; and we ſhall now proceed to cull the good parts of each and exhibit them in what appears to us to be the moſt ſimple form. We ſhall firſt paſs in review the cauſes of fever. Theſe are of three kinds: inflammations of all parts; animal irritants, or contagious effluvia; and vegetable irritants, or marſh miaſmata. A prediſpoſition of body is required to enable theſe agents to produce the febrile ſtate, ſince all are not equally liable to undergo their operation.

The ſtate of body which ſeems to be moſt liable to be affected by ſympathetic fever, or that from local inflammation, is plethora; though it is to be remarked, that this does not argue that ſymptomatic fever is in plethoric habits the moſt formidable. The ſtate of the body which diſpoſes to the influence of contagion and miaſmata, is a weakened condition of the nervous ſyſtem. Thus cold, bad living, fatigue, the depreſſing paſſions, Venus nimia, have long been accounted prediſpoſing cauſes. They are alſo in conjunction, or long applied, exciting cauſes, and will produce fever without contagion.

From theſe well-known and generally-allowed ſtatements it follows, that the operations of febrile commotion is carried on through the medium of the nervous ſyſtem; a fact long ſince ſhown by Cullen and others, but of which we have been long in making a proper uſe in the proſecution of this ſubject. We have ſeen that in fever the capillary ſyſtem betrays the firſt ſymptoms of derangement, principally manifeſted in the ſkin. Theſe ſymptoms are generally coldneſs or rigor, the conſequence of conſtriction of the capillaries. Now, to this general conſtriction (as is explained by Dr. Park in his Pathology of Fever) may be referred all the phenomena of the firſt or cold ſtage of fever. For, every part having a different mode of feeling, and a different function to perform, it follows that various effects will reſult in different organs from the ſame change of circulation. And accordingly, that ſtate of veſſels which occaſions a ſenſe of *cold* on the ſurface is accompanied by the ſenſe of *nauſea* in the ſtomach. The ſame conſtriction in the capillary ſyſtem of the brain produces diminiſhed performance of the ſenſorial functions; or agents directly debilitating the brain may give riſe to this conſtriction over the whole ſurface. However this may be, the atonic ſtate of the brain muſt be looked to as the cauſe of the languor and laſſitude, the lengthened muſcles of the face, the loſs of ſtrength, fainting, &c. which are the concomitants of the firſt ſtage of fever. To the ſame conditions of nervous torpor and capillary conſtriction, we refer the feeble ſmall pulſe, the paleneſs of the ſkin, and the ſhrinking and diminution of ſize in the features, and every other external part, as well as of morbid ſwellings. From the contracted condition of the capillaries the other ſecretions are diminiſhed, through wanting a due ſupply of blood. The mouth and tongue become dry from the ſcanty ſupply of ſaliva; the pancreatic juice, the bile, the mucous and ſerous excretions in the alimentary canal, being diminiſhed, as well as the muſcular action of the bowels enfeebled, the fæces are not paſſed forwards, and coſtiveneſs takes place; the urine is not only ſmall in quantity, but of pale colour. The heat of the body is dependent on the due ſupply of animalized blood and nervous power, and always increaſed when the ratio of theſe fluids is increaſed, is now diminiſhed by their diminution. The diminiſhed circulation of blood in the capillaries naturally throws a larger ſupply on the heart; and to this circumſtance the anxiety, and ſenſe of load about the region of the heart, the ſighing, yawning, and ſtretching of the limbs, as well as the ſhort and diſturbed reſpiration, are to be attributed.

All the ſymptoms, then, of the onſet of fever, conſtituting

ſtituting the phenomena of the cold ſtage, are explicable on the ſuppoſition of a depreſſion or diminution of the nervous energy, however induced; and chiefly acting by conſtricting the capillaries, or by conſtriction of thoſe capillaries which involve the brain in torpor. In like manner, the ſymptoms of the hot ſtage and the ſubſequent phenomena, in continued fevers, are referrible to an imperfect recoiling, as it were, of the nervous power, and more immediately to the increaſed action of the heart and arteries, and of the capillary veſſels.

The heat, the redneſs of ſkin, and flushed countenance, the returning ſize of the external parts, the reſtoration or even increaſe of the ſenſibility of the organs, are all the reſult of the diſtention of the extreme veſſels by the red blood, as the oppoſite ſymptoms of the cold ſtage were the conſequence of an oppoſite condition of the circulation. Hence the frequent ſoreneſs of the body, which cannot bear its own preſſure without pain; hence intolerance of light in the eye, and the quick ſenſibility to noiſe in the ear, both of which increaſe the head-ache, which is now more acute, and deep-ſeated: hence alſo diſeaſed parts become more painful. The quick and ſtrong pulſe implies the greater force of the heart, and of the arterial action; nevertheleſs the dryneſs of the ſkin, and the continued ſuppreſſion of the reſt of the ſecretions, evince the continuance of a morbid condition of the extremities of the exhalants and ſecernents by which their functions are impeded.

This laſt circumſtance has been variouſly explained. Cullen attributed it (as before ſtated) to a ſpaſmodic contraction of the termination of the veſſels; but, as we before ſhowed, it did not explain how this was produced; and it ſeemed curious that a ſuſpenſion of ſecretions ſhould ariſe both in the hot and cold ſtage from the ſame cauſe. A new explanation has been promulgated by a late author, Dr. Park. He conceives that, "During the hot ſtage of fever, that theſe mouths are cloſed can hardly admit of diſpute; as it ſeems impoſſible in any other way to explain, when the veſſels to which they belong are gorged and diſtended with fluids, what prevents theſe fluids from tranſuding at every pore.

"In order to explain why they are thus conſtricted in the hot ſtage, and to underſtand the nature of theſe patulous mouths which perform an important part in the production of both fever and inflammation, we have only to regard them in the light of ſphincters, to which they are perfectly analogous. The office of both is to retain the contents of the organ to which they belong, or to allow their tranſmiſſion only at ſuitable times, and in proper quantity. Accordingly, the action of the ſphincter appears to be vicarious with that of the organ, as its office requires it ſhould be; that is, the ſphincter relaxes when the organ contracts, and, on the other hand, the ſphincter contracts when the organ relaxes. Thus, for example, when the ſtomach is rouſed to inordinate efforts of contraction by an emetic, its ſphincter, the pylorus, relaxes, and bile is tranſmitted through the duodenum in vomiting. When the inteſtines are excited to contraction by a ſtrong purgative, the ſphincter of the rectum relaxes, and fæces are with difficulty retained. When the bladder contracts for the expulſion of urine, its ſphincter relaxes, and allows the tranſmiſſion of this fluid. So likewiſe, when the veſſels of the ſurface ſhrink, and paleneſs is produced by fear, a cold ſweat breaks out, and the ſurface becomes moiſt. Or, when the veſſels collapſe from loſs of blood, the ſame clamminеſs of the ſurface attends, and is the forerunner of ſyncope; and thus tranſpiration is increaſed, and not ſuſpended, as Dr. Cullen ſuppoſed, by moderate contraction of the veſſels.

"On the other hand, the ſphincters and the pores alike become conſtricted when the organs or veſſels to which they belong are relaxed and over-diſtended. Thus, when the ſtomach is diſtended with food, the pylorus cloſes, and ſuffers nothing to be tranſmitted till the bulk of its contents is reduced by abſorption. When the rectum is over-diſtended by immoderate accumulation of fæces, its ſphincter contracts, and the moſt obſtinate conſtipation is apt to enſue. When the bladder is over-diſtended with urine, its ſphincter becomes conſtricted, and ſtrangury is the conſequence. In like manner, when the veſſels of the ſurface are over-diſtended by immoderate determination of blood in fever or inflammation, the pores then become conſtricted, and tranſpiration is ſuppreſſed. And for the ſame reaſon, the ſecretion of bile is ſuppreſſed in active inflammation of the liver; and that of urine in acute inflammation of the kidneys. Thus the mouths of the exhalent veſſels, terminating on the external and internal ſurface, appear to be governed by the ſame laws, and to exhibit the ſame modes of action, as the ſphincters belonging to larger organs. In the hot ſtage of fever, then, tranſpiration is ſuppreſſed, and morbid heat kept up by over-diſtention of the veſſels exciting ſpaſmodic conſtriction of their mouths; and accordingly it is to the removal of vaſcular diſtention that we muſt look for a ceſſation of that conſtriction, and the return of tranſpiration."

To us, this idea of the ſphincter-like properties of the ſecreting veſſels appears as viſionary and gratuitous as the notion before mentioned of Cullen. Moreover, much muſt, in the relaxation of ſphincters, be attributed to the form which their antecedent muſcular parts oppoſe to them. At all events, this ſuppoſition is not required. If ſecretion were a proceſs dependant on the mere ſtraining or letting-through of certain parts of the blood, we could account well for the hindrance of ſecretion on the notion of contraction in the veſſels; but the products of ſecretion depend on nervous influence; take away the nerves going to a part, and ſecretion ceaſes. Can this be becauſe ſuch deprivation cauſes a contraction of their mouths?

The alteration of the ſecretion in fever is thus explained. Secretion is diminiſhed in the firſt ſtage, becauſe the conſtriction of the capillaries brings to the ſecernents ſmaller quantities of blood. It is ſtill more diminiſhed, or it is altered or ſuſpended, in the hot ſtage of fever, becauſe, the nerves being preſſed on by the diſtended capillaries, or the nervous power being more rapidly expended in the blood in the generation of heat, perhaps a more rapid motion in the ſanguineous circulation is hindered from acting on the ſecernents. It matters not whether the latter be diſtended or contracted, or in a mean ſtate: they are too ſmall to receive blood; and the ſtate of its parts depends on the faculties derived from the nerves, which we ſee have here loſt their power.

Cullen erred in conſidering the hot to be an invariable conſequence of the cold ſtage of fever. The cold ſtage may happen; and ſo great may be the debility induced, that re-action may never return; or the hot ſtage may be manifeſted at once, as in ſymptomatic fevers and ſome other kinds. The ſweating ſtage is produced in a manner not very well underſtood. It was ſuppoſed by the older phyſiologiſts, as Albinus, Haller, &c. that the ſweat, as well as the inſenſible perſpiration, is a mere exudation of the watery part of the blood through the cuticle; hence it was ſaid to ariſe, in fever, from a mechanical relaxation of the extreme arteries, which were ſuppoſed to be ſpaſmodically contracted during the hot ſtage. But it has been obſerved by later phyſiologiſts, that this opinion reſpecting the nature of the perſpiration is contrary to all analogy, and founded only upon experiments made on the dead body. The opinion of Dr. Fordyce and Mr. Cruickſhanks appears to be the true one; namely, that the matter of perſpiration is ſecreted from the blood by the capillary arteries, and thrown out on the ſurface by organic pores in the cuticle, (however difficult to be diſcovered,) connected with the extremities of theſe arteries; and that in this proceſs there is not a

ſeparation merely, but a new combination, as in ſimilar inſtances of ſecretion.

It has been very generally held, that the coming-on of perſpiration tends to cure fever. We do not altogether ſubſcribe to this doctrine, though certainly ſweating produces a ſalutary refrigeration. It ſeems to us, however, that it is critical, rather becauſe it ſhows that the nerves have reſumed their functions; that it is not ſo uſeful in itſelf, as in being an indication of another ſalutary change in the conſtitution. It is to the reſtoration of the nervous influence that we refer the re-eſtabliſhment of ſecretion all over the body; as the moiſture of the mouth, the abſence of thirſt, the return of appetite, and the copious flow of urine. The increaſe of the febrile phenomena in the hot ſtage towards evening, is explained by the well-known fact, that the action of the heart always accelerates at that period.

According to the views here taken, the actions of the nervous ſyſtem are eſſential movements of the febrile ſtate. When we conſider that this is indeed the only one through which the general ſympathy between the capillaries of all parts of the body can be manifeſted, we ſhall readily conceive that the brain muſt be the part whoſe morbid condition is eſſential to fever. Our ignorance of the ſtructure and functions of that organ, prevents us from reaſoning ſo haſtily as to affirm with Dr. Clutterbuck, that inflammation is the condition which produces fever. But certainly it does ſeem, that a perpetual ſympathy being eſtabliſhed along nervous continuations, a ſympathy capable of cauſing at their remote parts diſeaſe ſimilar to that which gave riſe to it, muſt in its courſe implicate in this ſame action (inflammation) a part where the vaſcular and nervous ſyſtems are ſo cloſely united as the brain.

The illuſtration we have attempted ſeems to embrace the ſymptomatic, the idiopathic, and the intermittent, forms of fever. The firſt we ſhall now diſmiſs the conſideration of, as appertaining to SURGERY, under which article the ſubject will be reſumed. Of the others a little remains to be ſaid as to the agents which produce them. Of the natural agents, i. e. the atmoſpherical, the mental, or the terreſtrial, which are daily altering the nature and conſtitution of our bodies, we may remark, that our preſent knowledge renders us quite incapable of tracing or illuſtrating their effects. We ſhall ſpeak therefore of contagion.

An opinion has been raſhly broached by ſome, that, becauſe fever is often directly traceable to *contagion*, therefore it ariſes from no other cauſe. It has been wiſely and moſt impugnably anſwered, that, on this ſuppoſition, the ſeeds of all the manifold ills which "fleſh is heir to" muſt have been latently contained in Adam, and that many of them muſt have laid in the ſame dormant ſtate for hundreds of generations; as in the caſes of ſmall-pox, ſiphilis, &c. The more general notion, and the only one which bears the teſt of reaſoning, is, that contagions are produced by natural chemical changes, whether external or internal to the human body; in which latter ſituation they re-produce their kind. Thus putrid decompoſitions of animal ſubſtances, the ſame proceſſes acting on vegetables, or the action of the ſun on the earth itſelf; ſeem, in ſome ſituations, to have been each followed by a diſtinct contagious fever. The contamination of the air by the breathing of many individuals, as in cloſe places of confinement or in large theatres, has been followed by the ſame conſequences, even when the individuals in queſtion were all free from infectious fever. Often, however, the fevers which follow expoſure to the above-mentioned agents are not tranſferrable from one to another, but are rendered common by the general influence of the exciting agent. It ſeems too, that ſome diſeaſes which are not generally contagious may, under circumſtances of peculiar violence and intenſity, acquire this property; for, on the teſtimony of very eminent phyſicians, phthiſis and croup have been ſaid to be infectious; eryſipelas is well known to have become ſo on ſome occaſions; and indeed we ſhould not be ſurpriſed, when we conſider the multiform products of diſeaſed ſecreting ſurfaces, that ſecretions of a volatile nature ſhould be generated, and that they ſhould be ſo related with our frame as to produce like actions to thoſe whence they took their riſe. But, whether in the bodies of men or out of them, this product is amenable to the action of the common agents of matter. We ſee diſeaſes, which have been idly called *ſpecific*, altering in the courſe of years their nature,—old ones loſt, new ones ariſing. For the horrible leproſy of the ancients we in vain ſearch a prototype in the medical hiſtory of our own time. The dreadful ſiphilis which mutilated the ſoldiers at the ſiege of Naples, is now ſo changed in its character, that we hardly recognize it in the ancient deſcriptions; and, though ſcarlet fever, meaſles, &c. hold on for centuries their unchanging courſe, this is no evidence againſt the fact, that many diffuſible maladies do change by the hand of time, while all are ſubject (though in a minor degree) to the influence of the ſame agents which control ſimilar actions of the body when called into play by other cauſes.

The moſt important part of our inquiry reſpecting contagion, relates to the mode and circumſtances of its communication from individual to individual, and of its general ſpreading, with a view to diſcover the means of ſuppreſſing it, or preventing its extenſion. This enquiry is, of courſe, limited to the contagions which are ſoluble or diffuſible in atmoſpheric air; ſince it is obvious that the indiffuſible contagions may be avoided, by ſhunning the contact of the diſeaſed. And it muſt be premiſed, that all the febrile contagions have been found, by experiments, to be propagated according to the ſame laws, and to be ſuppreſſed by ſimilar means.

Whenever a contagious epidemic diſeaſe prevails, a very general alarm is excited, in conſequence of a notion, that the ſeeds of an evil ſo generally deſtructive muſt be diffuſed through the atmoſphere at large; and that, if we ſtir abroad, we breathe contagion at every ſtep. This opinion has been promulgated by phyſicians of high rank and authority; but recent obſervations have ſhown that it is erroneous; thus at once removing all grounds for this unneceſſary alarm, and directing our attention to thoſe means of precaution and prevention which can alone effectually contribute to our ſecurity.

Without entering into the long ſtring of authors who have ſupported this opinion, it is enough to ſtate ſimply, that a ſufficient number of facts are now known to eſtabliſh the inference that the popular opinion and apprehenſion are groundleſs, and that the moſt malignant contagions are never conveyed to any great diſtance through the atmoſphere; but that they are, in fact, rendered inert and harmleſs by diffuſion in the open air, and even in the air of a well-ventilated apartment. It is alſo eſtabliſhed on clear evidence, that an accumulation of contagious matter may occur, and may undergo, from the warmth of the body, a change which will increaſe its force; ſo that the ſtricteſt cleanlineſs in the clothes and perſon of the patient ſhould always be inſiſted on.

Contagion is capable of being contained in unventilated clothes. A nation has been exterminated by ſome of its people wearing a blanket tainted with contagion; but ventilation ſo effectually removes this, that we are in no fear of carrying infection from one houſe to another in our clothes. It may indeed hang about furniture, or it may remain for ſome time in the air of a place where the acceſs of freſh air is excluded.

In moſt caſes, the contagious eſſence of fever remains ſome days in the body before its effects are manifeſt. In others, the attack is almoſt ſimultaneous with the reception of the contagion. Where a ſudden infection takes place, a diſagreeable ſenſation is excited at the moment

of expoſure, which different perſons have deſcribed differently. Some have felt a ſharp taſte in the mouth, as if blue vitriol were diſſolving in it, but which no waſhing or gargling could remove. Others have compared the firſt impreſſion to that of an earthy exhalation from a newly-opened grave, the ſenſation extending down to the ſtomach, ſometimes exciting inſtantaneous ſickneſs and ſhivering. Dr. Haygarth mentions that two of his patients, who were phyſicians, were infected ſuddenly by a ſhort expoſure. One of them thought that he caught the fever by creeping behind, in order to aſſiſt, his patient; the other by inſpecting morbid fæces. In both theſe caſes, the expoſure was ſuch as might probably afford a full doſe of the contagion. Dr. Lind is of opinion, that, in theſe diſeaſes, the ſtools, eſpecially if very fœtid, are moſt communicative of contagion; next to theſe, the breath; and, laſtly, the effluvia from the body.

The activity of contagion is not always proportionate to the appearances of malignancy in the diſeaſed. Sometimes only one man in a ſhip may be ſeized with the *petechial* or with the *yellow* fever, ſays Dr. Lind, while all the reſt continue unaffected. And on the contrary, fevers, of the mildeſt deſcription, ſometimes ſpread extenſively. The period at which different fevers begin and ceaſe to generate contagious effluvia is not abſolutely aſcertained. It ſeems moſt probable that in eruptive fevers there is no contagion till the eruption appears; and that contagion remains ſo long as any ſcab remains on the ſkin. This is clearly the caſe in ſmall-pox.

When it is conſidered, that contagion *originates* in accumulated and confined animal effluvia, and is *communicated* either to thoſe who approach, or come in contact with the ſick, or by means of ſubſtances impregnated with contagious matter, and in theſe ways only, the means of prevention are obvious.

With reſpect to the caſual origin of contagion, it is ſcarcely neceſſary to ſay, that cleanlineſs and ventilation, as they preclude the confinement and accumulation of the animal effluvia and ſecretions, will infallibly prevent the generation of the poiſon. Where contagion exiſts, its farther communication may be prevented by avoiding contact or approach to the ſick, and by confining the patient to a ſeparate room, in which, if it be kept clean, and well ventilated, it has already been ſhown that the contagion will be inert at a ſhort diſtance from the ſick; and therefore that the neceſſary attendants, and medical viſitors, will receive no injury from reſpiring the air within it. In this way contagion has been prevented from ſpreading in large ſchools, and other places, where a number of people live together, as in workhouſes and hoſpitals, of which ſome examples have been already given. Dr. Haygarth's rules for the prevention of infection, ſeem to compriſe all the requiſite means to be adopted in houſes where contagious fever exiſts: they are the following.

1. As ſafety from danger entirely depends on cleanlineſs and free air, the chamber-door of a patient, ill of an infectious fever, eſpecially in the habitations of the poor, ſhould never be ſhut; a window in it ought to be generally open during the day, and frequently in the night. Such regulations would be highly uſeful both to the patient and nurſes; but are particularly important previous to the arrival of any viſitor.

2. The bed-curtains ſhould never be drawn cloſe round the patient; but only on the ſide next the light, ſo as to ſhade the face.

3. Dirty clothes, utenſils, &c. ſhould be frequently changed, immediately immerſed in cold water, and waſhed clean when taken out of it.

4. All diſcharges from the patient ſhould be inſtantly removed. The floor near the patient's bed ſhould be rubbed clean every day with a wet mop or cloth.

5. The air in a ſick room has, at the ſame time, a more infectious quality in ſome parts of it than in others. Viſitors and attendants ſhould avoid the current of the patient's breath; the air which aſcends from his body, eſpecially if the curtains be cloſe; and the vapour ariſing from all evacuations. When medical or other duties require a viſitor or nurſe to be placed in theſe ſituations of danger, infection may be frequently prevented by a temporary ſuſpenſion of reſpiration.

6. Viſitors ſhould not go into an infected chamber with an empty ſtomach; and, in doubtful circumſtances, on coming out, they ſhould blow from the noſe, and ſpit from the mouth, any infectious poiſon which may have been drawn in by the breath, and may adhere to thoſe paſſages.

Beſides theſe precautions, we are adviſed to endeavour by gaſeous agents to deſtroy the contagious pabulum. The vapours of vinegar, and thoſe of the ſulphureous acid, have been long uſed with ſome degree of ſucceſs; but thoſe of the muriatic, and ſtill more perhaps thoſe of the nitrous, acid, appear to be the beſt antidotes to accumulated contagion. The evidence of the efficacy of the nitrous-acid fume, in purifying infected places and ſubſtances, which was a few years ago laid before the Houſe of Commons by Dr. Carmichael Smyth, was ſuch as to induce that houſe to vote a national donation of five thouſand pounds to him for the diſcovery. This vapour is eaſily obtained, by mixing with powdered nitre a little of the ſtrong acid of vitriol or ſulphuric acid; the latter combines with the potaſs, the baſe of the nitre, expelling at the ſame time the nitrous acid in fumes. (See Dr. C. Smyth's treatiſe on the ſubject.) The vapour of the muriatic acid may be obtained in a ſimilar manner, by uſing common ſea or rock ſalt, inſtead of nitre. Where contagion has been long pent up in cloſe cells or rooms, it is apt even to adhere to the walls. In ſuch caſes, white-waſhing, with hot or newly-ſlaked lime, is an efficacious aid of the acid fumigations.

We are ſorry, however, after all, to be obliged to admit the juſtice of a remark of Dr. Clutterbuck's; "that theſe modes of chemically neutralizing the contagious virus, while they lead to a falſe ſecurity, are often quite uſeleſs." For this reaſon, ventilation and cleanlineſs are the chief means on which we ſhould place our dependance in guarding againſt the diffuſion of fever. Theſe are both meaſures of ſo much importance, that the profoundeſt phyſicians have not thought it derogatory to their dignity to enter into minute and particular directions for their perfect eſtabliſhment. The means required are however obvious to the meaneſt capacity. We ſhall juſt quote a ſhort extract from Dr. Jackſon, becauſe the fact it contains is not generally known. He ſays, "In cold, damp, and foggy, weather, the free admiſſion of external air might probably be injurious; for air of that deſcription is not calculated to abſorb or diſſipate the floating contagion. In this caſe, the ſtrong heat of fire in *open* fire-ſtoves, ſo placed as to diffuſe its influence into the *lower layer* of the atmoſphere, has appeared to myſelf to be the only ſubſtitute for defect of common ventilation, and the only ſure means of rectifying the air that is vitiated by emanation from the bodies of living men. Heat, as acting on the ſkin, probably operates favourably on the conditions of contagious fever; it evidently operates favourably, as exciting and maintaining circulation of air within the apartment. I here take leave to mention the circumſtance that firſt directed my attention to it. The wards in the barrack in Weſtmoreland Fort, on Spike Iſland, which were allotted to the reception of the ſick of the St. Domingo expedition, and which were crowded to the moſt extreme degree of crowding, were alſo in ſome degree cooking-places; that is, employed for the preparation of the lighter parts of diet. A large fire was neceſſary: and a long grate, being filled with coals, threw out a great heat, ſufficient to roaſt a ſurloin of beef. This was the caſe in the larger wards, where there were from forty to fifty perſons ſtowed on the floor as cloſe as they could lie. Thoſe who lay within a certain diſtance of the fire generally did well, though the ſymptoms of the diſeaſe were often

violent; thoſe who were near the end where there was no fire died in great numbers, though the ſymptoms of the diſeaſe often appeared to be moderate. The air near the fire was comparatively light, and not offenſive; near the remote end it was heavy, unpleaſant, almoſt inſupportable to the tranſient viſitors. The influence of ſtrong heat from fire, in a ſick apartment, appeared to be ſo uſeful, at leaſt ſo agreeable, in the preſent caſe, that large fires were ordered to be made in all the huts and ſheds on the outſide of the fort which were occupied by the ſick. The air in theſe huts, though filled with ſick to overflowing, was not offenſive, the progreſs of contagion was not active, and mortality was comparatively moderate; in fact, on the loweſt ſcale. From that and other more recent experience, I am diſpoſed to conſider the action of the heat of fire as a moſt important mean of ventilation, mainly conducive in arreſting the progreſs of contagion; the chief truſt, in fact, in damp, foggy, and ſtill, weather, through which we can expect to preſerve the air of hoſpitals, as filled with febrile ſick, from a dangerous vitiation."

Fever is generally fatal from the occurrence of inflammation of ſome part or texture of the body; and diſſections ſhow, according to the type of the reigning epidemic, diſorganizations of the mucous membranes of the brain, the lungs, the liver, or other viſcera. In a few caſes, however, no topical congeſtions are found; and the patient ſeems to be worn out by continued exhauſtion of the functions of the nervous ſyſtem.

The *treatment* of fever naturally grows out of the hiſtory already given of its cauſes, actions, and conſequences. We ſhall confine ourſelves to a mere outline of it, from a conviction that the peculiar varieties in character, and conſequently in the treatment, of epidemics, are only to be learnt by experience of the particular fever which happens to be prevalent; or, in other words, that epidemics continually vary, as was indeed the opinion of Sydenham. For ſimilar reaſons we ſhall omit all notice of a vaſt ſtore of drugs which in particular caſes have had the merit of curing fever; e. g. yeaſt, carbon, muſtard, with many others which occur to us even at this moment.

A diſtinction is to be made between fever as it is ſimple, and as it is complicated with inflammation of particular organs. Firſt of ſimple fever. This requires ſome difference in treatment, according to the ſtage it has arrived at; the ſtages being three; viz, the cold ſtage, the hot ſtage, and the declining ſtage. This diviſion, it is proper to obſerve, is in ſome meaſure arbitrary, and has no exact relation to time: for, as the whole duration of the diſeaſe is extremely various, extending from a few days to as many weeks; ſo the continuance of the different ſtages, both individually and relatively to each other, is not leſs various; and it becomes impoſſible to aſſign a determinate extent to any one of them; added to which, they often run imperceptibly into each other. A ſufficient diſcrimination, however, may be made between them for the purpoſes of practice; which is the point of chief importance.

The application of contagious virus is firſt made, in the majority of inſtances, to the ſtomach; and there ſeems good reaſon to think that it remains there, and produces local effects before it is carried into the circulation. It is probably on this account that an emetic often effectually prevents the development of the febrile movements: this remedy ſhould therefore be uſed in early caſes; and purging ſhould likewiſe be reſorted to, becauſe it is ſometimes difficult to eſtabliſh theſe actions in the hot ſtage of fever. When the hot ſtage is newly formed, it is ſtill often deſirable to change the order of ſympathetic actions which are eſtabliſhed. For this purpoſe, the abſtraction of blood till fainting enſues, followed by a briſk purge, will often entirely prevent a ſevere fever from running its courſe.

In the more ſevere forms occaſionally met with in foreign practice, the meaſures for arreſting the progreſs of the malady muſt be peculiarly energetic. The experienced Dr. Jackſon, ſpeaking of a ſevere and complicated form of fever, which he characterizes as preſenting itſelf with appearances of violent irregular vaſcular excitement, and local determinations which threaten convulſion and apoplexy, ſuffocation or engorgement of internal organs, lungs, liver, or ſpleen; ſometimes with a ſtrong, or what may be called a concentrated, general action, thickened and conſtricted ſkin, ardent as a live coal; a condition, which threatens to ſubſide by internal congeſtion, or to explode by local external gangrene of varied form, viz. petechiæ, ſtreaks of ecchymoſis, or extenſive and deep blackneſſes;—gives the following judicious directions. When a certain quantity of blood, only meaſureable by the phyſician as ſuperintending the proceſs, has been abſtracted from the arm, it is adviſable that the patient be ſtripped naked and immerſed in a warm bath of moderate temperature, the immerſion continued for fifteen or twenty minutes, the ſkin ſtrongly ſcrubbed with bruſhes and ſoap while under immerſion. At the expiration of twenty minutes, the condition is to be examined with care; and, if it be then found that the mode of action has not changed, that is, if the movement has not become general and equal, it will be adviſable to re-open the vein, and to allow blood to flow, while the patient remains in the bath, until the object in view be attained: that is, until the circulation be in ſome manner equalized. When that is done, cold water is to be affuſed copiouſly upon the head and ſhoulders, while the lower extremities remain in the warm bath. The courſe of the diſeaſe will, in moſt caſes, be ſuſpended, if not perfectly arreſted, by the effect of the proceedings now recommended; and when that is done, the body, being removed from the bath, is to be wiped dry, and laid in bed; bliſters, as means preventive of return, are to be applied to the head, neck, back, or ſides, according to the predominance of the local ſymptoms. Friction with warm oil will be uſeful; emetics and purgatives promiſe the ſame benefit here, after the caſe is ſimplified, as in the preceding. A bolus of camphor, nitre, tartarized antimony and ſnake-root, with half a grain of opium, and two or three grains of calomel, given every five or ſix hours, with plentiful dilution, frequent ablution, and frequent change of bed and body linen, conduce, if the courſe of the diſeaſe be not totally arreſted, to maintain the movements in an equal tenor until the febrile circle be completed, when healthy action may be expected to re-appear. The outline of practice now ſuggeſted, varied according to circumſtances, applies to the cure of the diſeaſe in all its conditions.

Theſe violent meaſures are ſeldom reſortable to in private practice, nor are they generally required in the fevers of this country; ſo that, if tolerably active bleeding and purging do not arreſt the diſeaſe at its onſet, we let it run its courſe, endeavouring to conduct it favourably to its termination.

It is well known that ſome thirty years back the treatment of febrile diſeaſes conſiſted in ſtimulating and exciting the body to the higheſt poſſible pitch. The folly of this plan has been of late ſeverely reprobated; but a ſhadow of defence has been inſtituted, on this ground; that, as epidemics are always changing their character, what was uſeful and right formerly has ceaſed to be ſo. But this is mere deluſion; for Hippocrates, Sydenham, and Huxham, and indeed all judicious practical men, bled in fevers; nor can the nature of fever itſelf be ſo changeable, as to be cured by contrary remedies, though indeed its variations in character may require a correſponding variety in treatment. We muſt therefore refer to the well-known hypothetical notions of debility, &c. the fatal practice of our immediate predeceſſors.

Bleeding is now on all hands agreed to be the chief agent in ſubduing the violence of fever, though there is much diſagreement as to its modus operandi, and as to the

the extent to which it may be carried with ſafety. Of the various explanations which different authors have given of the beneficial operation of bleeding we ſhall not ſpeak, becauſe they will naturally be underſtood from the general ſpeculations of the pathologiſts already paſſed in review. According to the notions we have adopted, that a general diſtention of the capillaries of the ſyſtem is the cauſe of fever, and that an increaſe in the production of nervous power in the brain and ſpinal marrow is the cauſe which perpetuates this diſtention from one part to another, and moreover ſuſpends the actions of ſecreting veſſels;—bleeding muſt of courſe be adviſed as a meaſure which relieves that diſtention. If diſtention be the ſtate of the capillary ſyſtem in fever, this ſtate muſt be evidently increaſed by the increaſed action of the heart, the vis a tergo thence derived acting as a perpetual dilator of the affected veſſels. The diſtention is alſo of courſe increaſed by the quantity of blood. Bleeding therefore relieves diſtended capillaries by taking from them two cauſes of their unnatural condition: firſt, it takes away the quantity; and ſecondly, as the action of the heart depends ſomewhat on the quantity, it takes away the diſtending force of the latter viſcus. The latter effect is ſtill further increaſed if bleeding be carried ad deliquium animi, or till circulation of blood in the brain be ſuſpended. Now, deeming as we do, that the diſtention of the capillary ſyſtem occurs alſo in the brain and ſpinal marrow, and thus excites the nervous ſymptoms, we conſider bleeding on the ſame ground a great and direct aſſiſtance to the revival of the nervous functions, and hence to the reſtoration of ſecretion. The benefit of bleeding is alſo to be explained on other grounds; i. e. on the ſuppoſition of the increaſed contraction and dilatation of the capillaries in fever. It may in ſuch caſes operate by relieving plethora, the ſtimulus to contractility, and by diminiſhing the production of nervous power, the reſult of increaſed circulation in the brain and ſpinal marrow. Whatever ſide of the queſtion we take, the propriety of early bleeding in fever is ſhown. It muſt be remarked, however, that a low nervous fever is often formed, in which we have no right, from the products of diſſection or from reaſoning, to infer enlargement of the cerebral capillaries; in which, however, a high degree of nervous irritation exiſts, and in which local bleeding is alone admiſſible. It is in this form of fever that counter-irritants are very uſeful.

From the above conſiderations the propriety of bleeding as early as poſſible in continued fever muſt be conſidered fully eſtabliſhed. As to the quantity to be taken away, no dogmata can be laid down on the ſubject; for neither the pulſe, the ſize, the age, nor the temperament, of the patient, are unequivocal guides to our practice. The conſideration of theſe conjointly muſt direct us in general. The firſt bleeding ſhould be carried on till the patient faints. As to the propriety of repeating the operation, the ſizy appearance of the blood noticed in fever, and a certain degree of inflammation of the lips of the divided orifice in the arm, will indicate to us the affirmative; while the diminiſhed production of heat, and diminution of the pulſe, will point out when it is time to diſcontinue the uſe of this potent meaſure.

Purging at the commencement of fever is of the higheſt utility; and will often, according to the teſtimony of Drs. Clutterbuck and Bateman, cut ſhort the diſeaſe. It ſhould be excited by the moſt active means; e. g. by cathartics of gamboge, elaterium, ſubmuriate of mercury and jalap, &c. (we have generally uſed elaterium.) The excitement thus produced on the bowels relieves the fever, both by emptying the ſecreting veſſels, and by exciting an irritation vicarious to that exiſting in the brain. As the diſeaſe advances, (that is, about the ſixth day,) this ſtrong purging ſhould give way to milder or laxative medicines, the adminiſtration of which ſhould not be puſhed further than to procure two motions in the four-and-twenty hours. The reaſon for not perſiſting long in the uſe of draſtic cathartics is leſt inflammation be induced of the mucous membrane of the bowels; a circumſtance much to be dreaded.

Digitalis is a medicine of great uſe in controlling the actions of fever. It ſeems to operate in the ſame way as bleeding; viz. by diminiſhing the action of the heart and larger arteries, it prevents the undue diſtention or excitement of the diſeaſed capillaries. But it is a medicine which requires to be carefully watched. There is no rule to be laid down as to its uſe. We are contented, in ordinary caſes, to give from five to ten drops of its tincture every four or ſix hours; but theſe doſes may be quintupled in ardent fevers of great intenſity, as we ſee the Italians are in the habit of doing, not only with impunity, but with ſucceſs. (See p. 53 of this article.)

As to the *dietetic treatment* of febrile patients, we have ſcarcely any thing to ſay. The parched mouth and nauſeating palate of the ſufferers in queſtion ſo clearly announce the painful violation of feelings which thoſe muſt have undergone who were ſubjected to the diſcipline of the Brunonian ſchool, that one almoſt wonders that the common ſenſe and prejudices of mankind did not run againſt the injurious regimen of wine and ſtimulants. In the majority of caſes our patients need eat nothing; a variety of cold drinks, as barley-water, lemonade, &c. may be provided for them, and allowed in the moſt unlimited quantities. Acid fruits may be taken freely; and this is in general all that is deſired. Should ſuſtenance be wiſhed, thin gruel is all that ſhould be allowed; for of the heating and ſtimulating effects of broths, beef-tea, &c. every one is ſufficiently aware. At the ſame time the free current of air through the apartments in the houſes of the poor, and the removal into another room of the huddled-up and dirty furniture, are alſo indiſpenſably neceſſary. The bed-clothes, linen, &c. of the patient, ſhould be changed at leaſt every other day; and ſponging the body with water (when maternal or anile prejudices do not oppoſe it) ſhould be ordered. And let no one deſpiſe one iota of theſe ſimple (and, when uncombined, inefficient) meaſures; for they have ſaved the lives of thouſands, and may be conſidered (inſignificant as they are in themſelves) among the proudeſt reſults which have ariſen from the philoſophy of the preſent age. To the cold effuſion eſpecially we are indebted for the preſervation of many of our moſt efficient veterans at a time when the uſe of bleeding was not eſtabliſhed.

Cold applications to the head are often of much avail in the removal of the nervous ſymptoms of fever. Dr. Clutterbuck thinks "they are moſt ſerviceable where the pain and throbbing are the moſt violent, and the heat of body generally much increaſed." Where, on the contrary, the face is pale, and the extremities cold, as is often the caſe in feeble ſubjects, and in advanced ſtages of diſeaſe, the uſe of warm fomentations to the head from time to time ſeems more beneficial.

The laſt ſtage of fever is marked at once by great diſorder in, and imperfect performance of, all the ſenſorial functions. The patient is nearly inſenſible to impreſſions; there is extreme proſtration of ſtrength, indicated by the ſupine poſture, and the continual ſliding of the body towards the bottom of the bed; together with involuntary tremors of the hands and tongue; and laſtly, early delirium, followed by an almoſt total annihilation of the powers of mind. The pulſe is commonly ſoft and compreſſible, though often with conſiderable fulneſs; and the heat of the body is generally conſiderable.

It is in this ſtage, that black ſordes collect about the mouth and teeth; that the tongue turns black on its ſurface; and that petechiæ, purple ſpots, and vibices, with dark-coloured hæmorrhages, are apt to occur; ſucceeded by involuntary and fœtid diſcharges by ſtool and urine. It is to fever marked by ſuch ſymptoms, that the terms putrid and malignant were formerly and erroneouſly applied.

In former times, when perſons labouring under fever were

were confined in a close and heated atmosphere, and when cordials and stimulants, under the name of alexipharmics, were largely employed, such a train of symptoms was by no means uncommon. At present, owing to a more judicious management of the patient, they are rarely seen. The treatment of patients under these circumstances is difficult: little in fact can be done. It is to be remarked, that this state is never met with when proper antiphlogistic measures have been premised. The patient, after having undergone their operation, always terminates his life in another manner; viz. either from a general wearing-out and exhaustion of the nervous functions, or from local inflammation of a particular organ.

With respect to the period of this stage at which bleeding becomes inadmissible, this is very uncertain; for it has been often successfully performed even when the patient appeared near his death. Dr. Clutterbuck says that he has occasionally employed it with advantage at almost every period up to the end of three weeks. He believes it may be safely done at any time, as long as the sensorial functions are carried on in a tolerably perfect manner; "that is, while the external senses are preserved, the intellectual sound, the voluntary powers merely impaired, without being disordered." This author thinks that, contrary to what is generally supposed, "the more the sensorial functions are disturbed, particularly the greater the delirium, the less confidence can be placed in this evacuation." The pulse does not always indicate when it will be too late to bleed; for in numerous cases Dr. Clutterbuck has found it weak and small, when bleeding has proved of the most decided advantage. As a general rule, it may be stated, that, while a full and wiry pulse authorizes us to bleed in the most advanced stages of continued fever, a small and contracted state of it should be a veto to such practice. Hardness of pulse should also be particularly attended to. Dr. Clutterbuck thinks, when it is "soft and compressible, bloodletting is altogether inadmissible." In the advanced stage of fever, bleeding should be had recourse to with much caution and reserve, in regard to quantity; for the loss of two or three ounces will, at such time, be productive of very marked effects. He also thinks that this practice should not hinder the very moderate use of stimulants, as wine, ammonia, &c. Upon the whole, however, we should attempt very little of the latter kind of practice, and should content ourselves with the negative practice of abstracting all nervous irritants, as light, sound, &c. and open the bowels and excite the kidneys; always recollecting what Sydenham says, "ob nimia diligentia medici." It is to be recollected, that we are not now speaking of those cases in which inflammation and disorganization takes place in a particular organ, this being the most frequent mode in which continued fever terminates.

A determination of blood to particular organs is a very frequent occurrence in epidemic fever. Sometimes these determinations happen very generally, from some peculiarity in the nature or the cause of the epidemic; as when we see inflammation of the lungs an almost constant companion of the prevailing fever; or where inflammation of the mucous membrane of the intestines, constituting dysentery, prevails. Occasionally, however, while simple fever is prevalent, the particular predispositions to disease which are present in the constitution are manifested by oppression of particular organs. As to the nature of these determinations of blood, we have no hesitation in ascribing them to inflammation. It should be mentioned, however, that this is denied by a physician, the excellence of whose descriptions and treatment of the above diseases forbids us to pass over his hypothesis, which we should otherwise consign to the oblivion it must soon meet with, and for which nothing but the practical merits of its author has procured even an ephemeral reputation. The hypothesis in question is that of Dr. Armstrong, who considers that congestion of blood takes place in the veins of organs gravely affected in epidemic fever, and without any further disorder in the arterial system than simple excitation. Now nothing can be more baseless than the structure of this theory. It rests, first, upon the results of dissection; that is, upon finding actual congestion of blood in the veins. Now the veriest tyro that ever took up a scalpel knows that the last act of the arteries and the left ventricle is the propulsion of blood in the dead subject, so that the arterial system is always empty, the venous system full. And again, granting that an excitement of the small arteries existed, and caused distention and enlargement of the veins; the fact is practically unimportant, because our endeavours must be directed to the relief of the excited arteries, not to that of the veins, which are passive tubes. Venous congestion cannot, however, exist without derangement in the action of the heart; and if such derangement existed, congestions of the veins would exist generally; occurrences which certainly do not happen. Many other arguments suggest themselves against this wild speculation; but, as those we have adduced seem quite conclusive, we shall dismiss the subject. We must assert, however, that in no other work extant do we find so good a history, or such efficient treatment, of local inflammation supervening to fever, as in the work of Dr. Armstrong. From this gentleman's work, and from that of Dr. Jackson, we shall principally derive the symptoms of the following complaints.

We shall not enter into any discussion as to whether all fevers be of one kind; and the yellow fever, epidemic, dysentery, &c. the same disease, varying in intensity, and deriving the peculiar character of those forms of disease from the predispositions which climate and other external agents produce, though this seems a very probable view of the subject; but we shall confine ourselves for the present to an account of those complications which are met with in the epidemic fevers of this country. The most common complication is that of fever with inflammation in the lungs and its investments. In this case, in addition to the ordinary symptoms of fever, a permanent pain is felt in some part of the chest, generally acute, though occasionally obtuse; but, in either case, much increased by deep inspiration. There is a sense of weight or constriction across the breast. The respiration is always laborious; the thorax heaves, as if under some oppressive load; and the alæ nasi are thrown into strong motion. The patient is extremely restless, and has a frequent and troublesome cough, which augments both the pain in the side and the difficulty of respiration. Most frequently he cannot breathe with any degree of ease when incumbent, but is obliged to have the trunk considerably elevated. The features altogether indicate surprise, alarm, or anxiety; the eyes seem prominent; the cheeks and lips are generally of a deeper colour than natural, yet in some cases the face has a pale bloated appearance. The tongue is commonly foul in the middle, and of a dark red round the edges; the pulse is sometimes slow, full, and strong; and in other instances, quick, small, and weak. As in almost all local inflammations, the temperature of the skin varies a great deal in the day, and partial perspiration are not uncommon, especially when the pain of the side is acute. A milder form of inflammation attacks the pleura, which is often insidious and unsuspected. If the breathing be narrowly watched, it is observed to become quicker and more anxious, especially in the horizontal posture; and cough and uneasiness are almost always excited on a full inspiration. There is also, for the most part, pain or soreness in the left side, or under the sternum, with a feeling of weight or tightness in the breast, often with little pain. The progress of the inflammation is, however, involved in considerable obscurity: but it may, nevertheless, be traced by the continuance of uneasiness in the chest; by the increase of the cough, dyspnœa, and restlessness; by the pa-

tient's panting or breathing ſhort whenever he ſpeaks; by the number of reſpirations exceeding the natural amount in a given time; by the colour of the face, indicating ſome impediment to the common changes of the blood in the lungs; and by the gradual increaſe of the pulſe, and of the fever. When the inflammation ends in an abſceſs, the uneaſineſs in the breaſt abates, but the breathing becomes more laborious, and there are chilly and hot fits, with copious ſweats, and great loſs of ſtrength. The moſt common termination, however, of inſtances of this kind, is by an effuſion of ſerum into the cavities of the pleura. This calamity is not neceſſarily fatal at once, ſome patients lingering for ſome time after it.

In this form of diſeaſe, the treatment of fever in general muſt be conjoined with the uſual means for alleviating local inflammation. It is ſeldom an accurate diagnoſis can be eſtabliſhed between inflammation as it affects the ſubſtance of the lungs, or as it affects the pleura. In either caſe bliſtering may be conſidered a meaſure of great effect; and, if there ſeems ſtrong evidence of the exiſtence of inflammation in the pleura, we may have recourſe more freely to the lancet than under ordinary circumſtances. It is to be remembered that cold affuſion is by no means to be allowed when the lungs are affected in fever. The warm bath is often, however, of great uſe when the temperature of the ſkin is unequal; and at the ſame time diaphoretics are of much importance. Of this kind of medicine, large doſes of calomel, with as much opium as will counteract the purging property of the latter drug, are the moſt advantageous.

Another complication ſomewhat analogous to the preceding, is that of fever with bronchitis. The fever in this caſe is attended with a cough, at firſt dry, but afterwards moiſt. In recent caſes the expectorated matter reſembles the white of an egg, but in a more advanced ſtage it appears viſcid and opake. The pulſe throughout is feeble and quick, the tongue foul, the heat variable, the bowels irregular, and the ſtomach prone to reject its contents; and, although the patient frequently appears drowſy, for the moſt part he obtains very little ſleep. In ſome perſons thus affected, the complaint continues many weeks, and often acquires a conſumptive character before death. When it ends favourably, the convaleſcents remain long in an emaciated and enfeebled ſtate. An abatement of the vomiting, ſome deſire for light food, and a tendency to quiet ſleep, are the appearances which augur recovery.

The treatment of this complaint muſt differ principally from that of ſimple fever in that a minor degree of bleeding will ſuffice, and in the exhibition of nauſeating medicines, which are of very great uſe, notwithſtanding the gaſtric irritability which prevails. In a word, the treatment is that of Catarrhus, (to which the reader is therefore referred for more explicit details,) conjoined with the more active and general treatment of fever.

Abdominal inflammation is frequently complicated with the fever in queſtion; and it is often difficult to diſtinguiſh the preciſe ſituation of this occurrence; for the functions are ſo generally diſordered, that their diſturbance affords no diagnoſtic, as in caſes of common inflammation. It is not, however, of the utmoſt importance to aſcertain the preciſe ſeat of the inflammation, as the treatment does not vary eſſentially. The inflammation of the mucous membrane of the ſtomach which accompanies fever is ſo common in ſome countries abroad, that it has induced Brouſſais and others, as we have before ſeen, to infer its invariable preſence in febrile diſeaſes. In the works of the above author are to be found a variety of excellently-written caſes of the complication in queſtion. J. P. Franck (De Curandis Hominum Morbis Epitome Prælectionibus Academicis dicata, Ven. 1805.) more properly confines the term *gaſtric fever* to thoſe caſes in which the fever is accompanied and exaſperated, though not cauſed, by phlegm, bile, inteſtinal worms, or other irritating matter capable of inducing an inflamed ſtate of the ſtomach. We conſequently generally meet with this diſeaſe in dyſpeptic patients when they become the ſubjects of fever. We copy from a tranſlation of Frank's work the ſymptoms of the gaſtric fever.

"It begins, like other fevers, with alternate cold, ſhivering, and heat, accompanied with laſſitude, head-ache, and pains ſimilar to rheumatiſm in the back, the loins, and the joints. The face becomes pale, and the eyes yellowiſh; but the ſtomach is chiefly affected with inflation, tenſion, and a ſenſe of weight, joined with anorexia, loathing of food, nauſea, retching, and eructation of diſagreeable flatus, and of bilious, tenacious, acid, or acrid, matter. The ſtate of the mouth is the beſt indication of the ſtate of the ſtomach, which is obſervable in the fœtid breath, the tongue loaded with tenacious white or yellow mucus, ſometimes taſteleſs, and at others bitter and diſagreeable. Diſorders in the abdomen ſucceed, ſuch as borborigmus, gripes, wandering pains, ſenſe of weight and fulneſs, with either conſtipation, or bilious, fetid, or frothy, dejections. In this ſtage of the affection the patient may not be ſo ill as to be confined to bed; but in a ſhort time, though the cold fit be neither great nor conſtant, and ſometimes may be abſent; the heat, thirſt, giddineſs, and head-ache, increaſe, the pulſe becomes more frequent and often intermittent, the ſymptoms of the ſtomach, nauſea and retching, and of the abdomen, are aggravated; the fluſhing of the face is greater, with greeniſh paleneſs towards the ſides of the noſe; the under lip quivers, the eyes are ſuffuſed with tears, the reſpiration becomes hurried and difficult, often accompanied with a cough, either with or without expectoration; pain ſimilar to that of rheumatiſm is felt in the thorax, ſcapulæ, and fauces; there is often great apparent proſtration of ſtrength, with delirium, drowſineſs, or vigilia.

"After three or more days, remiſſions occur in the morning, with a gentle ſweat breaking on the forehead and breaſt. The tongue is ſometimes more loaded with yellow mucus, and ſometimes dry in the middle, and of a brown colour; the urine is made with ardent pain, is deeper yellow, or appears like that of cattle, or with a pink or furfuraceous ſediment. Towards night, ſometimes with a ſlight chilline ſs, or ſhivering, all theſe ſymptoms are aggravated; the ſkin becomes dry, harſh, and burning, and is ſometimes ſuffuſed with a yellow tinge; blood often drops from the noſtrils, mixed with yellowiſh ſerum; and the vigilia, reſtleſſneſs, and delirum, are exceedingly diſtreſſing.

"As the diſeaſe advances, the morning remiſſion almoſt diſappears: the region of the liver and ſtomach is more tenſe and painful; the anxiety, heat, thirſt, and head-ache, become much aggravated; the delirium is almoſt conſtant; the fauces are parched; the tongue, brown, livid, approaching to black, and covered with a viſcid mucous, is almoſt of a fragile hardneſs and chopped; and the ſpeech is impaired and ſtuttering. The eyes are very red, the hearing is obtuſe, and the temples throb. The circulation is quickened, while the blood-veſſels are contracted; the urine, ſcanty, thicker, fetid, and voided unconſciouſly; and the ſtools, liquid, brown, or greeniſh, and extremely fetid: the abdomen is inflated and ſounds to the touch, and the ſkin is parched or bathed in a viſcid ſweat.

"If the fever in this ſtage is either neglected or badly treated, or the patient is otherwiſe in unfavourable circumſtances, it will ſoon terminate fatally. On the other hand, if the force of the diſeaſe is ſubdued either ſpontaneouſly or by art, then the offending matters are thrown off by the bowels and ſkin, the remiſſions become longer and more diſtinct, the tongue more moiſt, and the mucus which covered it either ſloughs off, or, as the tip of the tongue becomes redder, comes away from the edges in ſoft ſcales. Sometimes a very ſudden change now takes place: the viſcid matter almoſt of a ligneous hardneſs, which was adhering to the palate, quickly ſoftens, and is bedewed with a bland moiſture. At this period, the fever

ver ſometimes paſſes by almoſt imperceptible gradations into a periodic intermittent; or the exacerbation, becoming in its returns more tardy and mild, terminates in an equable and moiſt tranſpiration; the ſtools become copious, pultaceous, and natural; and the urine depoſites a copious reddiſh-white precipitate.

"In the more mild and ſlow forms of the fever, the patient, on riſing from ſleep, feels little refreſhed, is liſtleſs and moroſe, and his mouth and fauces are loaded with phlegm; he has fetid eructations, and copious mucous expectoration, with nauſea; has little reliſh for food, but does not altogether loathe it, though after eating he complains of weight, fulneſs, drowſineſs, flatus, and obſtruction of the bowels. He has a ſlow, weak, and ſometimes a full and rather-hard, pulſe, with little thirſt. Cold ſhivering is ſucceeded with wandering fluſhes, and dry ſqualid ſkin, or ſlight ſweating; leaden heavineſs of head, and murmuring and ringing in the ears, cauſing a degree of ſtupidity. The viſcidity, in ſuch caſes, of the mucus in the ſtomach and inteſtines is often ſo great as to obſtruct the orifice of the biliary duct, and give riſe to jaundice. The abdomen ſwells, and feels painful to the touch in conſequence of flatus, and of the inertia of the bowels. Singultus and difficult deglutition ſucceed to great anxiety and oppreſſion of the ſtomach; but in a few days numerous aphthæ are obſerved to ſpread from the fauces over the whole cavity of the mouth, which ſoon ſlough off, and are replaced with a freſh crop. Some patients are alſo diſtreſſed with difficulty of breathing and cough, which is firſt dry, and afterwards accompanied with abundant and viſcid expectoration. In this ſtate of things we can ſcarcely call the diſeaſe fever, unleſs there is greater proſtration of ſtrength, pains in the joints, increaſing towards night, burning of the ſkin, or eruptions frequently breaking out immaturely; and more particularly if there are diſtinct evening exacerbations, ſucceeded by leſs diſtinct remiſſions, vertigo, vigilia, ſtupor, delirium, frequent ſyncope, with recurrent diarrhœa, rapidly undermining the powers of the ſyſtem. In other caſes, great quantities of worms, ſometimes living and ſometimes dead, or nearly putrid, are ejected both from the mouth and anus, accompanied with peculiar fœtor of the breath, and the uſual ſymptoms of verminoſe irritation; ſuch as wandering pains, lancinating pains of the joints, itching of the noſe, tremor, fainting, *nauſea*, teneſmus, and copious dejections of putrid mucus.

"When the attack of the fever is more ſudden, we generally, though not always, obſerve the cold ſhivering to extend beyond an hour, and to recur by turns, being followed by heat, which is for the moſt part parching, and increaſed towards night, often accompanied with furious delirium. In ſome caſes a ſlight remiſſion occurs in the morning; in others none. The pulſe is weak and indiſtinct, collapſing after it has at firſt been full and ſomewhat hard. There is much nauſea and bitterneſs of the mouth, and ſo great tumefaction and oppreſſion of the ſtomach, that the very touch or weight of the bedclothes is painful. Towards evening there is again an exacerbation, correſponding ſometimes to ſemi-tertian intermittent; and the yellowneſs of the eyes, fluſhing, head-ache, vigilia, anxiety, fœtor of the breath, and delirium, are increaſed; and the thirſt, and longing for acids, is ſometimes intenſe, but occaſionally is ſlight. The urine, at the acceſs of the paroxyſm, is brown, thick, turbid, and fœtid; during the remiſſion, it is watery and crude. The ſtools are exceedingly offenſive. Abundant but viſcid perſpiration gives no relief. The tongue is tremulous, and, with the teeth, is loaded with a brown viſcid matter; or it is ſcabrous, almoſt black, very dry, and can ſcarcely be extended beyond the teeth. The ſtupor and vigilia increaſe; blood ruſhes copiouſly from the noſtrils, or is paſſed with the urine and fæces; fluid, grumous, and preceded by pain extending to the pubis. Now large quantities of æruginous and viſcid bile are ejected from the ſtomach, agreeing in this almoſt with the yellow fever of America and Siam. The ſtools become more liquid, green, brown, frothy, and very offenſive; and there is ſeldom power remaining either to void or to retain the natural diſcharges. The patient, notwithſtanding, ſays he is very well, and attempts to go to his friends, whom he imagines are abſent. He picks the bed-clothes, or mutters to himſelf; and ſometimes burſts out into fits of furious delirium. This is ſucceeded by ſubſultus tendinum, comatoſe ſtupor, violent pulſation of the carotids, great difficulty of reſpiration, colliquative diarrhœa, cadaverous breath, hiccup, cold extremities; cold, profuſe, and viſcid, ſweat; very rapid, and ſcarcely perceptible, intermittent pulſe; lethargic ſleep, convulſion, and death."

In our climate, though occaſionally the gaſtric fever arrives at the ſame violence as above, upon the whole gaſtric irritation is more ſlow in its progreſs. It generally happens that the ſtomach and inteſtines ſuffer together, and that the inflammation implicates the whole ſtructure of thoſe parts, while in the accounts juſt rendered we often perceive a phlogoſis of the mucous membrane only. In this caſe the complaint is generally attended with deep continued pain, and ſoreneſs of the integuments, increaſed on preſſure; retching, vomiting, or anorexia, deſire for cold acidulous drinks; ſhort quick reſpiration, fulneſs as well as flatulence of the bowels, great proſtration of ſtrength, reſtleſſneſs, and anxiety. The patient almoſt invariably lies upon his back, frequently toſſing his arms about, moving his feet, or changing the poſition of his head. If deſired to turn upon his ſide, it gives him conſiderable uneaſineſs in the abdomen; and, if ſuddenly raiſed into the upright poſture, he generally begins to eruct, retch, or vomit.

The pulſe is ſmall and ſharp, and in ſome caſes very quick, but in others below an hundred in a minute; the tongue foul in the centre; the mouth clammy; the taſte vitiated; the bowels are, for the moſt part, *bound*; the lips parched and pale, or ſomewhat livid; and the countenance expreſſes much diſtreſs. The pain of the belly is augmented by yawning, by coughing, or by drawing the breath deeply down, and ſometimes even by the blandeſt liquids, which are uſually rejected, unleſs taken in ſmall quantities at once. If the pain be acute, the ſkin is often of a pungent heat about the breaſt and abdomen; while the forehead and face, expoſed to the atmoſphere, are ſometimes damp and even cold.

During the advancement of the abdominal affection, the pulſe grows ſmaller and quicker, the vomiting more urgent, the belly tumid; the thirſt, ſenſe of internal heat, and reſtleſſneſs, being all aggravated. Upon the approach of ſuppuration, of effuſion, or of gangrene, there are rigors or ſlight chilly fits, with much abatement of pain; but cold copious and clammy perſpirations come on, attended with ſhort agitated breathing, with an hurried undulating pulſe, frequent dark lax ſtools, and inceſſant vomiting. Soon after this, the patient dies. For the moſt part, however, inflammation of the ſtomach or bowels terminates fatally before it has advanced into actual gangrene; the patient finally ſinking under the accumulated force of exhauſtion and of irritation.

It has been mentioned, that in moſt ſevere caſes of gaſtric fever a great derangement of the functions of the liver is found. Sometimes, however, the latter circumſtance exiſts alone. But we are not always to infer that morbid action of the liver exiſts becauſe we meet with copious vomitings of bile; for the act of vomiting itſelf will induce copious diſcharge of bile from the healthieſt individual. We again quote, chiefly from Armſtrong, the hiſtory of the ſymptoms of this complication.

"If the liver be attacked with inflammation, giddineſs, load about the breaſt, ſickneſs, and vomiting, are often among the primary ſymptoms; and the patient, complaining of pain and ſoreneſs, with weight about the right hypochondrium, can neither bear preſſure in that place,

place, nor lie upon the left ſide, without an increaſe of pain. When the convex ſurface of the liver is the ſeat of the inflammation, it is ſometimes not very eaſy to diſtinguiſh the hepatic affection from pleuritis: but in the former uneaſineſs is excited by preſſing the hand under and above the falſe ribs, and there is generally ſome pain at the top of the ſhoulder; circumſtances not commonly obſervable in inflammation of the pleura: and further, the cough and dyſpnœa are not ſo diſtreſſing as in the latter, while the abdominal ſecretions, eſpecially thoſe of the liver, are much more vitiated."

The cough is for the moſt part dry, but ſometimes humid, and frequently excites a pungent pain in the part affected, with a tendency to nauſea, retching, or vomiting. The ſpirits and ſtrength, particularly the former, are much depreſſed; the mind is apprehenſive, confuſed, or ſlightly delirious, the pulſe quick and hard; or low, intermitting, or oppreſſed; the breathing anxious and variable; the tongue covered with a dirty white, or yellowiſh, more frequently with a brown fur; the urine ſcanty and deep-coloured; the bowels are generally irregular; and the fæces dark, ſlimy, varied, and mixed with morbid bile. The heat of the ſkin, though ſometimes only a little, is at other times much, above the ſtandard of health; it is ſometimes jaundiced. Dr. Armſtrong ſtates, however, that this ſymptom often occurs without inflammation of the liver.

It is to be remarked, that there is often much obſcurity in tracing the preſence of gaſtric fever or inflammation in any part of the abdominal fever, when it aſſumes a ſlow and mild form. But the exiſtence of this ſtate in any part of the belly may be inferred in continued fever, when, after the ſupervention of the ſtage of excitement, the ſtomach remains uncommonly irritable; when there are conſtant feelings, however trifling, of weight or uneaſineſs about the ſcrobiculus cordis, when there is quickened or anxious reſpiration; a change always obſervable in abdominal, ſeldom in cerebral, irritations. We ſhould alſo note the ſmall and rapid pulſe, the indiſtinct chills and heats, the dry or foul tongue, with thirſt, reſtleſſneſs, frequent eructations, ſenſe of internal heat, ſoreneſs, or pain, in ſome particular part; and an unuſual quantity of dark, thick, fluid matter in the ſtools on the operation of a purgative. The progreſs, indeed, of ſuch affections muſt be traced by the above ſymptoms; for *pain* is not very conſpicuous. But the beſt method of finding out obſcure abdominal inflammation is to preſs forcibly on the bowels at a time when the patient's mind is occupied with ſome other object. It is proper to ſelect this opportunity; for oftentimes patients complain of pain in reply to the queſtion "Does preſſure hurt you?" becauſe they *expect* that ſuch will be the caſe.

The moſt important feature in the treatment of the gaſtric complication of fever is its inertneſs. This is a fact not ſufficiently dwelt upon in this country; and, though the too great dependance which our Gallic neighbours place upon medicated broths, eau ſucré, &c. may be worthy of cenſure when ſuch remedies are applied to inflammatory complaints in general, yet, when the inflammation is confined to the mucous lining of the alimentary canal, the mere omiſſion of irritating medicines, whether cathartics or ſtimulants, will do much for the cure of the diſeaſe. The nature of our treatment in abdominal inflammation will depend therefore upon whether the inflammation be confined to the above tube, or whether it more generally implicates the ſurrounding viſcera. In the firſt caſe, free general bleeding ſeems by no means called for, though leeching the abdomen is highly neceſſary. As in this caſe a large quantity of irritating ſecretions have been collected, to the great aggravation of the gaſtric diſturbance, it ſhould be our firſt care to evacuate them from the ſyſtem. In doing this, we ſhould uſe ſuch remedies as are moſt likely to bring about the deſired effect without, by their own properties, irritating the inflamed membrane. In the firſt place, ample dilution with acidulated drinks is to be had recourſe to; an emetic is the next thing to be preſcribed, and its effect is often miraculous; but, after the firſt time of giving it, its repetition ſeems by no means admiſſible. The evacuation of the bowels is to be effected by a doſe of caſtor oil, if the ſtomach does not reject it, and by enemas: by the latter remedies, compoſed of oleaginous (or in caſes of ſevere pain of anodyne) decoctions, the alvine diſcharge is to be regularly kept up. The medicines are to be ſuch as at once diminiſh the temperature of the ſtomach; as, the common ſaline draughts, nitre largely diluted, &c. occaſionally ſmall doſes of antimony may be uſed. No ſolid food or animal broths ſhould be allowed; but cooling drinks may be taken in large quantities, together with ſweet mucilaginous decoctions.

Now, if the collatitious viſcera ſeems more deeply implicated, much will depend upon the ſtate of the general fever. If the latter be highly manifeſted, if the temperature be high, and the pulſe ſtrong, bleeding and afterwards cupping over the affected part muſt be had recourſe to without loſs of time. If, on the other hand, a violent and intenſe inflammation ſupervenes, while the excitement of fever is not marked, (and this is no uncommon occurrence,) we ſhould endeavour to excite thoſe parts of the body which diſplay a diminution in the quantity of their circulating fluids. To this end a hot bath muſt be premiſed before we bleed; and, in performing the latter operation, we ſhould carefully watch the riſing of the pulſe; an occurrence ſo important, that we may occaſionally endeavour to promote it by cordials and ſtimuli. After this, ſinapiſms to the feet, and other counter-irritants, will be found uſeful agents. It will be neceſſary alſo to excite the ſecernent ſyſtem generally by large doſes of calomel and opium.

When inflammation of the liver is clearly manifeſted, or when the mucous membrane of the bowels is threatened with ulceration, in addition to the uſual revulſive meaſures we ſhould exhibit calomel in five-grain doſes, combined with half a grain of opium, every ſix hours, till ptyaliſm is induced. We may remark, that no general rules can be laid down as to the uſe of bliſters: they are for the moſt part of the utmoſt efficacy in relieving the local complications attendant on continued fevers; but they require to be applied with much care, as to the ſtate of the ſkin generally; for, when inflammation of the mucous membrane of the alimentary canal is attended with much heat and redneſs of the ſkin, it is generally found that bliſters increaſe rather than alleviate the complaint: they alſo act in a detrimental manner in caſes where exceſſive nervous irritability is preſent.

Beſides the complications before mentioned, we ſometimes find rheumatiſm or angina united with fever. Depletion may be puſhed to the utmoſt extent in the former; in the latter, quite the reverſe.

In taking leave of the treatment of continued fever, we have to ſay a few words on the management of *convaleſcents*. It is too much the practice even in this country, and it is carried to a much greater extent abroad, to give bark and other ſtrengthening medicines, as they are improperly called, to thoſe who have eſcaped from ſevere attacks of fever. We have no heſitation in ſtrongly reprobating this practice. We ſhould anxiouſly inculcate, that ſtrength is only to be attained through the medium of healthy digeſtive organs; and that, when theſe are ſtrong, a very ſmall quantity of ſuſtenance will produce a high degree of nutrition. Now, as ſudden plethora is proverbially "a bad ſign" when it ſupervenes to fevers, we ſhould be cautious of producing it by exciting in an unnatural manner the energies of the digeſtive organs, and we ſhould rather ſuffer them to recover their tone (which they will generally do) in a gradual manner, and by means of their own powers.

We now proceed to the conſideration of YELLOW FEVER; a diſeaſe at the preſent moment committing dread-

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ful ravages on mankind, and concerning the origin of which the medical world is much divided. The conflicting opinions of medical men on this ſubject are indeed well known to the public; the grand queſtion to decide being whether yellow fever is contagious or not. It is by no means eaſy however to trace the operation of the inſcrutable agents which give riſe to this diſeaſe: and hence, while one phyſician attributes its diffuſion to exhalations from the body of the human ſpecies, another finds perhaps in the ſame caſe evidence of its origin from miaſmata. In a late number of the Medical Repoſitory we find the names of numerous and reſpectable authors marſhalled in regular array againſt each other as taking oppoſite ſides in this important queſtion. We copy the chief of theſe, that thoſe who want to examine cloſely the evidence on each ſide may have recourſe to it.

Among thoſe who conſider yellow fever to be an imported and *contagious* diſeaſe, are ranked Arejula, Batt, Berthé, Dalmas, ſir J. Fellowes, Moreau de Jonnés, B. Progetto, Salgado, &c. who found their opinions on the yellow fever of Spain; and more recently Pariſet holds the ſame opinion. Alſo Bally, ſir Gilbert Blane, Caizerques, Chiſholm, W. Currie, Des Portes, D'Oyarvide, Lind, Ried, &c. who derive their facts from the Weſt Indies and America.

Among thoſe who deny that yellow fever is contagious, and aſſert its origin to be entirely *local*, or dependent upon ſome myſterious and inappreciable change in the atmoſphere, are ranked Amiel, Burnett, Caſſan, Doughty, Keutſch, Lacoſte, Langerman, O'Hallaran, &c. who draw their obſervations chiefly from the fever of Spain; and Bancroft, Barker, Browne, Comſtock, Clarke, Coventry, Davidge, Denmark, Deveze, Dickſon, Ferguſon, Gilbert, Hillary, J. Hunter, R. Jackſon, Jefferſon, M'Arthur, M'Lean, E. Millar, Moore, Moſely, Muſgrave, Muttlebury, Ramſay, A. Robertſon, B. Ruſh, Savaréſi, Selden, Sheppard, Trotter, Valentin, Vanel, Veitch, Whitehead, &c. in the Weſt Indies and America; and in Africa, Drs. Copland and Winterbottom.

Among thoſe who hold a middle courſe, allowing the local origin of the fever, but aſſerting that it may become contagious, we find Eymann, Hoſack, Humbolt, J. Johnſon, Le Blond, Nicol, Palloni, Pugnet, Romans, &c.

To theſe we muſt add the ſingular opinions of Baron Larrey. This author divides virus into two kinds; the one fluid, as in ſiphilis, ſmall-pox, and vaccina; the other gaſeous, or miaſmatic: of this laſt ſort is (he ſays) the virus of the yellow fever. Each virus has a particular influence on certain parts. That of the yellow fever acts particularly on the nervous ſyſtem of animal and organic life. It is connected with the lymphatic ſyſtem; and, according to him, it is the moſt ſubtle and fugacious of all. It laſts but a moment at the higheſt point of diſeaſe; and then loſes the power of tranſmitting itſelf. It is principally ſeated in the exanthema when this exiſts, and in the cutaneous tranſpiration. It is in this manner that M. Larrey endeavours to reconcile the contradictory opinion of phyſicians on this ſubject. He is, however, an advocate for meaſures of precaution; for if, ſays he, one patient only out of a hundred be capable of tranſmitting the diſeaſe, prudence requires that the whole ſhould be ſequeſtered, as it is impoſſible to aſcertain the individual by whom the diſeaſe may be perpetuated.

For our own parts, we can only give the concluſions we have arrived at from an attentive peruſal of moſt of the above works. It would far exceed our limits to detail, even in the moſt compreſſed form, the arguments of theſe numerous and conflicting authorities. But, taking up thoſe opinions which ſeem to have been moſt carefully induced from facts, and which in ſome manner explain the diſſonant evidences of various authors, the following circumſtances appear to us tolerably well eſtabliſhed. Firſt that the YELLOW FEVER, the *bilious remittent*, the *Bengal fever*, the *Bulam fever*, &c. are all one and the ſame diſeaſe modified by varieties in climate, conſtitution, and prediſpoſing cauſes; that is to ſay, that they are ſo far the ſame diſeaſe, that their fundamental therapeutical indications are ſimilar, and that they are apt, when external circumſtances ſerve, to run into each other. Secondly, that this fever is for the moſt part cauſed by certain miaſmata from marſhy ſoils, which miaſmata are ſuppoſed to be the product of putrefying *vegetable* ſubſtances, it being urged that *animal* putrefaction is not found to produce yellow fever. This, however, is by no means clearly aſcertained. It is aſſerted that the miaſmata in queſtion are generated for the moſt part in ſituations where the water has receded or been partially dried up, and where conſequently the muddy bottom is expoſed to the ſun's rays. It is aſſerted alſo, that an high temperature is an indiſpenſible condition to the production of theſe miaſmata, or at leaſt to their morbid action on the human body; whether ſuch heat be in actual exiſtence, or whether it has immediately preceded a ſudden acceſſion of cool weather.

Though theſe miaſmata from marſhy ſoils are undoubtedly in many inſtances the ſole cauſe of the yellow fever, yet ſomething muſt be often attributed to the influence of deſcending dews from the atmoſphere. Indeed Dr. James Johnſon mentions having himſelf experienced the ſenſible effect of this dew on-board of a ſhip; and it ſeems very probable that it was only by the preventive treatment he employed, that he warded off an attack of this fever. This author likewiſe informs us, that a fever which broke out in the Leopard's crew followed upon a deſcent of dew which took place every night, and was *perfectly ſalt and bitter to the taſte*. The above-mentioned fact, according to Dr. J. Johnſon, leads to a "practical inference of conſiderable utility; viz. that, when neceſſity compels us to penetrate through thoſe inſalubrious woods, jungles, or marſhes, we ſhould ſelect that point of time at which we are leaſt likely to meet thoſe miaſms, whether in their aſcending or deſcending ſtate. This period ſeems to extend from three to ſix o'clock in the afternoon; that is, after the greateſt heat of the earth and air, and, conſequently, the greateſt evaporation; and before the condenſation and return of ſuch exhalations as roſe during the day, and which combine with thoſe ſtill iſſuing from the heated ſoil for ſome time after ſun-ſet. Independently of this circumſtance, the body ſeems to be poſſeſſed of greater energy at this period of the day than at any other, it being that time when the principal meal is nearly digeſted, and conſequently the animal vigour at its higheſt pitch. The depreſſing paſſions, intemperate or bad living, and the other prediſpoſing cauſes of the fever of this country, act with equal or greater force in aſſiſting the baneful operation of the miaſms of yellow fever.

Thirdly, it is inferred as a probability, (for we have no evidence of our own to offer,) that yellow fever ariſing from miaſmata may in ſome conſtitutions generate the volatile material which other fevers do, and produce contagion. Independently of the evidence derived from the authors before mentioned, the principles we have laid down when treating of contagion lead to the ſame concluſion. Indeed, when we conſider the nature of contagion itſelf, we cannot refuſe our aſſent to the propoſition in queſtion. We ſee that a fever, clearly traced in the firſt inſtance to local injury, will, under the concomitant circumſtances of foul wards in an hoſpital, deficient ventilation, &c. engender contagious fever through large bodies of men; ſo that we infer that any fever, however induced, may be contagious, ſeeing that its local origin does not hinder the contagious effluvia from being produced. Moreover, let us conſider the manner in which contagion is produced. It muſt be a *volatile ſecretion*; and this can only ariſe from the mucous membrane. Now, when we ſee the great variety of appearances which the viſible products of this membrane exhibit when inflamed, can we doubt that in almoſt all

violent inflammations contagious effluvia may be ſecreted. In common ſtates of the atmoſphere, this is probably mixed, diffuſed, and decompoſed; but in peculiar conditions of the air a ſuſpenſion may take place, and thus contagious fever may be rendered general. Now that the morbid ſecretions of the mucous membrane are contagious effluvia, and that theſe are modified by nervous impreſſions in the ſame way as all ſecretions are, ſeems rendered ſtill more probable by the circumſtances, that in thoſe fevers which are moſt contagious, viz. the exanthemata, a phlogoſed ſtate of the mucous membrane is uniformly preſent, and that an emetic exhibited early in thoſe maladies often prevents the attack; a fact which we can only explain on the ſuppoſition that this remedy actually removes a depoſited ſecretion, or, in other words, contagious effluvia from the ſurface of the ſtomach. In fact, there ſeems good evidence in ſupport of the opinion, that all inflammation of, or diſordered ſecretion in, the mucous membrane may elicit contagious effluvium. Thus dyſentery, cholera, eryſipelas, the influenza, (a ſpecies of catarrh,) have all been ſometimes contagious, though it is well known that all theſe diſeaſes occur without ſuch an effect being produced. Nor, can we, on the ſame account, diſmiſs with the abſolute denial which moſt authors have thought proper to do, the well-ſupported aſſertion, that croup and phthiſis are occaſionally catching.

To return to the yellow fever; it is to be remarked, that a conſideration of the medical topography of the countries where this fever has appeared muſt diſcloſe grand and important circumſtances relative to the management of our fleets and armies. As this ſubject, however, embraces a wide field in a branch of medical ſcience hitherto not cultivated ſyſtematically, we regret that our limits will not permit us to diſcuſs it fully; but we can, with the utmoſt confidence, refer our readers to a work by Dr. James Johnſon on Tropical Climates; which contains all that is at preſent known on the ſubject.

As to the nature of yellow fever, its immediate cauſes operate of courſe, as in other fevers, through the medium of the mucous membranes; and the irritation which is communicated to the brain and ſpinal marrow forms the grand connecting and eſſential link to the development of the general febrile phenomena. The action of the prediſpoſing cauſes, as climate, fatigue, &c. is however to render the mucous membranes particularly liable to inflammation; while the ſame influence, by affecting the circulation of the ſurface, as was ſhown when treating of Cholera, throws unnatural quantities of blood into the portal ſyſtem, and produces *congeſtion* there, this being the only part of the venous ſyſtem where ſuch a ſtagnation can take place. The effect of this is particularly felt in the liver, the ſtomach, and indeed the whole abdominal viſcera.

The characteriſtic ſymptom of this fever, viz. the yellow colour of the ſkin, is variouſly accounted for by different authors. Dr. Bancroft ſuppoſes it is induced by the preſſure to which the act of vomiting ſubjects the liver and gall-bladder. But to this it is replied, that there is no proportion between the intenſity of colour and the ſeverity of the vomiting; and moreover, that it often occurs before the vomiting takes place. Brouſſais is of opinion, that the yellow colour depends on violent irritation of the duodenum propagated to the ſecretory organ of the bile. The moſt plauſible opinion, however, though it has been much ridiculed, ſeems to be, that the ſuſpenſion of the action of the liver prevents the elimination from the blood of the bilious elements, and that theſe, exiſting in the blood from the want of ſecretion, and not from abſorption, produce the phenomena in queſtion. We have ſome reaſon to believe, that a morbid ſtate of blood might cauſe the ſame appearance without the liver being materially implicated. This indeed, as far as regards certain yellow dingy patches which occaſionally appear on the ſkin in this fever, is allowed by Dr. Bancroft.

The *black vomit*, a moſt formidable ſymptom in yellow fever, was for a long time attributed to a ſuperabundant and altered ſecretion of bile; but certainly without foundation, as is evident from the fact, that in a great number of diſſections the liver has been found in a healthy ſtate; and, where it has differed from its natural appearance, it has frequently been of a paler colour; the gall-bladder has alſo at the ſame time been found in a healthy ſtate, containing its uſual quantity of bile, not at all altered in its appearance or properties. Moreover, at a time when the ſtomach has been diſtended with black vomit, the paſſage from the duodenum into the ſtomach has been completely obſtructed by the pylorus valve, ſo that no portion of the matter could have been derived from the hepatic ſyſtem, in every part of which ſyſtem the bile was quite natural in colour, taſte, and conſiſtence. The matter of black vomit, compared with bile, differs materially from it in all its phyſical qualities. It differs from it in colour; for, however dark the bile may appear in its moſt concentrated ſtate, it always diſplays a yelloviſh or greeniſh-yellow tinge, when ſpread on a white ſurface, or when diluted; and this is never obſerved with the matter of black vomit. Indeed Dr. Bancroft has found that an addition of bile to the latter, altered its nature ſo much as to give it an appearance different from what it had before; nor could the black vomit be imitated by any mixture of various proportions of dark-coloured bile with the fluids found in the ſtomach. It differs moſt decidedly in taſte; the black vomit being always inſipid, when freed from other foreign matters; whereas the bile can never, by any means, be deprived of intenſe bitterneſs.

A natural concluſion therefore is, that the black vomit proceeds from the ſtomach itſelf, and is a conſequence of inflammation of that viſcus; whether this be a particular morbid ſecretion by the inflamed veſſels or glands of the ſtomach; or, as Dr. Bancroft thinks, "merely blood which has been effuſed from ſome of the ſmall arteries, ruptured in conſequence of the ſeparation of certain portions of the villous coat, and which has coagulated within the general cavity of the ſtomach, or on the ſurface over which it was effuſed; and, having been afterwards detached and triturated by the violent and frequent contractions of that organ in the efforts to vomit, has had its appearance as a coagulum of blood altered, and its colour darkened by the gaſtric juice, or by ſome chemical decompoſition, either ſpontaneous, or produced by the action of the air, or other matters contained in the ſtomach."

It remains to give a deſcription of the ſymptoms of this fever, which we believe will be found to agree accurately with the above ſhort pathological ſketch. The deſcriptions, not being drawn from our own obſervation, are ſelected from the moſt accredited authors, whoſe names we ſhall ſubjoin. The chief diſtinctions between the different forms this fever exhibits are drawn from its violence, or, what amounts to nearly the ſame, its continued, its remittent, or its intermittent, form.

The firſt deſcription is that of Dr. Bancroft, derived from the contemplation of this fever in the weſtern hemiſphere. "The progreſs and violence of the yellow fever differ greatly, according to the force of its cauſe, the vigour and excitability of the patient, and the ſeaſon of the year. When it prevails epidemically in hot climates, and attacks young and robuſt men, lately arrived from temperate regions, the diſorder commonly appears in its moſt aggravated form. In this, the patient firſt complains of laſſitude, reſtleſſneſs, ſlight ſenſations of cold and naufea, which ſymptoms are ſoon ſucceeded by ſtrong arterial action, intenſe heat, fluſhing of the face, redneſs of the eyes, great pain and throbbing in the head and in the eye-balls, uneaſineſs and pain in the ſtomach, oppreſſion of the præcordia, a white fur on the tongue, and

and a dry parched ſkin, with a quick, full, tenſe, and generally ſtrong, pulſe, though it is ſometimes oppreſſed and irregular. Theſe ſymptoms are ſpeedily accompanied by frequent efforts to vomit, eſpecially after ſwallowing food or drink, with diſcharges, firſt of ſuch matters as the ſtomach happens to contain, and afterwards of conſiderable quantities of bile, appearing firſt yellow and then green, ſometimes tinged with blood, but in the progreſs of the diſorder with matters of darker colours: an increaſe of pain, heat, and foreneſs of the præcordia, alſo occurs, with conſtant wakefulneſs, and frequently with delirium more or leſs violent. This paroxyſm, or exacerbation, which has been called the inflammatory or the febrile ſtage, generally laſts thirty-ſix hours, but is ſometimes protracted for ſeventy-two hours, and even longer, probably in conſequence of either general or local inflammation, (particularly in the brain or ſtomach,) or of irregularity in the circulation, which are known to prolong the paroxyſms in fevers of type.

"A remiſſion then occurs, in which many of the ſymptoms ſubſide, ſo as often to induce a belief that the fever is at an end, and recovery about to take place. Frequently, however the foundations of irreparable injury to the brain or ſtomach have already been laid in the former paroxyſm; and in ſuch caſes the remiſſion is ſhort and imperfect. During theſe remiſſions, the pulſe often returns apparently to the condition of health; the ſkin feels cool and moiſt, and the intellect, if previouſly diſturbed, ſometimes becomes clear; ſometimes, however, the patient remains in a quiet and ſtupid ſtate, a ſymptom generally denoting great danger. Another ſign of danger, as denoting a very morbid condition of the ſtomach, is the renewal of the efforts to vomit, when preſſure is made on that organ, or food is ſwallowed. After a certain interval, this remitting ſtage is ſucceeded by another, which may be called a ſecond paroxyſm, and which, probably, would appear as a renewed exacerbation, if the violent effects of the firſt had not almoſt exhauſted the patient's excitability, and in conjunction with the extreme depreſſion of ſtrength which uſually attends inflammation of the brain or ſtomach, rendered him nearly unſuſceptible of thoſe morbid actions which are neceſſary for that purpoſe. In this latter ſtage, then, inſtead of great febrile heat, and ſtrong arterial action, the warmth of the body, and the frequency and ſtrength of the pulſe, are often leſs than when the patient was in health; but frequently the pain and heat in the ſtomach become excruciating, with inceſſant ſtrainings to vomit, which, in moſt of the fatal caſes, are followed by hiccough, and repeated diſcharges of matters reſembling turbid coffee more or leſs diluted, or the grounds of coffee, and alſo by evacuations of ſimilar dark matters from the bowels. Here it is to be obſerved, that, when theſe ſymptoms occur, (indicating a violent affection of the ſtomach and bowels,) the patient is, in general, ſufficiently in poſſeſſion of his intellects to know thoſe about him, and to give diſtinct anſwers to queſtions made to him, although his exceſſive weakneſs often renders him incapable of mental exertion, and his inability even to raiſe his head may induce the appearance of coma. In thoſe caſes, however, in which the brain has ſuffered greater injury than the ſtomach, the retching and black vomit, juſt deſcribed, do not ſo commonly occur; but, inſtead of them, low muttering, or coma, with convulſions of the muſcles of the face, and other parts of the body, ſupervene. About this time, alſo the tongue and teeth are covered with a dark-brown fur; yellowneſs of the ſkin and petechiæ make their appearance; the urine has a putrid ſmell and dark colour; the fæces likewiſe become moſt offenſively putrid; hæmorrhages ſometimes take place from the noſtrils, gums, and various other internal ſurfaces. There is in ſome patients, a ſuppreſſion of urine; in others, an involuntary diſcharge of it, and of the fæces: the pulſe becomes feeble and intermits; the breathing is laborious; portions of the ſkin aſſume a livid colour; the extremities grow cold; and life is gradually extinguiſhed."

On the above deſcription Dr. J. Johnſon remarks, that the propriety of characteriſing the ſubſidence of great heat and vaſcular action at the cloſe of the firſt ſtage as a remiſſion, is very queſtionable. It is, in fact, (ſays he,) the tranſition from inordinate action to exhauſtion; to that almoſt hopeleſs ſtate which (the foundation of almoſt irreparable miſchief having been already laid in the moſt important viſcera) is ſpeedily to terminate in diſorganization and death, and has nothing in it of the ſalutary tendency of a remiſſion. As Dr. Gilleſpie obſerves, "it is proper to caution young practitioners againſt a miſtake very common with regard to the yellow, or ardent fever; that is, of taking the fatal ſtage which follows the ceſſation of ardent heat and great excitement, and which accompanies a ſphacelus of the viſcera, for a ſalutary criſis of the diſeaſe." Diſeaſes of Seamen.—"Cette diminution des ſymptômes en impoſe quelquefois au malade, et meme aux médecins inexpérimentés." Dict. des Sciences Médicales, tome xv. p. 336.

This declenſion of fever at the cloſe of the firſt ſtage excited early attention, and is often ſo marked as to have been frequently miſtaken for a proof of returning health. It is noticed by Dr. Hume, who had the charge of the naval hoſpital at Jamaica between the year 1739 and 1749, and was afterwards a commiſſioner of the Sick and Hurt Board, in the following terms: "The pulſe is at firſt full, quick, and ſtrong; but in forty-eight hours after ſeizure, or thereabouts, it ſometimes becomes calm and regular, ſcarcely to be diſtinguiſhed from the pulſe of a perſon in health." See Dr. Hume's Account of the Yellow Fever, publiſhed by Dr. Donald Munro.

Now, that we may more firmly eſtabliſh the accuracy of the above deſcription, as well as ſhow the correctneſs of Dr. Johnſon's remark, that the partial diminution of pain and uneaſineſs is not properly a remiſſion, we ſubjoin the following account of the ſame fever as it occurs in another part of the weſt. It is detailed by Dr. M'Arthur. According to that author, this fever is uſually uſhered in by the ſenſations which precede other fevers; ſuch as laſſitude, ſtiffneſs, and pain of the back, loins, and extremities; generally accompanied by ſome degree of coldneſs. Theſe are ſoon ſucceeded by a ſevere pain of the head; a ſenſe of fullneſs of the eye-balls; intolerance of light; ſkin dry, and imparting a burning heat to the hand; pulſe full and quick; tongue covered with a whitiſh mucus, but often not materially altered from the ſtate of health; bowels bound. "I may here remark, that the actual degree of heat, as indicated by the thermometer, is not proportionate to the intenſity communicated to the touch. It generally varied between 99° and 102°, very ſeldom exceeding 103°. yet the ſkin imparted a burning cauſtic ſenſation to the hand at theſe times. If the patient has been attacked in the night, he awakes with oppreſſive heat, head-ache, and the other ſymptoms of fever, the ſenſation of cold having paſſed unnoticed. At other times, after fatiguing exerciſe in the ſun, and ſometimes after a hearty meal, the violent head-ache, and other ſymptoms of the fever, are uſhered in by an inſtant loſs of muſcular power, and immediate depreſſion of nervous energy. The patient, as if he were ſtunned by a blow, falls down, his eyes ſwimming in tears. In thoſe caſes, delirium is an early ſymptom. In a few hours, the pain of the loins increaſes, and, in aggravated caſes, ſtretches forward towards the umbilicus; the countenance is flushed; the white of the eye as if finely injected by blood veſſels, the albuginea appearing through the interſtices of the network of veſſels, of a peculiar blue ſhining cartilaginous whiteneſs.

"During the firſt twelve hours, the patient is not particularly reſtleſs, enjoys ſome ſleep, and, when covered by the bed-clothes, has partial perſpirations on his face, neck, and breaſt. About the end of this period, there is a great

a great exacerbation of the fever; he becomes reſtleſs; the heat and dryneſs of the ſkin increaſe; there is much pain of the eyes and frontal ſinuſes; the pain of the thighs and legs is augmented; thirſt is increaſed, with a ſenſation of preſſure about the region of the ſtomach. Nauſea and vomiting occur towards the end of the firſt twenty-four hours. If the fever has not been arreſted within thirty-ſix hours from its commencement, the patient is in imminent danger, and all the ſymptoms are aggravated; the pulſe is ſtrong and full, and pulſation of the carotids appears diſtinct on each ſide of the neck. The ſkin continues hot and dry; the thirſt is increaſed; there is much anxiety, the patient continually ſhifting his poſture; the urine becomes high coloured; all his uneaſineſs is referred to his head and loins. A ſenſation of pain is felt about the umbilicus, when preſſed upon; the white of the eye now appears of a dirty concentrated yellow colour, and apparently thickened, ſo as to form a ring round the margin of the cornea. The blood-veſſels of the eye appear more enlarged and tortuous; knees drawn upwards to the abdomen; frequent vomiting, with much ſtraining; mucus, and his common drink only, being ejected.

"Delirium comes on about the end of the ſecond day. There is now a dryneſs, or ſlight ſenſation of ſoreneſs, of the throat when ſwallowing; and about this time an urgent ſenſation of hunger frequently comes on, and a remarkable want of power in the lower extremities, reſembling partial paralyſis of the limbs. About this time, alſo, the pain of the loins is ſo ſevere, that the patient expreſſes himſelf as if his back was broken. The third day, or ſtage, begins by apparent amelioration of all the bad ſymptoms, the vomiting and thirſt excepted. The matter ejected has ſmall membranaceous-looking flocculi floating in it, reſembling the cruſt waſhed from a port-wine bottle. The thirſt is now urgent, and there is an inceſſant demand for cold water, which is almoſt immediately rejected by the ſtomach. The heat of the ſkin is reduced; the pulſe ſinks to, or below, its natural ſtandard; the patient, for an hour or two, expreſſes himſelf to be greatly relieved; and, at this time, a perſon unacquainted with the nature of the diſeaſe would have hopes of his recovery. This ſtate, however, is of ſhort duration, and the deluſion ſoon vaniſhes. The delirium increaſes; the matter ejected from the ſtomach becomes black as coffee-grounds, and is ſomewhat viſcid. Diarrhœa comes on; firſt green, then black, like the matter vomited. The patient often complains of being unable to paſs his ſtools, from a want of power in the abdominal muſcles. There is an acrid burning ſenſation of the ſtomach, and ſoreneſs of the throat, extending along the whole courſe of the œſophagus, in attempting to ſwallow; eyes, as if ſuffuſed with blood; ſkin a dirty yellow; parts round the neck, and places preſſed upon in bed, of a livid colour. More or leſs hæmorrhage takes place from the noſe, mouth, and anus; and a depoſition of blood from the urine. The delirium becomes violent; the body as if it were writhed with pain, the knees inceſſantly drawn up to the belly. The patient ſeizes, with convulſive graſp, his cradle, or any thing within his reach, and prefers the hard floor to his bed. The pulſe now ſinks; reſpiration becomes laborious; the countenance collapſed; the luſtre of the eye gone. For ſome hours, he lies in a ſtate of inſenſibility before death; at other times, expires after ſome convulſive exertion, or ineffectual effort to vomit. The tongue is ſometimes but little altered during the courſe of the fever; and, if loaded in the early ſtages, it often becomes clean and of a vivid red before death.

"Such is the regular ſucceſſion of ſymptoms which characterize this fever, but of longer or ſhorter duration, according to the violence of the diſeaſe, or ſtrength of the powers of life to reſiſt it. In weakly habits, the vaſcular action at the beginning is leſs marked; and, in theſe caſes, the fever is generally more protracted, and the patient expires unaffected by the laborious reſpiration, and convulſive motions, which attend the laſt ſtruggles of life in the more violent degrees of this endemic. Very often the patient retains his ſenſes till within a few minutes of his death; and ſometimes will predict, with conſiderable preciſion, the hour of his diſſolution.

"In the early ſtages of the worſt caſes of this fever, there is much anxiety in the countenance of the patient, who expreſſes a deſpair of recovery; and *I have never noticed a remiſſion during the whole courſe of the fever.* Several caſes of remittent fever under my care terminated in the endemic fever.

"A certain number of thoſe attacked by this fever, if prompt meaſures to ſubdue it had been employed, recovered from its firſt ſtage. They exhibited evident ſigns of amendment within the firſt twenty-four, or at fartheſt thirty-ſix, hours, from its firſt attack. Alſo, a conſiderable proportion recovered from the ſecond ſtage; that is to ſay, previouſly to black vomiting unequivocally appearing. But I have only known thirteen caſes, in above five years, to have recovered from the laſt ſtage. Some of theſe were afterwards invalided, in conſequence of dyſpeptic complaints, and generally-diſordered ſtate of the ſtomach and other abdominal viſcera. In theſe caſes, the ſtomach gradually became retentive; the eyes and ſkin became of a more vivid yellow; they had refreſhing ſleep, but continued extremely weak and languid for a long time. The oozing of blood from the fauces and gums alſo continued for ſome days; and the depoſition of blood in the urine remained longeſt; this excretion being always the laſt to return to its natural healthy condition.

"Pain of the back, early ſtretching round to the navel; ſoreneſs in the throat and œſophagus; heat and acrid ſenſation in the ſtomach; urgent thirſt; hunger; want of power, reſembling paralyſis of the limbs; violent delirium; deſpondency; enlargement of the blood veſſels, and a red-yellow colour of the white of the eye, either ſingly or collectively, indicate extreme danger; and, when the black vomit has appeared, ſcarcely a hope remains."

The next form of yellow fever, is the *inflammatory endemic* which attacks new comers, (eſpecially when they live intemperately,) on their arrival in the Weſt Indies. The reader will ſee the preciſe ſimilarity between this fever (which is allowed to ariſe from the united influence of plethoric conſtitution, intemperate habits, and changes in the temperature of the air) and yellow fever. Its ſymptoms are thus deſcribed by Nodes Dickinſon: "In its ſeverer aſpect, and when neglected at the attack, this fever conſiſts of two ſtages. In the firſt, there is increaſed excitement, reſulting from an unuſual ſtimulus applied in an exceſſive degree to a ſyſtem peculiarly ſenſible to its impreſſion: it produces a derangement in the functions of ſome or many viſcera. If this goes on, the ſecond ſtage appears, in which the ſtructure of theſe viſcera is altered to a degree incompatible with the living ſtate. Thus the diſeaſe proceeds from high excitement to irreparable exhauſtion, as we ſhall perceive by attending to the hiſtory of its ſymptoms. In the leſs ſevere example there is chilline ſs at the onſet, ſoon followed by a permanent and univerſal ſenſe of heat, fluſhed face, inflamed eyes, head-ache, increaſed ſuſceptibility to the impreſſions of light and ſound, vertigo, drowſineſs, ſighing, white tongue, arid fauces, thirſt, wandering pains, loſs of appetite, coſtiveneſs, high-coloured urine, dry ſkin, nauſea, with full and frequent pulſe;—ſhould theſe ſymptoms in a ſevere degree remain without control, the diſeaſe is ſoon increaſed to its moſt aggravated form. The patient is extremely reſtleſs, with a continual deſire to alter his poſition, but without relief. The heat and head-ache are intenſe; the carotids throb with unuſual violence. There is ſometimes a furious delirium; tinnitus aurium, and even loſs of ſight. There is, occaſionally,

ſionally, a dry cough with pain in the ſide, and almoſt invariably a ſenſe of heat, oppreſſion, and pain on preſſure at the præcordia, accompanied by conſtant ſighing. Vomiting ſometimes comes on very early in the attack. There is often great drowſineſs, but no refreſhing ſleep. In ſome caſes an acute pain is felt in the right ſide; and a yellow colour of the ſkin often ſupervenes. This yellowneſs is occaſioned by the preſence of bile, which is alſo detected in the urine and ſerum diſcharged from the bliſters. Should the paſſage of bile into the inteſtines ſpontaneouſly take place, or be procured by the action of purgatives, this jaundiced appearance will generally be prevented: nevertheleſs, in ſome caſes it may poſſibly ariſe from a redundant ſecretion, even when the bilious canals are free; and a bilious vomiting and purging may occur with the yellowneſs of the ſkin, and carry off the attack. Theſe ſymptoms proceed with various degrees of violence, and they occupy an uncertain period. Within twelve, twenty-four, or thirty-ſix, hours, or perhaps after a longer but indefinite time, an important change takes place. It marks the commencement of the ſecond ſtage. Many of the moſt urgent ſymptoms decline. The pain and heat of ſurface ſubſide. There is a ſenſe of cold with dampneſs of the ſkin. This change at firſt ſo much aſſumes the appearance of febrile remiſſion as to give great hope to the inexperienced practitioner; but it ſpeaks a ſtate of the utmoſt danger. In ſome caſes the patient ſinks, at once, after the ſubſidence of excitement, apparently deſtroyed by the general affection, without any previouſly-ſevere determination of blood to particular organs; and he dies at the moment of hope in his amendment. But, more commonly, the cataſtrophe is not ſo ſudden. With the diminution of heat and pain, the pulſe falls; the countenance exhibits great diſtreſs; the eye is ſunk; the pupil dilated; ſometimes delirium continues; at others, there is great inſenſibility with tendency to coma. Vomiting, occaſionally, continues without intermiſſion: at times, however, the ſtomach remains tranquil; and this, when there is much cerebral diſturbance.

"As the diſeaſe advances, a diſcolouration of the ſkin often takes place. It appears in yellow, brown, and livid, patches. This diſcolouration never comes on until the ſubſidence of the ſymptoms of excitement, however early in point of time. It occurs within the paſſive hæmorrhage from various parts: from the noſe, corners of the eyes, ears, &c. and at the ſame time with the black vomiting. This change of colour appears to ariſe from ecchymoſis proceeding from exhauſtion of the vis vitæ in the capillary veſſels of the ſurface in conſequence of previous inordinate excitement. It is very diſſimilar from the bilious yellowneſs already noticed as an incidental ſymptom of the firſt ſtage of the diſeaſe.

"The firſt diſcharges from the ſtomach are merely the ingeſta; afterwards a large quantity of ſerous fluid is ejected, when little has been drunk. In a more advanced ſtage of the complaint, the material thrown up is ropy, and mixed with numerous ſmall ſhreds, flocculi, or membranaceous films, which float in the ejected liquid. Theſe ſoon acquire a dark-brown, purple, or black, colour; but do not, at firſt, communicate much general tint to the fluid in which they are ſuſpended. Afterwards, the matters vomited are more intimately mixed together; and, with the addition of dark-coloured blood which is effuſed into the ſtomach, vitiated bile, and other morbid ſecretions, give an appearance in the aggregate of coffee-grounds. There is at this period, uſually, a purging of dark-coloured matter reſembling tar mixed with black blood.

"Sometimes within the firſt forty hours, at others after a more protracted period, the ſcene draws towards a cloſe with the ordinary phenomena of approaching diſſolution which accompany the laſt ſtages of acute diſeaſe in general. There are dilated pupil, ſtrabiſmus, ſingultus, ſubſultus tendinum, coma, deliquium, hæmorrhage from various channels, ſuppreſſion of urine, low muttering delirium, total inſenſibility, occaſionally violent raving, and an inceſſant diſpoſition to riſe in bed. Theſe are among the laſt ſymptoms of an unſubdued attack; and they mark the near approach of death."

To eſtabliſh our aſſertion of the identity of the various forms of yellow fever, we ſhall now give a deſcription of this fever as it occurs in the eaſt and other parts. In many parts of the eaſt, the comforts and habits of the people are far from proving ſuch powerful prediſpoſing cauſes of yellow fever as in the weſt; but, as this is by no means general, we often meet with the preciſe ſymptoms of continued fever, as exemplified in the following excellent deſcription of the endemic of Batavia, drawn up by Wade Shields. "The patient, without much previous notice (of the firſt attack), is ſuddenly ſeized with giddineſs and cold chills, a ſenſe of debility, and vomiting, with pain over the orbits, and in the epigaſtric region. He frequently falls down, and is inſenſible during the paroxyſm; his body covered with cold clammy ſweats, *except at the pit of the ſtomach, which always feels hot to the palm of the hand;* the pulſe is ſmall and quick. On recovering a little, this train of ſymptoms is ſucceeded by flushings of heat, increaſed pain over the orbits and in the ſinciput, pain and a ſenſe of internal heat about the ſtomach and præcordia, oppreſſed breathing; the lower extremities, at this time, not unfrequently covered with cold ſweats. The eyes now become, as it were, protruded, and the countenance flushed. Retching, and, at length, vomiting of diſcoloured bilious matter, comes on; the tongue white and furred, the abdomen tenſe and full, with pain in the loins and lower extremities. The length of this paroxyſm varied from ſix to eighteen hours, and was generally ſucceeded by cold rigors; very often low delirium, preparatory to the next ſtage or paroxyſm of the fever. The intellectual functions now become much impaired, the patient not being at all ſenſible of his ſituation, or of any particular ailment. If aſked, how he is? he commonly anſwers, "Very well;" and ſeems ſurpriſed at the queſtion. This was a very dangerous ſymptom, few recovering in whom it appeared. In this ſtage all the ſymptoms become gradually, often rapidly, aggravated; particularly, the head-ache, pain and tenſion in the epigaſtric region, and vomiting. Some patients, on-ſhore, were carried off in eighteen, twenty-four, thirty, or forty, hours, and others not till as many days after the attack, eſpecially when removed on-board, from the more noxious air of the iſland. A great proportion changed, in a few days, to a bright yellow; ſome to a leaden colour: other caſes terminated fatally, in a very rapid manner too, without the ſlighteſt alteration in that reſpect. Generally, however, the change of colour indicated great danger. Vomiting of black bilious ſtuff, reſembling the grounds of coffee, frequently commenced early, and continued a moſt diſtreſſing ſymptom; too often baffling all our attempts to relieve it. In ſome, a purging of vitiated bile, or matter reſembling that which was vomited, occurred; in a great many, a torpor prevailed throughout the inteſtinal canal; rarely did any natural fæces appear ſpontaneouſly. The pupil of the eye was often dilated, and would not contract on expoſure to a ſtrong light; in others there was great intolerance of light: both indicated danger. Low delirium was a pretty conſtant attendant on this fever, from firſt to laſt; ſometimes, though more rarely, raging-high delirium. The latter caſe is attended with red, inflamed, and protruded, eyes; great inquietude, hot dry ſkin, and ſmall quick pulſe. The patient's mind is actively employed about his uſual occupations. During the violence of the paroxyſms, he is quite inſenſible to every thing that goes on around him, conſtantly graſping at, or wrenching, objects within his reach. In the low delirium, alſo, the mind is much occupied on avocational ſubjects: if a ſeaman, about the ſhip's duty; if a ſoldier, about his regiment, marching, &c. Some patients were comatoſe

from the firſt attack; in others, the fever was uſhered in with convulſions, delirium, and cold ſweats, without any intervening heat of the ſurface, except at the pit of the ſtomach, which, in moſt caſes, was burning-hot to the touch, and accompanied internally by a ſimilar ſenſation according to the patient's own feelings.

"Hæmorrhage from the mouth or noſe ſeldom occurred; in two caſes, which terminated fatally, the blood did not coagulate, but tinged the linen yellow. Aphthæ appeared in a few caſes, and indicated danger. Subſultus tendinum often attended both on the low and high delirium. The pulſe never could be depended on. In the very laſt ſtage it has been regular; but in general it is ſmall, quick, and either hard or ſtringy and tremulous; ſometimes, during the reaction of the ſyſtem, full and hard. Deafneſs was very common, and an unfavourable ſymptom. Two kinds of eruption appeared about the lips: one ſuch as we often ſee at the decline of common fevers; the other, conſiſted of ſmall black or brown ſpots round the lips, and was likewiſe a dangerous, indeed a fatal, ſymptom. With this eruption, the teeth, tongue, and fauces, generally become covered with a brown or black cruſt, and the breath intolerably fetid. Locked jaw took place in two caſes at Onruſt-hoſpital, but the patients were inſenſible of it: both died. The brain appeared the organ chiefly affected at firſt—the ſtomach and liver in ſucceſſion. In thoſe caſes which occurred on-board, and where the patient had not ſlept on-ſhore at Edam, the ſymptoms were much milder, and the fever reſembled more the bilious remittent of other parts of the Eaſt. A great torpor prevails generally throughout the ſyſtem, with the low delirium; bliſters, medicines, &c. having little effect on the patient, who appears as if intoxicated. When rouſed, he recollects the perſon who is ſpeaking to him, for a moment, and anſwers in a hurried incoherent manner: then lies on his back, his mouth and eyes half open; both feces and urine often paſſing involuntarily. I have ſeentpatients remain in this ſtate for hours, nay, for days together, ſcarcely moving a ſingle voluntary muſcle all that time. Never was there a diſeaſe ſo deceitful as this fever: I have frequently ſeen inſtances where every ſymptom was ſo favourable, that I could almoſt have pronounced my patient out of danger: when all at once he would be ſeized with reſtleſſneſs, black vomiting, delirium, and convulſions, which, in a few hours, would hurry him out of exiſtence! The fatal terminations generally happened on the third, fifth, ſeventh, ninth, and not unfrequently the eleventh and thirteenth, day; if they paſſed this period, they uſually lingered out twenty or thirty days. But very few indeed ever ultimately recovered, who had ſlept on-ſhore, and were attacked at that dreadful iſland, Edam! No conſtitution was exempted from the aſſault of this fever. It ſeized with equal or nearly equal violence on thoſe who had been many years in India, and on the moſt robuſt and plethoric, or newly-arriyed, European. Even the Dutch officers and Malays, who had been drawn from different parts of Java, and whom we had priſoners at Edam, fell victims as faſt, or nearly ſo, as the Engliſh. Several officers, ſeamen, and ſoldiers, were ſent on-board from this iſland, in hopes that the change of air might mitigate the diſeaſe. Many of even the worſt caſes of theſe would promiſe fair for a few hours in the forenoon; but night always diſpelled our hopes, for then the patient relapſed as bad as ever: they almoſt all died. But their fate was conſiderably procraſtinated by the change; many of them lingering out a great length of time on-board, ſinking at laſt from the conſequences of the fever, rather than from the fever itſelf. Several of them changed into obſtinate intermittents at ſea, with great derangement of the liver, ſpleen, and bowels. Indeed the *liver*, in moſt caſes, ſeemed affected from firſt to laſt in this fever; but, in all protracted ſtates of it, this affection became the prominent ſymptom. In thoſe that were cut off during the firſt eighteen, twenty-four, or thirty, hours, the *brain* appeared to be the organ oppreſſed."

The *remittent* form of yellow fever is that moſt frequently met with in the Eaſt. We ſhall accordingly proceed to deſcribe the marſh remittent, or endemic fever of Bengal, in the words of Dr. Clark. "This fever attacked in various ways, but commonly began with rigors, pain and ſickneſs at ſtomach; vomiting, head-ache, oppreſſion on the præcordia, and great dejection of ſpirits. Sometimes, without any previous indiſpoſition, the patients fell down in a deliquium, during the continuance of which the countenance was very pale and gloomy; as they began to recover from the fit, they expreſſed the pain they ſuffered by applying their hands to the ſtomach and head;" ſo great indeed, that delirium often came on at once; but, "after vomiting a conſiderable quantity of bile, they ſoon returned to their ſenſes. Sometimes the attack was ſo ſudden and attended with ſuch excruciating pain in the ſtomach, that I have been obliged to give an opiate immediately.

"In whatever form the diſeaſe appeared at firſt, the pulſe was ſmall, feeble, and quick: the pain at the ſtomach increaſed, and the vomiting continued. As the paroxyſm advanced, the countenance became flushed, the pulſe quick and full, the eyes red, tongue furred, thirſt intenſe, head-ache violent; delirium ſucceeded; and the patient became unmanageable; but a profuſe ſweat breaking out in twelve or fourteen hours, generally mitigated all the ſymptoms. In the remiſſions, the pulſe, which before was frequently 130, fell to 90. The patient returned to his ſenſes, but complained of great debility, ſickneſs at ſtomach, and bitter taſte in the mouth. This interval, which was very ſhort, was ſucceeded by another paroxyſm, in which all the former ſymptoms were aggravated, particularly the thirſt, delirium, pain at the ſtomach, and vomiting of bile. If the diſeaſe was neglected in the beginning, the remiſſions totally diſappeared, and the ſkin now became moiſt and clammy; the pulſe was ſmall and irregular, the tongue black and cruſted, and the pain at the ſtomach and vomiting of bile became more violent." It is needleſs to ſay, that from this period till death cloſed the ſcene, the features of this fever were ſuch as characteriſe the laſt moments of all violent and fatal fevers.

The unfavourable terminations are generally between the third and ſeventh day, though in ſome caſes the fever goes on to the fifteenth or twentieth day: but viſceral obſtructions are almoſt always the conſequence; and hepatitis and dyſentery complete what the fever fails to accompliſh. Dr. Johnſon adds, that ſeveral caſes occurred under his inſpection where there was a yellowiſh ſuffuſion on the ſkin, as in the endemic of the Weſt, with vomiting of matter bearing a conſiderable ſimilarity to the grounds of coffee. This however is by no means an uncommon ſymptom in the fevers of the Eaſt.

Occaſionally, in the advanced ſeaſon of the year, or when cold weather ſets in, this fever aſſumes an *intermittent* form. The ſimilarity in the nature of the two forms of diſeaſe is well ſupported by a Report drawn up by Drs. Ainſlie, Smith, and Chriſtie, on the epidemic fever of Coimbatore. The Report ſtates, that it was either remittent or intermittent, according to the conſtitution, treatment, and ſeaſon of the year. People by nature delicate and irritable, or rendered ſo by irregularities or want of care, were ſometimes attacked by the diſeaſe in the remittent form, proving bilious or nervous, as the conſtitution inclined. "The ſame happens to the more robuſt, when improperly treated, as where bark is given early and before proper evacuations have been premiſed. As the ſeaſon becomes hotter too, the remittent form prevails over the intermittent. Males ſuffered more than females, and young people and thoſe of middle-age more than old people and children. The remittent form ſometimes makes its approach very inſidiouſly. The patient feels himſelf out of ſorts for a few days; his appetite

appetite fails him; he has ſqueamiſhneſs, eſpecially at the ſight of animal food; univerſal laſſitude; alternate heats and chills; ſtupid heavineſs, if not pain in the head. The eyes are clouded; the ears ring; the bowels are invariably coſtive. In other caſes, the enemy approaches rapidly; and rigors, great proſtration of ſtrength, vertigo, nauſea, or vomiting, uſher in the diſeaſe.

"The firſt paroxyſm, which is often attended with delirium and epiſtaxis, after continuing an indefinite period with varying ſymptoms, terminates in a ſweat; not profuſe and fluent, as after a regular hot fit of ague, but clammy and partial, with the effect, however, of lowering the pulſe and cooling the body, but not to the natural ſtandard. The latter ſtill feels dry and uncomfortable; the pulſe continuing ſmaller and quicker than it ought. This remiſſion will not be of long ſtanding, without proper remedial meaſures. A more ſevere paroxyſm ſoon enſues, uſhered in by vomiting (ſometimes of bile), and quickly followed by exceſſive heat; delirium; great thirſt; difficult reſpiration; febrile anxiety; parched and browniſh tongue. The next remiſſion (if it do take place) is leſs perfect than the firſt, and brings ſtill leſs relief. In this way, if medicine or a ſpontaneous purging do not check the diſeaſe, it will run its fatal courſe, each ſucceeding attack proving worſe than its predeceſſor, till exhauſted nature begins to give way. The pulſe declines; the countenance ſhrinks, and looks ſallow; the eyes become dim, the abdomen ſwells from viſceral congeſtion; the ſtomach loathes all food, when hiccup, ſtupor, and low delirium, uſher in death. Such ſevere caſes, the committee think, were, in general, owing to neglect or blunders at the beginning of the diſeaſe."

Between the *bilious fever* and the continued form of the weſtern endemic we obſerve little difference. In each, gaſtric irritability, inflammation or fullneſs of the abdominal viſcera, oppreſſion of the head, are for the moſt part preſent. The other febrile ſymptoms are by no means conſtant and regular. Thus the pulſe is frequently regular, and ſometimes up to 120 or 130 in the minute. It is the ſame with the temperature of the ſkin. Often, when mad delirium is preſent, the pulſe will be 86, and the thermometer in the axilla at 96° of Fahrenheit. The bowels are almoſt always conſtipated, or in a ſtate of dyſenteric irritation. No ſuch thing as natural ſtools in this fever are ever to be ſeen, unleſs procured by art. Frequently, but not always, yellowneſs of the eyes, and even of the ſkin, takes place; and the mental functions are very generally affected, which indeed is characteriſtic of all bilious diſeaſes.

The following is the moſt general order in which the febrile phenomena preſent themſelves. Severe pain in the head, arms, loins, and lower extremities; ſtricture acroſs the breaſt, with great pain under the ſcrobiculus cordis; retching and griping. In ſome caſes the pulſe intermits, and the temperature of the ſkin is increaſed; in others, cold chills come on, attended with partial clammy ſweats; but all patients complain of *pain under the frontal bone;* moſt have white furred tongues, and thirſt. An increaſe rapidly takes place in the ſeverity of the pain in the head, limbs, loins, and acroſs the epigaſtric region; conſtant vomiting of viſcid bile comes on; intermiſſion of pulſe goes off. In ſome, the ſkin is cold; in others hot, with inſatiable thirſt. Tongue, in moſt caſes, covered with a thick white cruſt. Great irritability of the ſtomach, and averſion to food. Bowels conſtipated; but a few patients have a fœtid bilious purging. The third or fourth days bring an increaſe of pains acroſs the epigaſtric region, and in the head, with frequent vomiting of bile; tongue ſwelled and furred, but no great heat or acceleration of pulſe. An increaſe of all theſe ſymptoms, eſpecially the violent pain in the head under the frontal bone, takes place; delirium, and yellowneſs of the ſkin, come on; and the fatal progreſs of the diſeaſe is preciſely ſimilar to that of the continued fever before detailed. Throughout the whole of the diſeaſe, the *liver* appears to be ſeverely affected.

The diſeaſe does not always proceed, however, in the manner here mentioned. Sometimes violent madneſs is the firſt decided ſymptom: the patient endeavours to commit ſuicide, and has been known to attack with fury thoſe who have endeavoured to prevent his throwing himſelf over-board, or committing ſimilar acts of violence. The patient often falls ſuddenly down, with ſuffuſed eyes and inſenſible limbs; and awakes after ſome time to undergo the moſt violent inflammation of the brain.

The appearances found on *diſſecting* thoſe to whom yellow fever has proved fatal, are ſuch as commonly follow inflammatory action; and, according as this action has been violent or otherwiſe, we obſerve the various gradations of mortification or ſloughing, of abſceſs or ulceration, of adheſion or effuſion, or (rarely) of ſimple redneſs and dilatation of veſſels.

The parts principally affected are, the brain, the membranes of which are often found adhering together, and the ventricles containing watery or bloody fluids; the liver, the ſtructure of which is variouſly affected, from a ſlight hardneſs and darkened colour of its edge, to a ſtate ſo completely diſſolved and broken down, that with the ſlighteſt preſſure the finger runs into it. The gall-bladder is almoſt always turgid with bile; the ſtomach and ſmaller inteſtines inflamed in various degrees, the ſtomach being frequently ulcerated or ſphacelated, and the inteſtines exhibiting various diſeaſed products: it rarely happens that the inflammation extends to the colon. The thoracic viſcera are not generally much affected, though occaſionally polypi are found forming in the heart, or the pericardium is unuſually diſtended. But ulceration or abſceſs of the lungs is perhaps the leaſt frequent organic leſion of the viſcera. The ſkin is often affected with inflammatory action, as exemplified by its frequent termination in ſpots and ecchymoſes. It is to be remarked, that ſometimes the abdominal viſcera are very much diſeaſed, while the brain is tolerably ſound: but much variety exiſts as to the organs affected.

We paſs over numerous hiſtories of the forms of yellow fever. We have ſtated what appear to us the principal diviſions. To attempt to detail the perpetually-changing varieties in febrile diſeaſe is equally beyond our limits or our power; for a hiſtory, ſo far complete, that it embraces all the forms of yellow fever that have hitherto appeared, we again refer our readers to the work of Dr. J. Johnſon, before quoted, and to which we have been much indebted in our compilation of the hiſtory of this diſeaſe.

The courſe of few maladies ſo ſtrongly exemplifies the danger of following with unvarying meaſures diſeaſes ſimilarly named as that of the yellow fever. The treatment of this diſeaſe muſt change according to the prevalence of particular ſymptoms, according to the mode of attack, and according to the effects it produces. It cannot uniformly be grounded on the diviſion of ſtages, ſo uſeful in moſt ailments; for we have before ſeen, that it ſets in in various and oppoſite ways; being ſometimes attended with coldneſs and diminution of all the phenomena of life; ſometimes, on the contrary, with raving delirium, and great exaltation of ſtrength, heat, &c. It cannot altogether be founded on the exciting cauſe; for the intenſer and the milder forms equally ariſe from the action of the ſame agent, if the conſtitution be different; nor can an obſervance of the conſtitution of the patient always lead us to diſcrimination, ſince the weakeſt patients have borne depletory meaſures under which the robuſt have ſunk, and of courſe vice verſa.

The firſt acceſſion of the fever being the period at which alone remedial agents can be depended on, it behoves us to meet it with the utmoſt promptitude and deciſion. If the cold ſtage be firſt manifeſted, we ſhould loſe no time in putting in force thoſe meaſures of bleeding;

ing on the one hand, and reſtoring the balance of circulation on the other, as detailed in the quotation from Dr. Jackſon in our 209th page. If the raving delirium and increaſed circulation be firſt manifeſt, our bleeding muſt be ſtill more free; and here let us caution our profeſſional brethren againſt thoſe futile half-meaſures which ſyſtematic writers in this country have been accuſtomed to recommend. We repeat the opinion of the beſt-informed practical writers on Indian maladies, when we quote Dr. J. Johnſon's expreſſion "Bleed boldly and deciſively till the head and præcordia are relieved, or draw no blood whatever." Indeed it is effect we muſt look to. The pulſe is ſo changeable, that it is a bad guide; and, as to quantity, this is ſo various in different perſons of the ſame appearance, that the meaſurement of ounces is ſtill more fallacious. Ninety ounces of blood have been drawn during the early ſtage of this fever; and not until that quantity was extracted did the ſymptoms abate. This meaſure frequently relieves not only the head and abdominal congeſtion and inflammation, but alſo the diſtreſſing and perpetual vomiting. In proſecuting it we muſt let nothing deter us from our purpoſe. Should mental impreſſion cauſe faintneſs, the patient is to be ſupported with a little wine and water; the bleeding reſtrained; and, as ſoon as animation is reſtored, we muſt again open the vein. When the head is violently affected, cold lotions are to be applied to it; and, if there is general and high excitement, water ſhould be daſhed over the whole body. Againſt emetics ſtrong teſtimony exiſts; and indeed, when the great irritability of the ſtomach is conſidered, we ſhould naturally ſuppoſe ſuch remedies muſt do harm. The only caſe in which an emetic ſeems at all allowable, is when a full meal of ſolid food has been taken ſoon after the acceſſion of the fever, and the ſtomach has not rejected it. Here it appears highly probable that the undigeſted aliment muſt excite more ſerious inflammation than the tranſient ſtimulus of the emetic.

Purgatives in a condenſed form, as calomel with rhubarb and jalap, may be next exhibited; and theſe ſhould be aſſiſted in their operation by oleaginous or ſaline enemata. When the irritability of the ſtomach is ſo great that we fear the rejection of purgatives, a ſcruple doſe of calomel combined with a grain of opium, is ſaid to reduce the diſpoſition to vomit in a rapid and aſtoniſhing manner; after which the purgatives may again be perſevered in. When the bowels have been freely evacuated by purges, we muſt have recourſe to calomel, a remedy which writers on this fever have floridly called their "ſheet-anchor." This medicine, exhibited in large doſes and combined with opium, has been found to be a remedy of univerſal application. Many have truſted to it alone; but though with theſe practitioners ſome patients were cured, and the lives of others conſiderably prolonged, yet the rate of mortality which occurred during the excluſive uſe of mercury ſo far exceeded that which attended the practice of conjoining its exhibition with bleeding, that the latter practice is now reſorted to in all violent caſes. This fact may be explained on the ground that abſorption does not readily take place when the blood-veſſels are full, or on the ground that the generally-increaſed momentum of blood keeps up inflammation in the capillary ſyſtem of the diſeaſed viſcera, notwithſtanding the favourable action of mercury on the ſecernents. At all events, it is almoſt impoſſible to impregnate the ſyſtem with mercury till ample depletion has been uſed. Of the mode of action of mercury we have before regretted our ignorance, when ſpeaking of cholera and dyſentery. In the fever in queſtion, it ſeems to be chiefly effective by eſtabliſhing general ſecretion; and we find that, when this happy occurrence has taken place, (which is denoted by ptyaliſm coming on,) then, and not till then, is the patient in a fair way of recovering. If the ſtomach rejects the calomel, mercurial inunction may be ſubſtituted.

The above-urged meaſures of courſe require ſome modification. If the head be more excluſively affected, and the liver in a trifling degree only, we need not always puſh the mercury to the extent of ptyaliſm; but we ſhould carry the bleeding to the higheſt pitch, and particularly attend to the cold affuſion. When the diſeaſe aſſumes the mild remittent or intermittent form, the paroxyſm may be conducted by the ſame means as before mentioned. During the intermiſſion, calomel may be conjoined with bark, and the latter injected per ano; but, ever keeping in mind to reſtore the action of thoſe parts which are deficient, and diminiſh thoſe motions which are exceſſive, we ſhould endeavour by bliſters, by baths, and by local bleeding, to relieve topical inflammation, and reſtore the balance of power of which all the phenomena of this fever indicate a ſevere derangement. It is ſcarcely neceſſary to add, that it is of importance to avoid the exciting cauſes of the complaint, ſince theſe invariably aggravate it. Thus the removal of ſoldiers into barracks at a diſtance from peſtilential effluvia, of ſailors from on-board of foul or crowded veſſels, &c. ſhould, when practicable, be ſtrongly urged. It is to be remarked, that ſome have ſuppoſed the yellow fever to be a diſeaſe which cannot occur twice in the ſame individual; but this is contradicted by the beſt authorities.

We muſt now return to our noſological arrangement, which, for the obvious reaſon that it entirely diſagrees with the opinions we have adopted as to the identity of ſeveral fevers diſtinctly named, we have thus far abandoned. Dr. Good gives in the preſent order of Pyrexiæ four genera.

Genus I. *Ephemera*, [from the Gr. ἡμέρα, a day.] Ephemeral, diary, or ſimple, fever. Generic characters —Attack ſudden; paroxyſm ſingle, and terminating in about twenty-four hours. There are three ſpecies.

1. Ephemera mitis, or mild ephemera: without preceding rigor; heat and number of the pulſe increaſed ſlightly; laſſitude and debility inconſiderable; pains obtuſe, chiefly about the head; perſpiration and breathing pleaſant. This ſpecies is uſually produced by exceſs of corporeal exertion, ſtudy, or violent paſſion; by ſuppreſſed perſpiration; ſudden heat or cold.

2. Ephemera acuta, or acute ephemera: ſevere rigor; great heat; pulſe at firſt ſmall and contracted, afterwards quick and ſtrong; perſpiration copious; great languor. It is frequently produced by a ſurfeit of eating or drinking; or ſome temporary organic obſtruction. Theſe two ſpecies of Ephemera generally go off ſpontaneouſly; or, at moſt, by the help of reſt and abſtinence.

3. Ephemera ſudatoria, the ſweating ſickneſs: tenſe pains in the neck and extremities; palpitation; dyſpnœa, pulſe rapid and irregular; heat intenſe; intolerable thirſt; drowſineſs or delirium; exceſſive ſweat.

The hiſtory of the riſe and progreſs of this ſingular and formidable diſeaſe conſtitutes one of the moſt curious articles in the annals of medicine. Its origin is involved in a good deal of obſcurity; and much vague and inconcluſive reaſoning, concerning the mode in which it was propagated, is to be met with even among the moſt authentic authors who deſcribe its ravages. It ſeems, however, to be generally admitted, that it firſt appeared in the army of the earl of Richmond, afterwards king Henry VII. upon his landing at Milford Haven, in 1485; and that it ſoon ſpread to London, where it raged from the beginning of Auguſt to the end of October. Whether the troops, which were foreign ſoldiers, levied by the earl of Richmond, brought the diſeaſe with them from the continent, or whether the contagion was generated in the crowded tranſport-veſſels on-board of which they were embarked, it is impoſſible, amidſt the deficiency of evidence, to determine. It may readily be ſuppoſed, however, that a highly malignant and contagious diſeaſe might have been generated under

under theſe circumſtances, eſpecially as this body of troops is deſcribed by a contemporary hiſtorian (Philip de Comines) as the moſt wretched he had ever beheld; collected, it is probable, from jails and hoſpitals, and buried in filth. The moſt general opinion at the time, however, certainly appears to have been, that it aroſe from ſome peculiar ſtate of the atmoſphere, and was propagated by contagion; but no writer has diſtinctly pointed out the connexion of this or of any other epidemic with a ſpecific condition of the air, nor detected any peculiarity in the circumſtances attending its firſt appearance, or ſubſequent returns.

The ſweating-ſickneſs broke out in England four different times after this, but at unequal intervals. The ſummer ſeaſon was always the period of its commencement, and it continued riſe from three to five months. It appeared during the ſummer of 1506; and again in 1517, from July to the middle of December; when it raged with peculiar violence, proving fatal in the courſe of three hours; extending its havock to many of the nobility, and carrying off, in many towns, half the inhabitants. Its next recurrence was in 1528; at which time, though it was ſomewhat leſs fatal, many of the courtiers of Henry VIII. fell victims to it, and that monarch himſelf was in danger. Bellay, biſhop of Bayonne, then ambaſſador in England, who was affected with it, reports, that of 40,000 perſons attacked with it in London, only 2000 died. The laſt time that it viſited England was in 1551, when its fatality was ſo great, that in Weſtminſter 120 died of it in a day, and among others, the two ſons of Charles Brandon, both dukes of Suffolk. In Shrewſbury, particularly, according to the teſtimony of Dr. Caius, who reſided in that city, 960 died within a few days. The diſorder had alſo, in the mean time, been deſolating many parts of the continent. In 1529 it firſt ſhowed itſelf in Holland, and thence ſpread to the Netherlands, and to Germany, deſtroying a great number of lives. It is ſtated to have interrupted a conference at Marpurg between Luther and Zuinglius, about the euchariſt. From the deſcription which Wierus has given us of this epidemic, as it appeared in Germany, it ſeems to have commenced with a violent cold ſtage and ſhivering, which continued half an hour or more, accompanied with great pains in the region of the diaphragm and groin, and the other ſymptoms already mentioned as characterizing the diſeaſe, when obſerved in England. Swelling and ſtiffneſs of the hands at the beginning of the attack, and vomiting of black blood or bile, are alſo noticed by this author in particular. Eraſmus, an eye-witneſs of its devaſtations, deſcribes it in very forcible terms, "viſum eſt ax amne Phlegetoneo emiſſum hoc malum."

This diſeaſe has been deſcribed by various writers under the names of *ſudor Anglicus*, *ephemera Britannica*, *ephemera ſudatoria*, *hydronoſus*, and *hydropyretos*. It appears from their accounts to have ſpared no age or condition, but to have attacked more eſpecially perſons in high health, of middle age, and of better rank and condition. The invaſion of the diſeaſe was exceedingly ſudden, and was marked by the affection of ſome particular part, producing the ſenſation of intenſe heat, extending through the limb, and afterwards diffuſing itſelf over the whole body. This was immediately followed by profuſe ſweating, which generally continued more or leſs through the whole courſe of the diſeaſe, and was attended with inſatiable thirſt. Extreme reſtleſſneſs, head-ache, delirium, nauſea, cardialgia, and an irreſiſtible *propenſity to ſleep*, characterized its progreſs; together with great proſtration of ſtrength, producing frequent fainting, and irregularity in the action of the heart, which ſometimes palpitated violently, while at other times the pulſe was weak and fluttering. In this way the patient was carried off frequently in two, three, or four, hours from the eruption of the ſweat. Thoſe more eſpecially who bore their ſufferings with impatience, and who ſought relief from the ſenſe of heat, by which they were tormented, by expoſing their bodies to the air, or even by putting their arms out of bed, were often ſuddenly ſtruck with death. The ſweat, when promoted, is repreſented as being unuſually clammy, as well as abundant, and as having a very ſtrong and peculiarly fetid odour. The violence of the attack generally ſubſided in fifteen hours, yet the patient was not out of danger till the expiration of twenty-four hours.

For a long time phyſicians were at a loſs how to treat this new and ſingular malady. The fatal effects of expoſure to cold, however, ſuggeſted the propriety of accumulating heat round the patient, with a view of promoting the ſweat, which appeared ſo manifeſtly to be a critical diſcharge. The moment a perſon was ſeized with the ſymptoms of the diſeaſe, he was to lie down immediately in bed, without taking off his clothes, and to be completely covered, all but the face, with bed-clothes; in which ſituation he was to remain perfectly ſtill, not ſtirring a limb, if poſſible, nor putting a hand out of bed. He was enjoined abſtinence from food during the whole twenty-four hours, and even from drink the firſt five hours: then a little ale or beer, or wine and water, was to be given in ſmall portions, and ſucked through a ſpout, the patient ſtill lying in the ſame poſture. At the expiration of about fourteen hours, the bed-clothes were gradually to be removed, and the ſweating reſtrained; and, after it was quite over, proper food was to be given to recruit the exhauſted ſtrength. This was the proceſs when the ſweat flowed ſpontaneouſly: when this was not the caſe, attempts were made to excite it, ſuch as by dry and warm frictions, wine, aromatics, vinegar-whey, China-root, and other ſudorific medicines. By this method of practice, actively purſued, and properly adapted to the circumſtances, we are told that the diſeaſe, though ſo fatal when neglected or miſmanaged, was got over with a tolerable certainty of ſucceſs; ſo that, according to the obſervations of lord Bacon, who has given us a ſhort account of it in his Hiſtory of Henry VII. it might be looked upon "rather as a ſurpriſe of nature, than obſtinate to remedies." Great ſtreſs is laid by ſome phyſicians on the danger of indulging the propenſity to ſleep which accompanies the paroxyſm. "If they were ſuffered to ſleep," ſays Cogan, "commonly they ſwooned, and ſo departed, or elſe immediately upon their waking." (Haven of Health, p. 262.) It appeared, however, from the teſtimony of the continental phyſicians eſpecially, that much harm, and frequently fatal conſequences, aroſe from the extremes to which the hot regimen was carried.

Dr. Willan, in his publication on cutaneous diſeaſes, has thrown out a ſuggeſtion concerning the origin of this affection, which he ſuppoſes might have been owing to ſome diſeaſe or depravation in wheat, or to ſome noxious vegetable growing with it in particular ſituations. This idea ſeems to have been ſuggeſted by ſome analogy to be traced between the fatal epidemic, called feu ſacré, feu St. Antoine, mal des ardens, &c. which is ſuppoſed to have originated from eating rye damaged by a paraſitic plant, conſtituting the diſorder in corn termed by the French *ergot;* and it was alleged, that the inhabitants of Wales and Scotland who fed on barley or oat bread, were not attacked. This opinion appears, however, to be untenable, and has been ably combated in a paper in the Edinburgh Medical Journal, vol. iv. p. 464.

In a curious and ſcarce book, called the Touchſtone of Complexions, firſt printed in 1633, we have the opinion of Dr. Lævinus Lemnius, the famous German philoſopher, who viſited this country at the beginning of the 16th century, as to why the ſweating-ſickneſs ſhould prevail here more than elſewhere. It will be ſeen by the following extract, that we have been long and commonly regarded by foreigners as a gluttonous nation. "The *ephemera*, or *diaria*, is the ſweating-ſickneſs, which, becauſe it began in England, is called the *Engliſh ſweat*. Why this diſeaſe is termed by the name of the Engliſh

ſweat, I ſuppoſe grew hereupon, for that the people of that country be often therewith attacked, partly through their curious and dainty fare, and great abundance of meats, wherewith they cramme themſelves very ingluviouſly, which I noted at my late being in that realme, (about the time of midſummer,) by reaſon that the ayre with them is troubled, cloudy, and many times with foggy dampes overcaſt, whereby is engendred the cauſe and originall, both inwardly and outwardly, of this diſeaſe; the vehemency whereof bringeth them into a bloody ſweating, wherewith they muſt wreſtle and ſtrive as with a moſt fierce and ſtrong enemy, and which they muſt endeavour with all might to ſupplant: hereupon happen traunces and ſwounings, through feebleneſſe of body and minde, fainting and drooping of the ſpirits, decay of powers, ſtopping of the pipes and voyce, and life almoſt thereby cleane yeelded up, and the party even brought unto death's doore."

Other books from which original information may be collected on the ſubject of this article are the following: A Boke or Conſeill againſt the Diſeaſe commonly called the Sweat or Sweating-Sickneſs, made by John Caius, Doctor in Phyſic, 1552, 12mo. which was afterwards reviſed, enlarged, and put into a more ſcientific form, by the author, and publiſhed in Latin, in 1556, under the title of *De Ephemera Britannica*. Joh. Wierus, De Sudore Anglico. C. V. Dubourghdieu, De Peſte. Forreſtus, Schol. Obſerv. vi. 8. Sennertus, iv. 15. Thomas Cogan's Haven of Health. Lord Bacon's Relation of the Sweating-ſickneſs examined, &c. by Henry Stubbe, Phyſician at Warwick, 4to. Lond. 1671. R. Fortis, Ephemera Anglica Peſtilens.

Genus II. *Anetus*, [from ανιημι, I intermit.] Intermittent ague, or fever. Generic characters—Paroxyſm intermitting, and returning during the courſe of the diſeaſe: the intermiſſion generally perfect and regular.

There cannot perhaps be ſtronger evidence againſt the notion that local inflammation is the invariable accompaniment of fever, than that derived from the occurrence of intermittents. In theſe diſeaſes, a cold paroxyſm followed by a hot one, each more ſevere than in continued fever, leaves the patient perfectly free for ſome time from pain, or indeed loſs of ſtrength or derangement of function. Nevertheleſs, according to Brouſſais, theſe fevers are, equally with thoſe of the continued form, *gaſtro-enterites*. But any one not blinded by a favourite hypotheſis, cannot fail to view intermittents rather in the light of irritative than inflammatory affections; that is to ſay, as diſeaſes in which the nervous ſyſtem is primarily affected, and the capillary ſyſtem ſecondarily and as a conſequence. But the reaſon why intermiſſions take place is the difficult point to be decided. Darwin endeavoured to refer theſe periodical changes to the influence of our diurnal habits, in regard to activity and ſleep, exhauſtion of ſenſorial power and invigoration, and to the diurnal periods of heat and cold, light and darkneſs, &c. upon all the actions of our frame. That theſe circumſtances greatly influence the operations of the animal body, cannot be doubted: and, were all the periods of action and intermiſſion *diurnal* only, we might admit the generalization as correct. But we cannot reconcile the very frequent *intermiſſions* of diſeaſe, which continue for *tertian* periods, that is, during an interval of forty-eight hours, and ſtill more thoſe which continue for *quartan* periods, of ſeventy-two hours, with this general law. See *Zoonomia*, vol. ii. ſect. 36.

The French writers (among whom the names Begin and Mongellaz occur to us at preſent) have ſpeculated of late as to the cauſe of intermittents. But, though theſe gentlemen have detailed ſome remarkable obſervations concerning the laws of intermittents, we do not find any rational attempt at inveſtigating the reaſon of the intermiſſion. Dr. Park, in his Gulſtonian Lecture, ſtated very properly, that irritation was the cauſe of the fevers in queſtion; and he founded his explanation of the cauſe of intermiſſion on this aſſumption; viz. that the effects of irritation vary according to the mode in which it is applied; "that which is internal to the organs exciting increaſed contraction; while that which is external diminiſhes or ſuſpends it."

"Beginning with internal irritation, its immediate effect is to excite the organs to increaſed contraction, as the following examples may ſhow. Thus, emetics excite increaſed contraction in the ſtomach; purgatives increaſe contraction in the inteſtines; ſudorifics ſtimulate the exhalent veſſels to contract," &c.

On the other hand, our author infers that the influence of external irritation is to ſuſpend or diminiſh contraction, becauſe, "in affections of the ſtomach or inteſtines, rubefacients or bliſters, externally applied, are uſed for this purpoſe. In morbid irritability of the womb, frictions and fomentations have that effect. In the vaſcular ſyſtem, the influence of external irritation is obvious and viſible on the ſurface, in the relaxation and increaſed fulneſs of veſſels produced by it, in whatever mode it is applied; whether mechanically, as by rubbing, ſcratching, or bruiſing; or phyſically, as by the application of ſinapiſms, increaſed fulneſs and diſtention of the veſſels being invariably the effect that reſults. And in the ſame way relaxation and increaſed fulneſs of the veſſels is produced by ſtrong ſtimulants applied to the internal ſurface of the ſtomach, where they act externally to the veſſels ramified on that ſurface; hence the general glow and ſenſe of warmth that ariſe from taking wine or ardent ſpirits."

The application of the above-mentioned propoſition to the phenomena of intermittent fever is as follows. The firſt cauſe, whether marſh-miaſma or any thing elſe being admitted to the mucous membranes, acts as a ſtimulant (according to Dr. Park cauſing relaxation) externally to theſe veſſels; and hence the unuſual flow of ſpirits which often precedes a febrile attack. As ſoon, however as this agent is abſorbed, and carried into the circulation, it excites increaſed contraction, (according to Dr. Park with diminiſhed circulation;) and hence the cold fit. "The duration of this cold ſtage (ſays Dr. Park) is limited, becauſe the powers of action are limited; and, the more violent the contraction, the ſooner thoſe powers will be exhauſted. The duration of the hot ſtage is limited, becauſe the relaxation of veſſels which occaſions it ariſes ſolely from their previous over-action, and not from any perſonal debility."

The *ſweating-ſtage* is referred by our author, according to an hypotheſis before mentioned, when ſpeaking of continued fever, to the relaxation of the ſphincter-like extremities of the capillaries, theſe veſſels having recovered their natural dimenſions after the expiration of the hot ſtage. The beneficial operation of the ſweating-ſtage is dependant, in the firſt place, on a reduction of irritability attendant upon a copious depletion of the veſſels; and, ſecondly, on the partial expulſion of the irritating cauſe: "the quantity of which muſt be diminiſhed with every paroxyſm; one portion being thrown off by tranſpiration, while another is returned back into the primæ viæ, where it no longer acts *internally* to the veſſels, and therefore no longer excites them to contraction." The paroxyſm, however, recurs after a certain period; "becauſe the portion that remains will be again taken up by abſorption, and be *internally* applied to the veſſels; where its ſtrength will gradually accumulate, until it acquires force enough to excite another paroxyſm; and thus the fever aſſumes the intermittent form."

Now it is obvious, that, according to the rapidity of this accumulation of the agent of the fever, ſo will the diſeaſe be quotidian, tertian, quartan, &c. Dr. Park likewiſe attributes ſomewhat of the ſecond and following attacks of ague to an *accumulation of excitability*, which he ſays prediſpoſes the body to be more ſtrongly acted on by ſlighter cauſes; for, if this accumulation did

not

not take place, the miaſmatal irritant being thrown off gradually by perſpiration and other ſecretions, the paroxyſms would always become milder as the diſeaſe advanced. But this is not the caſe.

This hypotheſis, though far from being correct, appears to us the beſt yet promulgated; and the hint derived from it ſeems to us to ſerve as the foundation for a theory more conſonant with acknowledged facts. We mean, that the idea of accumulation of material agents may be explained without the aſſumption (an aſſumption which a thouſand facts deny) that internal irritants excite, while external irritants diminiſh, contractility. We ſhould rather ſuppoſe the following circumſtances take place: that the miaſma, or other cauſe of ague, operates excluſively on the mucous membrane, it may be, of the ſtomach or lungs, but we know not where: it may be conjectured, however, on the ſtomach; that the irritation it excites is directly tranſmitted to the brain and nervous ſyſtem in general, through the medium of which, as in continued fever, the capillaries are ſo affected as to produce fever. Abſorption of the miaſma taking place, this irritation is no longer kept up on the nerves of the mucous expanſion; and, in uniſon with the law often urged, a re-action takes place over the whole body, merely in conſequence of the nervous diminution of motion. Without inferring an actual accumulation of the miaſm, ſince that would be diſturbed by the paſſage of food, &c. we ſhould ſay, that a number of *impreſſions* from the now ſecreted miaſms were neceſſary to develop the ſympathetic action of fever; and of courſe, as the conſtitution was more or leſs irritable, ſo would the febrile movements take place in a larger or ſhorter period. There is no neceſſity to infer that the quantity of miaſm gets leſs, becauſe we know that ſecreting veſſels often ſecrete the ſame irritant as that which cauſed their morbid action; as is exemplified in morbific pains. Leſt it be ſaid, however, this is only eſtabliſhed with regard to animal irritants, we ſhould account for the unaltered degree of fever obſerved in ſucceeding paroxyſms on the well-known law of habit; viz. that ſympathetic movements are more eaſily called into action in proportion to the frequency of their previous occurrence. It will be ſeen that much of this theory belongs in fact to Dr. Park; to whom moreover this much is due, that its ſtructure is entirely owing to the train of thought into which his reaſoning has caſt us. And we ſhall endeavour to connect theſe views with an explanation of tic douloureux and other periodical nervous affections, when we come to the claſs Neurotica.

The actions which give riſe to the paroxyſms of intermittents, though kept up ſolely by irritation, being nevertheleſs ſimilar in their nature to thoſe of continued fevers, it follows, as in other diſeaſes, that, if the contractility of the blood-veſſels is impaired, actual inflammation will ariſe; and hence that continued fever will come on, or that a ſtate nearly bordering on this, but at the ſame time capable of increaſe from the periodical action of the exciting cauſe, will occur; in which caſe we witneſs what is called a remittent fever.

Each paroxyſm of an intermittent fever is divided into three different ſtages, which are called the *cold*, the *hot*, and the *ſweating*, *ſtages*, or *fits*.

1. The *cold* ſtage commences with languor, a ſenſe of debility and ſluggiſhneſs in motion, frequent yawning and ſtretching, and an averſion to food. The face and extremities become pale, the features ſhrink, the bulk of every external part is diminiſhed, and the ſkin over the whole body appears conſtricted, as if cold had been applied to it. At length the patient feels very cold, and univerſal rigors come on, with pains in the head, back, loins, and joints, naufea and vomiting of bilious matter; the reſpiration is ſmall, frequent, and anxious; the urine is almoſt colourleſs; ſenſibility is greatly impaired; the thoughts are ſomewhat confuſed; and the pulſe is ſmall, frequent, and often irregular. In a few inſtances, drowſineſs and ſtupor have prevailed in ſo high a degree as to reſemble coma or apoplexy; but this is by no means uſual.

2. Theſe ſymptoms abating after a ſhort time, the ſecond ſtage commences with an increaſe of heat over the whole body, redneſs of the face, dryneſs of the ſkin, thirſt, pain in the head, throbbing in the temples, anxiety and reſtleſſneſs; the reſpiration is fuller and more free, but ſtill frequent; the tongue is furred, and the pulſe has become regular, hard, and full. If the attack has been very ſevere, then perhaps delirium will ariſe.

3. When theſe ſymptoms have continued for ſome time, a moiſture breaks out on the forehead, and by degrees becomes a *ſweat*; and this, at length, extends over the whole body. As this ſweat continues to flow, the heat of the body abates, the thirſt ceaſes, and moſt of the functions are reſtored to their ordinary ſtate. This conſtitutes the third ſtage. It muſt, however, be obſerved, that in different caſes theſe phenomena may prevail in different degrees, and their mode of ſucceſſion vary; that the ſeries of them may be more or leſs complete; and that the ſeveral ſtages, in the time they occupy, may be in different proportions to one another.

Such a depreſſion of ſtrength has been known to take place on the attack of an intermittent, as to cut off the patient at once; but an occurrence of this kind is very uncommon. Patients are ſeldom deſtroyed in intermittents from general inflammation, or from a fulneſs of the veſſels either of the brain or of the thoracic viſcera, as happens ſometimes in a continued fever; but, when they continue for any length of time, they are apt to induce other complaints, ſuch as dyſpepſia, diſeaſe of the liver, dropſy, &c. which now and then prove fatal. In warm climates, particularly, intermittents are very apt to terminate in a fatal manner. When the paroxyſms are of ſhort duration, and leave the intervals quite free from fever, we may expect a ſpeedy recovery; but, when they are long, violent, and attended with much anxiety and delirium, the event will be doubtful.

Diſſections of thoſe who have died of an intermittent, ſhow a morbid ſtate of many of the viſcera of the thorax and abdomen; but the liver, and organs concerned in the formation of bile, as likewiſe the meſentery, are thoſe which are uſually moſt affected.

The treatment of an intermittent fever reſolves itſelf into thoſe means which may be employed during a paroxyſm to arreſt its progreſs, or to mitigate its violence; and thoſe which may prevent any return, and effect a permanent cure. This forms of courſe the more important part of the plan; but it is ſometimes neceſſary to palliate urgent ſymptoms; and it is always deſirable to ſuſpend a paroxyſm, if poſſible, not only to prevent miſchief, but alſo that there may be more time for the uſe of the moſt effectual remedies. When therefore a fit is commencing, or ſhortly expected, we may try to obviate it by ſome of thoſe means which excite movements of an oppoſite deſcription in the ſyſtem: an emetic will generally anſwer the purpoſe, determining the blood powerfully to the ſurface of the body. Should the paroxyſm have already come on, and the cold ſtage be very ſevere, the warm bath, and cordial diaphoretics in repeated moderate doſes, may aſſiſt in bringing warmth to the ſurface: when, on the contrary, great heat prevails, the antiphlogiſtic plan is to be purſued; and it is highly neceſſary, if any organ of importance be much inflamed, to take blood, eſpecially if the patient is plethoric and robuſt: acidulated drink may be exhibited, with purges, keeping the ſurface cool at the ſame time. In the intermiſſions, ſtimuli of various kinds are recommended; at the head of which we place cinchona and arſenic, the former of which is to be taken largely in ſubſtance, where the diſeaſe is not complicated with viſceral affection; in a quotidian an ounce at leaſt ſhould be given between

between the fits, in a tertian half as much more, and in a quartan two ounces. It will be generally better to clear out the primæ viæ before this remedy is begun with; and various additions may often be required, to make it agree better with the ſtomach and bowels, particularly aromatics and other ſtimulants, aperients or ſmall doſes of opium, according to circumſtances. In theſe doſes, however, it generally oppreſſes the ſtomach; and it may reaſonably be doubted whether the application of bark has not often produced the viſceral diſeaſes which have happened in this complaint. The French uſe a preparation of this drug called *quinine*. It has this advantage over the cinchona in powder, that it contains all the remedial portion of that ſubſtance, without diſturbing the digeſtive proceſs by its large quantity of tough woody fibre. The doſe is two grains, to be given every two hours during the intermiſſion. The ſulphuric acid has been ſtated to have proved very ſucceſsful in the removal of this diſeaſe. But the moſt efficacious preparation we know of is the liquor arſenicalis: it muſt be given in doſes of 10 or 12 drops two or three times a-day, and its effects watched.

Our readers will bear in mind (ſee p. 55 of this article), that the *black pepper* (in doſes of 6 to 10 grains twice a-day) has been ſucceſsfully given by Drs. Frank and Ghighini. Since that paragraph was written, many reſpectable teſtimonials have appeared in favour of the uſe of this drug. It is remarkable that this is merely an old medicine revived, Dioſcorides and Caſimir Medicus having both uſed it in the treatment of intermittents.

This complaint often ſeems kept up by an habitual operation of action after the exciting cauſe has ceaſed to exiſt. It is in theſe caſes that ſo much has been done by mental impreſſions. We might fill a page with an enumeration of the various inert remedies which have, through the medium of imagination, cured the ague. It will be ſufficient to extract two ſentences from the works of two of the firſt philoſophers of this country. "I myſelf," ſays Mr. Boyle, "was cured of a violent quotidian by applying to my wriſts a paſte made of bay-ſalt, new hops, and blue currants; which has alſo relieved many others both of quotidians and tertians." (Philoſ. Works abr. tom. i. p. 80.) And Lord Bacon ſays, that "juices of ſtock-gilly flowers, roſe-campion, garlic, and other things, applied to the wriſts, and renewed, have cured long agues." His lordſhip likewiſe recommends, in the heats of agues, to hold eggs of alabaſter and balls of cryſtal in the hands.

The genus Anetus is divided by Dr. Good into five ſpecies, and thoſe ſpecies into many varieties, as will appear from the following enumeration.

1. Anetus quotidianus, the quotidian ague: intermiſſion about twenty-four hours; paroxyſm commencing in the morning; uſual duration under eighteen hours. This ſpecies is ſubdivided into the following varieties.

α. Partialis: confined to a particular part or organ, uſually accompanied with diſtreſſing pain. Sometimes limited to one ſide. Sometimes, and ſtill more generally, confined to the whole or half the head, embracing many caſes of cephalæa.

β. Comitatus: catenated with, or giving riſe to, foreign ſymptoms or other diſeaſes.

γ. Protractus: leaving the intermiſſion inordinately ſhort, or imperfect.

δ. Anticipans, the anticipating quotidian of Fordyce: the paroxyſm anticipating its antecedent period uſually by about two hours; and continuing the ſame anticipation at every recurrence; ſo that the acceſſion may hereby be thrown into any hour of the day or night.

ε. Cunctans, the retarding quotidian: the paroxyſm delaying its antecedent period, uſually by about two hours; and continuing the ſame delay at every recurrence as above.

2. Anetus tertianus, the tertian ague: intermiſſion about forty-eight hours; paroxyſm commencing at noon; uſual duration under twelve hours. Divided into,

α. Comitatus: catenated with other diſeaſes; and,

β. Protractus: leaving the intermiſſion inordinately ſhort or imperfect.

3. Anetus quartanus, the quartan ague: intermiſſion about ſeventy-two hours; paroxyſm commencing in the afternoon; uſual duration under nine hours.

This, like the former, has α, Comitatus; and β, Protractus. Alſo,

γ. Anticipans, or anticipating quartan: the paroxyſm anticipating its antecedent period.

δ. Cunctans, or retarding quartan: delaying its antecedent period.

4. Anetus erraticus, the irregular intermittent: intermiſſion and paroxyſm leſs regular; the former more than ſeventy-two hours.

This is divided into, α, Quintanus; β, Sextanus; γ, Septanus; δ, Octanus; ε, Nonanus; ζ, Decimanus; and laſtly, η, Vagus, which is equally irregular in the violence of the paroxyſm, the duration of its ſtages, and the period of its return.

5. Anetus complicatus, the complicated intermittent: paroxyſms intricate, multiplicate, or both. Here we have no fewer than eight varieties.

α. Tertianus duplex, or double tertian.

β. Tertianus triplex, or triple tertian.

γ. Tertianus impar, unequal double tertian.

δ. Tertianus duplicatus, ſingle tertian with two paroxyſms on the regular day of attack.

ε. Quartanus duplex, or double quartan.

ζ. Quartanus triplex, or ſingle quartan with regularly-returning paroxyſms, each of the intervening days being marked with a ſlighter attack.

η. Quartanus duplicatus, or ſingle quartan with two paroxyſms on the regular day of attack.

θ. Quartanus triplicatus, or ſingle quartan with three paroxyſms on the regular day.

Genus III. *Epanetus*, [from ἐπανημι, I remit.] Remittent fever. Generic characters—Strikingly exacerbating, and remitting, but without intermiſſion; one paroxyſm every twenty-four hours.

It is quite unneceſſary to deſcribe minutely the ſymptoms of the remittent fever, after the ample detail which we have given of thoſe of fever in general. We may juſt obſerve, however, that it varies extremely in its character, according to the ſeaſon, climate, and other circumſtances under which it appears. In its milder forms, the remittent begins with chilline ſs, laſſitude, pains in the bones, head-ache, and a diſordered condition of the ſtomach, loſs of appetite, ſickneſs, and even vomiting. At night the febrile ſymptoms run high; the heat and thirſt are great, the tongue and mouth are parched, the pain of the head is violent, the patient is totally unable to ſleep, and is continually toſſing and tumbling about, and often becomes delirious. But generally in the morning, an imperfect ſweat brings on a remiſſion of all the ſymptoms. In the evening, the paroxyſm returns, but is not preceded by any cold fit or ſhivering; yet it is commonly more ſevere than the former. Next morning it remits as before; and theſe periodical changes recur daily, becoming however leſs marked, if the diſeaſe be neglected, until the fever inſenſibly aſſumes a continued form. The pulſe is full and quick during the remiſſions to indicate fever; but rigors ſeldom precede the fits after the firſt attack. Many patients diſcharge a bilious matter from their ſtomachs by vomiting, and all are diſordered in that organ. The more violent form of this complaint, as exemplified in the yellow fever, has already been deſcribed. The milder form is to be treated according to the ſame indications as the ſevere; but, of courſe, by much leſs powerful meaſures. Here we have three ſpecies, with their varieties.

1. Epanetus mitis, the mild remittent: pulſe regular, though

though frequent; debility ſlight; remiſſion diſtinguiſhed by ſweating or a cloud in the urine.

ε. Epanetus malignus, the malignant remittent; pulſe ſmall, hurried, irregular; debility extreme; often with ſigns of putreſcency. Of this there are four varieties.

α. Autumnalis, the autumnal remittent: often with a ſtrong tendency to aſſume the tertian or double tertian type.

β. Flavus, the American yellow fever.

γ. Ardens, the burning remittent, the Cauſus (Καυσος) of Hippocrates.

δ. Aſthenicus, the highly-debilitating remittent of the ſouth of Spain, Gombron, Breſlaw, &c.

3. Epanetus hectica, hectic fever: pulſe weak; ſtages of chilline's, heat, and ſweat, variouſly intermixed, and ſometimes ſingle; the cold ſtage exhauſting; exacerbation chiefly in the evening: urine with a natant furfuraceous ſeparation; countenance ſlightly flu'ſhed or pale, ſunk, ſallow, ſhrunk, and tremulous; debility, but not decided proſtration of ſtrength; tongue whitiſh; emaciation great, but not ſudden; vertigo, or pain in the head; poſition often ſupine; anorexia, ſometimes nauſea and diarrhœa.

Some writers have detailed accounts of an idiopathic Febris hectica; but we believe it will generally be found that this is merely ſymptomatic of a grave attack of Dyſpepſia, under which article it has already been mentioned. It is for the moſt part found as a ſymptom in tabes; and ſometimes in phthiſis, chloroſis, lues, and ſcirrhous diſeaſes of various organs.

Genus IV. *Enecia*, [from αιεικης, perpetual.] Continued fever. Generic characters—One ſeries of increaſe and decreaſe; with a tendency to exacerbation and remiſſion, for the moſt part appearing twice every twenty-four hours. There are three ſpecies, beſides varieties.

1. Enetia cauma, inflammatory fever; the Synoche of Sauvages and Cullen. Heat greatly increaſed; pulſe quick, hard, and ſtrong; urine red; diſturbance of the mind ſlight. Dr. Good has four varieties.

α. Plethoricum. "Produced (ſays Dr. Good) by the ſtimulus of violent paſſions, undue muſcular exerciſe, or heating foods, upon a plethoric habit; as alſo by a ſuppreſſion of accuſtomed diſcharges, as thoſe of menſtruation, habitual veneſection, or perſpiration."

β. Bilioſum: produced by the ſtimulus of an undue ſecretion or abſorption of bile into the ſanguineous ſyſtem.

γ. Pleuriticum: accompanied with a violent ſtitch or pain in the pleura.

δ. Cephalalgicum: accompanied with great pain in the head.

2. Enecia typhus: pulſe ſmall, weak, and unequal; uſually frequent; great proſtration of ſtrength, and diſturbance of the mental powers. Two varieties.

α. Mitior, the nervous fever: with ſlight ſhiverings; heavy vertiginous head-ach; oppreſſion at the præcordia; nauſea; ſighing; deſpondency; coma or quiet delirium; urine whey-like.

β. Gravior, putrid fever: countenance ſhrunk; eyes vague, ſuffuſed, and with a film of mucus; tongue chapped, dry, and very ſordid; complexion browniſh or ſlight pink; lips tremulous, ſometimes muttering; poſition ſupine, limbs extended; reſpiration frequent and tremulous; little increaſe of heat; bowels irregularly affected; relaxation of the ſphincter rectum, &c. uſual duration from ſix to forty days.

3. Enecia ſynochus: compounded of cauma and typhus: in its commencement reſembling the former; in its progreſs the latter. Here are four varieties.

α. Sudatorius: carried off by a critical ſweat in an early ſtage of the diſeaſe.

β. Flavus: with yellowneſs of the ſkin, attended with a ſenſe of burning heat. Nearly allied to Epanetus flavus, and E. ardens, varieties of E. malignus.

γ. Puerperarum, child-bed fever. See the article PARTURITION, vol. xviii. p. 674.

δ. Soporoſus: accompanied with great drowſineſs, or ſtupor.

Order II. PLOGOTICA, [from φλεγω, I ſet fire to, or burn.] Inflammations.

Having already ſtated in what mode the primary phenomena of inflammation were induced, and that the varieties of appearance this action exhibits were the reſult of changes in the ſecernent ſyſtem rather than in the red-blood veſſels; we ſhall now proceed to conſider the latter part of the poſition in queſtion, i. e. what changes the ſyſtem of the white veſſels undergoes in order to produce the varieties of inflammation.

The principal varieties inflammation exhibits on its firſt occurrence, are thoſe of phlegmon, eryſipelas, and a mixture of both. In each, heat, pain, redneſs, and ſwelling, are apparent; but eryſipelas differs from phlegmon in this, that, while in the latter the degree of pain, redneſs, &c. gradually decreaſing, clearly indicates, that the morbid change in the properties of veſſels is moſt intenſe in the middle of the injured part, and that the natural action is gradually reſtored towards its circumference; in the former, heat, redneſs, &c. preſent an abrupt diſcontinuance, one line having all the characters of inflammation, but the next being perfectly pure from diſeaſe. The pain alſo is not of the ſame kind, nor the ſwelling ſo great, in eryſipelas as in phlegmon.

The remarks made while treating on inflammation in general, as to its mode of production and its general effects on the conſtitution, are moſt particularly applicable to phlegmon. It remains, therefore, that we ſhould now ſpeak more particularly of eryſipelatous inflammation. From various circumſtances it ſeems pretty clear, that eryſipelas is inflammation of the ſkin; but how it happens that the veſſels of the ſkin ſhould differ ſo materially from other parts in the phenomena they exhibit under the ſame action, is one of the unſolved problems of our ſcience; nor, as far as we know, has its ſolution been ever attempted. According to Cullen, indeed, eryſipelas depends "on a matter generated within the body, and thrown out, in conſequence of fever, upon the ſurface of the body." Mr. Pearſon repreſents it as the "critical termination of another diſeaſe, ſuch as obſtructed menſtruation, quartan ague, ſuppreſſed ſuppuration, ſpaſmodic and convulſive diſeaſes." But theſe are merely vague conjectures as to remote cauſes, and have nothing to do with the queſtion, why does inflammation in the cutaneous ſtructure exhibit irregularity of ſwelling, and burning pain, &c. and why does inflammation in other parts manifeſt the phenomena of phlegmon? If it be ſaid, that this depends on the peculiar ſtructure of the ſkin, we muſt ſhow that thoſe authors have been deceived who have ſpoken of phlegmon attacking the ſkin, and of eryſipelas attacking deep-ſeated parts. It is a remarkable fact, that thoſe authors who have endeavoured to explain the phenomena of inflammation have for the moſt part confined their attention to phlegmon. It does not accord with the purpoſe of the preſent eſſay to ſpeculate on this difficult ſubject; but we ſhall juſt lay the facts before our readers, whence they may draw their own concluſions.

In the firſt place, if eryſipelas be not ſolely confined to the ſkin, it is in this ſtructure that it is moſt frequently met with, and moſt ſuddenly, extenſively, and clearly, manifeſted. It is much influenced by and dependent on the ſtate of the nervous ſyſtem, and of the primæ viæ, attacking for the moſt part intemperate livers; and, when it attacks that part of the ſkin in which the nervous ſyſtem is moſt acute, it is developed with aſtoniſhing force and celerity. It is liable to be connected with phlegmon, in which caſe we ſhould ſuppoſe phlegmon to be the affection of deep-ſeated eryſipelas of the ſuperficial parts of the body. It is intimately connected with the ſtate of

the ſecernent veſſels; and one peculiar connexion between eryſipelas and thoſe veſſels is ſhown in what is called œdematous eryſipelas. It is alſo connected with a vaſt majority of that diſeaſed action of the ſecernents which are called cutaneous diſeaſes. It is unattended with the throbbing which is experienced in the arteries of phlegmonous limbs. The following characteriſtics may be alſo added. When eryſipelas is of an unmixed kind, it has not the dark red colour which common inflammations have, but a lighter red, with a yellow tinge, which is particularly obſervable towards the termination of the diſorder. The ſwelling which occurs is unattended with any remarkable induration, and forms a very inconſiderable prominence. The ſkin of the inflamed part has a ſhining appearance, and, on being touched with the finger, turns white at the ſpot where the preſſure is made; but the bright red colour immediately afterwards returns. The pain is uſually of a burning ſhooting deſcription; and the patient frequently complains of a ſort of itching, which is found to be particularly annoying. The ſwelling, which happens in caſes of eryſipelas, is not only leſs hard and elevated than that of phlegmonous inflammation, but it is, at the ſame time, quite irregular. Another remarkable feature of eryſipelas, is the manner in which this inflammation often changes its ſituation, by getting well on one ſide, while it is ſpreading in ſome other direction. The alteration which the ſkin undergoes in eryſipelas conſiſts in its feeling at the part affected leſs pliable than in the natural ſtate, and a little thickened.

It will be recollected that we have objected to all further diviſion of inflammation than this, into phlegmonous and eryſipelatous; but many diviſions have been founded on the terminations of inflammation. Theſe we conſider as dependent on the action of ſecreting veſſels; and the latter action dependent on the plethoric ſtate of the blood-veſſels in inflammation, and the altered condition of their own nerves. We proceed therefore to ſpeak of the *terminations* of inflammation.

The firſt termination is that in which, the capillaries recovering their powers, and the nerves loſing their increaſed ſenſibility, the phenomena of inflammation ceaſes to exiſt, and the natural functions of the parts affected continue. This is the moſt favourable event that can happen; but, according to Dr. Parry, the leaſt frequent. This is true of phlegmon, but by no means of eryſipelas. Even in phlegmon, reſolution often takes place before the *ſwelling* of the injured part has come on.

Now as to the connexion between inflammation and its products, it is to be noted, that the latter are produced in two ways: firſt, by ſimple increaſe of alteration in the action of the ſecernents, as in extravaſation of fluids on the nervous and ſerous membranes; the ſecond, by the abſolute acceſſion of new properties in ſome of the inflamed veſſels, or, by the actual growth of new veſſels, as in adheſion, ſuppuration, and ulceration.

It was a favourite opinion of the late John Hunter, and one which has been very generally adopted, that not only inflammation, but each of the above-mentioned terminations, were inſtituted for the determinate purpoſe of curing diſeaſe; that, if the powers of a part were not competent to produce one action, they ſet up another, which required leſs power, and which might attain the object in view, though more ſlowly and leſs efficiently. There is ſomething hypothetical in all this; yet whoever attentively conſiders the reparative proceſſes of the body, cannot fail to conclude, that the laws to which they are ſubjected are framed in ſuch a manner that their operation tends under ordinary circumſtances to the ſanity of our frame. As, however, the immediate agents concerned in their laws can have no choice of action or adaptation of means to ends; as they cannot vary with uncommon circumſtances; ſo we frequently witneſs from their operation baneful effects; and hence it becomes our province to control their operations under many circumſtances, though upon the whole we muſt view them among the moſt beautiful phenomena which the animal economy preſents.

The firſt diviſion of the products of inflammation embraces the hiſtory of thoſe ariſing from the ſimple increaſe of, and alteration in, the action of ſecernent veſſels. It is obvious that theſe products of inflammation can only be manifeſted in particular ſtructures. Various diviſions of theſe ſtructures have been made by Bichat; but it is pretty generally allowed, that the diviſions of membranous parts made by this author are too minute. The production of the firſt terminations of inflammation requires the preſence of an apparatus furniſhed with exhalants or ſecretory veſſels from the arterial or capillary ſyſtem of the reſpective parts. This apparatus conſiſts, either of ſome ſimple ſurface, as the ſkin and various parts of the mucous membrane; of ſome natural cavity, the internal ſurface of which is lined with ſimilar membrane, as the ſtomach, bowels, bladder, &c. or of ſome diſcontinuity of ſubſtance, forming a virtual, though often not a real, cavity, into which either exhalants open immediately, as in the cellular ſyſtem; or which is lined with membrane, capable, by means of ſimilar exhalants, of furniſhing its appropriate fluid, as the ventricles of the brain, medulla oblongata, and nerves; the intervals between the coverings or ſheaths of the ſame parts, the duplicatures of the pleura and peritonæum, the pericardium, the ſynovial receptacles, &c. Or, laſtly, this apparatus conſiſts of ſome excretory duct or ducts communicating with the part, if glandular, as in the mammæ, liver, kidneys, ſalivary glands, &c. in which caſes the duct anſwers the double purpoſe of providing during health a ſalutary fluid, and of evacuating the part, when affected with exceſſive momentum of blood.

It is obſervable alſo, that the ſeveral organs ſo ſupplied have, uſually, the combination of two of theſe circumſtances of ſtructure, ſo as to acquire a double power of evacuation, either immediately from themſelves, or from neighbouring portions of the ſame arterial branches. Thus the lungs have pleura without, and mucous membrane within; the liver, peritonæum without, and pori biliarii from within, &c. To theſe may be added the cellular, parenchymatous, and other, ſubſtances, forming a proportion of the maſs of various parts, and affording a third emunctory for the ſuperfluous contents of blood-veſſels, by means of exhalants and ſecretory capillaries, every where opening into them, as through the membranes before deſcribed. This is the caſe in the medulla of the brain, and in various other organs; in which we often find exhaled fluids, as well as between the membranes and in the ventricles of the former, and on the ſeveral ſurfaces of the latter.

The nature of the fluids effuſed in inflammation, and their effects on the ſeveral parts, vary conſiderably, according to the nature of the texture from which they originate, and to the degree of the malady which gives them birth. From each of theſe ſtructures ſimilar products are derived. In all of them the firſt operation of inflammation is generally to increaſe the natural ſecretions. Hence mucus is more copiouſly ſecreted in the alimentary and pulmonary expanſions of the mucous membrane, in the uterus, and in the vagina. Serum is copiouſly effuſed in the cellular tiſſue, on the ſerous membranes; and the ſecretion of tears is increaſed from the eyes, &c. As the inflammation advances, or as it is more intenſe, the products vary: the mucous membrane pours forth coagulating ſerum, fibrine, pus, or blood; and the ſerous membrane ſimilar products. Neither chemical analyſis nor the known properties of theſe ſubſtances allow us to infer any material difference in them, whether they ariſe from the ſerous or mucous membranes.

All thoſe parts which are ſecreting ſurfaces, and at the ſame time have outlets, as the mucous membranes, are not commonly ſubject to that proceſs called *adheſion*; for the

the natural ſecretions of the part act perpetually ſo as to throw off the firmer accumulations, and to evacuate them from the body: while, on the other hand, increaſed ſecretion on the ſerous ſurfaces, when it becomes indurated, agglutinates the correſponding parts together, becomes organized, and thus are adheſions contracted. It is by this proceſs occurring in artificial cavities, as wounds, &c. that reparation takes place. The ſame proceſs may be conſidered as the origin of that cream-like ſubſtance depoſited in the cavities of joints, in capſular ligaments, in the ſheaths of tendons, &c. which, by the abſorption of the thinner parts, becomes what is called *chalk-ſtone*, a well-known effect of highly-inflammatory gout, and conſiſting of urat of ſoda. The ſame is depoſited in the cellular ſpace between the inner and fibrous coats of the larger arteries, becoming true bone, or phoſphate of lime, and producing ſuch diſtreſſing effects, reſulting, according to ſome late obſervations, from an inflammatory affection of the vaſa vaſorum; and when on the coronary arteries of the heart, according to Parry, the proximate cauſe of ſyncope angens.

Though theſe various products are for the moſt part the reſult of inflammation, yet it is by no means clear that they are not ſometimes preſent without the occurrence of this action. Copious mucous excretions are often habitual to old perſons in whom we cannot infer increaſed vaſcular action; and the various depoſitions of the ſcroſulous diatheſis ſeem generally to be cauſes rather than conſequences of inflammation. On the other hand, as increaſed ſecretion may exiſt without inflammation, ſo the latter may occur without the former; nor does the peculiar modification which gives riſe to this circumſtance ſeem clearly aſcertained. It would ſeem indeed, that the violence of the inflammation had ſome influence over the ſuſpenſion of ſecretion; but this does not uniformly happen, ſince the violent inflammation we have mentioned as incidental to fevers of hot climates are often accompanied from the firſt with copious though morbid ſecretion. In the generality of caſes, however, in which ſecretion is ſtopped, we believe it will be found, that the capillary ſyſtem is leſs ſuperficially and more violently inflamed than when this action is increaſed.

It is alſo to be noted, that on ſome occaſions increaſed ſecretion brings on inflammation, though by no means ſo frequently as inflammation induces ſecretion. In theſe caſes we obſerve ſlight and unimportant exceſſes in the ſecreting powers, after having continued ſome time, ſuddenly exhibit the regular phenomena of inflammation.

When inflammation terminates by the proceſſes of adheſion, ſuppuration, or ulceration, we infer, that either new ſecreting veſſels are formed, or that the ſanguineous capillaries acquire the ſecreting faculty. Of adheſion we have before ſpoken. It is generally allowed to be produced by the formation of new veſſels. We infer that ſuppuration and ulceration are proceſſes which depend on the capillaries acquiring new faculties, becauſe there is in each a loſs of ſubſtance which could only be thus accounted for. The capillaries having acquired the abovementioned property, and loſt that of tranſmitting blood to the affected ſtructure, muſt diminiſh from the deficiency of ſanguineous ſupply, abſorption being ſuppoſed to continue. Moreover, pus, the fluid ſecreted, is, according to recent experiments, but ſlightly removed in its nature from the blood itſelf. Hence it would naturally be the production of veſſels which poſſeſſed the ſecreting power in the leaſt perfect manner. We infer it alſo from the ſuppoſed inadequacy of the common ſecernents of thoſe parts in which ſuppuration is often eſtabliſhed to pour forth ſuch copious ſupplies of pus; and laſtly we infer it, becauſe how, otherwiſe than on the ſuppoſition that a change takes place in the terminations of the capillaries, could we explain the fact, that healthy ulcers do not bleed?

The laſt and moſt fatal termination of inflammation is *gangrene*. This alſo exhibits ſomewhat different appearances, as it affects the bones or fleſh, or as it is produced from the ſurface of an ulcer, in which latter caſe the gangrened portion is called a *ſlough*. Gangrene is termed the death of a part; and is generally ſuppoſed to be the actual abolition of all vital powers and motions, and that the part actually returns to inert matter. The fact that gangrened parts look different from dead parts is readily explained by the ſuppoſition, that the former have entirely loſt their contractility and elaſticity, while the latter, as is well known, do not loſe the firſt property for ſome hours, nor the ſecond for ſome days, after what is commonly called death. See *Gangrene* in this article.

The natural connexions of philoſophy would lead us in this place to an examination and hiſtory of local injuries followed by inflammation and the conſtitutional or febrile diſturbances ariſing therefrom. As however the arbitrary diſeaſes of Medicine and Surgery have ſeparated the practical application of theſe rules, we muſt defer theſe ſubjects till we arrive at the article SURGERY. To that article we ſhall alſo refer the reader for an account of external injuries, or ſuch as belong to manual treatment.

It may not be amiſs, however, to obſerve, that the febrile ſtate which ſupervenes on local injury does not differ from common fever, except that, being kept up by a certain irritating cauſe, it can only be cured by the removal of ſuch cauſe; and hence that all treatment muſt be directed to the cure of the local diſeaſe. And farther, as the local injuries are intenſe, or the conſtitution morbid, the fever will aſſume inflammatory or hectic character, or a mixture of both.

This Order contains eleven Genera. To explain Dr. Good's arrangement of Inflammation, we ſhall copy part of a note ſubjoined to this order. He therein remarks, that "The whole of the obſervations of Mr. John Hunter upon this ſubject are worthy of being deeply ſtudied; and will not a little elucidate the nature of the arrangement introduced into the preſent method. It may be ſufficient to obſerve, that in treating on inflammation, he divides the body into two parts: 1, the circumſcribed cavities, organs, and cellular membrane which connects them; and 2, the outlets of the body, commonly called mucous membranes, as the ducts of the glands, alimentary canal, &c. He diſtributes inflammatory affections into three kinds, adheſive, ſuppurative, and ulcerative. Adheſive inflammation belongs chiefly to the former of the above two parts of the body, *where they are deeply ſeated;* and appears intended to take place in order to prevent ſuppuration. It applies therefore peculiarly to the genus Empreſma in the preſent order, except in gaſtritis, enteritis, and cyſtiſis; in all which, however, we frequently meet with ſtriking examples of the adheſive inflammation, or true Empreſma; inſomuch that the affected organ becomes at times ſo cloſely united with ſome adjoining membrane or other organ, as to obtain a kind of artificial wall, or paries, and prevent the eſcape of its contents into another cavity, when ulcerated through the whole thickneſs of its ſubſtance. Suppurative inflammation belongs chiefly to the ſame diviſion of parts, *placed near the ſurface;* and conſequently applies peculiarly to the two genera of Phlegmone and Phyma. The ulcerative belongs chiefly to the ſecond order of parts, as the mucous membranes and outlets; and hence principally applies to the genus Erythema, as it muſt alſo be allowed to do to that of Phlyſis. Deep-ſeated ſuppurative inflammations and abſceſſes cannot well be placed in either of theſe genera; and have a claim to be conſidered by themſelves; they are hence included in the genus Apoſtema, with which the order opens.

Genus I. *Apoſtema*, [αποστημι, to recede from.] Deep-ſeated abſceſs. Generic characters—Large ſuppurative inflammation in a deep-ſeated organ; pus copious and confined. This genus contains five ſpecies.

1. Apoſtema commune, or ſimple abſceſs: inflamma-

tion

tion common to the fleſhy parts; pain obtuſe; tumour ſpreading externally; tender to the touch; pus laudable; readily incarning when opened. See SURGERY.

2. Apoſtema pſoaticum, pſoas abſceſs: pain and tenſion about the loins, ſhooting down the ſpine and thigh; difficulty of ſtanding erect; fluctuating enlargement along the pſoas muſcle; apex of the tumour immediately below the groin. See SURGERY.

3. Apoſtema hepaticum, abſceſs of the liver: diffuſe pulſating tumour in the region of the liver; preceded by pain, a yellow countenance, and ſhiverings.

This is by no means a common complaint in this country; but it is met with in hot climates, where indeed the medical practitioners are ſaid to be remarkably expert in performing an external operation for its relief. We ſhould take eſpecial care to prevent ſuppuration from happening in this important organ, by active treatment during the inflammatory period of the complaint. Suppuration is prognoſticated if inflammation continues in the liver ſeveral days; if the pain remits, and is followed by a pulſation in the ſame place, and if ſhiverings come on, with a countenance of a yelloviſh colour; ſoon after which a tumour and a ſenſe of weight are perceived in the region of the liver: a hectic fever follows, with thirſt, and extreme feebleneſs. Aretæus obſerves, that pain generally extends to the throat, and to the extremity of the ſhoulder; and a dry, but not very frequent, cough afflicts the patient. He further remarks, that this diſorder is ſometimes miſtaken for a tumour of the peritonæum; but that the latter is more irregular, and is not circumſcribed by the limits of the hypochondrium.

The favourable termination of this complaint depends on the manner in which the abſceſs burſts. If externally, we may entertain ſome hope; if internally, at the cavity of the abdomen, it is for the moſt part fatal. See HEPATITIS.

4. Apoſtema empyema, lodgment of matter in the cheſt: fixed pain in the cheſt; breathing laborious, but eaſieſt in an erect poſition; difficult decumbiture on the ſound ſide; fluctuating enlargement on the ſide affected; dry tickling cough. It is often brought on by diſeaſed action in the pleura without ulceration. There is reaſon for believing that matter is contained in the cavity of the cheſt, when, after a pleuriſy, or inflammation in the thorax, the patient has a difficulty of breathing, particularly on lying on the ſide oppoſite the affected one; and when an œdematous ſwelling is externally perceptible. The malady is ſometimes relieved by the operation of paracenteſis thoracis, (ſee SURGERY;) and caſes are related in which the matter is ſaid to have been abſorbed.

5. Apoſtema vomica: deranged function of a thoracic or abdominal organ, ſucceeded by copious diſcharge of pus into ſome part of the alimentary channel, and its evacuation by the mouth or anus.

The term is here uſed in the large ſenſe in which it is employed by Celſus, who applies it to a burſting of pus from the liver, or any other large internal organ, as well as from the lungs. "Si vero jecur *vomicâ* laborat, eadem facienda ſunt, quæ in cæteris interioribus ſuppurationibus." Lib. iv. cap. 8. Sauvages follows him in this interpretation. Boerhaave and Cullen confine vomica to the lungs, and that in a more reſtrained ſenſe than moſt writers; for they limit it to what has been called, though with no great accuracy, *occult* vomicæ (*vomicæ cloſæ*). Linnæus and Vogel, on the contrary, while they confine the term to the lungs, explain it by *open* vomicæ (*vomicæ apertæ*), in which the pus is thrown forth profuſely and ſuddenly

Genus II. *Phlegmone*, [from φλεγω, to inflame.] Phlegmon; abſceſs or tumour near the ſurface. Generic characters— Suppurative ſubcutaneous tumour; tenſive; glabrous; painful; at length fluctuating, and burſting ſpontaneouſly; the pus uniform and mature.

The treatment of phlegmon is to be conducted, as far as local treatment is regarded, by topical applications, which are generally either cold or warm lotions. Heat is well known to promote and increaſe all animal actions, and muſt therefore tend to keep up and augment the proceſs of inflammation. Hence ariſes the indication to diminiſh the heat of the part affected, by making uſe of cold topical applications, and maintaining a continual evaporation from the inflamed ſurface. The common plan is to dip linen in the ſaturnine lotion, and, after folding it once or twice, lay it all over the part affected, taking care afterwards to keep it conſtantly wet with the application. In moſt inſtances cold water will anſwer every purpoſe; in others the aqua ammoniæ acetatæ, or lotions of the ſulphate of zinc, alum, &c. may be employed. Poultices made with linſeed-meal and water, or with bread and water, are the ordinary applications of this kind; and ſo great is the importance which ought to be attached to the circumſtance of making them ſoft and unirritating, that a ſurgeon of the firſt eminence has not diſdained to make their compoſition the ſubject of part of a lecture before the College of Surgeons. With poultices, fomentations are alſo frequently proper, as having in all ſevere caſes a great effect in leſſening the pain. Likewiſe, when ſuppuration is unavoidable, they accelerate the cure by promoting the formation of matter, and haſtening its approach to the ſurface of the body. The common method is to dip flannels in a decoction of chamomile-flowers, or white poppy heads, wring them, and apply them very warm to the inflamed part; but warm water anſwers the purpoſe as well. In diſcriminating the caſes which require cold applications from others to which warm ones are moſt ſerviceable, the practitioner ſhould always bear in mind, that, when ſuppuration is inevitable, it is invariably moſt advantageous to diſcontinue cold aſtringents without delay. In general where the chance of the phlegmon being reſolved is great, cold applications are beſt; but for the moſt part the choice of the topical remedies muſt be regulated by the patient's feelings. There are ſome patients who ſeem to derive moſt eaſe from hot applications; there are others who appear to experience moſt comfort from cold ones. The latter remedies ought perhaps rather to have the preference, when the proſpect of preventing ſuppuration is fair and rational, and when at the ſame time they afford as much eaſe as poultices. There are ſeven ſpecies.

1. Phlegmon communis: tumour common to the ſurface; bright-red; hard; defined; hemiſpherical; polarized; gradually ſoftening and burſting at the pole.

2. Phlegmone parulis, gum-boil: tumour ſeated on the gums; deep-red; hardiſh; undefined; pain obtuſe. Divided into two varieties.

α. Simplex: limited to the ſubſtance of the gums. β. Carioſa: connected with a caries of a tooth or ſocket. When the former variety happens, the part may be freely opened with the lancet, and the gum fomented. When the latter variety comes on, the offending tooth muſt be drawn.

3. Phlegmone auris, impoſthume in the head: tumour ſeated within the ear; pain acute, throbbing; heat and redneſs ſpreading externally; hearing diſtreſſingly keen, or ſtunned with imaginary ſounds; abſceſs burſting with the ſenſe of a loud ſnap or exploſion. In this complaint we ſhould ſyringe the inſide of the ear with ſoap and water, and apply a bliſter behind it. A roaſted onion, though an anile preſcription, will alſo be found uſeful: it is applied in the helix of the ear as a poultice.

4. Phlegmon parotidea, phlegmon of the parotids: tumour ſeated under the ear: reddiſh; hard; pain obtuſe; ſuppuration ſlow and difficult. Two varieties.

α. Benigna: incarnation and cicatrization regular and obſtructed.

β. Maligna: pus illaudable, profuſe, protracted; ſucceeded by foul ſloughs. Dr. Parr gives the following account of this ſecond variety. The malignant parotid ſwells

ſwells 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 ſcirrhous parotids may be extirpated, (though this is one of the moſt difficult operations in ſurgery;) but the malignant ſink deeper, and will not admit of the operation, which is always dangerous from the numerous large veſſels in the neighbourhood.

5. Phlegmone mammæ, abſceſs of the breaſt: tumour ſeated in the breaſt; pale-red; hardiſh; in irregular cluſters; pain pricking and acute; ſuppuration quick and copious. Here alſo we have two varieties.

α. Violens: from ſevere preſſure or blow.

β. Lactantium, milk-abſceſs: from redundancy of milk. Both varieties are characteriſed by tumefaction, tenſion, heat, redneſs, and pain; ſometimes in both breaſts, but moſt commonly in one. Pyrexia generally attends the diſeaſe. It is ſometimes very quickly formed, and in general without any thing preceding to ſhow it; but now and then a ſlight ſhivering is the forerunner. This diſeaſe terminates either in reſolution or ſuppuration. If left to itſelf, it generally terminates in ſuppuration. But it is often of long continuance; it is very painful, but ſeldom fatal, unleſs when abſolutely neglected. The termination of the diſeaſe by gangrene is ſeldom to be apprehended; at leaſt few, if any, have ſeen the diſeaſe terminate in this way.

As to the firſt variety, during the inflammatory ſtage, cold lotions, purging, &c. may be had recourſe to. In the ſuppurating ſtage, the ſame treatment is required as in the var. β, or milk-abſceſs. This latter may in general be prevented by an immediate application of the infant to the breaſts after delivery, or at leaſt before they are turgid with milk. When pus is actually formed, a ſoft warm poultice, compoſed of bread and water, or of a decoction of poppies and linſeed meal, ſhould be conſtantly kept upon the part, and renewed every three or four hours; at the ſame time carefully ſuſpending the enlarged breaſt, with an handkerchief ſpread under it, and tied behind the neck. It is very rarely proper to make any artificial opening in theſe abſceſſes: they ſhould be permitted to burſt of themſelves, and be poulticed as long as the hardneſs or inflammation continues. During this painful period, the child muſt be ſuckled by the healthy breaſt; for it rarely happens that the milk is pure during a ſtate of inflammation, or that the mother can bear her child's attempt to draw the nipple.

During the ſuppurating proceſs, the dietetic regulations laid down under Dyſpepſia muſt be rigorouſly enforced. The local application muſt vary with the appearance of the ulcer when it heals; and the adminiſtration of remedies will alſo be regulated by the ſame criterion. See PARTURITION, vol. xviii. p. 712, 13.

6. Phlegmone bubo: tumour ſeated in a conglobate gland; reddiſh; hard; diffuſe; not eaſily ſuppurating; opening with a callous edge. Divided into,

α. Simplex: unconnected with any conſtitutional or foreign poiſon.

β. Virulentus: produced by ſpecific virus, or connected with conſtitutional affection. The glands moſtly infected are thoſe of the inguen and axilla. This laſt variety is found chiefly in lues and peſtis. Often cured by vomits after ſuppuration has advanced.

The firſt variety will require the ſame treatment during its inflammatory ſtage as phlegmon in other parts, and the ſame during the ſuppurating ſtage as common abſceſs. The ſecond variety, being ſymptomatic of other diſeaſes, will properly be treated under thoſe heads.

7. Phlegmone phimotica, phimoſis and paraphimoſis: tumour ſeated in the prepuce; diffuſe; obtuſely painful; impriſoning the glans, or ſtrangling it by retraction.

α. Incarcerans: the prepuce protracted, and impriſoning the glans. Numerous ſubjects are born with a contraction of the aperture of the prepuce; and the caſe is then called a *natural* or *congenital* phimoſis. Sometimes, in adults, and particularly in old perſons, the prepuce contracts ſo much, without any evident cauſe, that its cavity becomes filled with urine during the act of making water, and great pain is the conſequence. In caſes where the opening is exceedingly ſmall, and the diſorder is either congenital, or has occurred without obvious inflammation, it is by no means an uncommon circumſtance for calculi to be formed under the prepuce. Theſe ſometimes reſemble in ſhape the glans, on which, as it were, they are moulded. When the phymoſis is congenital, and has exiſted a long while, it frequently happens that, in conſequence of inflammation, adheſions have taken place between the glans and the prepuce; and, in this event, it may not always be in the power of the ſurgeon to effect a cure. The poſſibility of doing ſo muſt depend, in a great meaſure, upon the extent and firmneſs of the adheſions. According to Richerand, it is ſeldom practicable to deſtroy them after the patient has attained the age of puberty.

No operation ought to be practiſed on children for the natural phimoſis, unleſs preſſing inconvenience ſhould immediately ariſe from the malformation. The conſtriction generally goes off, as ſuch ſubjects approach the adult ſtate. For the mode of performing the operation when neceſſary, ſee SURGERY. For the treatment of the diſeaſe, and alſo the other variety, β, ſtrangulans, or paraphimoſis, in which the prepuce is retracted and ſtrangling the glans, ſee *Lues* of this article.

Genus III. *Phyma*, [Gr. a tubercle, from φυω, to break or guſh out.] Boil, carbuncle, &c. Generic characters—Imperfectly-ſuppurative, cutaneous or ſubcutaneous tumour; the abſceſs thickened, and indurated at the edge; often with a core in the middle. There are four ſpecies, though Dr. Good has numbered them as if one were omitted.

1. Phyma hordeolum, the ſtye: tumour ſeated in the verge of the eye-lid; granular, hard, reddiſh, ſore to the touch; ſuppuration confined to the point. This is generally produced by indigeſtion. Plenck affirms that he knew a man who uniformly had a ſtye after drinking ardent ſpirit. He points out the following reſemblance between a ſtye and a boil: "Eſt tuberculum inflammatorium, *parvo furunculo ſimile*, in margine palpebrarum." See SURGERY.

2. Phyma furunculus, the boil: tumour common to the ſurface; deep-red; hard, circumſcribed, acutely tender to the touch; ſuppurating with a central core. See SURGERY.

3. Phyma ſycoſis: tumour excreſcent, fleſhy, fig-ſhaped, darkiſh-red, ſprouting from the hairy part of the head or face; gregarious; often coaleſcing; diſcharge partial and ſanious.

Dr. Bateman has deſcribed the Sycoſis to conſiſt of "an eruption of inflamed but not very hard tubercles, occurring on the bearded portion of the face and on the ſcalp, in adults, and uſually cluſtering together in irregular patches." Some difference takes place in the appearance and progreſs of the eruption, when it is ſeated in the chin and in the ſcalp. Hence it is divided into two varieties.

α. Sycoſis barbæ, (S. menti, *Bateman.*) The tumour hard, roundiſh, pea-ſized; ſeated in the beard; commonly in cluſters; occaſionally confluent, and ſpreading from ear to ear; diſcharge ſmall and gelatinous, beard matted. See Plate I. fig. 1.

According to Dr. Bateman, in this complaint the tubercles arife firft on the under-lip, or on the prominent part of the chin, in an irregularly-circular cluſter; but this is ſpeedily followed by other cluſters, and by diſtinct tubercles, which appear in ſucceſſion along the lower part of the cheeks up to the ears, and under the jaw towards the neck, as far as the beard grows. The tubercles are red and ſmooth, and of a conoidal form, and nearly equal to a pea in magnitude. Many of them continue in this condition for three or four weeks, or even longer, having attained their full ſize in ſeven or eight days; but others ſuppurate very ſlowly and partially, diſcharging a ſmall quantity of thick matter, by which the hairs of the beard are matted together, ſo that ſhaving becomes impracticable from the tender and irregular ſurface of the ſkin. This condition of the face, rendered rugged by tubercles from both ears round to the point of the chin, together with the partial ulceration, and ſcabbing, and the matting together of the unſhaven beard, occaſions a conſiderable degree of deformity; and it is accompanied alſo with a very troubleſome itching.

Though this complaint occurs, of courſe, chiefly in men, women are not altogether exempt from it. But in them it is commonly ſlight, ſince it is not expoſed to the ſame irritation as when it occurs in the male ſex. Its duration is very uncertain; being ſometimes removed in a fortnight; ſometimes the ſuppuration goes on for many weeks; and ſometimes the ſuppurating tubercles heal, and again begin to diſcharge. Occaſionally the diſeaſe diſappears for a ſeaſon, and then recurs.

ζ. Sycoſis capilli, (S. capillitii, *Bateman.*) Tumour ſoft, unequal, cluſtering: ſeated in and about the hair of the head; diſcharge ichorous, copious, and fetid, from a fungous ſurface. See Plate I. fig. 2.

The Sycoſis capilli is ſeated chiefly about the margin of the hairy ſcalp, in the occiput, or round the forehead, and temples, and near the external ear, which is alſo liable to be included in the eruption. The tubercles riſe in cluſters, which affect the circular form; they are ſofter, and more acuminated, than thoſe on the chin; and they all paſs into ſuppuration in the courſe of eight or ten days, becoming confluent, and producing an elevated, unequal, ulcerated ſurface, which often appears granulated, ſo as to afford ſome reſemblance to the internal pulp of a fig. The ulceration, as Celſus ſtates, is generally humid; for there is a conſiderable diſcharge of a thin ichorous fluid, which emits an unpleaſant rancid odour.

Dr. Bateman informs us that "the Sycoſis, under its firſt-mentioned form, may be diſtinguiſhed from Acne indurata, by its ſeat being excluſively on the bearded part of the face; by the ſofter, more numerous, and cluſtered, tubercles; and by the ulceration which they tend to produce. And, under its ſecond form, in which it is ſomewhat aſſimilated to the eruption of favous puſtules, or Porrigo favoſa, affecting the face and the borders of the capillitium, it may be diſcriminated by the tuberculated and elevated baſe of the ſuppurating tumours; not to mention the adult age of the patient, and the abſence of contagion."

As to the treatment of Sycoſis, when the tubercles are numerous, inflamed, and confluent, and eſpecially when the ſuppuration is either beginning or conſiderably advanced, the moſt ſpeedy benefit is derived from the application of poultices, at night, of linſeed powder, bread and milk, or other ſimple ingredients. In the leſs ſevere forms, warm ablutions or fomentations may be ſubſtituted. When the inflammatory ſymptoms are reduced, and in caſes where they are from the firſt moderate, the healing proceſs is much promoted, and the diſcharge moderated and reſtrained, by the application of the unguentum hydrargyri nitrati, diluted with three or four parts of ſimple ointment, or by the ung. hydrarg. præcipitat. united with an equal portion of the zinc ointment, or the cerate of acetate of lead. At the ſame time it is uſeful to preſcribe antimonials, with alterative doſes of mercury, followed by cinchona, or ſerpentaria, and the fixed alkalis; or ſuch other meaſures as may be required to re-eſtabliſh the functions of the chylopoietic viſcera, which are almoſt always diſordered in Sycoſis.

4. Phyma anthrax, (Erythema anthrax, *Cullen.*) Carbuncle: tumour common to the ſurface; flat; firm; burning; penetrant; livid and veſicular; or cruſty above, with a ſordid and gangrenous core below; imperfectly ſuppurative. There are two varieties.

α. Pruna, the eſcar carbuncle: cruſt black; oozing an eroſive ichor, or ſanies.

ζ. Terminthus, the berry or fungus carbuncle. See the article SURGERY.

Genus IV. *Ionthus*, [Gr. a violet or purple eruption; from ιον, purple; or from ονθος, filth.] Tubercles in the face. Generic characters—Unſuppurative tubercular tumour; ſtationary, and chiefly common to the face.

This genus (the Acne of Dr. Bateman) is characteriſed by an eruption of diſtinct, hard, inflamed, tubercles, which are ſometimes permanent for a conſiderable length of time, and ſometimes ſuppurate very ſlowly and partially. They uſually appear on the face, eſpecially on the forehead, temples, and chin, and ſometimes alſo on the neck, ſhoulders, and upper part of the breaſt; but never deſcend to the lower parts of the trunk, or to the extremities. As the progreſs of each tubercle is ſlow, and they appear in ſucceſſion, they are generally ſeen at the ſame time in the various ſtages of growth and decline; and, in the more violent caſes, are intermixed likewiſe with the marks or veſtiges of thoſe which have ſubſided. There are two ſpecies.

1. Ionthus varus, the ſtone-pock: red, hard, pimply, diſtinct, gregarious; ſore to the touch; ſometimes oozing a little fluid at the tip. This ſpecies has two varieties.

α. Simplex, (Acne indurata, *Bateman.*) Broad-baſed, bright red, and ſolid. This variety is deſcribed as an eruption of ſmall tubercles, which appear ſingly, and are not very numerous, nor accompanied by much inflammation, nor by any intermediate affection of the ſkin. When it has continued ſome time indeed, a little roughneſs of the face is produced, where the larger tubercles have diſappeared, in conſequence of a ſlight cracking or diſpoſition to exfoliate in the new cuticle; but theſe marks are not permanent. Many of the tubercles do not proceed to ſuppuration; but gradually riſe, become moderately inflamed, and again ſlowly ſubſide in the courſe of eight or ten days, leaving a tranſient purpliſh-red mark behind. But others go on to a partial ſuppuration, the whole proceſs of which occupies from a fortnight to three weeks. The tubercles are firſt felt in the ſkin, like a ſmall hard ſeed, about the ſize of a pin's head, and enlarge for three or four days, when they begin to inflame: about the ſixth or ſeventh day they attain their greateſt magnitude, and are then prominent, red, ſmooth, and ſhining, and hard and painful to the touch. After two or three days more, a ſmall ſpeck of yellow matter appears on the apices of ſome of the tubercles; and, when theſe afterwards break, a thinner humour is ſecreted, which ſoon dries into a yellowiſh ſcab. The inflammation now gradually declines, the ſize and hardneſs of the tubercles diminiſh, and the ſmall ſcab becomes looſened at the edges, and at length falls off about the third week, The individual tubercles, which riſe and ſuppurate in ſucceſſion, paſs through a ſimilar courſe.

This eruption recurs frequently, at ſhort intervals, in ſome individuals, who have it partially; but in others, who are ſtrongly prediſpoſed to it, it is more extenſive, and never wholly diſappears, but is, at uncertain periods, more or leſs troubleſome. It is generally worſt after eating heartily, or drinking an unuſual portion of wine, or after the occurrence of any other cauſe of indigeſtion; as well as after any inordinate excitement

of

of the cutaneous circulation from violent exercise in hot weather or in heated rooms, especially when followed by a copious draught of cold liquor. This disease occasionally puts on a much severer aspect. In the form to which the term *indurata* is more strictly applied by Bateman, hardness is a remarkable feature in the appearance of the tubercle, which is at the same time more permanent, and more apt to spread from the face to the neck and shoulders, than in the preceding form. The tubercles are occasionally acuminated, as if tending to immediate suppuration, being at the same time of a bright roseate hue: yet many of them continue in a hard and elevated state for a great length of time, without any disposition to suppurate. Others, however, pass on very slowly to suppuration, the matter not being completely formed in them for several weeks, and then only a small part of the tubercles are removed by that process. Sometimes two or three coalesce, forming a large irregular tubercle, which occasionally suppurates at the separate apices, and sometimes only at the largest. In whatever mode they proceed, their vivid hue gradually becomes more purple, or even livid; and their tenderness is then extreme. Slight crusts form upon the suppurating tubercles, which after some time fall off, leaving small scars surrounded by hard tumours of the same dark red colour; and these sometimes suppurate again at uncertain periods, and sometimes slowly subside and disappear, leaving a purple or livid discoloration, and occasionally a slight depression, which is long in wearing off.

The general treatment of this disorder will be conducted on the same principles as slight inflammatory complaints in all parts of the body, when these arise from internal irritation. The most frequent cause of this disease, as the sagacious Darwin remarked, is found in deranged action of the chylopoïetic viscera. Dr. Bateman indeed does not seem to allow this; for he says that the patients of this complaint often enjoy good health, and that it is generally a local disease. But whoever considers the causes which, according to this author's account, aggravate varus, will have little hesitation in concluding that the same causes may often produce the complaint. According to the testimony of Dr. B. himself, the treatment of this complaint by repellent lotions often gives rise to vicarious disease in other parts; an occurrence which will never happen, we believe, if, previous to the use of those applications, we regulate by gentle purgative and abstinent diet the state of the stomach and bowels. The local applications to be used are weak stimuli of various kinds; as lotions of water with a small proportion of spirits of wine, or a few grains of oxymuriate of mercury, the strength of the latter being gradually increased (to a great degree when the tubercles are indurated) as the diseased part loses its inflammatory character.

γ. Punctatus, the maggot-pimple: tipped with a black dot, discharging, on the pressure of the finger, a grub-like concretion of mucus. In other respects this is similar to the former variety. The indurated mucus may be extracted by the fingers, or by means of a small blunt curved forceps, and the little tumour treated as the first variety. In Plate II. fig. 1, we have given a representation of Ionthus varus; and at A are depicted a few of the black punctæ which give character to the second variety.

2. Ionthus corymbifer, (Acne rosacea, *Bateman.*) Rosy-drop, or whelk: confluent; corymbose; rosy mottled with purple; often disfiguring the nostrils with pendulous lobes; irritated by cordials or exposure to heat. See Plate II. fig. 2.

This complaint occurs from a greater intensity of the same cause that gives rise to the first species; being chiefly found in those that stimulate the mucous expansion of the stomach with spirits, and whose livers are deranged in consequence of the same habit. Its appearance differs in the following particulars from the preceding species. In addition to an eruption of small suppurating tubercles, there is also a shining redness, and an irregular granulated appearance of the skin of that part of the face which is affected. The redness commonly appears first at the end of the nose, and afterwards spreads from both sides of the nose to the cheeks, the whole of which, however, it very seldom covers. In the commencement it is not uniformly vivid; but is paler in the morning, and readily increased to an intense red after dinner, or at any time if a glass of wine or spirits be taken, or the patient be heated by exercise, or by sitting near a fire. After some continuance in this state, the texture of the cuticle becomes gradually thickened, and its surface uneven or granulated, and variegated by reticulations of enlarged cutaneous veins, with smaller red lines stretching across the cheeks, and sometimes by the intermixture of small suppurating *vari*, or pimples, which successively arise on different parts of the face.

This species of Ionthus seldom occurs in early life, except where there is an hereditary predisposition to it; in general it does not appear before the age of forty; but it may be produced in any person by the constant immoderate use of wine and spirituous liquors. The greater part of the face, even the forehead and chin, are often affected in these cases; but the nose especially becomes tumid, and of a fiery red colour; and, in advanced life, it sometimes enlarges to an enormous size, the nostrils being distended and patulous, or the alæ fissured, as it were, and divided into several separate lobes. At that period of life too, the colour of the pimples becomes darker and more livid; and, if suppuration take place in any of them, they ulcerate unfavourably, and do not readily assume a healing disposition. In young persons, however, who are hereditarily predisposed to this complaint, irregular red patches not unfrequently appear in the face, which are often smooth and free from tubercles, and sometimes throw off slight exfoliations at intervals. These patches may be gradually extended, if great temperance both in food and drink be not observed, until the whole face assume a preternatural redness.

As this eruption is chiefly sympathetic of some derangement of the chylopoïetic viscera, or of a peculiar irritability of the stomach, little advantage can be expected from local applications: and, in fact, the stimulants, which are beneficial under proper regulations, in the other forms of Ionthus, are generally prejudicial in this, and aggravate the complaint. We shall not enter into any particular directions for the treatment of this complaint. Since this is so obvious, the first object to be attained is to induce the patient to abstain from drinking, seldom an easy task; and, this being accomplished, an abstemious diet and mercurial alteratives will be the principal remedies to be depended on. Dr. Bateman says the symptoms may be sometimes palliated by the liquor potassæ, or other antacids, which seem also to have some influence in lessening inflammatory action in the skin. If the inflammation subsides, the gentlest restringents should be used externally to the patches of reticulated veins; such as very dilute spirituous or acetous lotions, with or without a small proportion of the acetate of lead, or simple ointments combined with alum, acetate of lead, &c. in small quantities.

Genus V. *Phlysis*, [from φλυω, to boil up, to bubble.] Whitlow. Generic characters—Ulcerative subcutaneous tumour; flat, tensive, glabrous, diffused, hot, throbbing; at length fluctuating with an acrid ichor. There is but one species.

Phlysis paronychia: seated about the nails and ends of the fingers: pain acute and pricking; shooting up the hand. Three varieties.

α. Cutanea: the acrid effusion seated between the skin and parts immediately subjacent.

β. Tendinis: effusion seated between the tendons and the periosteum.

γ. Periostii,

γ. Perioſtii, the malignant whitlow, or felon: effuſion ſeated between the perioſteum and the bone, which is often rendered carious.

Similar inflammations are occaſionally to be found in the ſoles of the feet and palms of the hands; they break through the cuticle with difficulty from its thickneſs, and hence become diffuſed, and ſeparate the cuticle from the ſkin beneath. The bite or poiſon of the Gordius aquaticus, or hair-worm, is ſaid to have a pecular tendency to produce this affection.

Genus VI. *Erythema*, [Gr. from ερευθος, redneſs.] Inflammatory fluſh, improperly called Eryſipelas. Generic characters—Red, glabrous, tumid, fulneſs of the integuments; diſappearing on preſſure; pain burning; inflammation ulcerative; terminating in cuticular ſcales or veſicles, occaſionally in gangrene. There are ſix ſpecies.

1. Erythema œdematoſum, œdematous inflammation: colour ſcarlet; ſpreading widely and deeply through the cellular membrane, which often imperfectly ſuppurates, ſloughs, and becomes gangrenous.

2. Erythema eryſipelatoſum, eryſipelatous inflammation: colour deepiſh-red; ſuperficial; with a determined edge; migrating in a ſerpentine direction; the part which has paſſed through the action healing, as the part next attacked becomes affected.

3. Erythema gangrænoſum, gangrenous inflammation: colour duſky-red; ſuperficial; cuticle ſeparated from the cutis by a bloody ſerum; the cutis, when denuded, exhibiting dark-brown ſpots, diſpoſed to bliſter and ſlough; occurring chiefly in the extremities.

Theſe three ſpecies are uſually to be found in debilitated or relaxed conſtitutions: the former two often appear as ſequels of atonic fevers; the third is common to old age, and early infancy. For the treatment, ſee the article SURGERY.

4. Erythema veſiculare, fiery inflammation: colour pale-red; ſurface roughiſh, and covered with crowding minute veſicles, filled with an acrid, often a reddiſh, fluid; progreſſively trailing into the neighbouring ſound parts.

This is intended, as Dr. Good informs us, to delineate the *ignis ſacer* of the ancients, which has been ſeldom underſtood, and never hitherto allotted a clear methodic poſition. The common error has been in making it an exanthem, or eruptive fever, an Eryſipelas or a Peſtis, or a diſtinct diſeaſe approaching to the one or the other. There is no doubt that it has at times been an accompanying ſymptom in Peſtis, and has conſequently produced a variety in this fever which the reader will find noticed under the head Peſtis by the diſtinguiſhing term *erythematica*, of which nature was the plague of Athens, ſo excellently deſcribed by Thucydides and Lucretius. But the ignis ſacer, in its genuine and ſimple ſtate, inſtead of being a typhous eruptive fever, has often very little fever of any kind, never perhaps more than ſymptomatic fever; and by Celſus is deſcribed as being beſt cured by an ephemeral or other fever that may give increaſed action to the ſyſtem. The varieties are,

α. Benignum: the redneſs and veſicles advancing without a breach of the cuticle, as the part that has paſſed through the action is healing.

β. Corroſivum: the veſicles breaking in the part firſt affected, and the eroſive fluid producing tracks of ſanious ulceration as the redneſs advances.

Theſe ſubdiviſions of *ignis ſacer* are taken from Celſus, and given, as nearly as may be, in his own words, to prevent all doubt. He deſcribes it as a genus comprifing two ſpecies, of which the former has two varieties. "Duæ ſpecies ſunt. Alterum eſt *ſubrubicundum, aut miſtum rubore atque pallore, exaſperatumque per puſtulas* (φλυκταινας) *continuas*, quarum nulla alterâ major eſt, ſed plurimæ *perexiguæ*. In his ſemper fere *pus*, et ſæpe *rubor cum calore* eſt." Then follow the two varieties as deſcribed above: "α, *Serpitque id nonnunquam* ſaneſcente eo, quod primum vitiatum eſt; β, *nonnunquam* etiam exulcerato, ubi *ruptis puſtulis* (φλυκταιναις) ulcus continuatur, *humorque exit*." He then paſſes on to deſcribe the ſecond ſpecies, which anſwers to the character and almoſt to the words of our third ſpecies, Erythema gangrænoſum. "Alterum, autem, in *ſummæ cutis* exulceratione, ſed *ſine altitudine*, latum, *ſublividum*, inæqualiter tamen; mediumque ſaneſcit, extremis procedentibus; ac ſæpe id, quod jam ſanum videbatur, iterum exulceratur: at circa, proxima cutis, quæ vitium receptura eſt, tumidior et durior eſt, coloremque habet ex rubro ſubnigrum. Atque hoc quoque malo—in *cruribus maxime*." Lib. V. cap. xxviii. ſect. 4.

Dr. Good has ventured to tranſlate the *puſtulæ* of Celſus in the preſent inſtance φλυκταιναι, veſicles; firſt, becauſe he thus explains the term in ſect. 15 of the ſame chapter; and ſecondly, becauſe in the ignis ſacer, which, as we learn both from Thucydides and Lucretius, was a ſymptom in the plague of Athens, the former has given us this preciſe term. The following couplet is ſufficient from Lucretius. De Rer. Nat. vi. 1164.

Et ſimul, ulceribus quaſi inuſtis, omne rubere
Corpus, ut eſt, per membra ſacer quum diditur ignis.

Wide ting'd with purple dye, and brandiſh'd o'er
With trails of cauſtic ulcers, like the blaze
Strew'd by the *holy fire*.

In Thucydides the ſame ſymptoms are deſcribed; and in Seneca, who has cloſely copied from Lucretius, the phraſe ſacer ignis is ſtill preſerved. See Œdip. 187.

The Eczema rubrum of Dr. Bateman ſeems to belong to this ſpecies, and may form a third variety. It is commonly denominated Erythema mercuriale or hydrargyria. This diſeaſe is preceded by a ſenſe of ſtiffneſs, burning heat, and itching, on the part where it commences, which is moſt frequently the upper and inner ſurface of the thighs, and about the ſcrotum in men; but ſometimes it appears firſt in the groins, axillæ, or in the bend of the arms, or about the wriſts and hands, or in the neck. Theſe ſenſations are ſoon followed by an appearance of redneſs, and the ſurface is ſomewhat rough to the touch. This, however, is not a ſimple efflorescence; for, on examining it minutely between the light and the eye, or with a convex glaſs, the roughneſs is found to be occaſioned by innumerable minute and pellucid *veſicles*, which have been miſtaken for *papulæ*. In two or three days, theſe veſicles, if they are not ruptured, attain the ſize of a pin's head; and, the included ſerum then becoming ſomewhat opake and milky, the character of the eruption is obvious. It ſoon extends itſelf over the body and limbs in ſucceſſive large patches; and is accompanied by a conſiderable ſwelling of the integuments, ſuch as is ſeen in ſmallpox and other eruptive fevers, and by great tenderneſs of the ſkin, and much itching. When the veſicles begin to loſe their tranſparency, they generally burſt, and diſcharge, from numerous points, a thin acrid fluid, which ſeems to irritate the ſurface over which it paſſes, and leaves it in a painful, inflamed, and excoriated, condition. The quantity of this ichorous diſcharge is very conſiderable; and it gradually becomes thicker and more adheſive, ſtiffening the linen which abſorbs it, and which thus becomes a new ſource of irritation; it emits alſo a very fetid odour. This proceſs takes place in the ſucceſſive patches of the eruption, until the whole ſurface of the body, from head to foot, is ſometimes in a ſtate of painful excoriation, with deep fiſſures in the bends of the joints, and in the folds of the ſkin of the trunk; and with partial ſcaly incruſtations, of a yellowiſh hue, produced by the drying of the humour, by which alſo the irritation is augmented. The extreme pain ariſing from the preſſure of the weight of the body upon an extenſive portion of ſuch a raw ſurface, is ſufficient to give riſe to an acceleration of the pulſe, and white tongue; but

but the functions of the ſtomach and of the ſenſorium commune are not evidently diſturbed by this diſeaſe. The duration of this excoriation and diſcharge is uncertain and irregular: when only a ſmall part of the body is affected, it may terminate in ten days; but, when the diſorder has been univerſal, the patient ſeldom completely recovers in leſs than ſix weeks, and is often afflicted to the end of eight or ten weeks. By ſo ſevere an inflammation the whole epidermis is deſtroyed in its organization; and, when the diſcharge ceaſes, it lies looſe, aſſuming a pale brown colour, which changes almoſt to black before it falls off in large flakes. As in other ſuperficial inflammations, however, the new red cuticle that is left is liable to deſquamate again, even to the third or fourth time, but in ſmaller branny ſcales, of a white colour; and a roughneſs ſometimes remains for a conſiderable period, like a ſlight degree of Pſoriaſis. In ſome inſtances, not only the cuticle, but the hair and nails, are alſo obſerved to fall off; and the latter, when renewed, are incurvated, thickened, and furrowed.

In ſome caſes this diſeaſe is limited to a ſmall ſpace; and then the diſcharge is ſlight, and its whole duration ſhort. Similar local attacks of it occur in irritable conſtitutions, eſpecially in hot weather, affecting the hands and wriſts, the neck and external ear, and other parts, but without any conſtitutional diſorder. Succeſſive crops of the veſicles ariſe in irregular patches, with a red bluſh around them, which produce partial incruſtations, as the ichor that iſſues is dried: and by theſe veſications and deſiccations of the matter the affection is kept up for ſome weeks.

The treatment of this ſpecies of Erythema may be compriſed in few words; for it is principally palliative. But, although medicine may not poſſeſs the power of ſhortening the period of its duration; yet the omiſſion of the palliative meaſures will allow an extreme aggravation of the ſufferings of the patient to take place, and probably prolong it beyond its natural courſe, as well as contribute to wear out the vigour of his conſtitution. The miſery and exhauſtion, reſulting from the exceſſively tender and irritated ſtate of the ſkin, may be greatly alleviated by frequent ablution or fomentation with warm gruel, or ſtrained bran and water; or by the frequent uſe of the warm bath, which has the advantage of cleanſing the ſurface without occaſioning any abraſion by friction. A conſtant application of poultices has produced conſiderable eaſe to the patient, when the affection was confined to the extremities. Where the cuticle has exfoliated, Mr. Pearſon recommends the application of a mild cerate, conſiſting of litharge plaſter, wax, and oil, ſpread thickly on linen rollers, and renewed twice a-day. With the ſame view of diminiſhing the irritation of the ſurface, the bed and body linen of the patient, which becomes hard and ſtiff as the diſcharge dries upon it, ſhould be frequently changed. Every additional irritation from ſtimulating food and drink ſhould be avoided; the bowels ſhould be kept open by the adminiſtration of occaſional laxatives; and opiates may be given for the purpoſe of ſoothing the ſenſations of the patient. The ſulphuric acid is grateful and refreſhing; and, in the decline of the ſwelling and diſcharge, it may be combined advantageouſly with the exhibition of ſarſaparilla.

5. Erythema pernio, chilblain: colour crimſon ſuffuſed with blue; obſtinately itching; chiefly affecting the extremities during winter. Two varieties.

α. Simplex: the cuticle remaining unbroken.

β. Exulceratus; accompanied with ulceration.

Intenſe cold produces the ſame effect, in exciting inflammation, as intenſe heat. Hence chilblains are beſt treated on the ſame principles as burns or ſcalds. In the firſt variety, cold ſpirituous applications are to be uſed; and the patient ſhould avoid the extremes and alternations of heat and cold; conſequently ſhould not put his feet near the fire on coming out of the cold. The ſecond variety is to be treated by poultices. Terrible examples of this chilblain occurred among the French ſoldiers on their retreat from Moſcow. On this occaſion Baron Larrey, in his circular to the French ſurgeons, ſpeaking of the effects of intenſe cold, obſerves, that, in general, froſt-bitten ſores (plaies de congelation) preſent the ſame phenomena as burns. In both caſes a gangrenous eſchar, more or leſs extenſive, is formed, the ſeparation of which muſt be promoted by topical applications which excite the ſurrounding ſound parts. The moſt ſimple and effectual dreſſing was unguentum de ſtyrace, ſpread on linen or lint. Alcoholic embrocations and decoctions of cinchona counteracted the proceſs employed by nature in the cure. The eſchars ſeparated, the wounds are to be conſidered as ſimple, and treated accordingly. When chilblains ſphacelate, they are to be treated as gangrene in general.

6. Erythema intertrigo, eroſion of the ſkin: colour bright red; cuticle eroded; the expoſed cutis oozing a limpid and acrimonious fluid. This ariſes from peculiar acrimony in the matter of perſpiration, or acrid ſubſtances intermixing with its natural ſecretion; it occurs moſtly in children, in the folds or duplications of the ſkin, as the groins, armpits, and behind the ears. Tepid ablution, and certain abſorbent powders well known to mothers and nurſes, e. g. fuller's earth, comprehend all that is required for the cure of this eroſion. The bowels ſhould be opened if coſtiveneſs is preſent.

Genus VII. *Empreſma*, [from εμπρηθω, I flame or burn within.] Internal Inflammations. Generic characters—Deranged function of a viſceral organ, membraneous or parenchymatous, with local pain; fever moſtly a cauma; inflammation moſtly adheſive.

Hitherto we have ſpoken only of thoſe inflammations which, obvious to the ſight and touch, cannot be miſtaken for complaints of a different kind. But the genus upon which we are now entering preſents a vaſt number of the moſt ſerious diſeaſes which we are afflicted with; and which are difficult to recogniſe, not only from their hidden ſituation, not only from the ſimilarity which the ſymptoms of each ſpecies hold to thoſe of another, and from the occaſional reſemblance which they all bear to irritative or ſympathetic diſorders. It is in every caſe a matter of great moment to diſtinguiſh whether a diſeaſe be inflammatory or otherwiſe; ſince, this grand diſtinction once eſtabliſhed, we know whether it is abſolutely neceſſary to act deciſively and at once, or whether we may be allowed to wait and watch the full development of the diſeaſe. We may reſt more fully contented when we have made this diſtinction, becauſe the firſt treatment of *all* internal inflammation is nearly ſimilar. So ſtrongly was this truth impreſſed on the mind of the accurate Celſus, that, before he diſcriminates any diſeaſes by name, he marks certain ſymptoms or ſigns which require or authorize blood-letting, purging, and ſimilar active meaſures. In urging the importance of this general diſtinction, we are by no means unconſcious how neceſſary it often is to diſtinguiſh at an early period the preciſe ſituation of Phlogoſis; and in many inſtances it is practicable to do ſo. But that it is not ſo in all is one of the moſt firmly eſtabliſhed facts in medical ſcience. Caſes have occurred even in the brain, an organ above all others diſpoſed to take on inflammation from irritation, which ſo cloſely imitated Phrenitis, that the moſt accurate practitioners have been deceived by it; yet, on diſſection, no inflammatory action has been diſcovered. This circumſtance is the more lamentable, becauſe irritation and inflammatory diſeaſe require to be differently treated. It may be borne in mind, however, that the wrong treatment of irritation is ſeldom ſo fatal as the wrong treatment of inflammation.

The marks which diſtinguiſh inflammation from violent ſpaſm are too obvious to be miſtaken by the moſt ſuperficial obſerver. In the preſent inſtance, therefore, we ſhall confine our diagnoſis to thoſe inſidious approaches of

of inflammation which ſimulate the actions in which ſuſpenſion of the functions of a part takes place with ſome uneaſy ſenſations, but without actual diſeaſe. The more obvious marks of inflammation are derived from its *approach*, which is generally ſlow, except indeed in violent caſes; but in theſe no danger or miſtake can ariſe; the other phenomena of inflammation being moſt ſtrongly marked: by its *progreſſion*, which is generally conſtant and unremitting, except indeed that the diſeaſe is greater towards evening: by the increaſed *ſenſibility* in the affected part, preſſure being invariably found to aggravate inflammation, and common ſtimuli, which in health were unfelt, producing the ſame effect: by the derangement of the *functions* of the inflamed organ, particularly of its ſecreting function: by its effect on the *nervous ſyſtem* of the brain, which is to induce in the firſt ſtage exaltation, in the ſecond diminution or irregularity in the manifeſtations of the intellect by its effects on the nervous ſyſtem, as ſhown in the *voice*, the patient expreſſing his diſtreſs by low or gentle moanings (except the brain be much affected), and not by thoſe haſty, clamorous, and impatient, expreſſions, ſo common in thoſe who ſuffer from diſeaſes of irritation: by the ſympathetic action it excites in the capillary ſyſtem, inducing an increaſe of the general *temperature*: by its action on the heart and arteries, which is characterized by an increaſe in the fulneſs and frequency of the pulſe, but more eſpecially by its hardneſs, a condition which muſt be particularly attended to; (ſee our directions for aſcertaining theſe particulars at p. 93, 4.) for, in all inſidious inflammations, though the pulſe be not fuller nor more frequent than common, it will invariably be found *harder*. Each of theſe marks of diſturbance, taken ſeparately, would fail in guiding us with accuracy in recogniſing inflammation: it is by the conjunction of ſeveral or all of them that we muſt be directed.

To prevent the frequent repetition of the ſame direction, we ſhall now give a general account of the therapeutical indications belonging to Empreſma. Of the mode of action by which bleeding reduces inflammation, we have already ſpoken at p. 209, 10. and here we muſt repeat our conviction that much error ariſes from meaſuring the degree to which it is proper to carry this evacuation by the mere number of ounces. If we have clearly aſcertained that the diſeaſe is inflammatory, and that the ſymptoms before us are kept up by inflammation, we muſt bleed till relief is obtained: we muſt be guided ſolely by the *effects* of our practice.

Next to the agency of bleeding in reducing inflammation are to be mentioned that claſs of medicines which (ſomewhat differently from the common acceptation of the term) we have named SEDATIVES. Of theſe the moſt eſtabliſhed is the *Digitalis*. Many drugs are known however which poſſeſs the faculty of diminiſhing the contractility of the arteries in an eminent degree; but theſe, from their uncertainty or accidental ill effects, we forbear to notice, not doubting, however, that a few years will ſee the remedies in queſtion in full uſe in the medical world; among which the Pruſſic acid will, under ſome form or preparation, probably hold a diſtinguiſhed rank. It will be in vain attempted to exerciſe the operation of ſedatives in intenſe Phlogoſes, unleſs evacuations have been premiſed. Thus we ſee the Italians, as before reverted to, giving medicines of this claſs in the moſt exceſſive doſes, without lowering the pulſe, becauſe they had neglected to bleed their patients freely before their exhibition: hence in acute diſeaſes we ſhould always uſe bleeding firſt. In the claſs of ſedatives we ſhould not forget nauſeating medicines, though theſe act through the medium of the nerves. Antimony is the moſt common drug adapted to this purpoſe: it ſhould be ſo managed as to procure nauſea without vomiting, eſpecially in cephalitis.

Stimulation is reſorted to in inflammation two ways. In the firſt, which is conſtituted for the purpoſes of promoting the ſecretions of the diſeaſed part, we exhibit medicines which poſſeſs an excluſive action on it; as purgatives in bowel-complaints, expectorants in bronchitis, &c. The uſe however of theſe remedies is ſeldom admiſſible in the early ſtage of inflammation; and they are upon the whole very limited in their application. The next and more important mode of ſtimulation is inſtituted on the aſſumption that a loſs of balance exiſts between inflamed parts and the reſt of the ſyſtem; and conſiſts therefore in irritating ſound ſtructures for the purpoſe of relieving the diſeaſed ones. Many of the medicines having this effect operate alſo by inducing ſecretion, and thereby relieving plethora. In this double manner do purgatives act.

We alſo may make uſe of our knowledge of *ſympathy* to relieve inflammation. We throw cold water on the head in Cephalitis, becauſe, on account of the ſympathy between the external and internal parts of the head, by conſtringing the veſſels of the ſkin we alſo conſtringe the veſſels of the brain, the dilatation of which is the chief condition of the inflammation. The great difficulty conſiſts in properly timing and diſcriminating the neceſſity for each of theſe meaſures. For one practitioner throws cold water on the head, and his patient recovers of Cephalitis: another bliſters the ſcalp on one ſuffering under the ſame malady, and a like happy reſult enſues: yet theſe remedies are directly oppoſite, and the time or the attendant phenomena will explain why different treatment was neceſſary in diſeaſes nominally the ſame. The genus Empreſma contains ſeventeen ſpecies.

1. Empreſma cephalitis, phrenſy, or brain-fever: acute pain in the head; intolerance of light and ſound; face flushed; eyes red; cauma; watchfulneſs and delirium.

For a long period medical practitioners have been ſtruck with the remarkable anomalies which exiſt in the ſymptoms of cranial inflammation. It has been attempted to account for the principal appearances that inflammation exhibits by the ſuppoſition that ſymptoms would vary as the brain itſelf or its inveſting membranes were attacked. Many practical authors, on the other hand, have denied that the diſtinction in queſtion can be made. Among theſe it may be ſufficient to mention Cullen and Frank, and more recently the illuſtrious Portal; and indeed it muſt be confeſſed, that, till the preſent time, the diſtinctions were by no means clear, and even now it is well aſcertained that in all ſevere membranous inflammation the inveſted parts will ſuffer the like diſeaſe. This is particularly remarkable in inflammation of the inveſtments of the brain, in which few caſes are ſeen without derangement of the intellect, an occurrence which can only be explained on the ſuppoſition that the brain is inflamed. The French ſay that it is only in inflammation of the brain that the faculties are deranged; but that, in inflammation of the membranes, they are merely *exalted*; yet will they ſay that the mere membrane can have any thing to do with the elevation of thought, except as the blood flows faſter through the brain? and will they ſay that the excitement which follows drinking is membranous not cerebral excitement? certainly not.

In our introduction we have mentioned the important addition Drs. Martinet and Parent-Duchatelet had made to the progreſs of pathological ſcience by their excellent deſcriptions of inflammation of the arachnoid membrane. (ſee p. 47.) This complaint is commonly called *arachnitis*, but more properly *arachnoiditis*, which term we ſhall uſe. It may not be amiſs to obſerve, that the arachnoid is a delicate tranſparent membrane, cloſely in contact with the pia mater, and reflected over the internal ſurface of the dura mater. It forms a lining for all the ventricles of the cerebrum and cerebellum. It is conſtantly lubricated by a fine roſy exhalation; and is decidedly a ſerous membrane, performing the ſame functions in the head as the membranes inveſting the heart, lungs, and abdominal viſcera, perform in their reſpective ſituations. Like them, it is inſenſible to touch or torture

torture when in a healthy ſtate; and, like them, when inflamed, it acquires a high degree of morbid ſenſibility. To this we attribute the head-ache, more or leſs violent, which invariably attends on arachnoiditis. This membrane is inflamed by the ſame cauſes which inflame other ſerous membranes; and, like them, frequently throws out aqueous collections, or forms adheſions where the ſurfaces were before free; or, like thoſe ſubſtances, it forces out a whitiſh or ſero-albuminous fluid, ſometimes forming layers of falſe membrane.

The primary and moſt frequent cauſes of the diſeaſe, are percuſſions of the head, expoſure to the ſun, organic leſions of the brain itſelf, apoplectic diſpoſition, and depreſſing paſſions. Among the ſecondary cauſes, in point of frequency or importance, are metaſtaſes of different kinds, ſuppreſſion of habitual diſcharges, the uſe of ſtrong drinks, and the common cauſes of other internal phlegmaſiæ, as of pleuritis, gaſtritis, &c.

The firſt ſtage of arachnoiditis is marked by an increaſe of the ſenſibility, and by head-ache, one of the moſt conſtant characters of the diſeaſe. A tendency to ſopor is ſometimes manifeſted, eſpecially when the diſeaſe is ſeated at the baſe of the brain. The ſtomach alſo is ſympathetically affected with nauſea or vomiting. A febrile movement is generally eſtabliſhed in the ſyſtem, varying according to the age of the ſubject, the ſenſibility of the conſtitution, and the degree of the inflammation. In ſome rare caſes, eſpecially of metaſtaſis, coma ſets in from the beginning, and all the ſymptoms of the third period or ſtage (deſcribed hereafter) commence at once, and are quickly followed by death. The duration of this firſt ſtage is uſually from a few hours to three or four days.

The ſecond ſtage or period, which is that of re-action, is accompanied with diſturbance in the locomotive powers, correſponding with that of the brain itſelf. It is in this ſtage that we obſerve convulſions, delirium, reſtleſſneſs, oſcillations or commencing dilatation of the pupils, and other phenomena of cerebral inflammation. In this ſtage the pain in the head is leſs conſtant than in the firſt ſtage, the ſenſorium appearing leſs ſenſible of impreſſions, as well internal as external. This ſtage varies in duration, from two, three, or four, days, to one or even two weeks. It exhibits ſome difference in ſymptoms according to the principal ſeat of the diſeaſe. When the latter is at the baſe of the brain or in the ventricles, coma is almoſt eſſential, and is combined with convulſions, agitation, affection of the eyes, &c. whereas, if the arachnitis be on the convexity of the hemiſpheres, delirium is the early and regular and characteriſtic phenomenon.

The third ſtage is that of the ſhorteſt duration, varying from a few hours to three or four days, and rarely paſſing that period. This is the ſtage of collapſe; the abolition of ſenſe, loſs of motive power, paralyſis, local or general, and coma, being the characteriſtic ſymptoms. In this ſtage, however, the features of various cerebral affections are combined, and conſequently all diſtinctions between arachnoiditis and inflammations of other parts of the brain confounded.

The *collapſe* ſo characteriſtic of the third period or ſtage, and the *excitement* which diſtinguiſhes the ſecond, have this peculiarity, that, while one part of the body ſhall preſent the phenomena of one of theſe ſtages, another part ſhall preſent thoſe of the other. For example, in the face, we ſhall often ſee the muſcles of the eye-lids paralytic, while thoſe about the mouth are convulſed. It is principally when the arachnoiditis exiſts about the baſe of the brain, near the decuſſation of the optic nerves, that this medley of ſymptoms belonging to two different ſtages is obſerved. It is almoſt needleſs to ſay, that a return to health from any of theſe ſtages (this is rarely the caſe from the third) is marked by a diminution of intenſity in the ſymptoms, and a final ceſſation of them. At the ſame time it is often difficult to diſtinguiſh the tranſition from one ſtage into another, eſpecially of the firſt into the ſecond, and the ſecond into the third. No ſingle ſymptom can be depended on for this diſcrimination; the whole muſt be taken in connexion.

The ſymptom of the greateſt importance in the invaſion of this diſeaſe is head-ache. It is often intenſe, but varies conſiderably according to its ſeat. Cephalalgia then, occurring ſuddenly, and eſpecially when violent, ſhould always excite ſuſpicion of arachnoiditis, whether it takes place in a perſon previouſly well, or labouring under ſome other diſeaſe.

As far as regards the expreſſion of the countenance in arachnoiditis, a general character of ſurpriſe and ſtupor is obſerved, which it is impoſſible to deſcribe, but which cannot eaſily be miſtaken, after being once ſeen. Moreover the pupils are dilated or contracted, or alternately in each ſtate. The globe of the eye preſents a greater or leſs degree of redneſs in the conjunctiva; ſquinting on one or both ſides; conſtant rolling of the organ, its reverſion upwards, and finally paralyſis of the upper eyelid. Few caſes occur without ſome affection of the pupils.

The muſcular actions of the face are ſometimes deranged; and triſmus is by no means a very unfrequent attendant on this complaint. It ſeldom occurs till after the firſt ſtage is paſt. Grinding of the teeth, and foaming at the mouth, are generally ſeen only among children; and in the ſecond and third ſtages of the diſeaſe. Spaſmodic or convulſive movements of the facial muſcles are not very frequent, and never ſeen but in the advanced ſtages. Generally ſpeaking, the face is coloured and animated in arachnoiditis; ſometimes, however, it is pale and void of expreſſion.

Delirium frequently affects adults, who are moſt diſpoſed to arachnoiditis of the convexity of the brain. It is generally of the tranquil kind, or a muttering of half-articulated words between the teeth. It is ſeldom ſo intenſe but that the patient can be rouſed to anſwer diſtinctly at times. Theſe remarks appertain to the firſt and ſecond ſtages. In the third, there is generally an annihilation of the intellectual faculties. The commencement of delirium may, for the moſt part, be conſidered as the ſign of tranſition from the firſt to the ſecond ſtage, and forms the moſt characteriſtic feature of arachnoiditis of the convexity of the hemiſpheres. Where there is no delirium, there is generally either dulneſs, moroſeneſs, iraſcibility, or preternatural excitement, and unuſual exhilaration. In almoſt all caſes, however, we ſee a marked diminution of the cerebral faculties, or an impoſſibility, as it were, of bringing them into action; ſo much ſo, that many patients can only be induced to utter monoſyllables.

Somnolency is one of the moſt frequent of all the phenomena of arachnoiditis. When the diſeaſe purſues its ordinary courſe, this ſymptom does not appear till the end of the firſt or beginning of the ſecond ſtage. In a very few caſes it has been obſerved from the very commencement. Head-ache is almoſt inſeparable from the firſt and part of the ſecond ſtage of the diſeaſe. It is highly probable that it continues to the laſt, though not complained of by the patients, who are overwhelmed by the force of the diſeaſe, and incapable of diſtinguiſhing any particular ſymptom. They generally characterize the pain as heavy, numb, or ſhooting, uſually occupying the whole, but ſometimes only half, of the head. The apparent ſeat of the pain is not always the ſeat of the diſeaſe. Stupor, characterized by a kind of ſelf abandonment, loſs of all energy, and countenance of ſurpriſe, is common to every ſtage of the diſeaſe, but eſpecially the two firſt. In a very few caſes there has been obſtinate pervigilium, inſtead of ſomnolency; and in a ſtill fewer (ſhowing that there is no rule without exception), the

the patients have retained their intellectual faculties until the laſt.

The muſcular ſyſtem exhibits various deviations from the healthy ſtate, viz. general or local rigidity, or contraction, local or general palſy, local or general convulſions; to which we may add a third ſtate, that of agitation. This laſt ſymptom is ſeldom ſeen except in the firſt and ſecond ſtages. It is not of much importance as an aid in the diagnoſis; but not ſo *convulſions*. Theſe, with paralyſis, are one of the moſt characteriſtic ſigns of arachnoiditis. General convulſions are moſt common in children; and are principally ſeen in the ſecond and beginning of the third ſtage; more in the upper than in the lower extremities. Rigid contractions of the muſcles are ſeen (in order of frequency) in thoſe of the lower jaw, poſterior of the neck, ſuperior and inferior extremities. They belong to the ſecond ſtage, and early part of the third; ſometimes conſtant, but generally ſhowing intervals of relaxation.

The temperature of the ſkin is generally elevated, and equally diffuſed over the whole ſurface of the body, being higheſt in the ſecond ſtage of the diſeaſe, diminiſhing and greatly varying towards the termination of the third ſtage. The ſkin is generally dry during the firſt ſtage; in the ſecond, ſometimes moiſt, or even covered with an abundant perſpiration, eſpecially about the face. Drs. Martinet and Parent-Duchatelet take notice of a diſagreeable odour which patients labouring under this diſeaſe exale about the end of the ſecond ſtage, and which they can compare to nothing but the ſmell of mice. They aſſert that it always proved a very unfavourable ſymptom. We have met with this ſymptom in other complaints, where indeed no trace of arachnoiditis could be found.

The organic leſions diſcoverable on the *necrotomy* (a new and expreſſive word, as confining diſſection to the dead ſubject) of patients who have died of arachnoiditis are—a ſimple bluſh or redneſs of the arachnoid membrane; thickening, and loſs of tranſparency, in the ſaid membrane; a purulent, ſero-purulent, or ſero-gelatinous, exudation on its ſurface; the formation of falſe membranes; and a ſerous effuſion into the ventricles, between the laminæ of the arachnoid, or into the cellular tiſſue which unites the ſaid membrane to the pia mater.

The treatment of this complaint is ſimilar to that of Cephalitis in general, as far as regards bleeding, purging, and the exhibition of ſedatives. Bleeding, however, does not do ſo much good in the advanced ſtages of Arachnoiditis as in the advanced ſtages of Cephalitis. It ſhould therefore be uſed early in this complaint: local bleeding is alſo highly beneficial: the French ſurgeons, in addition to theſe meaſures, order counter-irritants, by means of ſinapiſms and bliſters to the feet and legs. A bliſter on the head has occaſionally been productive of the moſt ſtriking relief. General cold affuſion is particularly recommended, as alſo the application of cold water to the head alone. Compreſſion of the carotid arteries may alſo be uſed to repreſs the too great momentum of blood to the head. Theſe remedies, according to Martinet and his colleague, will often deceive the practitioner; and upon the whole they give a lamentable account of the uſual termination of this malady. The practice of the Engliſh in this complaint, though few of them make any diſtinction between Arachnitis and Cephalitis, is tolerably ſucceſsful; and for this reaſon, that the ſyſtem of bleeding in inflammation is carried to a greater extent in this country, and purging with draſtic cathartics is more in vogue. But we ſhould obſerve, that the arachnoiditis of this country is not often ſo violent as in France.

This account has been introduced here from a firm conviction in the mind of the writer of this article, that the diviſion of cerebral and arachnoid inflammation has a foundation in nature. Before he read the work of Martinet, or even a review of it, his note-book contained a hiſtory of certain anomalous caſes of head-affections which he by no means underſtood the nature of. Their hiſtory perfectly coincided, at leaſt in all eſſential points, with the details given by the authors before mentioned. Since reading the work in queſtion, and during the late hot weather, (June 1822.) ſeveral caſes have occurred to him. It may be worth while to notice, that, in one of the beſt marked of theſe, the ſubject of which was a child four years old, after the moſt active bleeding and purging, and after the cold affuſion of the head had been uſed with mere mitigation of the ſymptoms, at the end of the third day the exhibition of a ſcruple of calomel combined with two grains of opium in four doſes completely and moſt rapidly cured the patient. For excellent details of caſes and diſſections we refer to the work itſelf, or to a very good analyſis of it in the eighth number of Johnſon's Journal, which we have made ſome uſe of in our hiſtory of arachnoiditis.

In the above hiſtory of the ſymptoms of Arachnoiditis, the following are the moſt remarkable variations which occur from the ſymptoms of ſimple Cephalitis. The contracted ſtate of the features, the extreme irritability of ſome of the muſcles, ſometimes the integrity of the reaſoning powers, the eaſineſs of reſpiration; the ſymptoms obſerving certain changes as the pain is ſituated on the top or baſe of the brain; the peculiar rotation, *gritty ſenſation*, or turning-up, of the eyes; and laſtly, the diſpoſition of the diſeaſe to affect the ſpine. We cannot help in this place remarking, that, in the work of Duchatelet and his colleague, the diſtinction of ſpinal and cerebral arachnitis is by no means ſo unfounded as ſome of our countrymen have ſuppoſed. A caſe occurred ſome time ſince to the writer of this article in which the attending practitioner cured a patient (as he thought) of Peritonitis by a ſmall bleeding and a purge. The patient ſuddenly became affected with the primary ſymptoms of ſpinal arachnoiditis with little cerebral diſturbance. The latter however increaſed; and the patient, without exhibiting any very violent derangement of the pulſe or mental faculties, died in the courſe of ten days. On diſſection of the head at the baſe of the cranium, the arachnoid tunic was found thickened, ſtudded with depoſitions, and adherent to the ſurrounding parts. The ſame was ſtill more remarkable in the ſmall portion of the ſpine which was cut up through the foramen ovale. A ſlight effuſion was found in the ventricles. A ſpecies of arachnoiditis very common in this country is *Hydrocephalus*, which ſee.

The following account of Cephalitis will probably require much alteration when the preciſe difference which characteriſes the inflammation of the inveſting or the inveſted parts of the cranium ſhall be known.

Cephalitis often makes its attack with a ſenſe of fullneſs in the head, flushing of the countenance, and redneſs of the eyes; the pulſe being full, but in other reſpects natural. As theſe ſymptoms increaſe, the patient becomes reſtleſs; his ſleep is diſturbed, or wholly forſakes him. Sometimes it comes on with tremors of the limbs, and intolerable pains of the hands, feet, and legs; ſometimes with ſtupor and rigidity of the whole body; and ſometimes with anxiety, and a ſenſe of tenſion in the breaſt, which is often accompanied with palpitation of the heart. Sometimes, again, the ſtomach is affected; and nauſea, and a painful ſenſe of weight in that viſcus, ſometimes heart-burn and vomiting, are among the earlieſt ſymptoms. The pain in the head ſoon becomes conſiderable, and ſometimes very acute. The ſeat of it is various: it generally ſeems to occupy the whole head; it is deep-ſeated and ill defined; and, in other caſes, it is felt principally in the forehead or occiput. The redneſs of the face and eyes generally increaſes with the pain, and there is often a ſenſe of heat and throbbing in the head, the countenance acquiring a peculiar fierceneſs. Theſe ſymptoms, for the moſt part, do not laſt long before the patient begins to talk incoherently, and to ſhow

other marks of delirium: ſometimes, however, delirium does not come on till the fifth, ſixth, or ſeventh, day. It gradually increaſes till it often arrives at a ſtate of phrenſy. The face becomes turgid, the eyes ſtare, and ſeem as if ſtarting from their ſockets; tears, and (according to ſome) even blood, flowing from them; and the patient ſometimes reſembles a furious maniac, from whom he is principally diſtinguiſhed by the ſhorter duration of his complaint.

We ſhould, *à priori*, expect in phrenitis conſiderable derangement in the different organs of ſenſe, which ſo immediately depend upon the ſtate of the brain; and ſuch is the fact. The eyes are incapable of bearing the light; and falſe viſion, particularly that termed *muſcæ volitantes*, or floating motes and flaſhes of light ſeeming to dart before the eyes, are frequent ſymptoms. The hearing is often ſo acute, that the leaſt noiſe is intolerable: ſometimes, on the other hand, the patient becomes deaf; and it has been even obſerved, that the deafneſs and morbid acuteneſs of hearing ſometimes alternate. Affections of the ſmell, taſte, and touch, are leſs obſervable.

The *reſpiration* is generally deep and ſlow, ſometimes difficult, now and then interrupted with hiccup, ſeldom humid and frequent, which laſt is a very unfavourable ſymptom. The deglutition is often difficult, ſometimes convulſive. The liver is often affected; and complete jaundice, the urine and ſkin being tinged yellow, ſometimes ſupervenes. Inſtead of a ſuperabundance of bile, however, there is ſometimes a deficiency of it, which affords a bad prognoſis. The fæces being of a white colour, and a black cloud in the urine, have been regarded as fatal ſymptoms. The black cloud in the urine is owing to an admixture of blood; when unmixed with blood, the urine is generally pale.

Among the moſt unfavourable ſymptoms of cephalitis the following may be enumerated; namely, tremors of the joints, convulſions of the muſcles of the face, grinding of the teeth, ſudden changes of the colour of the face from florid to pale, involuntary tears, a mucous diſcharge from the noſe, the urine being of a dark-red colour, or yellow, or black, or covered with a pellicle; the fæces being either bilious or white, and very fetid; profuſe ſweat of the head, neck, and ſhoulders; paralyſis of the tongue, general convulſions, much derangement of the internal functions, and the ſupervention of the ſymptoms of other viſceral inflammations, particularly of peripneumony. If the delirium changes to coma, and the pulſe at the ſame time becomes weak and the deglutition difficult, the approach of death may be generally expected.

With reſpect to the *cauſes* of cephalitis, we have already obſerved that it is a rare diſeaſe in our temperate climate, but is more frequently obſerved in warm latitudes. The prediſpoſition ſeems to conſiſt in the irritability of youth and of the ſanguine temperament, as well as in a paſſionate temper of mind. The exciting cauſes are ſuch circumſtances, internal and external, as tend to produce an accumulation of blood in the head; among which are the direct influence of a vertical ſun in tropical climates, or long expoſure to it in hot weather in more moderate heats, eſpecially under great bodily exertions; violent fits of anger; intoxication; concuſſion, fracture of the ſkull, or other mechanical violence; long and intenſe exertion of the mind; certain narcotic poiſons, miaſmata, and perhaps contagion.

The *cure* of cephalitis muſt be conducted upon the ſame general principles as that of other acute viſceral inflammations; and, from the particular importance of the organ inflamed, the antiphlogiſtic and evacuant plan muſt be purſued with the utmoſt vigour and expedition. Blood-letting is to be conſidered as the principal dependence of the practitioner, and the more early it is employed, the more efficacious in general it will prove. It fortunately happens, that in this complaint, the advantages of general and local blood-letting may be combined; inaſmuch as a large quantity of blood can uſually be produced from the veſſels immediately connected with the inflamed organ. When this advantage can be obtained, it ſhould never be overlooked. It is adviſable, therefore, to open the temporal artery, or the jugular vein, and to take a large quantity of blood, according to the violence of the ſymptoms, and to the age and ſtrength of the patient. The blood-letting ſhould be carried to the extent of producing ſyncope or fainting; and, when that effect follows, the relief is more often complete.

We need pay very little attention to the *admeaſured* quantity of blood we take. We muſt bleed till the violence of the delirium is much abated, and till the pulſe is materially lowered. The effects of the blood-letting, in diminiſhing the morbid determination of blood to the head, ſhould be ſeconded by all other means in our power. The application of *cold* to the ſcalp, ſuch as waſhing it, after ſhaving, with cold water, vinegar and water, or ſpirits, is often exceedingly beneficial. To aſſiſt in leſſening the flow of blood to the head, the patient ſhould be kept as near the erect poſture as can be borne. At the ſame time he muſt be kept in bed, becauſe the muſcular exertion required to ſit or ſtand accelerates the pulſe; but the head and cheſt muſt be ſupported by pillows, or by other contrivances. And at this time, every irritation, eſpecially thoſe of light and noiſe, of which the inflamed ſenſorium becomes peculiarly ſuſceptible, ſhould be carefully withdrawn.

When the action of the heart is ſomewhat diminiſhed, and the brain ſtill continues oppreſſed, we ſhall find great benefit from bliſtering the lower extremities; but this ſhould not be done on the firſt invaſion of the malady. In addition to theſe direct means of diminiſhing the inflammatory action in the head, the indirect effect, which is produced by copious evacuations from the bowels, obtained by the uſe of *purgatives*, is of great importance, and ſhould be carefully attended to. Even ſyncope itſelf has been produced by profuſe evacuations from the inteſtines, which implies the complete influence over the circulation in the brain, which ſuch operations produce. The free uſe of elaterium, ſcammony, gamboge, &c. therefore, ſhould be reſorted to in all caſes of phrenitis; and, if a ſpontaneous diarrhœa ſhould ſupervene, the practitioner will be careful not to check it. As in all other caſes of inflammatory fever, every external ſource of excitement ſhould be carefully excluded; the apartment ſhould be cool and well ventilated; the bed-clothes light; the drink aqueous, cold, and acidulated.

It ſeems ſcarcely neceſſary to add, that nauſeating doſes of antimony, and the frequent exhibition of infuſion of digitalis, are very appropriate auxiliaries to the treatment of Cephalitis.

2. Empreſma otitis, (Otalgia, *Cullen.*) Ear-ache: ſevere pain in the ear; tenderneſs upon preſſure; deafneſs or confuſion of ſounds. This complaint is accompanied by a ſenſe of weight or tenſion in the internal ear, with ſome ſlight degree of fever. The treatment is the ſame as Phlegmon auris, (which ſee p. 230.) except that, when it is accompanied with much fever, we ſhould bleed, leſt the violence of the inflammation ſhould diſorganize the ear. Otitis is often a conſequence of inflammation affecting the throat and euſtachian tube; in which caſe we muſt uſe meaſures which might be conſidered ſomewhat active as compared with the ſmall extent of the diſeaſe, that we may prevent the cloſure of the euſtachian tube; an accident productive of ſerious inconvenience.

3. Empreſma parotidis, (Cynanche parotidea, *Cull.* Branks, *Scottice.* Mumps, *Anglice.*) Painful unſuppurative tumour of the parotid glands, often extending to the maxillary; conſpicuous externally; often accompanied with ſwelling of the teſtes in males, and of the mammæ in females. This complaint, which is ſaid to have proved both epidemic and contagious, comes on with the uſual ſymptoms of fever, which are ſoon after attended with a conſiderable tumour of the external

fauces and neck. This appears firſt as a glandular moveable tumour at the corner of the lower jaw; but the ſwelling ſoon becomes uniformly diffuſed over a great part of the neck, ſometimes on one ſide only, but more commonly on both. The ſwelling continues to increaſe till the fourth day; but, from that period it declines, and in a few days more paſſes off entirely. As the ſwelling of the fauces recedes, ſome tumour affects the teſticles in the male ſex, or the breaſts in the female. Theſe tumours are ſometimes large, hard, and ſomewhat painful; but, in this climate, are ſeldom either very painful or of long continuance. The fever attending this diſeaſe is commonly ſlight, and recedes with the ſwelling of the fauces; but ſometimes, when the ſwelling of the teſticle does not ſucceed to that of the fauces, or when the one or the other has been ſuddenly repreſſed, the fever becomes more conſiderable, is often attended with delirium, and has ſometimes proved fatal. As this diſeaſe commonly runs its courſe without either dangerous or troubleſome ſymptoms, ſo it hardly requires any remedies. An antiphlogiſtic regimen, and avoiding cold, are all that will be commonly neceſſary. But when, upon the receding of the ſwelling of the teſticles in males, or of the breaſts in females, the fever comes to be conſiderable and threatens an affection of the brain, it will be proper, by warm fomentations, to bring back the ſwelling; and, by vomiting, bleeding, or bliſtering, to obviate the conſequences of its abſence.

4. Empreſma pariſthmitis, (Cynanche, *Cull.* Angina, *Auct. Lat.*) Squinancy, or quinſy. Redneſs and ſwelling of the fauces with painful and impeded deglutition. This ſpecies contains three varieties.

α. P. tonſillaris, or common quinſy. It is an inflammation of the mucous membrane lining the throat, and affecting eſpecially the tonſils, and ſpreading from thence along the velum and uvula. The diſeaſe is marked by a redneſs of the parts, accompanied by ſwelling, which is ſometimes conſiderable, ſo as to render the act of ſwallowing painful and difficult, or even to impede it almoſt entirely. There is alſo a troubleſome clammineſs of the mouth and throat, with a frequent but difficult excretion of mucus; there is often a pain ſhooting into the ear: the voice is altered, and articulation rendered indiſtinct. A degree of fever is generally preſent. This kind of quinſy is not contagious. It terminates frequently by reſolution, ſometimes by ſuppuration, but hardly ever by gangrene. The progreſs of the inflammation to ſuppuration, is ſometimes, indeed, very rapid; at other times there are ſeveral ſmall abſceſſes, which break one after another, and the diſeaſe is tedious. Occaſionally the tonſils become enlarged and hard after this inflammation, and remain ſo for years. When a large impoſthume breaks, there is generally ſudden relief from the pain, difficulty of breathing, ſwallowing, and ſpeaking; although often no matter is thrown up, but paſſes down the œſophagus.

The diſeaſe is commonly traced to expoſure to cold. It affects the young and ſanguine, and is very liable to return, in ſome conſtitutions, upon the application of cold to any part of the body, ſo as to become almoſt habitual. It occurs, eſpecially in ſpring and autumn, when viciſſitudes of heat and cold frequently take place. The inflammation and ſwelling often begin moſt violently in one tonſil, and afterwards, abating in that, increaſe in the other. The remedies for inflammation, and the antiphlogiſtic regimen, are to be employed for the cure of this complaint. It is greatly aggravated by heating diet and ſtimulating medicines. General blood-letting is ſeldom neceſſary; but leeches to the neck and external fauces are very uſeful. Bliſters, when early applied to the ſame parts, are alſo highly beneficial, and have often had the effect of curing by reſolution a violent inflammation of the throat. When ſuppuration is begun, they can be of little uſe. Purgatives, repeated occaſionally, are of eſſential benefit. The inflammation is often relieved by topical refrigerants, particularly acids; hence the uſe of gargles containing vinegar, lemon-juice, or the mineral acids, and rendered palatable by means of honey or ſyrup. Theſe acids moreover coagulate the mucus which adheres about the parts, and cleanſe the paſſages. In many caſes, however, no application has afforded more relief than the vapour of warm water received into the fauces by means of Mudge's inhaler.

β. P. maligna: crimſon redneſs of the mucous membrane of the fauces and tonſils; ulcerations covered with mucous and ſpreading ſloughs, of an aſh or whitiſh hue; fever a typhus. This diſeaſe is of great danger and importance. We give the following account of its nature on the authority of Dr. Parr. It attacks like a ſlight inflammatory ſore throat, though ſometimes only a languor inſidiouſly creeps on, with a little difficulty of ſwallowing; and, in the worſt caſes, even this is abſent. The ſtrength, however, rapidly ſinks, the features fall, a ghaſtly paleneſs comes on, and death quickly follows. In ſlighter kinds, the courſe is not very different from that of the inflammatory ſpecies, though ſeemingly ſlight, with alternate chills and heats, pain in the head, &c. till the debility appears, when every other bad ſymptom immediately follows. Every ſore throat ſhould, therefore, be carefully examined.

In the moſt active inflammations of the throat, white ſpecks will ſometimes appear on the velum pendulum or tonſils. If the inflammation is florid, the conſtitution robuſt, and the pulſe firm, theſe ſpots may be diſregarded. On the contrary, in ſome inſtances of the moſt malignant kind, no ſloughs can be obſerved. The diſtinction muſt be taken from the colour of the inflammation. In the true malignant ſore throat, the colour approaches rather to the crimſon and the pink than the red; and ſometimes a ſhade of brown, not far diſtant from the cinnamon, is mixed. The pain in ſwallowing is ſlight in proportion to the degree of inflammation; languor, liſtleſſneſs, and indifference, are very conſpicuous; and the features diſplay the ſame want of fulneſs and tone: the eyes are red and watery. At this time the pulſe will be ſometimes apparently ſtrong, but a ſlight attention ſhows that the ſtrength of the ſtroke is apparent only: it throbs with a kind of convulſive weakneſs, rather than beats with a ſteady firmneſs. The tongue grows brown, the breath offenſive; and delirium, at night, comes on; by day, a wandering is only obſervable. When there are ſloughs on the throat, the edges are of a dark pink red; they are obſerved to cover, and ſometimes they conceal, a conſiderable loſs of ſubſtance: they enlarge, become deeper, and the edges black. An ichor, or a thin acrid matter, is diſcharged from the noſe or ears; the ſtools are thin and highly offenſive. The fever is ſaid to remit in the morning, but the remiſſion is inconſiderable, and will never aſſiſt in the diſtinction, though it will ſometimes lead to an inſidious ſecurity. Sometimes, from the beginning, exanthemata appear; and the putrid ſore throat is frequently, if not conſtantly, an attendant on Scarlatina: theſe ſoon aſſume a darker hue, and appear livid. The breath in the earlier periods is not affected, but a wheezing noiſe ſupervenes if neglected; and this, in the worſt kinds, is ſucceeded by a ſhrill barking ſound. It evidently ariſes from the eryſipelatous inflammation extending to the larynx, and is generally a fatal ſymptom. The eruptions have been erroneouſly deſcribed as favourable and critical. In a diſeaſe which runs its courſe generally in leſs than five, always in ſeven days, no prognoſtic is to be depended on but a more florid appearance in the throat, and a more healthy aſpect of the edges of the ſores.

The diſeaſe is epidemic, and attacks the active and robuſt as well as the infirm. The treatment muſt in its early ſtages be ſtrictly antiphlogiſtic; but it is ſaid that, when the ſloughs are formed, ſuch meaſures are injurious. It ſeems to us, however, that in this reſpect we ſhould be guided by the ſtate of the pulſe, &c. rather than adopt a line

a line of practice founded on the name of the diſeaſe. In fact, as we ſhall ſhow when ſpeaking of Gangrene in general, we muſt ſometimes ſtimulate by bark and wine, and ſometimes act the reverſe by bleeding and purgatives, when we want to produce the expulſion of ſloughs. Towards the latter end of the malady, when ſtimulation is required, we certainly meet with much ſucceſs by following the practice thus detailed by Parr. After laxatives, the bark is to be given in active doſes, with aromatics. Half a dram of the bark, with ten grains of aromatic ſpices, ſhould be exhibited every two hours. If it ſeems to produce ſtrictures on the ſkin, and rigour, five or ſix grains of camphor, and three or four of James's powder, combined with a little opium, ſhould be added to each doſe. Theſe may be waſhed down with a ſtrong decoction of bark, ſharply acidulated with either of the mineral acids. Dr. Parr however remarks, that in this diſeaſe the bark ſeldom diſagrees. The action of theſe remedies is greatly aſſiſted by diet and gargles. Port-wine ſhould be given freely; it ſhould indeed enter into every part of the food, and be drunk alone, cold. Even ſleep is leſs neceſſary than bark and port-wine; and, ſhould it continue above three hours, the patient muſt be awakened, for the loſs of time cannot be regained. The quantity of the medicine and the wine muſt be regulated by the effect. If we gain nothing in the firſt thirty-ſix hours, we may depend on a fatal event: if we loſe ground in twenty-four, our hopes will be inconſiderable. We have known women unaccuſtomed to wine drink two bottles within twenty-four hours, for more than a fortnight. The gargles ſhould be of a ſtrong decoction of bark, very ſharply acidulated with mineral acids or with the ſtrongeſt Cayenne vinegar, or ſome Cayenne in ſubſtance ſhould be added; and they ſhould be frequently uſed, or, as the patient is languid, injected with a ſyringe. Pepper-corns conſtantly bitten, and the ſaliva ſwallowed, we have often found highly uſeful.

"Theſe are the appearances, and ſuch the practice, in the more violent attacks of the complaint; and we have never ſeen an inſtance of it, when taken early and treated in this manner, in a conſtitution moderately ſtrong, proving fatal. The ſame plan, leſs actively purſued, is adapted to the milder kinds. But even the mildeſt ſhould not be treated with indifference."

γ. P. pharyngea: redneſs florid, and eſpecially at the lower part of the fauces; deglutition extremely difficult and painful; fever a cauma. This appears to be the ſame diſeaſe as the firſt variety, except that it is ſeated lower down in the throat.

5. Empreſma bronchitis, (Cynanche trachealis, *Cull.*) Croup. Breathing ſonorous and ſuffocative, voice harſh; ringing cough; fever a cauma. The term *bronchitis* is by Dr. Good confined to that peculiar and violent inflammation which is moſt appropriately termed by medical men in general *laryngitis*, as the latter term expreſſes the ſeat of the affection much better than bronchitis; and, as bronchitis is now properly uſed to deſignate thoſe complaints which will be detailed under the genus Catarrh, we ſhall uſe the term laryngitis in the following deſcription.

Laryngitis, then, is an inflammation of the ſuperior part of the trachea or larynx, to which parts, however, it is ſeldom confined, but extends downwards through the ramifications of the bronchiæ. It affects perſons of all ages, but is moſt formidable when it occurs to children, in whom it is ſaid, from the narrowneſs of the aerial aperture, the internal thickening of the parietes of the tube ſoon produces ſuffocation. It ſeems however, from the firmneſs of the coagulum thrown out, that the inflammation in croup is of the moſt exceſſive kind, ſo that death might be accounted for independently of the ſmallneſs of the glottis.

The complaint ſometimes runs its courſe in twenty-four, thirty-ſix, or forty-eight, hours; more commonly it continues a few days. Occaſionally the peculiar noiſe which is the pathognomonic ſign of croup, attends on ſlight inflammations of the bronchiæ and larynx, but the complaint is then of a ſomewhat prolonged duration.

Laryngitis is often a conſequence of the ſpreading of true bronchial inflammation; and ſometimes the one alternates with the other. The croup generally begins with a ſhort dry cough, wheezing, and other catarrhal ſymptoms. Soon the wheezing becomes more obſervable, the cough more troubleſome, and marked by a peculiar ſhrill ſound; the reſpiration is performed with a wheezing or croaking noiſe, and at length grows very diſtreſſing and laborious. At the beginning, or in ſlighter caſes, the ſound of inſpiration reſembled the paſſing of air through a piece of muſlin; afterwards it was as if the noiſe came from a brazen tube. The cough was attended with a peculiar ſhrill ſound, even at an early period of the diſeaſe, as well as the voice, where there was not a perfect hoarſeneſs. Dr. Home deſcribes it "vox inſtar cantus galli." It has been compared to the noiſe which a fowl makes when caught in the hand. This peculiarity, however, is not eaſily expreſſed by words, but a knowledge of it is readily acquired by obſervation.

By the end of the ſecond, or on the third day, ſometimes ſooner, ſymptoms of affection of the ſyſtem take place, as white tongue, thirſt, increaſed heat, and frequent pulſe: and the diſeaſe advances rapidly, not merely from violent general affection, but from the influence which it has upon the organs of reſpiration; the difficulty of breathing becoming now very diſtreſſing, the countenance being often flushed, and great inquietude and a continual inclination to change from place to place ſupervening. The child at the ſame time eagerly puts its fingers into its mouth, as if to pull away ſomething which ſticks in the paſſage. All the ſymptoms are increaſed during the night, throughout the diſeaſe.

A change now takes place; and, the inflammation terminating in effuſion, the paſſage of the air becomes obſtructed by viſcid matter in the trachea, ſome of which is occaſionally thrown up by coughing or retching. Occaſionally alſo, portions of a film or membrane, of a whitiſh colour, are thrown up by the ſame painful exertions; and the efforts made to diſlodge it are often ſo diſtreſſing, that the child appears to be almoſt in a ſtate of ſtrangulation. This is ſucceeded by an abatement of all the ſymptoms, until a freſh quantity of the ſame ſubſtance is formed, when the diſtreſs recurs as before. In many caſes, the difficulty of breathing and appearance of ſuffocation are increaſed by paroxyſms, ſo as to occaſion extreme anxiety and inquietude. And in other caſes the diſeaſe, after continuing ſome time, appears ſuddenly alleviated: the breathing is free; cheerfulneſs, appetite, and a diſpoſition to amuſement, take place. But a change for the worſe comes on as ſuddenly, and death enſues; the livid and ſwelled face, and convulſive ſtruggles, giving the little patient every appearance of one actually ſtrangled. When the internal fauces are viewed, as Dr. Cullen has obſerved, they are ſometimes without any appearance of inflammation; but frequently a redneſs and ſwelling appear. But it is commonly remarked that moſt of the caſes which occur in the winter are attended with inflammation and ſwelling of the tonſils, uvula, and velum pendulum palati; and frequently large films of a white ſubſtance are formed on the tonſils.

Croup moſt commonly attacks children during the three firſt years after weaning. It rarely occurs before three months, or after ten years. It is often inſidious in its approach; the child having only a ſlight cough or hoarſeneſs, with little fever or ill feeling.

The treatment of croup is that of inflammation in its moſt acute and violent form, and in a ſituation where its continuance threatens ſpeedy death. On this account, the inflammation muſt be ſubdued at all riſks; and no fear of the conſequences ſhould arreſt the vigour of the practitioner. A very large general bleeding, followed

by the application of a great number of leeches to the edges of the lower jaw and to the ſides of the neck, carefully avoiding the trachea, are the firſt means to be uſed. The knowledge of the powerful efficacy which mercury poſſeſſes of checking in ſome caſes the depoſition of coagulating lymph (though we cannot explain its modus operandi), furniſhes us with another remedy of ſcarcely leſs importance. Calomel may be given in doſes of four or five grains every hour, combined with juſt ſo much opium as will prevent it from paſſing off by the bowels. Theſe doſes are applied to children of three or four years of age; they may be greatly increaſed when required. Along with theſe meaſures the common means of counter-irritation may be advantageouſly uſed, as for inſtance the hot-bath and bliſtering remote parts. Bliſters on the neck ſeem to us to be attended with very bad effects in the early period of the diſeaſe.

When ſuffocation is threatened, or perhaps in ſome remarkable caſes after it has occurred, we may perform the operation of tracheotomy.

6. Empreſma pneumonitis, (Pneumonia perineumonia, *Cull.*) Peripneumony, or inflammation of the lungs: obtuſe pain in the cheſt; conſtant difficulty of reſpiration, alleviated by an erect poſition; tumid purple face or lips; cough, generally moiſt, often bloody; pulſe uſually ſoft. Dr. Good makes three varieties of Pneumonitis.

α. Pn. vera: the fever a cauma; pain ſevere, little expectoration in the beginning.

β. Pn. maligna: fever a ſynochus or typhus. The debility ſo extreme from an early ſtage of the diſeaſe, that the pulſe ceaſes on the preſſure of the finger; and the vaſcular action is too weak to accompliſh expectoration. Often epidemic.

γ. Pn. notha: great ſecretion and expectoration, with a mild cauma. Probably in many inſtances a catarrhal affection: chiefly occurring in advanced life, or in thoſe who have weakened their conſtitutions by exceſſes.

We ſhall treat the firſt two varieties together, as the latter appears to be merely a conſequence of the former, and to ſtand to it in the ſame relation as typhus does to inflammatory fever; i. e. merely as the effect of previous inflammatory action. The third variety, which is properly bronchitis, is referred to Catarrhus.

Inflammation of the parenchyma of the lungs, to which for the preſent we confirm our attention, is ſeldom a ſolitary affection, the pleura being in general affected along with it: and it is occaſionally accompanied with catarrhus.

Pneumonitis comes on with an obtuſe pain in the cheſt or ſide, great difficulty of breathing, particularly in a recumbent poſition, or when lying on the ſide affected,) together with a cough, dryneſs of the ſkin, heat, anxiety, and thirſt. At the firſt commencement of the diſeaſe the pulſe is uſually full, ſtrong, hard, and frequent; but in a more advanced ſtage it is commonly weak, ſoft, and often irregular. In the beginning, the cough is frequently dry and without expectoration; but in ſome caſes it is moiſt even from the firſt, and the matter ſpit up is various both in colour and conſiſtence, and is often ſtreaked with blood. The countenance is generally flushed; the noſtrils are much dilated before each reſpiration; the patient uſually breathes with the diaphragm principally, but not ſo excluſively as in Pleuritis. In the more ſevere Pneumonites, the difficulty of breathing, at all times the moſt dangerous ſymptom, becomes increaſed, and is often attended with more or leſs general, deep, livid, or even dark, ſuffuſion of the countenance, with ſome degree of tumidity, but little heat. There is alſo great anxiety in the expreſſion. The noſtrils are widely dilated, and ſharply depreſſed above their lobes, juſt before and during inſpiration. The patient is often obliged to ſit up in bed. There are vertigo and pain of the head. The reſpiration is attended with great labour, oppreſſion, and generally with a rattling noiſe: on inſpiration, the bottom part of the ſternum is often drawn forcibly and quickly towards the ſpine, the upper ribs raiſed, and the abdomen protruded; on expiration, theſe movements are reverſed. Sometimes the pomum adami deſcends on inſpiration; ſometimes the ſhoulders are much elevated. Speaking is very difficult. The cough occurs in painful oppreſſive fits, and raiſes various expectoration; this is however generally copious and mucous, ſometimes tinged with blood. The hands are cool, and livid, and the pulſe frequent.

If the actual inflammation or engorgement of the lungs does not cauſe death, a favourable termination is effected by the occurrence of copious ſecretion, both from the nervous lining and the ſerous inveſtment of the lungs; though it muſt be confeſſed that inflammation of the lungs often ſubſides by mere reſolution, where bleeding is actually employed. And moreover the eſtabliſhment of each of theſe ſecretions, when in exceſs, produces other and fatal diſeaſes, as empyema and chronic catarrh. Another termination of Pneumonitis, is ſuppuration of its ſubſtance, or Apoſtema vomica.

Before we ſpeak of the treatment of pneumonitis, we ſhall detail the ſymptoms of the next ſpecies.

7. Empreſma pleuritis, or pleuriſy: acute pain in the cheſt; increaſed during inſpiration; difficulty of lying on one ſide; hard pulſe; ſhort diſtreſſing cough. Dr. Good gives three varieties.

α. Pl. vera: fever a cauma; pain felt chiefly on one ſide. The inflammation, in this caſe, commences in that ſide of the membrane which lines the ribs; though often communicated to the contiguous portion which covers the lungs.

β. Pl. mediaſtina: heavy pain in the middle of the ſternum, deſcending towards its enſiform cartilage; with great anxiety.

γ. Pl. diaphragmatica: painful conſtriction around the præcordia; ſmall, quick, and laborious, breathing.

Pleuriſy comes on with an acute pain in the ſide, which is much increaſed by making a full inſpiration, and is accompanied by flushing in the face, increaſed heat over the whole body, rigors, difficulty of lying on the ſide affected, together with a cough and nauſea; and the pulſe is hard, ſtrong, and frequent, and vibrates under the finger when preſſed upon, not unlike the tenſe ſtring of a muſical inſtrument. The blood exhibits the thick ſizy or buffy coat on its ſurface in a high degree.

We ſee in this complaint an expreſſion of ſuffering on the countenance, and a ſtate of general contraction of the features. The noſtrils are acute and drawn a little upwards, and are ſurrounded by a ring of a pearly white. They are moved rapidly by the alternate acts of reſpiration, being dilated quickly juſt before each inſpiration. There is often a circumſcribed or partial flush of the cheeks, which generally terminates abruptly, eſpecially towards the noſe. The patient cannot, in general, lie on the pained ſide or part; and he chooſes a particular poſition, which is preſerved unchanged; any motion of the body ſeems to aggravate the pain of the cheſt. The reſpiration is frequent, quick, and ſhort, and often performed *excluſively by the diaphragm, the cheſt being motionleſs.* If a deep inſpiration be attempted, it induces ſharp pain, and is, with the calling out from this pain, immediately checked and ſuppreſſed by the patient. The cough is alſo checked, and is, at firſt, ſhort and dry, and attended with ſharp pain. The patient ſpeaks in a low tone, and in ſhort ſentences. The pulſe is rather frequent and ſharp, ſometimes leſs affected than might be expected. The pain is ſituated in various parts of the cheſt; generally on one ſide, or under the ſternum; ſometimes under the ſcapula, or at the back.

Pleuritis terminates fatally by implicating in inflammatory action the viſcera it inveſts, by ſpreading to other ſerous membranes, or by effuſion, adheſion, &c. the conſequence of inflammation when it attacks ſerous membranes. Adheſions are very frequently formed without

out material inconvenience to the patient; and no doubt increaſed effuſion ſometimes occurs without any ill effect. The lungs, the pericardium, and heart, commonly become involved in the morbid action, when death occurs in pleuritic complaints.

The treatment of inflammation, whether ſeated in the parenchyma of the lungs or the pleura, is ſimilar. The remedy chiefly to be depended upon is *blood-letting*, freely and early employed. The quantity of blood drawn muſt of courſe be regulated by the violence of the diſeaſe, and the ſtrength of the patient's conſtitution, and ought generally to be as large as this laſt circumſtance will allow. The remiſſion of the pain and the relief of the reſpiration, during the flowing of the blood, may limit the quantity to be then drawn; but, if theſe ſymptoms of relief do not appear, the bleeding ſhould be continued until ſome degree of ſickneſs and faintneſs, the ſigns of approaching ſyncope, come on. This direction is as old as the writings of Hippocrates. It will often happen, that one bleeding, however copious, will not prove a cure for the diſeaſe: for, although the pain and difficulty of breathing may be much relieved by the firſt bleeding, theſe ſymptoms very frequently recur after a ſhort interval, and often with as much violence as before. In the event of ſuch recurrence, the bleeding muſt be repeated, even in the courſe of the ſame day, and perhaps to the ſame quantity as before. Sometimes the ſecond bleeding may be larger than the firſt. There are perſons who are conſtitutionally liable to faint even upon a ſmall bleeding; and, in ſuch perſons, this may prevent the drawing of ſo much blood at firſt as a pneumonic inflammation may require; but, as the ſame perſons are frequently found to bear ſubſequent bleedings better than the firſt, theſe may be carried to the extent which the ſymptoms of the diſeaſe ſeem to demand. For it is according to the ſtate of the ſymptoms, that the bleedings muſt be determined to be repeated; and they will be more effectual, when employed in the courſe of the firſt three days, than afterwards: but they are not to be omitted, although four or five days may have elapſed before the phyſician is called in; nay, if there be a recurrence of the urgent ſymptoms, as deſcribed above, the bleeding ſhould be repeated at any period of the diſeaſe, eſpecially within the firſt fortnight, and even afterwards, if a tendency to ſuppuration be not evident, or if, after an apparent ſolution, the diſeaſe ſhall have again returned.

There is in peripneumony, as in ſome other acute inflammations, a ſtate of pulſe occaſionally recurring, which, to an inexperienced practitioner, appears to contra-indicate the uſe of the lancet; it is ſoft, and ſmall, or what has been called an oppreſſed pulſe; but it riſes, and becomes fuller and larger, after blood-letting. Under ſuch circumſtances, the propriety of the blood-letting is to be determined by the urgency of the other ſymptoms, eſpecially of the *difficulty of breathing*. In a ſimilar manner, a pulſe that is irregular, and beats with conſiderable intermiſſions, in peripneumony, will become regular after the relief of blood-letting; and ſuch a ſtate of pulſe, therefore, when the pneumonic ſymptoms are urgent, is not to be conſidered as contra-indicating, but as more ſtrongly demanding, the uſe of the lancet.

When a large quantity of blood has been taken from the arm, ſome blood may be ſtill taken locally, by means of cupping. This local blood-letting will be particularly proper, when the continuance or recurrence of pain, rather than the difficulty of breathing, becomes the urgent ſymptom. After this, a large bliſter ſhould be applied over the thorax or ſide, according to the ſeat of the pain, and the abſtinent and cooling regimen rigorouſly enforced.

Some practitioners, apparently upon theoretical grounds, have objected to the uſe of *purgatives*, upon the ſuppoſition that the evacuation which they occaſion may tend to ſuppreſs the expectoration: but, in the vigour of the patient and of the diſeaſe, ſuch an apprehenſion is abſolutely groundleſs. On the contrary, the free evacuation of the bowels, by cooling purgatives, conduces, like the blood-letting, to diminiſh the local and general inflammatory action. In the turgid and loaded ſtate of the lungs, the ſtraining of *vomiting* is likely to be productive of miſchief, and can anſwer no uſeful purpoſe; but the practice of exhibiting *nauſeating* medicines is highly proper. Of theſe, antimony and ipecacuanha, combined with digitalis, are the moſt common. The laſt medicine is alſo uſed with advantage in the earlieſt ſtages of the diſeaſe, to repreſs the frequency of the pulſe.

Though it has not been our cuſtom, in the compilation of this article, to enter particularly into necrotomy, becauſe we wiſhed to be the more full on the actions and diſorders which lead to fatal diſeaſes, rather than to detail irremediable conditions; yet we cannot avoid tranſcribing from the judicious Laennec, his account of the appearance on diſſection which the inflamed pleura exhibits. The minutiæ of pathological anatomy are ſufficiently important in regard to the obſcure diſeaſes of the cheſt, to warrant this deviation from the general tenor of our labours.

The anatomical character of acute pleuriſy, like that of the inflammation of all ſerous membranes, is redneſs of the part affected. This redneſs is in ſome ſort punctuated, and looks as if one had traced with a pencil upon the pleura an infinity of ſmall bloody ſpots of very irregular figure, and very cloſe to one another. Theſe red points occupy the whole thickneſs of the membrane, and leave ſmall intermediate portions retaining the natural white colour. This punctuated appearance is unqueſtionably a character of the inflammation, and not at all attributable, as ſome have ſuppoſed, to the partial diſappearance of the redneſs after death. Beſides this particular redneſs, and even in thoſe inſtances where it is very inconſiderable, we always find the ſuperficial blood-veſſels of the pleura redder, more diſtinct, and more diſtended, than in the natural ſtate.

M. Laennec never could clearly make out a diſtinct thickening of the pleura in theſe caſes. Such ſuppoſed thickening, he thinks, has been either an extenſive congeries of miliary tubercles on the outer or inner ſurface of the pleura; or a cartilaginous incruſtation on the parts covered by it; or, laſtly, falſe membranes, more or leſs denſe, adherent to its internal ſurface.

Inflammation of the pleura is always accompanied by an extravaſation on its internal ſurface, and which may be conſidered as the ſpecies of ſuppuration proper to ſerous membranes. This extravaſation appears to commence with the inflammation itſelf. It conſiſts of two very different matters. The one, of a firmer ſemi-concrete conſiſtence, is uſually termed *falſe membrane*, or coagulable lymph; the other, very thin and watery, is called, *ſeroſity*, or ſero-purulent effuſion. Both of theſe exhibit great variation of character. The *falſe membrane* conſiſts of a yellowiſh-white, opake, or ſemi-tranſparent, matter, varying from the conſiſtence of thick pus to that of boiled white of egg, or of the buffy coat of the blood. This ſubſtance forms a complete incruſtation (where the inflammation is general) over the pleura coſtalis and pleura pulmonalis. Theſe two ſheets of pleura are ſometimes united by bands of the ſame membrane, extending from the one to the other, through the ſerous fluid effuſed into the cavity. Theſe membranous exudations vary in thickneſs, from half a line to two lines; ſometimes exhibiting a kind of reticulated ſtructure; at others, appearing ſtudded or granulated with ſmall irregular tubercles. Theſe membranes are ſometimes detached and found floating in the ſeroſity. The *ſerous effuſion* is commonly of a lemon, or light-yellow, colour, tranſparent or ſlightly flocculent, reſembling unſtrained whey; an effuſion common to all the ſerous membranes in the body. In ſome caſes, this effuſion is of a very deep tawny colour, ruddy, and evidently mixed with blood; ſometimes, indeed,

deed, quite bloody. The portions of pleura ſituated beneath falſe membranes, when this is the caſe, are much redder than in the moſt acute recent inflammation, owing, as Laennec thinks, to a ſecondary inflammation ſupervening at a later period than the formation of the falſe membranes. The effuſed fluid is generally without taſte or ſmell in acute pleuriſy. The relative proportions between the effuſed ſerum and albuminous concretions, is not at all fixed. Generally ſpeaking, the more violent the inflammation, the more extenſive and thick is the membranous exudation. In weak leuco-phlegmatic ſubjects, on the contrary, we find a great quantity of limpid ſerum, with a ſmall portion of thin membrane often floating in it. In ſuch caſes, the pleuriſy ſeems to paſs inſenſibly into hydrothorax, as we ſhall ſee more particularly hereafter. It is an exceedingly rare caſe, M. Laennec obſerves, to find the contiguous ſurfaces of the pleura united, without previous effuſion of fluid, ſince the abſorption of the fluid is the firſt ſtep in the ſanative proceſs. We may therefore conclude, on finding thoſe old adheſions of the lungs to the ſides, that there exiſted, in the acute ſtage of the diſeaſe, an effuſed fluid; for, when patients happen to die in that ſtage, we almoſt invariably find an effuſion. The following paſſage will convey a clear idea of the ſanative proceſs in pleuriſy, and the organization of the extravaſated ſubſtances.

"It is the character of the *falſe membranes* produced in pleuriſy to be changed into cellular ſubſtance, or rather into a true ſerous tiſſue like that of the pleura; and this is the natural progreſs of the proceſs when left quite undiſturbed. This change is produced in the following manner: The *ſerous effuſion* which accompanied the membranous exudation is abſorbed, the compreſſed lung expands, and the falſe membranes inveſting it and the coſtal pleura become united into one ſubſtance. By and by, this ſubſtance becomes divided into layers pretty thick and opaque, which are ſeparated by a very ſmall portion of ſeroſity. About this time blood-veſſels begin to make their appearance in it, the firſt rudiments of which have the aſpect of irregular lines of blood, much larger than the veſſels which are to take their place. The blood ſeems as if it had been forced into the ſubſtance of the falſe membrane by a ſtrong injection; and we find the correſponding portions of the pleura redder than elſewhere, and as it were ſpotted with blood. After a time, the pſeudo-membranous layers become thinner and leſs opaque; the lines of blood aſſume a cylindrical ſhape, and ramify in the manner of blood-veſſels, but ſtill preſerving their augmented diameter. On minutely examining theſe at this ſtage, we find their external coat conſiſting of blood ſcarcely yet concrete, and very red; within this there is a ſort of mould, or rounded ſubſtance, whitiſh and fibrous, and formed evidently of concreted fibrine, perforated in its centre, already permeable to the blood, and evidently containing it. Eventually, the layers of the falſe membrane become quite tranſparent, and nearly as thin as thoſe of the ordinary cellular tiſſue, and the blood-veſſels reſemble in every reſpect thoſe which ramify on the inner ſurface of the pleura. It wants, however, the firmneſs of the natural cellular ſubſtance, being eaſily torn in our attempts to examine it, and its veſſels ſtill retain the large diameter indicative of their recent formation: and it requires ſome conſiderable time for them to attain the perfect character of the original tiſſues of the body." Theſe organizations having taken place, the health remains unaffected, and the reſpiration, except in ſome particular caſes, does not ſuffer from their preſence.

In ſimple pleuriſy, we find no ſign whatever of inflammation of the pulmonary parenchyma, even in the vicinity of the moſt inflamed portions of pleura. We find the ſubſtance of the lungs in ſuch caſes more denſe and leſs crepitous, owing to the compreſſion of the effuſed fluids. If the extravaſation has been very great, the lung becomes flattened, ceaſes to contain air, and conſequently to crepitate; its veſſels are compreſſed and contain little blood, and the bronchia, with the exception of the larger trunks, are evidently rendered ſmaller. Sometimes, however, we obſerve certain portions of the lungs poſſeſſing a redneſs like that of muſcle; and a compact homogeneous texture, in which no trace of air-cell can be detected. This has been termed carnification or hepatization of the lungs. Laennec conſiders it a product of inflammation. For ſome further intereſting particulars as to Empyema, and the products of chronic pleuritis, we refer the reader to Laennec's work "De l'Auſcultation mediate, &c."

Some authors have aſſerted the exiſtence of chronic pleuriſy as giving riſe to Empyema, and a variety of morbid products within the bags of the pleura. Theſe ſymptoms are very inſidious; and we do not find them altogether clearly detailed in any author. A ſlight pain in the ſide with dry cough (which latter brings on a ſtitch in the ſide), together with a pulſe rather hard, are the only circumſtances which occur to our recollection. The diſeaſe is ſeldom recognized till effuſion or adheſion has taken place, when, according to Laennec, ſome information may be derived from the uſe of the *ſtethoſcope*, of which inſtrument we ſhall preſently have occaſion to ſpeak.

8. Empreſma carditis, inflammation of the heart: pain in the region of the heart, often pungent; anxiety; palpitation; irregular pulſe.

The diſeaſes of the heart are confeſſedly the moſt difficult to recognize in the whole range of human maladies. When we conſider the complicated actions which the heart is the agent of, and the irregularities thoſe actions are ſubjected to by alterations in the ſurrounding organs which are aſſociated in its movements, it will be ſufficiently obvious, that the ſame diſeaſe of the ſtructure of the heart will, as it affects one or other of its parts, give riſe to various and diſſimilar phenomena. To illuſtrate this by a very ſimple fact: if the capillaries of the lungs be obſtructed, increaſed propulſive power muſt be exerted by the right ventricle; and, the ſtructure of this portion obeying the general laws of all muſcular parts, its increaſed exerciſe will be followed by correſpondent diminution of power, and debility will enſue. To trace the effect of the above irregular impulſe on the powers and functions of the heart would lead to a wide and undefined department of medical ſcience; to wit, an account of the mode of production of the various morbid growths found in the cavities of the heart. The circumſtance is merely mentioned to ſhow, that, becauſe the heart is compoſed of four cavities, each ſubject to ſimilar alteration from different cauſes, and vice verſa, we cannot but expect to find very anomalous ſymptoms in its diſeaſes. Thus, in carditis, the moſt unſatisfactory accounts have been given, becauſe, till the preſent time, authors overlooked the fact, the palpable fact, that inflammation muſt be different as it was ſituated in one or another portion of the heart; and that in a violent degree it might actually be directly oppoſite in its ſymptoms to its milder forms.

The ſymptoms uſually aſcribed to carditis were fever, pain in the ſituation of the heart, palpitations, an irregular pulſe, cough, difficulty of breathing, and often ſyncope. It is obvious that the ſymptoms here enumerated are merely the common ſymptoms of peripneumony, or pleuriſy, with the addition of palpitation, irregularity of pulſe, and ſyncope, or fainting. But it is obſerved by Senac, that theſe ſymptoms are extremely uncertain; and with regard to palpitation, although its preſence may lead us to ſuſpect that the heart is affected, yet it is probably an hypothetical opinion, ſince, in that inflammation which ariſes from wounds of the heart, palpitation does not occur. (Traité du Cœur, tom. ii. chap. 7.) With reſpect to the other two ſymptoms, it has been remarked, that the preſence of an irregular pulſe, and the occurrence of ſyncope, together with the ſymptoms of pneu-

monia

monia (or inflammation of the lungs), can only lead to a probable ſuſpicion of an affection of the heart; ſince they are by no means conſtant attendants on carditis; and the former very frequently attends other caſes of pneumonia. (Wilſon on Febrile Diſeaſes, vol. iv.) Upon the ſame grounds Dr. Cullen accords with the obſervations of Vogel, that "the ſymptoms of carditis are nearly the ſame with thoſe of peripneumony, but in general more ſevere."

In this perplexity as to the moſt important of cardiac diſeaſes, it muſt be highly gratifying to have an addition to our uſual modes of diagnoſis. This has been attempted, as our readers are probably aware, by Laennec. This author perceived that many of the movements of the thoracic viſcera were *audible*, and conceived the deſign of rendering this circumſtance uſeful to his profeſſion. Finding the application of the ear to the cheſt inefficient to give very accurate information on the ſubject, and acting on the eſtabliſhed knowledge of the increaſe of ſound when paſſing through tubes, the author invented an inſtrument which he called, from its uſe, a *ſtethoſcope*. It is merely a cylindrical piece of denſe wood, about one foot in length and four inches in circumference, having a hole drilled longitudinally through it of about three lines in diameter. The lower end of the inſtrument is placed on the thorax of the patient, the upper to the ear of the phyſician; and through this perforation the ruſhing of the air into the air-cells in inſpiration, &c. is heard. We paſs over this however for the ſame reaſon that we did when ſpeaking of pulmonary complaints, becauſe we cannot ourſelves diſcover the phenomena Laennec deſcribes, though we are willing to admit this may be the reſult of want of tact. As far as regards the motions of the heart, the ſtethoſcope ſeems entitled to more credit; and by its uſe, and by means of the important diſcuſſion now going on, we may hope ſoon to fix the diagnoſis of diſeaſes of the heart on the firmeſt grounds.

Before entering on Carditis, it will be neceſſary to ſpeak of the motions which are heard through the medium of this cylinder during health. We ſpeak firſt of the extent at which the beating of the heart is heard. The beating of the heart is heard moſt diſtinctly when the cylinder is applied to the left ſide, between the fifth and ſeventh ribs, or to the lower part of the ſternum, the action of the left ſide of the heart being beſt heard in the firſt ſituation, the action of the right in the ſecond. It is alſo heard in a leſs degree over the right ſide. It is more diſtinct during exertion, &c. and in thin people, the beating being leſs perceptible and leſs diffuſed in fat perſons. In the former, indeed, we ſometimes hear the beating of the heart all over the ſternum, on the left ſide as far as the clavicle, and ſometimes in the ſame ſituation on the right ſide. When the beating of the heart is heard beyond theſe limits, or even within them, if the patient has ſlight dyſpnœa, is unable to take much exerciſe on account of ſhortneſs of breath, palpitation ſupervening to ſlight emotions, &c. we may ſuſpect diſeaſe of the heart, though theſe ſymptoms may continue for years without any further changes. It ſeems that, when the parietes of the heart are thin, and conſequently weak, the beating of the heart is heard over the greater part of the thorax; and that the reverſe happens when thoſe parts are thickened. It ſhould be remarked, however, that the increaſe in the general ſize of the heart cauſes its beating to be externally heard.

The next point to be attended to in the uſe of the ſtethoſcope, is the degree of impulſe which the beating of the heart gives to the cheſt. Laennec calls this the *ſhock*. It muſt not however be confounded with the movements of reſpiration, which, when ſhort and frequent, as in fevers, &c. may be miſtaken for it. It ſeems that this ſhock is audible through the cylinder when it cannot be felt by the hand. It is rather indiſtinct in healthy and fat perſons; and is generally in a direct ratio to the thickneſs of the walls of the ventricle, conſequently in an inverſe ratio to the extent of the beating of the heart. It is only heard during the contraction of the ventricles; or at leaſt the contraction of the auricles, when audible, produces a more diſtant and indiſtinct ſound. The *ſhock* is ſcarcely heard at all when the parietes of the ventricles are morbidly thin. The increaſed force of this ſhock is viewed, therefore, as preſumptive evidence of thickening of the parietes of the ventricles, while its abſence ſeems to indicate dilatation of the ventricles. Laennec endeavours to point out the phenomena developed by the ſtethoſcope when both the latter ſtates of diſeaſe are preſent; but theſe are by no means ſatisfactory. The *ſhock* is heard over the fifth and ſeventh ribs on the left ſide, over the lower half of the ſternum, or, when that bone is ſhort, over the epigaſtrium. Coinciding with the ſhock above-mentioned, and coinciding alſo with the pulſe, we hear, by means of the cylinder, an obtuſe ſound which laſts about two ſeconds: this is produced by the contraction of the ventricles. Immediately afterwards we hear the contraction of the auricles announced by a ſhort acute noiſe, which Laennec has compared to the ſound produced by the lapping of a dog or from the valve of a bellows. He denominates it *claquement*, a word well tranſlated by our Engliſh *clacking*. This clacking, the ſign of the contraction of the auricles, is followed by the perfect inaction of the heart for a ſhort ſpace of time. Then the obtuſe noiſe, and riſing or *ſhock* of the ventricles, is again heard; which is inſtantly followed by the *clacking*; and ſo on. The proportion of theſe motions is nearly as follows: of the time occupied by all the motions of the heart, one fourth is taken up by the *clacking*, or contraction of the auricles; one fourth by abſolute reſt; and one half by the contraction of the ventricles. Having thus explained, in a certain degree, the application of this new inſtrument, we return to Carditis.

As between inflammation of the brain and arachnoid membrane, as between that of the pleura and of the lungs, the ſymptoms vary, ſo alſo do we find them varying as the muſcular ſubſtance of the heart, or its inveſtment, the pericardium, is the ſeat of this action. This opinion is of courſe to be received with ſome diſtruſt, becauſe our knowledge of the diſeaſes of the heart is very limited. We reſt it chiefly on the authority of Laennec, than whom no one has performed more important ſervice in elucidating the nature of the diſeaſe we are treating of.

The principal diviſions of diſeaſes of the heart are made with reference to the morbid products or alterations of ſtructure found on diſſection. Though we propoſe to mention curſorily the chief of theſe, it is by no means our intention to treat of them fully. We ſhall rather confine ourſelves to a minute and laboured detail of the forms and diagnoſtics of inflammation as it affects the various parts or ſtructures of the prime mover of animal life. We do this, becauſe it ſeems to us, that morbid anatomy is of no uſe unleſs it leads to a diſcovery of the mode of action by which diſeaſed ſtructures are built up; for that, in the majority of caſes, when once formed, all endeavours to remove them by medical ſkill are unavailing, is a truth but too well known.

Inflammation of the inveſting membrane of the heart, or *pericarditis*, has been uſually held to be undiſtinguiſhable from inflammation of the heart itſelf; and, when acute, this muſt neceſſarily be true of all but the firſt periods of the diſeaſe, becauſe its connection with its incloſed veſſels will of courſe bring on actual Carditis. The ſymptoms of acute pericarditis are ſimple acceleration of the movements of the heart; viz. quick and hard pulſe, redneſs of the capillary ſyſtem as manifeſted in the ſkin, added to the uſual ſymptoms of phlogoſis of ſerous membranes. The acceleration alluded to is evidently an effect of irritation of the muſcular fibres of the heart; and, this being uniformly exerted over the whole of the heart,

heart, we ſhould naturally expect to find more increaſe in the quickneſs and force of its motions: for, to more rapid circulation through the pulmonary circles we refer redneſs of the ſkin; to the ſame increaſe through the aortal ſyſtem, ariſing from quickened action of the ventricles, we refer the quick pulſe; and to theſe united, the increaſed heat. The ſame ſymptoms belong alſo to that early ſtage of carditis which has not paſſed the bound named *excitement*, and to inflammation of the membrane which lines the heart and arteries. From this it follows, that the primary ſymptoms of inflammation, in whatever ſtructure of the heart it may be ſituated, produces the ſame ſymptoms while it is within certain limits as to violence; but this is by no means true of thoſe grave phlogoſes which attack particular ſpots of the heart, or attack it generally in a violent manner. Nor is it true of the ſevereſt forms of pericarditis or arteritis, (the term by which we deſignate phlogoſis of the inner membrane of the heart and arteries.) In theſe, the ſymptoms betray the following variations. Moſt authors have aſſerted, that between acute pericarditis and actual carditis there is no difference. Indeed Dr. Baillie and others have ſtated that they are never found ſeparate on diſſection. Laennec, however, denies this. In carditis, in common with other thoracic inflammations, we have difficulty of breathing, febrile heat, and thirſt. From the peculiar ſenſibility of the nerves with which the heart is connected, extreme anxiety and oppreſſion are met with, the countenance betraying the deepeſt diſtreſs. From the increaſed ſenſibility of the nerves, the motions of the heart are felt by the patient: this conſtitutes what is termed *palpitation*. Palpitation is more generally felt, however, from arterial increaſe in the motions of the heart. It is ſometimes ſo great, that it is felt even in the carotids and the head. One ſide or cavity of the heart, acting more rapidly than its correſpondent one, naturally induces irregularity of pulſe; it likewiſe induces an accumulation of blood in one cavity to ſo great a degree, as to ſuſpend its action: hence ariſes ſyncope. Pain is likewiſe preſent: it is uſually deſcribed as of a ſharp and gnawing kind, ſituated under the ſternum, and is highly aggravated by muſcular motion. The recumbent poſture is often uneaſy, the patient feeling eaſieſt when the body is bent forwards.

That inflammation of the heart has exiſted without all theſe ſymptoms is no objection to the account here offered, for pain is often abſent in other phlogoſes commonly characteriſed by it. It may happen that irregular action of the muſcular fibres of the heart may not occur, in the ſame way that ſpaſmodic contraction of the muſcular coats of the bowels does not always attend phlogoſis of the internal membrane, though it does ſo commonly. And, if the latter propoſition be admitted, we ſhall have no difficulty in accounting for the abſence of ſyncope and irregularity of pulſe. It is to be noticed, that inflammation of the muſcular ſubſtance of the heart is a diſeaſe of rare occurrence. Laennec doubts if a caſe has appeared in which inflammation occupied the whole of the ſtructure in queſtion. Phlogoſis of particular portions, ending in abſceſs or ulceration, are more common; but ſtill the majority of cardites ſeem to be membranous affections.

The following are the ſymptoms of acute pericarditis, as deſcribed by Laennec. "Les contractions des ventricules du cœur donnent une impulſion forte, et quelquefois un bruit plus marqué que dans l'état naturel; à des intervalles plus ou moins longs ſurviennent des pulſations plus faibles et plus courtes, qui correſpondent à des intermittences du pouls, dont la petiteſſe contraſte extraordinairement avec la force des battemens du cœur; quelquefois il peut à peine être ſenti. Lorſque ces ſignes ſurviennent tout-à-coup chez un homme qui n'avait jamais éprouvé de ſymptômes de maladie du cœur, il y a une grande probabilité qu'il eſt attaqué de péricardite. Aſſez ordinairement le malade éprouve une dyſpnée plus ou moins grande, des angoiſſes, une anxiété inexprimable; il ne peut faire quelques pas, ou ſe remuer un peu bruſquement dans ſon lit, ſans éprouver des ſyncopes. Le ſentiment de douleur, de chaleur, ou de poids à la région du cœur, eſt un ſymptôme beaucoup plus rare, mais qui ſe rencontre cependent quelquefois. Dans quelques cas, la région du cœur rend un ſon mat; mais le plus ſouvent ce ſigne n'eſt pas bien évident."

When the membrane which lines the cavities of the heart and large arteries is inflamed, conſtituting *arteritis*, we obſerve the following circumſtances. The complaint ſometimes ariſes ſpontaneouſly, but more frequently as a conſequence of ſevere febrile affections, ſmall-pox, meaſles, or rheumatiſm. When it comes on vicariouſly with the latter diſeaſe, all the phenomena of carditis are uncommonly ſevere except ſyncope, which is often not preſent.

This diſeaſe has alſo ſupervened on extenſive ſurgical operations. It ſometimes begins as phlebitis, or inflammation of the viſcus; ſometimes as arteritis, or inflammation of the arteries; occaſionally it produces death, while confined to one or other of theſe veſſels, but more frequently the lining of the heart becomes implicated before the fatal event. The ſymptoms of the complaint are—general redneſs of the ſkin; increaſed pulſation of the arteries, ſo great as to be viſible at the diſtance of ſome paces from the patient; and the uſual ſymptoms of carditis ſoon follow. Early in the diſeaſe, if its development is not ſudden, the patient is reſtleſs, impatient, watchful, irritable: he experiences partial fluſhings, which gradually increaſe both in frequency and extent: his bowels are inactive, but his pulſe is imperceptibly affected. By and bye, he complains of a deep-ſeated pain in ſome part of the abdominal or thoracic regions, and ſeldom fails to deſcribe it as being hot, lancinating, ſpaſmodic, and increaſed by ſlight exertion. Diſturbance of the vaſcular ſyſtem now comes on: reſpiration is accelerated, and the breath feels offenſive from its heat. The mouth, however, remains humid, the tongue red, the lips moiſt and natural. Rigors at laſt are felt; and, as the diſeaſe advances, the internal pain becomes more diffuſed. The original fluſhings give place to a true febrile ſtate of the cutaneous ſurface; and the diſquietude is ſucceeded by head-ache, nauſea, languor, and depreſſion. Inappetency and quenchleſs thirſt prevail. The bowels are more obſtinate; the mouth taſtes bitter. The pulſe, in ſome inſtances, is hard, ſtrong, and tumultuous; in others, wiry and irregular. If tranſient ſleep is obtained, it is unrefreſhing and interrupted by ſtartings and frightful dreams. About this time cough begins. This ſometimes is dry, frequent, teazing; ſometimes it recurs in violent and tedious paroxyſms, and is accompanied with expectoration of fetid mucus, the clots of which are occaſionally ſtreaked with florid blood. When the diſeaſe has, at length, acquired a formidable aſcendancy, all its previous ſymptoms, and the ſymptomatic fever (which is generally the inflammatory), are greatly aggravated. The patient's countenance ſuddenly ſhrinks, becomes pallid, haggard, cadaverous. His ſtrength ſinks; his emaciation is extreme. His lips are crimſon or livid; his tongue red, ſmooth, moiſt. At the ſame time his breathing is rapid, difficult, irregular; the head-ache intenſe; the pulſe hard, labouring, intermittent, accelerated to 110—130. Conſecutive to the former deep internal pain, a diſtreſsful ſenſe of conſtriction, moſt frequently in the cardiac, præcordial, or epigaſtric, region, is eſtabliſhed. Spaſms not unlike thoſe of tetanus, in many caſes, occur under the xyphoid cartilage, and in the line of the diaphragm. The countenance and extremities grow œdematous. Forcible palpitations of the heart, and, in ſome inſtances, of the abdominal aorta, ſo as to be diſtinctly felt through the integuments, now predominate. The arteries pulſate with alarming and painful violence, and the action of the more ſuperficial is quite viſible: that of the

the carotids is audible by the patient himſelf, often by his attendants. Syncope is frequent; the paroxyſms of dyſpnœa protracted and agonizing. The anaſarcous effuſion extends and becomes general. In many caſes aſcites ſupervenes; in others, hydrothorax: in ſome, the extravaſation of ſerum is univerſal and profuſe. Dyſpnœa ſucceeds, and the patient is confined to a ſitting poſture. The leaſt motion excites cough, and a ſenſe of inſtant ſuffocation. Wheals and ecchymoſed patches ariſe in different parts of the body. Violent convulſions enſue; and, in one of theſe, exhauſted already and moribund, he ſtruggles and expires.

The appearances on diſſection are a general and deep redneſs of the internal coats of the arteries, veins, and heart: ſometimes this laſt preſents a ſpotted appearance: it is to be obſerved, however, that both purple and ſcarlet redneſs of the internal membrane of the heart and large arteries, has been noticed by Hodgſon and Laennec in ſubjects who had not ſuffered inflammation. We ſhall not detain our readers long on the necrotomy of this diſeaſe further than to obſerve, that inflammation of the arteries, whether chronic or acute, renders the veſſels liable to the depoſition of organizable lymph on their internal ſurface; to obliteration, dilatation, and aneuryſm; to a cartilaginous and ſteatomatous thickening of their inner coat; to the depoſition of oſſeous and other matters in any part of their ſtructure; and to become ſcirrhous, cancerous, fungous, ulcerated, or ſphacelated.

The reader will perceive the difficulty of diſtinguiſhing arteritis from ſimple inflammatory fever; but the miſtake is not of much conſequence, ſince the treatment is in each diſeaſe the ſame. A very cloſe analogy is alſo perceptible between the ſymptoms of this complaint and the form of inflammation deſcribed before it. As to the duration of theſe diſeaſes, they are various. What we have hitherto ſtated with regard to carditis applies to its moſt violent form, to that form indeed which runs its courſe in from two to ſeven days. Another form of carditis is now and then found which is called the ſubacute: this variety is characterized by ſymptoms analogous to thoſe of the acute, only ſomewhat more moderate. There is leſs ſevere pain and ſenſation of burning in the ſituation of the heart; but which are generally preceded by ſhivering, and attended with great heat and thirſt, and a quick, hard, and ſometimes irregular, pulſe. The countenance of the patient, at the commencement of the attack, is uſually ſuffuſed, but after a lapſe of a few days becomes hollow and dejected, and has a peculiar irritable look. There is a conſtant ſtate of agitation and great anxiety. The palpitations of the heart are not ſo vehement; and the faintings, if they occur, are uſually of an incomplete deſcription. If the diſeaſe run on to a fatal termination, the hippocratic look of the face, an abatement of pain, ſlight rigors, extreme anxiety, ſenſe of ſuffocation, ſlight faintings, and occaſionally œdematous ſwellings, take place a ſhort time prior to that event.

Sub-acute inflammation of the heart is ſometimes complicated with Pneumonia, Pleuritis diaphragmitis, and organic obſtructions in the great veſſels. It has alſo been connected with the ſymptoms of Catarrhus ſuffocativus and croup, though the uſual ſeat of thoſe affections betrayed no inflamed appearance on diſſection.

The *treatment* of carditis under each of theſe forms is ſimple, but too often ineffectual. Bleeding is every thing in it. We have urged the neceſſity of very active bloodletting in moſt of the ſpecies of this genus we have at preſent paſſed through. It will be ſufficient therefore to obſerve, that carditis calls for more active depletion than any other of the Phlogotica: for, not only muſt we bleed to reduce inflammatory action, as in other ſtructures, but we muſt alſo bleed with the view of ſetting the heart at reſt; this operation being the only one by which *reſt* can be procured. In addition to theſe meaſures, it is proper to excite the capillaries by all ſorts of irritants; as by draſtic purges, briſk diuretics, diaphoretics, bliſters, or friction with tartarized antimony on the cheſt, or, if in a rheumatic patient, on the legs. It muſt not be concealed, however, that, except the bleeding and purging, little dependance can be placed on theſe meaſures. Should they be ſo fortunate as to produce a remiſſion of ſymptoms, we ſhould ſalivate the patients without loſs of time by mercurial inunction, and by ſcruple-doſes of calomel combined with opium. Local bleeding ſeems next to uſeleſs in Carditis. In Arteritis, very large doſes of digitalis may be given with advantage.

A no-leſs formidable diſeaſe, and one ſtill more difficult to recogniſe, is *chronic carditis*. It proceeds ſo inſidiouſly, that it often becomes incurably eſtabliſhed before a ſuſpicion of its true nature has occurred. It frequently ſubſiſts unattended by any pain in the region of the heart itſelf. On the contrary, it is apt to induce pain, and to reſemble affections, in *diſtant parts*, as the epigaſtrium, the hypogaſtrium, &c. It is at length aſcertained to have exiſted, by the ſymptoms of deranged circulation, the effects of organic change ſuperinduced; or perhaps its exiſtence is not ſuſpected during life. The ſymptoms which have been moſt frequently obſerved are —ſome degree of febrile affection; a ſmall, quick, and irregular, pulſe; and a peculiar jarring ſenſation communicated to the hand when placed over the ſituation of the heart. Palpitation of this organ is generally abſent; but, when it does occur, it is inconſiderable in point of extent. There is uſually no pain, though we ſometimes meet with a little uneaſineſs in the region of the heart: at other times a ſlight degree of obtuſe fugitive pain may be preſent. When pain is ſeated in the hypogaſtric region, it is oftentimes attended with ſuppreſſion of urine. Sometimes there is a ſenſe of beating in the head. The pulſation frequently takes place in the epigaſtric region, which has, in ſome degree, the appearance as if it aroſe from a throbbing tumour. Obſtinate vomiting is occaſionally preſent. At length dropſical affections ſupervene, as œdema of the face and extremities, and effuſion into the cavity of the thorax; the breathing then becomes more difficult and laborious; the countenance aſſumes an anxious and bloated aſpect; delirium not infrequently comes on; and the patient after much ſuffering, of longer or ſhorter duration, ſinks into diſſolution. Chronic inflammation is not uncommonly ſuperadded to dilatation or enlargement, and alſo to other organic affections, of the heart.

M. Corviſart deſcribes a variety of Pericarditis, which he denominates ſub-acute. It is leſs rapid in its courſe, and leſs obſcurely marked, than acute inflammation of this organ, but nevertheleſs more marked and rapid than the form of diſeaſe juſt detailed. "L'invaſion de la peracardite ſub-aiguë, eſt bien rarement marquée par des ſymptômes vifs qui puiſſent faire regarder la maladie comme devant être promptement funeſte. La pleuréſie eſt la phlegmaſie avec laquelle cette péricardite commençante a le plus de traits de reſſemblance. Comme dans cette affection, le malade éprouve d'abord un ſentiment de chaleur générale dans tout le côté malade de la poitrine; peu après, cette chaleur ſe concentre vers la région du cœur; là ſe fait ſentir une douleur vive et brûlante. La reſpiration devient promptement haute et gênée; le pouls eſt fréquent, dur, et rarement irrégulier; les deux pommettes, et particulièrement la gauche, ſont colorées d'un rouge vif; tels ſont les phénomènes de l'invaſion: mais au troiſième ou quatrième jour, l'altération particulière des traits, la figure grippée, ſur laquelle on voit l'expreſſion d'un abattement profond et pourtant d'une ſorte d'irritation, une anxiété conſtante et exprimable, une agitation continuelle, la reſpiration haute, pénible, entrecoupée, les palpitations légères, les défaillances incomplètes, d'autant plus éloignées l'une de l'autre que la marche de la maladie eſt plus lente; enfin, le pouls petit, fréquent, dur, ſerré, concentré, ſouvent irrégulier, ne laiſſent que peu de doutes ſur le ſiège poſitif de l'inflammation. Les ſymptômes plus graves, qui, vers

le troiſième jour, remplacent ceux de l'invaſion, ne reſtent les mêmes que pendant peu de temps, après lequel le viſage s'altère davantage, la face prend tous les traits de celle ſi bien dépeinte par Hippocrate; la douleur ceſſe en tout ou en partie; il y a des friſſons fugaces, des défaillances longues et incomplètes, des ſuffocations, une anxiété inſupportable; une infiltration générale ſurvient: le malade meurt enfin, le plus ſouvent à l'improviſte, ſoit en voulant ſe lever, ſoit en buvant, ſoit en changeant de poſition."

The treatment of chronic carditis, and the above-mentioned form of pericarditis, conſiſts in keeping the heart in a ſtate of comparative reſt by occaſional bleeding, and a diet of the moſt ſparing kind; in counter-irritating the ſkin by bliſtering, or by a ſeton, and by the gradual introduction of mercurial remedies. In the mean time the action of the bowels, of the ſkin, of the kidneys, and indeed of all parts of the ſecernent ſyſtem over which medicine has any controul, ſhould be gently excited.

Acute carditis, i. e. of the muſcular ſubſtance, terminates in abſceſs, ulceration, gangrene, or rupture. Gangrene muſt be of rare occurrence, ſince the rupture would moſt probably take place before the former accident could occur. We have no means of knowing, during life, that abſceſs or ulceration exiſts. The former may exiſt without ſymptoms; for Benivenius gives a caſe of a criminal, who, before his execution, ſeemed perfectly well, in whoſe heart, however, an abſceſs was diſcovered on diſſection.

From the caſes hitherto recorded, it ſeems that abſceſs is more rare on the internal than on the external ſurface of the heart. On the contrary, ulcers are moſt common on the inſide of the heart. Ruptures are the frequent mode of termination of ulcers in the heart. Rupture may occur, however, from violent and ſudden exertion; but theſe caſes are few in number. It is remarkable that ruptures of the right ventricle are leſs frequent than ruptures of the left; and that, in the latter caſe, the rupture ſeldom happens at the thinneſt part of the muſcular ſubſtance. It is needleſs to add, that theſe ruptures muſt be followed by inſtant death. A rupture of the cardæ tendinæ may occur, however, without this ſudden fatality. On diſſection of rupture of the heart, the pericardium is invariably found full of coagulated blood.

Increaſe of ſubſtance of the heart, or hypertrophy, and diminution, or atrophy, morbid dilatation, and contraction, are all affections which may ariſe from chronic irritation of the muſcular ſubſtance of the heart. This is only, however, a ſurmiſe: it is certain that the above-mentioned ſtate may come on without any affection of the heart's ſubſtance, but from obſtruction or diſeaſe in contiguous viſcera. The cauſe of morbid hardneſs or ſoftneſs of the heart is ſuppoſed to be poſſibly chronic inflammation; but nothing is known preciſely on that head.

Pericarditis terminates in an effuſion of water, in tubercles, granulation of various kinds, and more commonly in adheſions. When *effuſion* takes place in the pericardium, and the caſe is unattended with organic diſeaſes of the heart, we have, in addition to the ſymptom of deranged function exhibited in carditis, a deep livid colour of the lips; ſometimes a cough; a conſtant ſenſe of weight in the region of the heart; frightful dreams, the ſubject of which is generally impending ſuffocation. The weight at the cheſt is generally aggravated by the recumbent poſition; the eaſieſt poſture being a gentle inclination forwards, the hands reſting on the knees.

Theſe are all the ſymptoms obſervable in hydrops pericardii of ſmall dimenſions; that is to ſay, when one pound or ſo of water is effuſed: but, when the complaint is more exceſſive, (for the effuſion is ſaid to have reached the extent of eight pounds,) we have, as ſome authors ſay, much more marked ſymptoms. Senac avers, that he has ſeen the fluctuation of the fluid contained within the pericardium, between the third, fourth, and fifth, ribs; and Corviſart mentions that he once felt it. Pulſations, moreover, are ſometimes felt a little on the right of the ſternum, and alſo a little higher or lower on the left ſide than where the heart's pulſation is commonly recognized; theſe ariſe from the water being impelled, by the action of the heart, with ſome degree of force, againſt the parieties of the thorax at different points.

It is reaſonable to ſuppoſe, that with the *ſtethoſcope* we ſhould experience a ſound of fluctuation; and that, if the pleura contained fluid, we ſhould meet with this at ſome diſtance from the heart, and iſochronous with its pulſations. Laennec heard a very diſtinct fluctuation in a caſe in which *air* was contained in the pericardium.

We ſhould not pronounce, on diſſection, that a patient had laboured under this diſeaſe merely becauſe we found a ſmall quantity of water in the pericardium, ſince a few ounces may be poured forth after death. The effuſed fluid is generally limpid, and tinged with yellow or red. It has been propoſed to cure this malady by puncturing the pericardium, ſome adviſing this to be done through the ribs, others by trephining the ſternum.

We have not ſpace to detail the other various products found in the pericardium: they are indeed the ſame as in all other ſerous membranes. We have a few words, however, to ſay on adheſion of the pericardium to the heart. Many authors have deſcribed formidable ſymptoms as attached to this malady: but it is remarkable that more recent inveſtigation has ſhown, that the ſymptoms deſcribed are as uncertain as in any other diſeaſe of the heart. We quote from Laennec the following remarkable account. He ſays, "Avant que la converſion des fauſſes membranes en tiſſu cellulaire fût bien connue, l'adhérence du péricarde au cœur a été regardée par divers auteurs comme la cauſe de pluſieurs accidens graves. Lanciſi et Vieuſſens penſent qu'elle produit conſtamment des palpitations; Meckel, qu'elle rend le pouls habituellement petit; Senac, qu'elle détermine des ſyncopes fréquentes. M. Corviſart lui-même eſt tombé à cet égard dans pluſieurs erreurs. Il admet trois eſpèces d'adhérences: dans la première, l'adhéſion du péricarde au cœur a lieu au moyen d'une matière albumineuſe demi-concrète; et c'eſt la ſeule qu'il reconnaiſſe comme une ſuite de la péricardite. La ſeconde eſt l'adhérence intime ou par un tiſſu cellulaire très-court: il penſe qu'elle eſt l'effet d'une affection rhumatiſante ou goutteuſe. La troiſième eſt celle qui a lieu au moyen d'un tiſſu cellulaire plus ou moins long: la cauſe de celle-ci lui eſt inconnue. Il ne penſe pas, au reſte, qu'on puiſſe *vivre* et *vivre ſain* avec une *adhérence complète et immédiate* du cœur au péricarde ou des poumons à la plèvre. Je puis aſſurer que j'ai ouvert un grand nombre de ſujets qui ne s'étaient jamais plaint d'aucun trouble dans la reſpiration ou la circulation, et qui n'en avaient préſenté aucun ſigne dans leur maladie mortelle, quoiqu'il y eût adhérence intime et totale des poumons ou du cœur; et, pour ce qui regarde ce dernier organe en particulier, je ſuis très-porté à croire, d'aprés le nombre de cas de ce genre que j'ai rencontrés, que l'adhérence du cœur au péricarde ne trouble ſouvent en rien l'exercice de ſes fonctions. Il m'a paru ſeulement que la contraction des oreillettes devenait beaucoup plus obſcure quand elles ſont adhérentes au feuillet fibreux du péricarde."

The membrane which lines the heart and larger arteries is ſubject, independently of the two kinds of redneſs before mentioned, to oſſification and cartilaginous indurations of certain parts of it; and to many other anomalous products, varying from ſimple coagulation of blood to polypi, tubercles, cyſts, and even hydatids. We muſt refer the reader, who wiſhes to be familiarly acquainted with their appearances when he meets with them on diſſection, to Laennec's work, in which he will find a moſt ample account of them. But we ſhall quote his account of the ſymptoms of the oſſification and cartilaginous

laginous incruſtations which affect the valves of the heart, becauſe thoſe ſymptoms differ as they are ſituated on one or other of theſe parts.

The ſymptoms of the oſſification of the mitral valve will be found to vary in ſome degree from thoſe which betoken oſſification in the ſigmoid valves. The chief token of oſſification in the mitral valve is, according to M. Corviſart, "a peculiar ruſtling, difficult to deſcribe, felt by the hand when applied on the precordial region." But, though hard to deſcribe, it is (as Laennec obſerves) eaſy to recognize after it has once been obſerved, and Laennec compares it to the trembling of a cat when ſtroked. Corviſart adds, that the pulſe is alſo very peculiarly fluttering; it is moreover weak, without hardneſs or fulneſs, and leſs irregular than in oſſification of the aortic ſigmoids, but more ſo than in the ſtraitening of the orifices of the right cavities." To theſe ſymptoms are often added thoſe which announce hypertrophy and dilatation of the left auricle and right cavities, becauſe the obſtacle which the blood meets with in paſſing from the auricle to the left ventricle muſt neceſſarily, after a certain time, produce theſe effects.

Laennec, however, was never able to detect this peculiar character of the pulſe, even in thoſe caſes where the ruſtling or trembling in the precordial region was moſt evident; neither was the latter ſymptom evident to the touch except where the narrowing of the affected orifice was very conſiderable; for Laennec had often met with caſes of extenſive oſſifications of the aortic and mitral valves, in which none of that ruſtling could be perceived.

In the oſſification of the ſigmoid valves, the pulſe, ſays M. Corviſart, "may preſerve a certain degree of hardneſs and ſtiffneſs, but never much of fulneſs nor of regularity." There will be ſtrong and frequent palpitations; beſides "that peculiar ſpecies of undulation, ruſtling, or purring," which has been already noticed in oſſification of the mitral valve. We ſee, then, ſays Laennec, that "theſe ſymptoms are at length reduced to that peculiar ſenſation which is felt by the hand applied over the region of the heart, and which I call *frémiſſement cataire;* for the greater or leſs irregularity of the pulſe cannot be conſidered as a pathognomonic ſymptom, ſuch irregularity being met with, in every poſſible degree, in pericarditis, in the paroxyſms of all diſeaſes of the heart, even when no oſſification is preſent, and alſo in diſeaſes of the lungs where the heart is not affected.

"Since I began my obſervations with ſtethoſcope, I have met with but three caſes wherein the oſſification of the mitral valve was ſo conſiderable as to conſtrict the orifice of the left ventricle to a degree ſufficient to produce the *frémiſſement cataire;* and, as theſe patients did not die, I had not an opportunity of verifying the diagnoſtic by inſpection. Nor have I met with that affection above three or four times, and that in a ſlight degree, in the aortic ſigmoids. The ruſtling could not be diſcerned in theſe caſes, which however were decided caſes of oſſification, and all verified by necrotomy. On a compariſon of the few obſervations juſt given with thoſe which I had previouſly made without the help of the ſtethoſcope, I think I may preſent the following reſults as exact, or very nearly ſo.

"The oſſification of the mitral and ſigmoid valves does not produce irregularity in the circulation, nor can it be diſcovered by examination of the pulſe or by applying the hand over the region of the heart, until it has reached ſuch a degree as to have conſiderably narrowed the orifices of the left ventricle. The oſſification of the mitral valve does not produce the ruſtling noiſe unleſs it is very conſiderable; and I never obſerved it in oſſification of the ſigmoids, though I have often found them ſo oſſified as to have reduced the orifice of the aorta to one half or even one third of its natural ſize.

"A moderate degree of oſſification in the mitral valve may be detected by the cylinder (the ſtethoſcope), by the following ſymptoms: the ſound which accompanies the contraction of the auricle is more prolonged, more dull, yet ſomewhat rough like the ſtroke of a file upon wood; ſometimes the ſound reſembles a blow or ſlap, but this when the induration is rather cartilaginous than bony. This peculiar ſound, of a file or of a blow, is very evident even in thoſe caſes where the *frémiſſement* is not ſenſible to the touch; but it is more ſo when the latter is preſent, and has a degree of ſtrength in proportion with it. The oſſification of the aortic ſigmoids may be detected by a ſimilar ſound during the contraction of the ventricle.

"A ſlight degree of oſſification in the ſigmoid and mitral valves produces neither of the ſounds we have mentioned; but it may be detected, or ſuſpected, from a ſenſation of hardneſs, roughneſs, or harſhneſs, in the contraction of the ventricle or the auricle; and this ſenſation is clearly independent of the force of impulſion in theſe organs. The ſame ſymptoms would probably occur in ſlight oſſification of the tricuſpid valve and the pulmonary ſigmoids. In theſe caſes, as in dilatation and hypertrophy of the heart, an examination made (with the cylinder) alternately under the lower part of the ſternum and between the cartilages of the ſixth and ſeventh ribs, noticing alſo the ſtate of the external jugular veins, will be always ſufficient to decide in what part of the heart the diſeaſe is forming."

The arrangement of Dr. Good not giving us an opportunity of fixing the remaining diſeaſes of the heart with noſological accuracy in their proper places, we ſhall treat of them here, even though they do not exactly tally with the generic characters of Empreſma.

Like all other muſcles, the heart increaſes, in regard both to the number and force of its fibres, during unuſual exertion. It is thus that thickening and general enlargement of the heart follows extraordinary and long-continued exerciſe. We may remark, however, that an unuſual volume of the heart is ſometimes congenital. Exerciſe operates in a ſimilar manner on one cavity of the heart: thus, if obſtruction exiſt in the lungs, the increaſe of power acquired by the right ventricle requires alſo increaſed ſize of its contractile ſtructure; and the ſame ariſes in the left ventricle from obſtruction in the aorta. This increaſe of ſubſtance may be connected with particular circumſtances which may alter its ſymptoms; that is to ſay, there is a difference in hypertrophy of one or that of both cavities. The ſymptoms of this diſeaſe are taken chiefly from Laennec. There is a difference between hypertrophy with diminution of the cavity, and hypertrophy with increaſed calibre, and ſo on. The varieties and ſymptoms of hypertrophy which follow are chiefly extracted from the work of Laennec, wherein he continually examines the opinions and definitions of Corviſart.

By *hypertrophy*, or "increaſe of nouriſhment," of the heart, we are to underſtand an increaſe of thickneſs in its muſcular ſubſtance, and conſequently of the ſides of its ventricles, at the ſame time that theſe cavities are not increaſed in the ſame proportion; moſt commonly, indeed the cavities are diminiſhed. This diſeaſe, which is not very common, ſeems to have eluded the reſearches of Monſ. Corviſart; for he conſtantly ſuppoſes a thickening of the ſides of the heart to be accompanied with a proportionate dilatation of its cavities. The thickening, in this caſe, is always accompanied by conſiderable increaſe in the conſiſtence of the ſubſtance of that organ, unleſs the hypertrophy is combined with an affection deſcribed under the deſignation of "ſoftening of the heart."

Hypertrophy may exiſt in one of the ventricles only, or in both at the ſame time. The auricles may be affected at the ſame time and in a ſimilar manner; but moſt frequently they remain as thin as in their natural ſtate, even when the correſponding ventricle has acquired an enormous thickneſs. In ſome few caſes, the auricles alone may be affected with hypertrophy.

When the left ventricle is attacked with hypertrophy,

the ſides of this ventricle become thicker than in the natural or healthy ſtate. "I have ſometimes," ſays Laennec, "found the thickneſs to be full an inch at the baſe of the ventricle, which is double that of the healthy ſtate: this thickneſs in general diminiſhes inſenſibly from the baſe to the apex of the ventricle, where it becomes almoſt nothing; but in other caſes the apex partakes in the affection, and I have ſometimes found it from two to four lines in thickneſs, which may be eſtimated at twice or four times its natural thickneſs." The fleſhy columns and ſupporters of the valves acquire a thickneſs proportioned to the degree of hypertrophy. The interventricular partition, which in the preſent caſe ſeems to appertain to the left ventricle much more than to the right, participates greatly in the diſeaſe, though it never acquires a thickneſs equal to that of the reſt of the ſides of the ventricle. The muſcular ſubſtance of the diſeaſed ventricle becomes ſometimes twice as hard as in the natural ſtate, and of a more intenſe red colour. The cavity of the ventricle appears to have loſt in capacity what the ſides have gained in thickneſs. In a heart twice as large as the patient's fiſt, this cavity has been ſo ſmall, that an almond with its ſhell could ſcarcely be ſqueezed into it. The right ventricle, now diminiſhed in proportion as the left is enlarged, lies flat along the interventricular partition, and does not reach ſo low as the point of the heart: in theſe ſevere caſes, it ſeems as it were imbedded in the ſubſtance of the ſides of the left ventricle.

The following are the anatomical characters of hypertrophy of the right ventricle. The ſides of this ventricle are thicker and harder than in the natural ſtate: they ſink or give way but little under the knife; their thickneſs is more uniform than that of the left ventricle, being indeed nearly the ſame throughout the whole length of the ventricle; it is, however, always rather more marked about the triglochin valve, and in that portion of the ventricle which forms the origin of the pulmonary artery. The fleſhy columns and pillars are conſiderably increaſed in dimenſions; and this circumſtance, which is more evident than in hypertrophy of the left ventricle, is, together with the extraordinary hardneſs of the ſubſtance of the heart, moſt remarkable and deciſive of an hypertrophy of the right ventricle, and moſt eaſy to detect on a firſt examination; for the abſolute thickneſs of the ſides of this ventricle is never very conſiderable; never, ſays Laennec, more than four or five lines.

Hypertrophy of the Left Ventricle.—This is the affection which appears to be deſcribed by M. Corviſart under the name of "active aneuriſm of the heart." The ſymptoms ariſing from a thickening of the left ventricle, beſides thoſe of diſeaſes of the heart in general, are—a ſtrong pulſe, the beats being very perceptible to the patient, as well as to phyſician, by applying his hand over the region of the heart; the abſence or diminution of the ſound ariſing from percuſſion on the region of the heart; and the red, rather than blue, colour in the face. But theſe ſymptoms are not conſtant; and it is not uncommon for a conſiderable hypertrophy of the left ventricle to exiſt where ſcarcely any of them are preſent. The pulſe, in particular, is a very deceitful guide; and it is perhaps as common to find it weak as ſtrong, even in patients afflicted with a high degree of hypertrophy. Percuſſion; and the application of the hand over the region of the heart, are alſo fruitleſs modes of examination if the patient happens to be fat or dropſical. The uſe of the ſtethoſcope, however, is here of more decided importance. The inſtrument being fixed between the cartilages of the fifth and ſixth ribs of the ſternum, the contraction of the left ventricle will produce a ſtrong impulſe, and a ſound duller than ordinary; and the more conſiderable the diſeaſe, the more this ſound is prolonged. The contraction of the auricle is very ſhort, little ſonorous, and therefore ſcarcely ſenſible in ſevere caſes. The beatings of the heart are heard through a ſmall extent only; moſt frequently they are ſcarcely audible under the left clavicle and the top of the ſternum; ſometimes they are heard only where they may be felt, namely, between the cartilages of the fifth and ſeventh ribs. In this diſorder, more than any other, the patient feels the beating of the heart almoſt continually; but he is not very ſubject to violent attacks of palpitation, unleſs from ſome extrinſic cauſes, as diſturbance of the mind or violent exerciſe. Irregularities and intermittences of the palpitation are not common; and they are characterized by an increaſe in the impulſe of the ventricles rather than by the noiſe they make.

Hypertrophy of the Right Ventricle.—The ſymptoms in this caſe, according to M. Corviſart, differ from thoſe of the preceding ſection chiefly by a greater difficulty of breathing and a darker colour of the face. He adds, "the beating of the heart being more evident on the right ſide of the breaſt may be conſidered as a ſymptom of the dilatation of the right ventricle; but this ſymptom, unleſs accompanied by others, is not much to be depended upon."

Lanciſi had noted as a ſymptom of the aneuriſm of the right ventricle, the ſwelling of the external jugular veins, accompanied with pulſations analogous and iſochronous to thoſe of an artery. M. Corviſart rejects this ſymptom, relying upon what has, he ſays, "been obſerved in caſes where the left cavities have been found dilated;" and moreover, "becauſe ſuch pulſation may be confounded with that of the carotids." But the obſervation of M. Laennec gave him a reſult which does not agree with the opinion of M. Corviſart. He ſays, "I conſtantly found this ſymptom in all the caſes of hypertrophy of the right ventricle which came under my notice; and I never obſerved it in perſons attacked with hypertrophy of the left ventricle, unleſs the ſame perſons had a ſimilar affection in the right alſo; and I think that perſon muſt have been a careleſs obſerver, or one who had never met with theſe jugular pulſations, who could confound them with the riſing produced by the beatings of the carotids. Theſe pulſations, moreover, are confined to the lower part of the jugular veins; and are ſcarcely ſenſible, or much leſs ſo, towards the middle of the neck, where the external jugular vein approaches the carotid, from which indeed it is ſeparated only by the ſterno-maſtoid muſcle. Sometimes, however, the reflux of the blood extends farther, and even beyond the jugular veins: Hunaldus had found it to extend, moſt decidedly, to the ſuperficial veins of the arm. We may therefore conſider this ſymptom, whenever it is preſent, as a good reaſon to ſuſpect at leaſt an hypertrophy of the right ventricle."

The contractions of the heart in hypertrophy of the right, as heard through the ſtethoſcope, are of the ſame kind as in hypertrophy of the left ventricle, except that the ſound from the contractions of the affected ventricle is leſs dull. But in hypertrophy of the right ventricle, the heart gives a ſtronger impulſion under the lower part of the ſternum than between the cartilages of the fifth and ſeventh ribs; while the contrary takes place, as we have ſeen, when the left ventricle is affected. In the generality of perſons, the pulſations of the heart are equally audible in each of thoſe places; but in others, who however have no appearance of diſeaſe of the heart, they are heard more clearly under the ſternum than between the cartilages of the ribs; "and it has appeared to me," ſays Laennec, "that ſuch a ſymptom has always coincided with, or denoted, a decided prediſpoſition to hypertrophy or dilatation of the right ventricle."

Hypertrophy of both Ventricles.—When both ventricles are at once attacked with hypertrophy, they both deſcend to the point of the heart; and the ſymptoms conſiſt of an union of thoſe proper to the hypertrophy of each ventricle, but with almoſt-conſtant predominance of thoſe which indicate the hypertrophy of the right ventricle.

Dilatation of the Ventricles.—A dilatation of the ventricles of the heart, which M. Corviſart denominates "paſſive

"paſſive aneuriſm," is diſtinguiſhed by the following anatomical characters—enlargement of the cavities of the ventricles, the ſides becoming thinner. Theſe marks are commonly attended with a ſoftening of their muſcular ſubſtance, a colour ſometimes bluer than natural, at other times more pale, inclining to yellow. The ſides are ſometimes ſoftened to ſuch a degree, eſpecially thoſe of the left ventricle, as to yield to the preſſure of the fingers; and they become ſo thin as not to exceed (in the left ventricle) two lines in the thickeſt part, and at the extremity ſcarcely half a line. The extremity of the right ventricle is ſometimes thinner ſtill, appearing to conſiſt only of a little fat and a ſtrip of the internal or ſerous membrane of the pericardium which covers the heart. The fleſhy columns, particularly thoſe of the left ventricle, are manifeſtly more diſtant from each other than in the natural ſtate. The interventricular partition loſes leſs of its thickneſs and conſiſtence from the effect of the dilatation than the reſt of the parietes of the heart.

The dilatation may affect one ventricle only; but it is more common to find them both affected at the ſame time; which is the more remarkable, as in hypertrophy the contrary takes place. When one ventricle only is affected, its extremity reaches lower than the other, but this diſproportion is not ſo great as in hypertrophy; and the enlargement of the dilated cavity appears rather to be in its diameter than longitudinally; inſomuch that a heart which has both its ventricles dilated, becomes rounded, and very near as large at the apex as at the baſe; and in ſhape it will appear like a pouch, rather than of the conic form which is natural to it.

As to the cauſe of dilatation of the heart, ſome difference of opinion is found amongſt the beſt authors. Corviſart conceived, that, when the ſyſtem was in a ſtate of plethora, or the heart, from other cauſes, kept much in a ſtate of congeſtion, it had a tendency to dilate in one or more of its cavities. With the dilatation of the auricles he almoſt invariably found a correſponding increaſed tenuity of the parietes. In the right ventricle too, the walls generally became thinner as its capacity increaſed; but in the left ventricle the contrary. He conſidered the cauſe to be preſſure on the parietes from the fulneſs of the cavities, which in their dilatation became attenuated or thickened, not from ſuperadded diſeaſe, but from the inherent and original diverſity of ſtructure. He conceived the ſymptoms would be found to correſpond with this explanation: That in active aneuriſm the powers of the heart would be found to be increaſed; its concuſſion on the cheſt great, and the pulſe proportionably ſtrong.

M. Roſtan arrived, after a very laborious inveſtigation of the ſubject, at ſomewhat different concluſions. He convinced himſelf that dilatations, with increaſed thickneſs, were not to be aſcribed ſimply to the effect of internal impulſe, modified by the original character of the cavity, but that invariably ſome extrinſic cauſes could be found; that the current of the circulation was oppoſed either at the valves, or at ſome remoter diſtance; that the heart endeavoured to overcome this reſiſtance; that in this effort its parietes were often increaſed in thickneſs, and its powers in ſtrength. Patient examination declared the obſtruction ſometimes to exiſt at a diſtance from the centre of circulation, which had not previouſly been contemplated, deep in the ſubſtance of the lungs, or far in the courſe of the aorta. He conceived the diſeaſe to occur more frequently in the right ventricle than M. Corviſart had done. Claiming then the merit of aſſerting for this cauſe the conſequence it bore, one which ſeemed ſo ſatisfactorily to account for the appearances, he upon the whole agreed with his fellow-labourer in the ſame field, that where there was increaſed thickneſs there was increaſed power. He very clearly, however, demonſtrated how all this might exiſt without its manifeſting itſelf by thoſe ſymptoms of increaſed ſtrength and power on which M. Corviſart had dwelt. The heart was making its effort to overcome ſome reſiſtance, and the full effect of its impulſe could be felt only to the point of obſtruction. Hence you could no longer depend on mere ſtrength of pulſe as a diſtinguiſhed ſign of dilatation with increaſed thickneſs of parietes. Imagining that he had thus aſcertained, more ſatisfactorily than had previouſly been done, the key-ſtone on which much learned lore had been built, the cauſe of that claſs of diſeaſe generally denominated *active dilatation*, M. Roſtan's inveſtigations diſcloſed another truth. The cauſe of obſtruction ſometimes acted ſo long, and the thickening increaſed to ſuch an extent, that it encroached upon the capacity of the cavity. Seeing how this could be readily explained, that it was but a further effect of the ſame cauſe, he very naturally allowed it to remain in the claſs to which it was moſt allied. In ſeveral caſes he found the cavity ſo ſmall, that it would hardly contain a walnut.

But the concluſions both of Corviſart and Roſtan betray too ready a tendency to draw general concluſions; for it now ſeems pretty clearly aſcertained, that the diſeaſe which M. Roſtan attributes uniformly to ſome obſtruction in the courſe of the circulation, may ſometimes ariſe independently of this or any other very apparent cauſe. M. Laennec properly conſiders, that it is occaſionally an idiopathic affection of the heart, though not of frequent occurrence.

The ſigns of a dilatation of the *left ventricle*, according to M. Corviſart, are—"pulſe ſoft and feeble; palpitations weak, dull, ſinking; the hand ſeems to feel a ſoft ſubſtance which raiſes the ribs, not ſtriking them briſkly; and preſſure ſeems to render the beats more feeble. Very little ſound proceeds from the region of the heart." But the only certain evidence of a dilatation of the left ventricle, according to Laennec, is that produced by the ſtethoſcope; namely, the ruſtling roaring ſound of the contractions of the heart heard between the cartilages of the fifth and ſeventh ribs of the ſternum. The loudneſs of the ſound, and its extent, ſhow the extent of the dilatation. Thus, if the ſound of the contraction of the ventricle is as loud as that of the contraction of the auricle, and the beatings of the heart are at the ſame time evident on the right ſide of the back, the dilatation is very conſiderable.

Dilatation of the *right ventricle*, according to M. Corviſart, is accompanied with nearly the ſame ſymptoms, as to the ſtate of the pulſe and the beating of the heart, which however are rather more evident, of courſe, on the right ſide, that is, near the ſternum and towards the epigaſtrium, than in the region of the heart properly ſo called. He, however, places not much reliance on this ſymptom, nor on that of Lanciſi, namely, the ſwelling or puffing-up of the external jugular veins. The ſymptoms he thinks moſt to be depended upon are—greater difficulty of breathing than in the affections of the left ventricle; a more decided ſerous diatheſis; more frequent hemoptyſis; a more dark lividity in the countenance, ſometimes even the darkeſt blue.

"Theſe obſervations," ſays Laennec, "are in general correct; but I cannot entirely concur with my celebrated maſter (Corviſart) as to the importance of two of theſe ſymptoms—the ſwelling of the jugulars, and the extent of the abſence of ſound in the region of the heart. An habitual puffing-up of the external jugular veins, but without ſenſible pulſations, has appeared to me the moſt conſtant (doubtful) ſymptom of dilatation of the right cavities of the heart. As to the abſence of ſound, I have often found the right cavities much dilated in caſes where the breaſt emitted a conſiderable ſound in the precordial region and under the ſternum; and in general it has appeared to me, that the diſeaſe of the heart which produced moſt frequently the ſuppreſſion of ſound was not this, but "hypertrophy combined with dilatation," of which we ſhall preſently ſpeak. As to M. Corviſart's remark of the more intenſe lividity of the countenance in dila-

tation of the heart, it may perhaps be more dark in dilatation of the right than of the left cavities, and the ſame thing may be ſaid of the lividity of the extremities; but I have often ſeen the countenance very pale and yellowiſh, and even the lips diſcoloured, in patients attacked with dilatation of the heart; and, on the other hand, hypertrophy with dilatation of the right cavities, has appeared to me to be the diſeaſe moſt frequently attended by intenſe lividity of the face and of the extremities, great ſtuffing, frequent or conſiderable hæmoptyſis, and a very conſiderable pouring-out of ſerous matter."

The only conſtant pathognomonic ſymptom of dilatation of the right ventricle, is the ruſhing noiſe of the heart to be heard under the lower part of the ſternum, or in the ſpace between the cartilages of the fifth and ſeventh ribs on the right ſide. The degree of dilatation is meaſured by the extent of the heart along which the ſound can be heard, and according to a kind of progreſſive ſcale for which we muſt refer to Laennec, § 599.

The palpitations, in dilatation of the heart, conſiſt chiefly in the frequency and noiſe of the contractions, not in the increaſe of their force, which indeed is often leſs than when the patient is in health. The irregularities of ſtrength and of frequency, and the intermittences of the pulſe, are not very common, though perhaps rather more ſo in theſe caſes than in hypertrophy.

Dilatation combined with Hypertrophy of the Ventricles of the Heart.—The union of theſe affections is very common. It may exiſt in one of the ventricles, or in both together. In the latter caſe, the heart may become prodigiouſly enlarged, even to thrice the ſize of the patient's fiſt. This increaſe of ſize ariſes from the thickening of the parietes of the ventricles, together with a proportionable increaſe of their cavities; their muſcular ſubſtance alſo becomes harder.

The ſymptoms of this affection are, of courſe, a combination of thoſe of hypertrophy and of dilatation. The contractions of the ventricles are attended with great force, and a conſiderable noiſe; thoſe of the auricles are ſonorous alſo. The pulſations may be heard through a great extent; and ſometimes, eſpecially in thin people and in children, the impulſion is felt equally under the clavicles, in the ribs, and even a little in the left part of the back. "I once (ſays Laennec) heard and felt the contraction of the ventricles in the lower and poſterior right part of the breaſt of a woman attacked with this malady; and, though ſhe was a little woman, and not ſtrong, the impulſe and the ſound were more intenſe in that place than I have met with them in the precordial region of a ſtout man."

The contractions of the ventricles, in this diſeaſe, may be readily felt on applying the hand over the region of the heart; for here, particularly during the moments of palpitation, the beats will be found quick, dry, ſtrong, and ſenſibly reſiſting the hand. If we attentively notice the patient when he is moſt calm and undiſturbed, it will be ſeen that his head, his limbs, and even the bedclothes, are really ſhaken at every contraction of the heart. The beatings of the carotids, of the radials, and other ſuperficial arteries, are often viſible. If we preſs the region of the heart, that organ, according to the expreſſion of M. Corviſart, "ſeems to be angry at the preſſure, and to re-act more violently." Theſe violent beatings, ſays he, when the diſorder affects the left ventricle, are accompanied with a pulſe which is frequent, ſtrong, hard, vibrating, and hard to be ſtopped. "This character of the pulſe is obſerved, indeed," ſays M. Laennec, "very frequently in hypertrophy with dilatation, as well as in ſimple hypertrophy of the left ventricle: but I cannot agree with M. Corviſart in regarding it as a *ſymptom* of active aneuriſm of the left ventricle; for, as I have elſewhere obſerved, we find very often a pulſe ſmall and weak, though otherwiſe regular, in men whoſe heart is very large and habitually beats with great violence, and vice verſa.

"The palpitations which take place in the diſeaſe we are treating of, when examined by the help of the ſtethoſcope, preſent the ſame characters with the habitual contractions deſcribed above, but with greater intenſity; and they are ſeldom accompanied with irregularities, unleſs when death is near, and they become weaker. In theſe palpitations we ſometimes obſerve, beſides the impulſe which the heart ſeems to give through a large ſurface, a ſtroke more dry, more ſonorous, ſhorter though iſochronous, and which appears to ſtrike the parietes of the breaſt along a much ſmaller ſurface: this ſtroke is evidently produced by a quick and ſtrong riſing of the apex of the heart."

If the beatings of the heart are examined alternately right and left, i. e. under the lower part of the ſternum and between the cartilages of the fifth and ſeventh ribs, on the left ſide, we may exactly know which is the affected ventricle, if only one, or whether both are affected, as moſt commonly happens. It will be uſeleſs to repeat the ſymptoms which have already been ſufficiently detailed. Dilatation with hypertrophy of the ventricles of the heart being, of all affections of the heart, that in which it attains the largeſt ſize, it is alſo that wherein the abſence of ſound in the region of the heart is obſerved moſt frequently and to the greateſt extent.

Dilatation of one ventricle with hypertrophy of the other, is a ſpecies of complication not very uncommon, though more ſo than the preceding. The ſymptoms are ſtill a mixture of thoſe of hypertrophy with thoſe of dilatation, the one ſet predominating over the other according as the former affection is more or leſs intenſe than the latter.

Dilatation of the Auricles of the Heart.—This variety of diſeaſe very rarely occurs, and we ſhall therefore be brief in detailing the ſymptoms. Laennec ſays, that, whenever the auricles were conſiderably enlarged, whether from actual dilatation or from diſtention ariſing in extreme pain, he found that their contractions, inſtead of the briſk ſound they produce in the natural ſtate, which has been compared to opening and ſhutting of a valve, give out only a dull obtuſe ſound like a bad pair of bellows. He never could clearly diſcover that the contractions of the auricles gave any impulſe, even when the thickneſs of their parietes was greatly increaſed.

Here Laennec recalls our attention to a negative ſymptom which he had already noticed in analyſing the beatings of the heart; namely, that, "in many caſes of hypertrophy of the ventricles, the contraction of the auricles can ſcarcely be diſtinguiſhed by examination over the region of the heart; but if, inſtead of this, the cylinder be applied over the ſternum or under the clavicles, the contractions may then be clearly diſtinguiſhed, and often the ſound is very conſiderable. This ſymptom, as I have before obſerved, ſeems to point out, that the affections of the auricles and thoſe of the ventricles are totally diſtinct from each other; i. e. that the auricles are not affected by the maladies of the ventricles."

Softening of the heart, fatty coverſions, atrophy, and cartilaginous and bony indurations, do not betray clear ſymptoms of their exiſtence during life; or at leaſt we are not ſufficiently acquainted with theſe ſymptoms. A general cachectic habit is uſually obſerved in moſt of theſe morbid ſtates, which of courſe require the long continuance of diſorder before they are eſtabliſhed.

The treatment of hypertrophy or dilatation is ſeldom attended with ſucceſs. The little that is to be done is compriſed in a few words. The circulation muſt be kept below par, by repeated ſmall bleedings, when the ſubſtance of the heart is any-where thickened; by a very low diet, when it is diminiſhed or morbid. We ſhould ſomewhat modify the latter rule, becauſe it is often an object to nouriſh and ſupport the body in a ſtate of actual deprivation of ſome of the ſanguineous elements. Occaſionally counter-irritants, and a regular uſe of medicines acting mildly on the capillary ſyſtem, are alſo proper. Perhaps much of the

the ill ſucceſs which has attended this plan may be referred to the difficulty we have to make patients perſevere in this very abſtemious regimen, and the prejudices we have to encounter againſt the innumerable bleedings which it is neceſſary to perform.

We cannot diſmiſs the ſubject of cardiac diſeaſe without reminding the practitioner of the occaſional ſimilarity which nervous irritations diſplay to organic diſeaſes of the heart. We refer the reader, for one ſource of this irritation, to Dyſpepſia; but nervous excitement in other organs beſides the ſtomach gives riſe to ſyncope and palpitation; as for inſtance, in hyſteria, pregnancy, pulſation in the epigaſtrium, &c. The diagnoſis is founded on the permanency of organic malady, in contradiſtinction to the paroxyſmal attack of irritative palpitation; for though, in the former caſe, the patient is better and worſe, he is ſeldom wholly free from diſeaſe. The increaſe in the ſymptoms of organic diſeaſe when muſcular exerciſe (particularly running up ſtairs) is uſed, furniſhes another point of difference between this and nervous diſorder. Some further and obvious indications of diagnoſis are drawn from the appearance of the tongue, ſkin, general ſtate of the pulſe, &c.

9. Empreſma peritonitis, inflammation of the peritoneum: pain and tenderneſs of the abdomen, eſpecially in an erect poſture; with little affection of the ſubjacent viſcera, or abdominal walls. Dr. Good gives three varieties.

α. P. propria: the inflammation taking the general range of the peritoneum; pain extreme, often pungent, with little or no relief from ſtools.

β. P. omentalis: with a more ſenſible ſwelling in the region of the omentum.

γ. P. meſenterica: pain deeper ſeated, and more immediately in the meſenteric region; external tenderneſs leſs than in the preceding varieties.

Inſtead of theſe diſtinctions, we ſhall adopt the more common ones of acute and chronic peritonitis.

Acute Peritonitis generally commences, like other viſceral inflammations, with chills and ſhiverings, though theſe are ſometimes ſlight, and occaſionally abſent altogether. This cold ſtage has been known to continue two or three days before the re-action took place. After this, the pulſe becomes quick and frequent; there is conſiderable thirſt; and the general affection, called fever, enſues. Theſe ſymptoms are attended from the very beginning with a ſenſe of heat and pain in the abdomen, at firſt generally confined to ſome one part, though ſometimes diffuſed over the whole of its ſurface. This pain is much increaſed by preſſure; or, in other words, there is a great tenderneſs or ſoreneſs of the belly, and moſt invincible coſtiveneſs. The pulſe is at leaſt one hundred in a minute, and ſmall; yet the tongue is not much altered at firſt from its natural appearance.

As it is of much importance to diſtinguiſh the tenderneſs on preſſure, we ſhould carefully watch the countenance of the patient while we preſs on the belly. In doing this, we ſhould put both hands on the ſides of the belly, and draw them as it were to the centre; this mode of preſſure producing more pain than that which is made directly downwards. In the courſe of twenty-four hours the pain and tenderneſs on preſſure increaſe, ſo that even the weight of the bed-clothes ſometimes becomes intolerable, and the pulſe riſes to a hundred and twenty or thirty in a minute: at this time the tongue begins to be covered with a cream-coloured mucus, and, though it is moiſt, there is great thirſt. A conſiderable degree of tenſion and ſwelling now takes place over the whole abdomen; and the patient finds moſt relief from pain by remaining motionleſs upon the back, with the knees in a ſmall degree elevated. This poſition, while it throws the weight of the inteſtines to the ſpine, and therefore removes the preſſure of them from the inflamed membrane, at the ſame time relaxes the abdominal muſcles, and prevents any ſtricture over the outer ſurface of the inflamed part. As theſe muſcles are called into action by any attempt to riſe or even to turn, ſo ſuch a motion neceſſarily aggravates the acute pain; whence abſolute reſt, as juſt ſtated, is moſt eaſy to the patient. The patient, for the ſame reaſon, generally breathes by the intercoſtals, and very little by the diaphragm. The tenſion of the belly continues to increaſe to the ſixth, ſeventh, or tenth, day; on one of which days, unleſs proper meaſures have been taken to remove the diſeaſe, the patient moſt commonly expires. Previous to death, the pain often ſuddenly ceaſes, and the inexperienced may conceive that this is an indication of amendment in the diſeaſe: but, if the ſymptoms be minutely examined, it is found that, at the ſame time, the pulſe is ſinking in ſtrength and increaſing in rapidity, that the ſtrength of the patient is alſo ſenſibly diminiſhed; the countenance collapſes, cold clammy ſweats break out, the extremities loſe their vital warmth, and at length a laborious reſpiration manifeſts the concluding ſtruggle of life.

But the ſymptoms above enumerated are often modified by age, conſtitution, ſeaſon, and other circumſtances. Thus, in ſome ſubjects, of feeble conſtitution and advanced age, peritonitis will creep on without fever, or even local pain—and yet the diſorder will go on to complete diſorganization of the peritonæum, or ſuch an effuſion of ſerous fluid as gives the complaint the character of aſcites. In ſome ſubjects, the thickneſs of the muſcles and parietes of the abdomen renders the pain of preſſure ſcarcely perceptible. A favourable prognoſis, however, is to be deduced from a gradual ceſſation of the pain, eſpecially when it is accompanied by a diminution of tenſion and ſoreneſs, and when at the ſame time the pulſe becomes fuller and leſs frequent, the ſkin leſs parched, ſoft, and moiſt, the reſpiration leſs laborious, and the countenance more open and expreſſive of eaſe.

Inflammation of the peritoneum may be diſtinguiſhed from *colic* by the permanency of the pain, and the frequency of the pulſe, as well as by the tenderneſs on preſſure, even before any tenſion of the abdomen has taken place; and by the abſence of any inclination to go to ſtool when the pain is ſevere, as well as by the undiminiſhed ſuffering when an evacuation of the bowels is effected, either ſpontaneouſly or by medicine. It is not ſo eaſily diſtinguiſhed from inflammation of the bowels, or *enteritis*. In this latter diſeaſe, however, there is obſtinate conſtipation, and the pain is more acute, and not ſo much aggravated by external preſſure; the ſtomach is alſo commonly affected with vomiting.

But theſe diſtinctions are by no means to be depended on; for, though we have the authority of Hunter for conſidering peritonitis a diſtinct affection, (Hunter on the Blood, 244.) yet it cannot be diſputed that many caſes do occur in which the organs inveſted by the peritonæum become implicated in its inflammatory diſeaſe; and, according as the peritonæum is inflamed, over the ſtomach or over the bowels, ſo enteritis or gaſtritis will enſue.

The prediſpoſing cauſes of peritoneal inflammation are involved in obſcurity. The exciting cauſes are various: compreſſion of the abdominal viſcera; blows or falls on that region; internal friction or preſſure, as of the gravid uterus, extra-uterine conceptions, enlarged ovaries, or other morbid growths within the abdomen; violent and long-continued corporeal exertions, violent and repeated contractions of the abdominal muſcles in vomiting; irregular circulations of the blood in the cold ſtages of intermittents, and ſtrictures of the colon or rectum producing unnatural contortions and friction of the inteſtines on one another, are all cauſes of peritoneal inflammation.

But the grand cauſes are to be ſought in the action of a cold atmoſphere on the ſurface of the body; the application of wet or cold, eſpecially to the feet, when the perſon is in a ſtate of corporeal inaction; the neglect of changing wet clothes, the drinking of cold liquids when

the body is heated, and whatever ſuddenly interrupts certain functions of the ſyſtem, as the ſuppreſſion of perſpiration, the lochia, and the menſtrual diſcharge.

Over the cauſes which produce epidemic diſpenſations of this diſeaſe, the ſame veil of myſtery hangs, that conceals from our view the etiology of other epidemics. M. Brouſſais ſaw the diſeaſe epidemic, and apparently contagious, among the French armies, in various parts of the continent; in Germany, Holland, and Italy. We have all ſeen puerperal peritonitis epidemic in our own country. The tranſlation of rheumatic, arthritic, or eryſipelatous, inflammations, from the joints or ſurface of the body to the interior tiſſues, is not to be overlooked.

Bayle, Brouſſais, and others, have noted the following morbid appearances after acute peritonitis. 1. Redneſs, thickenings, and even eſchars, which penetrated to the mucous membrane of the peritoneum. 2. Solid exudations, in form of falſe membranes, lining the ſerous ſurface of the peritoneum, but without organization. 3. A liquid exudation, ſometimes turbid, ſometimes limpid or reddiſh: more or leſs of ſerous and purulent fluid was always found in the abdominal cavity, bathing the ſurface of the inteſtines. 4. M. Brouſſais alſo found red clots, ſometimes thin, ſometimes thick, ſpread over, in form of membrane, the peritoneum, which was reddened and thickened underneath. Blood itſelf has been found effuſed from the peritoneal lining of the abdomen, without any apparent breach of veſſel or ſubſtance. Sphacelations were ſometimes found.

In moſt caſes where acute peritonitis has been cured, and the patient ſoon afterwards died of other diſeaſes, adheſions were found, ſimilar to thoſe occaſioned by pleuriſy.

The nature of the diſeaſe being once aſcertained, the method of cure will be obvious. As in all other acute inflammations, *blood-letting* from the ſyſtem at large is the remedy to be principally depended upon, and ſhould be reſorted to at as early a period as poſſible. And this evacuation ſhould be large, frequent, and early; for, if the inflammation be not mitigated in the ſpace of twenty-four hours of active treatment, the event will generally be fatal. The chief guide in directing this operation muſt be the degree of pain expreſſed by the patient, particularly under the action of preſſure: and even if this be much diminiſhed, it may ſtill be right to apply from ten to fifty leeches to the abdomen; and, as ſoon as theſe have done their office, its whole ſurface ſhould be covered with a bliſter. It is to be diſtinctly underſtood, however, that neither leeches nor bliſtering ſhould be truſted to, until ſome diminution of pain has actually been produced by the general bleeding. And farther, if it ſhould happen that the pain is not diminiſhed after the ſecond bleeding, this operation muſt be repeated even to the fourth or fifth time, after intervals of three or four hours each. If it ſhould be unequivocally manifeſt at any one of theſe bleedings, that the ſtrength of the patient is inadequate to the loſs of ſixteen ounces, a ſmaller quantity may be taken away, and we may reſort, at the ſame time, to the topical application of leeches and bliſters. It ſeems, however, preferable to delay the application of a bliſter till the conſtitutional effects occaſioned by the local inflammation are partly removed by the general bleeding, and till the diſorder is thus reduced to a ſtate more nearly approaching to a ſimple topical affection. For, by proceeding thus, the double advantage will be obtained, of applying the topical remedies at a period when their influence will be exerted with the greateſt effect, and the practitioner moreover will not be deprived of the only means of aſcertaining the variations of the diſorder; namely, by preſſure on the abdomen. The firſt ſymptom on which we may pronounce the recovery of the patient, is the ability of remaining in a ſitting poſture, after he had previouſly been confined to the back: this poſition of the body proves that the inflamed peritoneum is now able to bear the weight of the bowels, which perhaps never takes place where the patient does not recover.

With reſpect to internal medicine, it is of ſecondary importance. Nevertheleſs it is neceſſary that the bowels ſhould be kept open, and this ſhould be effected with as little irritation as poſſible. For this purpoſe, caſtor-oil, or ſmall doſes of the ſulphate of magneſia, may be adminiſtered with advantage; and emollient clyſters may be injected, which, at the ſame time that they procure ſtools, will act as internal fomentations. Fomentations may be alſo applied externally to the abdomen, when the tenderneſs is ſufficiently removed to admit of the preſſure. It is ſcarcely neceſſary to add, that the ſtricteſt antiphlogiſtic ſyſtem muſt be adopted, both in reſpect to diet and medicine.

It may be right to mention an irregularity in the complaint, which is apt to miſlead the practitioner, and to deter him from reſorting to thoſe vigorous meaſures ſo eſſential to counteract the magnitude of the danger. There is now and then, at the very firſt attack, ſo great a degree of proſtration of ſtrength, accompanied likewiſe by a pulſe ſcarcely perceptible at the wriſt, as might induce us to conſider the patient at the point of death, and unequal to undergo the treatment above recommended. There is alſo a ſpaſmodic attack of pain, which remits. Theſe appearances, however, ſeem to ariſe wholly from the inflammation extending to the peritoneal coat of the ſtomach and inteſtines. Here, as in different circumſtances, the pain on preſſure muſt be the criterion to determine our practice; and, if the pain ſhould be found exquiſite, no accidental ſymptom ſhould lead us from truſting for relief chiefly to the lancet. Such a deciſion will ſoon be juſtified by a freedom in the action of the arterial ſyſtem, the pulſe becoming fuller and ſtronger, by an abatement of the languor and proſtration of ſtrength, and by a diminution of pain.

Among other powerful but uneſtabliſhed meaſures we have to mention the injection of tobacco per ano, cold lotions to the belly, and the exhibition of oil of turpentine. Whether any further good can be attributed to the laſt medicine than what reſults from its purgative operation is not yet known.

The attack of the *chronic* inflammation of the peritoneum is very different from that of the acute ſpecies. It advances by degrees, manifeſting itſelf only by occaſional ſuperficial pricking pains over the abdomen, without producing any inclination to go to ſtool: the pulſe is ſomewhat accelerated, and the tongue (particularly in the morning) is ſlightly covered with white fur. There is alſo conſiderable thirſt; yet there is no exacerbation of fever in the evening, nor any hectic fluſhes on the cheeks: on the contrary, the countenance is full of languor, and the face is pale and doughy.

In the early ſtages of the diſeaſe, the patient is capable of performing his ordinary avocations, and only complains, after fatigue, of a certain degree of tightneſs and pricking ſoreneſs acroſs the abdomen, from one *os ilium* to the other. This ſtate will continue, with little variation, for many months, during which the operations of the bowels will ſometimes proceed naturally, though more commonly the patient is coſtive. There is no tenſion of the ſkin of the abdomen, as in the acute ſpecies; on the contrary, the ſkin and abdominal muſcles are ſometimes obſerved to ſit looſely upon the peritonæum, which gives a ſenſation to the touch, as of a tight bandage underneath, over which the ſkin and muſcles may be ſaid (as it were) to play. The patient always complains more of the *tightneſs* than of the *pain*; and, as this tightneſs is much increaſed by any congeſtion in the inteſtines, the relief which he experiences from evacuating their contents, leads him to attribute his ſenſations to an habitual coſtiveneſs, for the removal of which evil all his endeavours are uſually directed.

The progreſs of the affection is as follows: The bowels

els become more and more irregular in their action; the tenderneſs and ſwelling increaſe; the appetite fails; the pulſe acquires greater velocity; the features look ſharp and contracted; the countenance becomes pale or ſallow; the lips parched and ſkinny; the tongue, ſometimes of a bright colour, reſembling what is ſeen in diabetes, at other times it is covered with a thick whitiſh mucus. The fleſh and ſtrength decay rapidly; and great emaciation takes place. The ſkin, except towards the laſt ſtage, is for the moſt part dry and ſcaly; the urine ſmall in quantity, occaſionally clear, more frequently otherwiſe. If a cough has not exiſted from the beginning, it is very apt to occur about this time; but this is by no means to be conſidered as a diagnoſtic ſymptom; its exiſtence depending upon the ſpreading of the diſeaſe to the pleura, and the thoracic viſcera. The feet ſometimes ſwell towards the concluſion of the diſeaſe, but the ſwelling is often confined to one leg and thigh. At this period, if the examination of the abdomen be made with due care, it will be found to communicate to the touch the feeling occaſioned by a ſolid tumour; the integuments and muſcles not rolling upon the contained parts as in the firſt ſtage. But in ſome caſes, where effuſion is conjoined with the original and more important diſeaſe, a ſenſe of fluctuation may be diſcovered. Very frequently the patients complain of a diſtreſſing feel of what they call a "broiling heat" at the ſtomach, the diſcharge of a tough ropy phlegm from the mouth, conſtant nauſea, with violent retching and vomiting; and, in two caſes, the matter brought up during ſeveral days before death was ſtercoraceous.

In the courſe of the complaint, the appetite is for the moſt part very bad; but the deſire for liquids is inſatiable, even though a conſciouſneſs exiſts that a large quantity cannot be ſwallowed without occaſioning very great diſtreſs. When a feeling of ſinking and emptineſs prevails, the patient eagerly thinks of many articles that might allay his uneaſineſs; but the ſight of them ſeldom fails to excite loathing and diſguſt. Should any ſuſtenance be taken, it is either ſpeedily rejected by vomiting, or it cauſes indeſcribable uneaſineſs. The patient rolls about in all directions, in vain ſeeking for ſome point where he may repoſe. Every action of the ſtomach or inteſtines comes to be performed with great pain. The paſſage of flatus upwards or downwards, the movements which take place before the evacuation of the bowels, all give riſe to ſuffering. At times the pain is ſharp and tranſient; at others heavy and obtuſe. But a ſenſe of weight is ſeldom abſent; and it is more felt after vomiting or purging than before. One patient, (an infant,) in alluſion to this ſymptom, uſed to put its hand on the abdomen, and exclaim piteouſly, "Oh! ſo heavy." Another ſaid, that his bowels felt as if they were "tied up in a napkin." At another time he ſaid, "they ſeemed to be in a maſs:" and at a third, he declared, that if he had "a ſhot attached to every convolution of his inteſtines, he could not ſuffer more than he did."

The above deſcription, which is chiefly taken from Drs. Pemberton and Baron, is not applicable to all caſes. Chronic peritonitis ſometimes comes on ſo inſidiouſly, that not the ſlighteſt ſuſpicion could be entertained of its exiſtence. We ſhould therefore be careful, ſince this diſeaſe is often the ſequel of acute peritonitis, not to remit too ſoon in our endeavours for the cure of the latter diſeaſe.

Exceptions to the ſymptom of conſtipation are more frequent in chronic than in acute peritonitis. In ſome caſes, too, the appetite is preſerved, and the digeſtion but little deranged; in which caſes we may conclude, that the peritoneum reflected over the ſtomach is not very deeply involved in the diſeaſe. At other times, however, there is vomiting; but this is not to be conſidered a pathognomonic ſymptom of chronic peritonitis. Brouſſais mentions a ſenſation, as though a ball were rolling about in the abdomen, and ſometimes approaching the throat; this he attributes to the agglutination of the inteſtines, which form, with the gorged meſenteric glands, a round and mobile maſs in the belly, often without any effuſed fluid.

In chronic peritonitis, the peritoneum acquires a greater degree of morbid thickening, and the inflammation appears to have penetrated to the different ſtructures of the ſubjacent organs. The effuſion is ſerous, limpid, or greeniſh, or reddiſh, with white purulent-looking filaments floating about. Occaſionally we find ſpread over the whole extent of the peritoneum, or over ſome of the envelopes which it lends to various organs, a crop of granulations, piſiform, white, and not unlike certain miliary eruptions of the ſkin. Bayle, who examined theſe granulations very minutely, obſerves that, in a ſubject who preſented them to a great extent, he could ſcrape them off very eaſily with the ſcalpel in many places, and that *there* the peritoneum underneath appeared perfectly ſound. In other parts, however, they could not be raiſed from the membrane without tearing it. Brouſſais has alſo related numerous caſes where the peritoneum was larded, and immenſely thickened, with crops of tubercles. "I have alſo (ſays the ſame author) ſeen a ſpecies of veſicles, ſimilar to hydatids, formed of the moſt limpid ſerum, under a tranſparent ſheet of membrane which had been elevated thereby."

Brouſſais obſerved, that thin men, of a lymphatic temperament, and who had been weakened by any diſeaſe, particularly by protracted intermittents, were the moſt ſubject to theſe tuberculated diſorganizations of the peritoneum. The ſubjects opened by M. Laennec preſented the following morbid appearances in the abdomen. On perforating the peritoneum, a quantity of gas ruſhed out, which had the odour of ſulphurated hydrogen. The inteſtinal canal was found ſingularly conglomerated, and agglutinated into one maſs, and partly covered by thickened and adherent epiploon. In ſome caſes the inteſtines were entangled and twiſted upon each other, and glued together by falſe membranes. The peritoneum itſelf was thickened, diſorganized, and tuberculated, in the manner already deſcribed, with effuſions of various kinds in the cavity of the abdomen. It is evident that theſe chronic diſorganizations of the peritoneum cannot long exiſt without affecting the ſtructure, and conſequently the functions, of the various abdominal viſcera. Hence the digeſtion, chylification, biliary ſecretion, &c. all become deranged, and preſent a complication of diſtreſſing phenomena. But not only is the diſeaſe propagated to the organs over which the peritoneum is ſpread; it is not ſeldom extended to the ſerous tiſſues of other cavities than that of the abdomen.

Before we proceed further, it will be right to inform our readers, that in following the common notion, that all the above-mentioned morbid products are the reſult of inflammation, we are oppoſed by ſome very reſpectable pathologiſts. Dr. Baron, in his clever work on the "Tuberculated Accretions of Serous Membranes," promulgates the idea, that morbid productions on the peritoneum are not always the conſequence, but rather the cauſe, of inflammation of that membrane. He ſuppoſes that tubercles are formed from hydatids, (a notion entertained by Morgagni;) and that theſe ſubſtances owe their production to a diſeaſed ſtate of the abſorbent rather than the vaſcular ſyſtem. He details many facts drawn from the obſervance of the ſcrophulous diatheſis of the patients of chronic peritonitis, from the abſence of ſymptoms of inflammation, till in all probability the morbid products were formed. He traces up the formation of large tumours and general agglutination of the inteſtines, from the ſmalleſt millet-ſized hydatid; and he ſhows that the ſymptoms of derangement of the vaſcular ſyſtem, when they exiſt, may eaſily be referred to the local ſtimulation of the tubercle or other morbid product. We are not able to decide the queſtion, whether morbid accretions of the peritoneum *never* ariſe but from inflammation;

inflammation; but we will venture to say, that in the majority of cases they do; and whoever reads Dr. Baron's cases attentively cannot fail to see strong evidence in favour of this notion. In that of Sarah Tandy, "the complaint is reported to have come on only four weeks ago, with tenderness and swelling of the belly, nausea, and vomiting." This patient did not die for a year, so that the appearances on dissection could furnish no evidence as to when the tuberculous affection had begun. In the case of the female, p. 36, the "affection began in the pleura;" and we do not generally observe metastasis in diseases of the absorbent system. Sarah Aldridge (p. 28.) is made to state, that she recollects the pain was "more severe at the commencement than it has been since;" her blood too "showed a strong buffy coat." The case of Browning (p. 41.) affords any thing but evidence of the origin of the disease from diseased absorbents; it came on after an operation for strangulated hernia, and was clearly connected with the sphacelation of the intestine which took place.

This disease is full of danger, as well from the slow insidious progress which it makes to undermine of itself the constitution, as from the accidents to which it exposes the patient during the long course of management required in its treatment. As another cause of danger, also, may be added, the want of resolution which we have so often to regret in patients during the cure of a chronic disease, where the advantages of the plan, from its gradual operation, are not so obvious to the senses. The symptoms which indicate recovery are, an abatement of the pricking pains of the abdomen, and a diminution of the frequency of the pulse to eighty in a minute: but even under these appearances, however favourable, a relapse is always to be dreaded.

We have little, and that little unsatisfactory, to say concerning the *treatment* of this disease. In the first place, bleeding must be so far had recourse to as to keep the circulation as much as possible below the standard of health. The bowels must be kept open by none but the mildest laxatives. The most perfect quietude; cauterization by means of continued blistering on the abdominal regions; nauseating medicines so carefully watched that they never may produce actual vomiting; are also to be resorted to. Under these measure we may cure this complaint, when it has existed two or three weeks only, if we are fortunate enough to be called in so soon. After that period our measures will somewhat change. We must endeavour to excite the absorbent system to remove the morbid productions; and for this purpose we should chiefly trust to rigid abstinence. We should also endeavour to increase the sensations of the skin, kidneys, &c. Mercurial medicines seem successful in advanced stages of the complaint. We should try them, however, in the early stage of the disease; in the latter, as there is little hope of promoting the absorption of a tubercle, we should naturally be averse to excite the irritation of fever which follows the introduction of mercury.

10. Empresma gastritis, (Gastritis, *Cullen, &c.*) inflammation of the stomach: burning pain at the pit of the stomach, increased by swallowing; rejection of every thing; hiccough; oppression and dejection of mind; fever a synochus. There are two varieties.

α. Adhæsiva: pain very acute; fever violent.

β. Erythematica: with an erythematous blush extending to and visible in the fauces; pain more moderate; fever less violent: pulse low and quick.

This species, under one of its two varieties, is found also as a symptom, occasionally, in aphtha, measles, smallpox, and other exanthems.

These terms which designate the varieties we use perhaps somewhat differently from Dr. Good, in the following sense. The first variety will designate that violent form of inflammation in which all the coats of the stomach, and probably its peritoneal covering, are affected. The second variety is gastritis affecting the mucous membrane only. The first is almost always acute and violent, and is very rarely met with; the latter exhibits both an acute and chronic character, and is frequently observed. The first variety, which has long been known to medical authors, is thus described.

Gastritis adhesiva is characterized by an acute burning pain in the region of the stomach, which is suddenly increased, and vomiting at the same time excited by any thing whatever that is swallowed; it is also aggravated by external pressure. These symptoms are accompanied by a great degree of general fever; the pulse is extremely quick and small, and commonly hard. There is also extreme anxiety, and a greater depression of strength, and loss of power in all the functions of the body, than in the case of almost any other inflammation. In many instances there is a remarkable tendency to syncope; and there is frequent retching, and often hiccup, independently of any thing swallowed. In some instances, other symptoms are superadded to these. Thus, very early in the disease, a high delirium has sometimes come on, with great giddiness and loss of sight, from the sympathetic affection of the brain; considerable difficulty of breathing has also occurred, probably from the impossibility of depressing the diaphragm without compressing the stomach; convulsions of the muscles, and in some cases, although intense thirst was present, actual inability to drink has also taken place.

From the great sensibility of the stomach, and its sympathetic connexion with the other important organs of life, it must be obvious that inflammation of this viscus, by whatever causes produced, must occasion a great and often fatal derangement of the system. If the disease lasts long enough to follow the ordinary course of other inflammations, it may terminate like them by resolution, gangrene, or suppuration. Some writers have mentioned scirrhus and cancer of the stomach as among the sequelæ of gastritis; but Dr. Cullen has correctly stated that the scirrhosities, which are often discovered affecting the stomach, are seldom known to be the consequences of inflammation.

The *prognosis*, as to the tendency of the disease to one or other of these terminations, may be deduced from the following appearances and considerations. The disposition of the inflammation to cease, or to terminate by *resolution*, as it is called, may be known by the mild or moderate state of the symptoms; and by a gradual remission of them, in consequence of the action of the remedies employed in the course of the first few days of the disease. For in violent cases, where the remedies have not been applied sufficiently early or with sufficient vigour, gangrene comes on very rapidly. That a gangrene has begun, may be known from the sudden remission or cessation of the pain, while the pulse continues frequent, and at the same time becomes weaker; while other marks of the sinking of the powers of life in the whole system come on; such as frequent fainting, starting of the tendons, hiccup, a cadaverous appearance of the countenance, &c. *Suppuration* is a less frequent termination of gastritis, but occasionally occurs, and may be expected to take place, when the symptoms have continued, in a moderate degree, for more than one or two weeks; and especially when there is a considerable remission of the pain, while a sense of weight and anxiety still remain. When an abscess is formed, the frequency of the pulse is at first abated; but it soon again increases, and frequent cold shiverings, and marked exacerbations of heat and feverishness in the afternoon and evening, followed by night-sweats, come on; in other words, a hectic fever ensues. At length the disease commonly proves fatal, unless the abscess open into the cavity of the stomach, the pus be discharged by vomiting, and the ulcer soon heals. There are, indeed, some rare instances on record, in which the imposthume has burst externally, and not only the pus, but the alimentary matters swallowed, have passed out at the opening during the remainder of life. In such cases,

caſes, a previous adheſion of the ſtomach with the peritoneum had taken place by means of the inflammatory proceſs.

We are not acquainted with any particular *prediſpoſition* to gaſtritis in the firſt inſtance; but, when the diſeaſe has once occurred, like moſt other inflammations, it leaves a tendency in the part affected to be more eaſily excited to inflammation again; and therefore, for a long time ſubſequent to recovery, the utmoſt caution, in regard to the uſe of irritating food and drink, is required. The *exciting* cauſes are, ſuch matters applied to the ſtomach, as, from their ſenſible, chemical, or mechanical, properties, occaſion violent irritation to the ſtomach, or injure its texture; or the inflammation is produced by the extenſion of the diſeaſe from the neighbouring organs, or from diſtant parts; or frequently it follows ſuddenly on the ſecond variety.

When inflammation of the ſtomach induces death, independently of ſuppuration or gangrene (which are not the moſt frequent terminations of the diſeaſe), ſometimes the inflammation is found, upon *diſſection*, to have ſpread over a conſiderable part, or perhaps the whole, of the inner membrane; but moſt commonly it occupies a ſmaller portion. The ſtomach upon the outſide, at the inflamed part, ſhows a greater number of ſmall veſſels than uſual, but is commonly not much crowded with them. On opening the ſtomach, it is found to be a little thicker at the inflamed part, the inner membrane is very red from the number of ſmall florid veſſels, and there are frequently ſpots of extravaſated blood. Portions of the inner membrane are ſometimes deſtroyed; and ſometimes a thin layer of coagulable lymph is found thrown out upon a portion of the inner ſurface of the ſtomach. See Baillie's Morbid Anat. p. 138.

The *treatment* of acute gaſtritis will neceſſarily vary, according to the nature of the exciting cauſe, and to the degree and duration of the diſeaſe, and to the circumſtance of its being ſimple or complicated. The leading indication however, and the general plan, muſt be the ſame as in all phlegmonic inflammations in their commencement; namely, to attempt the reſolution of the diſeaſe by depletion, together with the ſtrict obſervance of the antiphlogiſtic regimen. Large bleedings muſt be ſpeedily employed, and repeated, if the urgency of the ſymptoms continue to require it, notwithſtanding the ſmallneſs of the pulſe, the general debility, and even diſpoſition to fainting. For, after bleeding, it is obſerved that the pulſe commonly becomes fuller, and the tendency to ſyncope is diminiſhed. In an inſtance recorded in the Edinburgh Medical Eſſays, the patient was bled five times within ſeven hours, and was each time ſuddenly relieved from the acute pain; the pulſe, before irregular, became regular; and the cold extremities became warm. In delicate conſtitutions, when the violence of the inflammation has been reduced, but not altogether removed, by bleeding, the application of leeches, or of cupping-glaſſes, after ſcarification, to the region of the ſtomach, may be occaſionally reſorted to with advantage. A large bliſter, applied to the pit of the ſtomach, after veneſection, is likewiſe advantageous. In caſes where a conſiderable irritability of the ſtomach, with little or no actual inflammation, exiſts, and gives riſe to naufea and vomiting, the external agency of a bliſter is often the moſt effectual remedy. It is perhaps adviſable to abſtain altogether from taking any thing whatever into the ſtomach, whether by way of medicine or aliment, until the violence of the inflammation be ſomewhat ſubdued, ſince theſe matters at firſt will produce vomiting. In other caſes, where any thing can be borne by the ſtomach, liquids of the very mildeſt kind, ſuch as milk and water, thin gruel, &c. muſt be given, and in very ſmall quantities at a time.

Opiates, in whatever manner exhibited, are very hurtful during the firſt days of inflammation of the ſtomach; but, when its violence has greatly abated, or the pain and ſickneſs recur at intervals only, opiates may be cautiouſly adminiſtered in clyſters. It is remarkable, that, notwithſtanding the uſually nauſeating effect of antimony, this ſubſtance may be given with advantage in gaſtritis, when combined with enough opium to reſtrain its action. Active purges ſhould be exhibited in clyſters till the bowels are fully opened.

We are particularly cautioned in this complaint to avoid a ſudden return to full living, on account of the tendency of the diſeaſe to relapſe.

The ſecond variety differs in its ſymptoms, as it is chronic or acute. Its acute form is uſually connected with general inflammation of all the coats of the ſtomach, and hence its ſymptoms are often the ſame; yet it undoubtedly may exiſt ſeparately, ſince ſuppuration and gangrene of the ſtomach, leſions not very uncommon in the firſt variety, are ſcarcely ever met with in the acute gaſtric inflammations which are found in exanthems. Its cauſes are nearly ſimilar to thoſe of the other variety.

The firſt ſymptom of Gaſtritis erythematica is ſometimes a violent vomiting reſembling cholera morbus. The patient throws up every thing that he ſwallows; then bilious, mucous, or even ſanguineous-looking, matters; going very frequently to ſtool at the ſame time. Fever is a neceſſary accompaniment of this form of the diſeaſe. Sometimes gaſtritis declares itſelf without vomiting; but always with violent pyrexia, often unpreceded by a cold ſtage or ſhivering. The patient complains of a burning internal heat, and generally of a ſoreneſs in the pharynx. The tongue appears *red* and *clean*, and the thirſt is conſiderable; the deſire for cold acidulated drink is as great as the averſion for every other kind of liquid. If the phlogoſis does not extend to the inteſtinal tube, there is conſtipation. If it reach the colon, there is diarrhœa with teneſmus. There is deep-ſeated pain in the epigaſtric, and eſpecially in the right hypochondriac, region, but not exaſperated without a certain degree of preſſure. This pain is ſometimes lancinating, and accompanied by a ſenſe of conſtriction. It manifeſtly diminiſhes after the patient has ſwallowed cold aqueous drink, eſpecially if acidulated. Very often the vomiting ceaſes in a few days, although the other ſymptoms perſiſt. At other times it continues, or ſupervenes in the courſe of the diſeaſe; and the patient is haraſſed with conſtant nauſea, which appears to him to be occaſioned by ſome globular body riſing upwards, and painfully compreſſing the lower part of the cheſt. Each fit of vomiting is followed by a temporary eaſe of very ſhort duration, the patient inceſſantly demanding emetics; a ſymptom ſtill more common in peritoneal inflammation than in acute gaſtritis. The abſolute impoſſibility, which the patient ſuppoſes, of ſwallowing any thing, appears referrible to the contracted and highly-irritable ſtate of the upper orifice of the ſtomach. Such are the principal ſymptoms of *acute gaſtritis*; but ſeveral of them may be abſent; even pain itſelf does not exiſt, in ſome caſes, where the inflammation is moſt intenſe. Our diagnoſis muſt therefore be aſſiſted by a rigid obſervance of the *ſympathetic* troubles produced by this phlogoſed ſtate of the mucous membranes of the digeſtive organs. The *firſt* claſs of theſe appertains to the head, affecting the functions of the ſenſes, and the movements of the voluntary muſcles. Head-ache may or may not exiſt. Aberrations of the intellect, correſponding with the moments of greateſt ſuffering, are more ſteady in their appearance. "I have ſeen," ſays Brouſſais, "men as completely delirious as in fevers the moſt malignant, or phrenitis itſelf." In ſuch caſes too, we often ſee the conjunctiva red, the eye inflamed, and the features altered. In proportion as the diſeaſe advances, and the ſufferings increaſe, the attention becomes eſtranged, till coma enſues. In the mean time we obſerve irregular contractions of the facial muſcles, grinding of the teeth, ſubſultus tendinum, and various convulſive movements. The patients throw off the bed-clothes when they are ſenſible, complaining

complaining that the internal heat which devours them is ten times more insupportable when the chest is covered. They try all kinds of positions in bed; sigh deeply; and show in their countenances the expression of intense agony. If they are questioned respecting the nature and seat of their pains, they apply the hand to the epigastric region, but cannot clearly describe their sufferings; the sense of internal burning is the only one which is distinct to them. We must therefore ground our diagnosis on the tout ensemble of the symptoms, and especially on the instantaneous relief produced by cooling drink.

In respect to the respiratory system, we observe sometimes a cough, with teazing pain; a glairy or mucous expectoration streaked with blood, or white, like that of peripneumony, at the period of resolution; a general pain in the chest; a laborious respiration in sanguineous subjects. The voice is often lost from a sympathetic paralysis of the laryngeal muscles. During the first days of acute gastritis, the pulse is full, hard, and often as strong as in pneumonia, particularly if the pectoral symptoms above mentioned are present; a proof of sanguineous plethora in the pulmonary parenchyma. In lighter shades of gastritis, and when the vital powers have been reduced by pain, the pulse is sharp, irregular, or even intermittent; towards the close of life, imperceptible. Heat of skin is considerable, during the violence of the acute stage. M. Broussais has always found it dry and harsh. The skin is cold when the disease is on the decline, and cannot be brought to a natural warmth when the disease is verging to a chronic state. The cutaneous secretions are suppressed; and the breath is fetid in a few days after the circulation becomes much increased.

Chronic Gastritis erythematica.—This may be a primitive affection, or the sequela of an acute attack. It is produced by the same causes as the above-mentioned form of the disease; but, from peculiarity of constitution, or force of cause, it is unaccompanied by those violent commotions in the system which arrest the attention of the other kind. The patient complains of pain across the base of the chest, deep-seated in the epigastric and hypochondriac regions; generally more considerable in the right side, and sometimes so high up as to be thought in the chest. This pain is constant and very troublesome; sometimes burning, lancinating, pricking, and confined to a very circumscribed spot, especially when the stomach contains any acrid or irritating substances. It is very frequently accompanied by a sense of constriction. Some patients complain of feeling as though a ball of large size were pressing against the diaphragm; others as if a bar were fixed across the stomach, preventing their swallowing food or drink. Of all these sensations, the lancinating and stinging pains are those which acquire the greatest degree of intensity. The others are so faint, that the patient seldom demands relief from them till the strength becomes considerably reduced.

The appetite always fails; and, when the disease exists in its greatest degree, there is a general abhorrence of food. When there is any remains of appetite, the digestion is quite imperfect. Aliments are usually thrown up soon after eating; especially if too much food, or food of a stimulating nature, have been swallowed. Those who, from a milder degree of the disease, or idiosyncrasy of stomach, do not vomit, are oppressed, during the gastric digestion, with a sense of load at the stomach, nausea, acid, corrosive, or fetid, eructations, rumination, and exasperation of the usual pain. There are some patients who only experience eructations, inquietude, and mental perturbation. The pulse rises a little, and the skin warms, during gastric digestion; but sink to their usual level when the digestive process is finished. For a considerable time the bowels are as costive as though a scirrhus of the pylorus existed; but ultimately, in the majority of cases, there is diarrhœa, with colic, tenesmus, and stools mixed with blood—a proof of the extension of the disease. Then the breath, and even the perspiration, exhale an odour manifestly steroraceous.

These sufferings, even when not very severe, are badly borne by the sick, who become dejected, impatient, taciturn, discontented, and not disposed to enter into the details of their feelings. They have an air of suffering in their countenance; the conjunctiva, lips, and cheeks, being of a deep red colour, verging towards that of tincture of logwood; as are also the tongue and whole interior of the mouth, excepting along the centre of the former, where a thin mucous list may be seen. In a few subjects the tongue is very much loaded, the breath offensive, and a bitter taste is experienced in the mouth; but these are exceptions, and the diagnosis must be drawn from the whole of the symptoms, not from any one exclusively.

As soon as this disease is completely established, the cellular and adipose membrane becomes nearly absorbed, with but little diminution of the muscles; when these last are much extenuated, the disease is without hope. At all times, however, the skin is drawn tight over the muscles, sinking in in their interstices, so that it cannot be pinched up but with difficulty, even in those places where it is usually very relaxed. In no other species of marasmus has M. Broussais seen this degree of adhesion so strongly marked. This character of the skin, together with its colour, being a brown, inclining to yellow, offer two of the most constant diagnostic signs of chronic gastritis.

The pulmonary system suffers very little in this species of the disease, with the exception of a slight stomach-cough occasionally. Nor is the circulation so much influenced, at the beginning, as to evince any appreciable febrile movement. When the disease has made progress, then the pulse becomes hard and frequent; the skin, at the same time, being hot, and dry to the touch. There is always an evening exacerbation, with agitation and restlessness. If this train continues unchecked, prostration of strength soon ensues, and the gastritis, in fact, passes into the acute form. If, however, the febrile movement is only marked by frequency of pulse, without heat of skin; or if the patient only experiences a few hours of heat towards the evening, or during digestion; the malady may continue chronic. In all cases, if long protracted, the febrile symptoms subside, and the evening exacerbation ceases to be sensible. Then the skin becomes cold, and of the colour before described, with perceptible wasting of the body. When diarrhœa is added, the cessation of pyrexial phenomena is still more sudden and complete.

The treatment of the *acute* form of this variety is similar to that of Gastritis adhæsiva, except that cold lotions at first, and afterwards warm fomentations, are to be applied to the epigastrium instead of blisters; and local is to supersede in a great measure the general bleeding. Cooling acidulated drinks and effervescing draughts afford much gratification to the patient. Strong purges, even when nausea is not present, are extremely hurtful; and, upon the whole, the practitioner is to be careful not to give too much medicine.

As to the treatment of *chronic* gastritis of the mucous membrane, this must be regulated by somewhat similar indications. The patient must abstain from all animal food and all indigestible vegetable substances; thin gruel and cold drinks, as weak solutions of nitre, the occasional application of leeches and warm fomentation, with laxative clysters, forming the most approved remedies. This applies to chronic gastritis when it assumes the character of local pain and irritation, manifesting generally a *sense of burning at the pit of the stomach, redness of the fauces, and fœtor of the breath.* Another form of chronic gastritis, which supervenes to long-continued nervous irritation, has been mentioned under Dyspepsia, where it is described as constituting the second stage of that complaint.

complaint. Chronic erythemata, or inflammation of the ſtomach, is no uncommon diſeaſe in this country, where the common practice of purging dyſpeptic patients is frequently adopted in it, and tends materially to increaſe its violence.

11. Empreſma enteritis, inflammation of the bowels: griping pain in the belly, with tenſion, tenderneſs, and vomiting; fever a ſynochus. This alſo has two varieties diſtinguiſhed thus; that one affects all the coats of the bowels, and the other only its mucous membrane.

α. E. adhæſiva. Pain very acute; vomiting frequent; obſtinate coſtiveneſs; fever violent.

When this diſeaſe attacks the ſmall inteſtines, it is attended with many of the ſymptoms of inflammation of the ſtomach. There is acute pain ſituated in different parts of the abdomen, but generally about the umbilical region; it is conſtant, but liable to exacerbations from time to time, generally deſcribed as of a twiſting kind. There is, in a marked degree, a painful expreſſion of countenance and manner, and difficulty of reſpiration. The general ſurface is at firſt ſomewhat hot, but at length the countenance and extremities become ſhrunk, cold, and perhaps affected with cold perſpiration, and lividity. The pulſe is frequent and ſmall. The tongue is moiſt, but not always free from load. The ſtomach uſually rejects every article of food or of medicine. The bowels are moved with great difficulty, but generally with much relief. The abdomen in general becomes tumid and tenſe, and exceedingly tender under preſſure.

An inflammation attacking the large inteſtines is diſtinguiſhed by pain uſually ſituated in the hypogaſtric and iliac regions, or on one or other ſide of the abdomen, and gradually becoming more general: this pain is at firſt, perhaps, of a violent or ſpaſmodic character; afterwards it is fixed, conſtant, increaſed under preſſure, reſtrains the movements of the body, and, in ſome degree, of reſpiration; and induces a ſtate of continued and painful contraction of the features. The patient becomes reſtleſs, and throws the arms about. The ſurface is affected as in inflammation of the ſmall inteſtines. The pulſe is ſometimes little accelerated, until the affection is advanced. The tongue is moiſt, and whitiſh or loaded. There is often little or no vomiting. The operation of purgative medicine is effective, but attended by an excruciating pain, characteriſtic of this diſeaſe. Sometimes the bladder ſeems to participate in this affection; and there is a conſtant deſire, with ineffectual efforts, to void urine.

Enteritis is much diſpoſed to terminate in gangrene, an occurrence indicated by a ſudden remiſſion of the pain, while, at the ſame time, the ſtrength fails, the pulſe ſinks, the voice grows feeble, the countenance ſhrinks, and aſſumes even a cadaverous aſpect; yet the diſtention of the belly is not diminiſhed, but often increaſed. This tendency to terminate ſpeedily in mortification conſtitutes the great danger of inflammation of the inteſtines. Sometimes the diſeaſe terminates in ſuppuration, which, though leſs rapidly fatal, moſt commonly wears out the patient's ſtrength and life in a lingering manner; but ſometimes this condition ends in recovery. The formation of pus is indicated in this diſeaſe, as in other internal inflammations, by the remiſſion, but not total ceſſation, of the pain, and by the occurrence of frequent fits of rigor, and ſometimes by a purulent diſcharge by ſtool. But the diſeaſe, eſpecially when the aid of medicine is early and actively obtained, frequently terminates favourably, by reſolution, as it is called; i. e. by a gradual diminution and ceſſation of the ſymptoms. If the pains abate gradually, and the tenderneſs and diſtention of the abdomen leſſen, while the pulſe becomes ſofter and fuller, natural evacuations of fæculent matters are paſſed, and a free general perſpiration breaks out, this favourable termination may be anticipated. Whereas, the continuance of the conſtipation and of the fixed pain, the increaſe of the ſickneſs and vomiting, the occurrence of the ſymptoms juſt deſcribed as indicative of gangrene, eſpecially if accompanied with hiccup and cold ſweats, are among the unfavourable prognoſtics.

The principal ſource of miſtake into which the practitioner is likely to fall in treating this diſeaſe, is in confounding it with *colic*; a ſpaſmodic diſorder, which requires a treatment eſſentially different, but which nevertheleſs occaſionally terminates in enteritis. The diagnoſtic ſymptoms of the two complaints have been already ſtated at length. See *Colica*, p. 149.

The *exciting cauſes* of enteritis are obſtructions in the bowels, which neceſſarily retain the fæces, until theſe, by their quantity or quality, become extremely irritating, and excite inflammation; or irritating ſubſtances conveyed into the inteſtine, which, by their bulk, ſhape, or indigeſtibility, or by their chemical or ſpecific acrimony, produce excitement there. Thus, the ſwallowing of hard kernels, ſeeds, or ſtones of fruit, of pieces of metal, &c. has often induced the diſeaſe; and the preſence of *ſcybala*, or hardened fæces, and of calculous concretions, operates partly by the immediate irritation which they occaſion. Thus alſo, ſtrong concentrated acids or alkalis, ſpirituous liquors, high-ſeaſoned food in large quantities, draſtic purgatives, worms, &c. in the inteſtinal canal, have excited inflammation in it in different inſtances. Hence the diſeaſe has ſometimes been the immediate effect of repletion, or of a fit of intoxication: and even a mild cathartic, when the bowels were loaded with much hardened fæces, which the medicine was incapable of removing, has, in ſome rare caſes, produced inverted motion and *intus-ſuſception*, terminating in enteritis. A very common cauſe of inflammation in the bowels is the application of cold to the legs and feet, or to the abdomen itſelf, eſpecially if ſudden or long continued. Gout, rheumatiſm, eryſipelas, or chronic eruptions, are ſometimes followed by inteſtinal inflammation. It is alſo a ſymptom in hernia.

In the *cure* of enteritis, as in all other acute inflammatory diſeaſes, the leading object is to remove the inflammation, from which all the other ſymptoms of the diſeaſe originate. This, though apparently an identical propoſition, cannot be too ſtrongly inculcated, in the treatment of enteritis; becauſe the exceſſive conſtipation of the bowels, which, in common with the reſt of the ſymptoms, is in general merely an effect of the inflammatory condition of the bowels in ſome part, is often attacked by the inattentive practitioner with active purgative medicines, as if it were the primary object, and the ſource of all the miſchief. The inflammation is to be ſubdued by blood-letting, from a large orifice, to an extent which muſt be various according to the conſtitution of the patient, and the violence of the ſymptoms. This depletion may be aided in its effects by the application of leeches, and afterwards of a bliſter, to the abdomen; and by the ſtricteſt abſtinence from all ſtimulating aliment. The blood-letting muſt be repeated in a ſhort time, if the ſymptoms do not abate, and the ſtrength of the patient is ſufficient to ſupport the evacuation; which can only be determined by the obſervation and experience of the practitioner. If the pulſe ſhould become fuller and leſs wiry after the operation, it will afford a ſtrong reaſon for the repetition of it, ſhould the continuance of other ſymptoms appear to require it. The warm bath may be reſorted to with advantage.

It muſt be obvious, that before the inflammation of the inteſtines is leſſened or removed by theſe meaſures, any additional irritation to the membranes, already in an acute ſtate of ſenſibility, whether by the immediate ſtimulus of a cathartic medicine, or by the contents of the bowels being forced forwards to the inflamed part, muſt tend to aggravate the diſorder, rather than to relieve it. In fact it is uſually found, that purgatives, given by the mouth, are not ſucceſsful, where this previous diminution of the inflammation has not been effected. And, when this has been accompliſhed, ſome of the milder purgatives, as the neutral ſalts, ſhould firſt be adminiſtered,

the action of the inteſtines downwards being at the ſame time ſolicited by emollient clyſters, which alſo contribute to the ſame relaxant purpoſes as the external fomentations. A purgative medicine has often been known to operate as ſoon as a bliſter, applied to the belly, began to riſe, though it had not acted previouſly: and this obſervation is ſtill more commonly verified, after a free evacuation by blood-letting.

Though it is not adviſable to irritate the bowels by draſtic purges, it is improper to allow conſtipation to continue in this complaint. Clyſters therefore, and the following mode of purging, will be found uſeful. Five grains of calomel may be given with one of opium; and, an hour afterwards, a large doſe of caſtor-oil. This will be retained on the ſtomach in conſequence of the ſedative operation of the calomel and opium; and the bowels will be opened without pain or irritation.

β. E. erythematica, exhibits various gradations of ſeverity of danger. It has already been amply treated of under the heads of Diarrhœa and Dyſentery.

12. Empreſma hepatitis, inflammation of the liver. Tenſion, ſoreneſs, and pain, in the region of the liver; pain about the right ſhoulder; difficulty of lying on the left ſide. This ſpecies has two varieties.

α. Hepatitis acuta: the ſpecific character deciſive, and the ſymptoms clearly marked.

β. H. chronica: the ſpecific character obſcure, and the exiſtence of the diſeaſe only to be ſuſpected from an expoſure to its cauſes, and an occaſional recurrence of the pathognomonic ſymptoms accompanied with a ſlight degree of fever.

The cauſes of this diſeaſe are often obſcure. Beſides the uſual ones of Empreſma, we find hepatitis frequent and ſevere in ſituations where extreme heat, or extraordinary viciſſitudes of heat and cold, are met with. The diſeaſe comes on with a ſenſe of chilline ſs preceding pain in the right hypochondrium, ſometimes dull, ſometimes ſharp, extending up to the clavicle and ſhoulder of that ſide moſt uſually, which is much increaſed by preſſing upon the part; and is accompanied with a cough, oppreſſion of breathing, and difficulty of lying, except on the ſide affected; together with nauſea and ſickneſs. The inteſtines are generally inactive, and the ſtools ſhow a deficiency of biliary ſecretion, or at leaſt of any intermixture of it with them; the urine is of a deep ſaffron colour, and ſmall in quantity; there is loſs of appetite, great thirſt, and coſtiveneſs, with a ſtrong, hard, and frequent, pulſe, of from 90 to 100 in a minute, and ſometimes intermitting; the ſkin is hot and dry at the ſame time, and the tongue covered with a white, and ſometimes a yellowiſh, fur; and, when the diſeaſe has continued for ſome days, the ſkin and eyes often become tinged of a deep yellow.

The appearance of the blood is ſomewhat remarkable juſt before it coagulates, when, the red part falling to the bottom, and the buffy coat not yet being formed, it appears of a dull green colour. This it owing to the mixture of the yellow-coloured bile with the purple-coloured venous blood, as yellow and purple form green: the coagulable lymph contains none of the purple colour; therefore the buffy coat is not green, but yellow. The ſame appearances are obſerved in the blood of a perſon labouring under jaundice.

In hepatitis, as well as in other ſpecies of Empreſma, we do not always find the ſymptoms of the ſame degree of violence as they are deſcribed in the definition: thus in ſome caſes the fever is ſevere, in others it is ſcarcely perceptible: in ſome inſtances, the pain is very acute and violent; in others, collections of pus have been found after death, when no pain had been felt. When the pain is ſeated deep in the ſubſtance of the liver, as that poſſeſſes little ſenſibility, the pain is uſually obtuſe; but, when the ſurface is affected, it is acute, and apt to ſpread to the diaphragm and lungs, producing cough.

Many authors have made a diſtinction between the ſymptoms that occur when the inflammation occupies the convex ſurface of the liver, and thoſe that are preſent when the diſeaſe affects the concave. It is ſaid, when great difficulty of breathing, and cough, accompany the pain in the region of the liver, that theſe ſymptoms indicate the inflammation to be ſeated in the ſuperior or convex part; but, where the inflammation occupies the concave or inferior ſurface, which lies contiguous to the ſtomach and duodenum, there is more ſickneſs and vomiting; and moreover, the pain is not ſo violent in that region of the organ as in the other inſtance. But theſe ſymptoms are not unequivocal.

Hepatitis, when it occurs in India, exhibits many anomalies which are very unuſual in this climate. Dr. Johnſon, in his well-known work on Tropical Climates, ſtates, that in many caſes, if we expect to find the pathognomonic ſymptoms of acute hepatitis, as it appears or is deſcribed in Europe, we ſhall be greatly deceived. "In *comparatively* few inſtances have I ſeen the violent rigors, high fever, hard, quick, and full, pulſe, acute pain, &c. which we would naturally look for as preceding the deſtruction of ſuch a large and important viſcus."

It accords, however, with Dr. Johnſon's experience, that ſuch caſes do occur during the firſt twelve or eighteen months after arriving in the country. He mentions the caſe of a young gentleman, who, deſpiſing all rules of temperance or precaution, ran about in the ſun for ſome days at Malacca, indulging in all ſorts of licentiouſneſs or inebriety; and was ſeized, in a day or two afterwards, with rigors and heat alternating; ſucceeded in a few hours by pain in the right ſide, extending acroſs the pit of the ſtomach, accompanied with ſome difficulty in reſpiration. He did not ſend for Dr. J. till twelve or fourteen hours after the attack. He had then high fever, hard quick pulſe, great dyſpnœa, a ſhort cough, and the moſt excruciating pain in the region of the liver; and a flux ſoon terminated his life. But our author met with few caſes in India ſo exquiſitely marked with acute European ſymptoms as this. In general, he ſays, the diſeaſe makes its approach in a much more queſtionable ſhape, though equally pregnant with danger as the foregoing, and not ſeldom more rapid in its courſe. "A man comes to us, complaining of having a flux. He ſays he is frequently going to ſtool; that he is griped, but paſſes nothing but ſlime; that his ſtools are like water, or ſome ſuch remark. It is ten to one if he mentions any other ſymptom at this time. But, if we come to interrogate him more cloſely, he will confeſs that he has had ſome ſoreneſs at the *pit of the ſtomach*, or perhaps in the right ſide. If we examine the part, a fulneſs will ſometimes appear; if we preſs upon it, he ſtarts back, or ſhrinks at leaſt from the preſſure. If we look into his countenance, beſides a certain anxiety we ſhall obſerve a dark kind of ſallowneſs in his cheeks, and a yellowiſh hue in his eyes. The latter is ſeldom abſent in hepatic diſeaſes, both in India and Europe. The temperature of the ſurface will probably not be much increaſed; but the ſkin will have a dry feel; his mouth will be clammy, and his tongue have a whitiſh or yellow fur towards the back part. His pulſe, though neither hard nor very quick, will have an irritable throb, indicative of ſome internal affection. His urine, if inſpected, which it always ſhould, will be found to tinge the bottom and ſides of the pot with a pink ſediment, or turn very turbid a few hours after it is voided; and he will generally complain of ſome heat and ſcalding in making water. Theſe are all the external marks we can perceive; and the few ſymptoms at the head of the liſt are all that the heedleſs ſoldier or ſailor has noticed, or at leaſt recorded. Happily for the patient, as well as his phyſician, the degree of violence in the bowel-complaint, where other ſymptoms are not conſpicuous, will be almoſt always a ſure index to the rapidity or danger of that in the liver. Whereas in thoſe caſes where the ſymptoms are of the violent or European caſt, particularly pain, fever, and dyſpnœa,

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the bowels are very frequently coſtive for the firſt few days of the complaint. If it is not early checked, it will frequently run on to ſuppuration, and then the chance of its pointing, or of the matter finding its way through ducts or adheſions, with ultimate recovery, is faint indeed. Other ſymptoms will occaſionally ariſe in this diſeaſe, or accompany it from the beginning. Thus the fever is ſometimes ſmart; the enlargement, hardneſs, or tenderneſs, of the part, more violent; the inability of lying on a particular ſide may be complained of; a ſhort cough may attend; or that particular ſenſation in the acromion ſcapulæ may be noticed, though it is not very often that this laſt is preſent. Theſe ſymptoms, and the duration of the complaint, will vary much. Indeed, the latter is very uncertain; as its continuance may be protracted to ſeveral weeks, without ſuppuration or organic derangement of vital importance following. This, then, is the hepatitis of India; and certainly there is no ſmall diſſimilarity in ſymptoms between it and the acute hepatitis of Europe. The flux, which may be termed the pathognomonic of the former is almoſt always wanting in the latter. The one (Indian) partakes more of inflammatory congeſtion and obſtruction; the other of active inflammation, like that of the lungs, kidneys, &c."

The cure of the acute hepatitis, as it occurs in this country, may generally be effected by the uſual cooling and depleting plan. Bleeding local and general, bliſters over the region of the liver, briſk cathartics, and, when the violence of the diſeaſe abates, the exhibition of mercury in full doſes, complete the liſt of meaſures this diſeaſe requires. In hot climates it will be neceſſary to puſh the mercury further, to begin with it earlier, and continue it longer, than is requiſite in the hepatitis of this country. In the former ſituation, indeed, it is often neceſſary to adminiſter calomel in ſcruple doſes in the very onſet of the diſeaſe; and bleeding need only be had recourſe to as an auxiliary. This, however, we by no means intend to deny, that very extreme bleedings are ſometimes required in Indian dyſentery; but mercury is the chief dependance: this medicine muſt be puſhed till it produces ſalivation, and its action kept up till all veſtige of diſeaſe is extinct.

Acute hepatitis terminates when not cured, in ſuppuration or gangrene. In this country, however, more patients die of the inflammation itſelf than of its ſequelæ. Suppuration is moſt common in hot climates. See *Apoſtema hepaticum*, p. 230. But few caſes are known of the occurrence of gangrene in the liver.

The ſecond variety, or *chronic* inflammation of the liver, is a diſeaſe which is more common in this country than the acute; and is ſo inſidious in its progreſs as to have ſometimes advanced to complete diſorganization, before its exiſtence was ſuſpected. In ſome meaſure, indeed, a ſimilar obſervation applies to all the chronic derangements of the ſubſtance of the liver, which often excite no alarm, by the ſymptoms which might be expected to accompany them, until they are fully formed. The ſlight indiſpoſition that occurs is attributed to indigeſtion, flatulence, or ſome other affection of the ſtomach; the pain of which the patient occaſionally complains is falſely referred to that organ; and its continuance is ſo ſhort, and the degree of it frequently ſo inconſiderable, as to demand but a ſlight attention. The relief obtained by eructation and the diſcharge of air alſo tends to confirm the opinion, that the ſeat of the diſeaſe is in the *ſtomach*: but this relief may be explained on the principle of removing the diſtention of the ſtomach, and ſo taking off the preſſure of this organ from the liver.

While this ſlow inflammation and gradual obſtruction is going on in the liver, the patient is ſubject to occaſional pain in the right hypochondrium, extending to the ſcapulæ, or to the top of the ſhoulder; a quick pulſe, an increaſe of heat alternating with chilly ſenſations, difficult breathing on quick motion, ſome difficulty of lying on the left ſide, flatulence, indigeſtion, acidity, coſtiveneſs; and, together with a gradual diminution of ſtrength and fleſh, he has a pale or ſallow complexion. The complexion, indeed, of a perſon affected with chronic obſtruction in the liver, although often not wearing the appearance of jaundice, yet has frequently a peculiar ſallowneſs, or a dirty-greeniſh hue, which Dr. Darwin, from its reſemblance to the colour of a full-grown ſilk-worm, has aptly, though pedantically, denominated *bombycinous*. The extent and duration of pains, Dr. Saunders obſerves, ariſing from diſeaſe of the liver, are ſo various, as frequently to deceive both the phyſician and patient; they extend to the ſhoulder, ſcapulæ, muſcles of the neck, along the arm, even to the joints of the wriſt. Every change of poſture either relieves an old pain, or induces a new one, as does the mere bending of the body in any direction, or even extending the arms. The pains are greater in a ſupine than in an erect poſture.

Theſe ſymptoms, and ſome others which make their appearance in the more advanced ſtages, are ſufficient to point out the exiſtence of chronic diſeaſe in the liver: but it is to be regretted, that they are not peculiar to chronic inflammation of that organ. Profeſſor Portal points out ſome difficulties in forming an accurate diagnoſis between diſeaſes of the liver and of ſome of the neighbouring organs, eſpecially of the lungs. He ſays that, on the one hand, obſtructions and congeſtions in the right lobe of the lungs, and the right cavity of the cheſt, ſometimes occaſion ſuch an alteration in the ſituation of the liver, by preſſing down the diaphragm, as to produce a ſuſpicion of diſeaſe in it, by occaſioning the appearance of a tumour in the right hypochondrium. He relates a caſe of this ſort, in which he was deceived by this apparent tumour, in a patient who died of pulmonary conſumption, where little or no expectoration took place: and he cautions practitioners not to be miſled by ſuch an appearance, which is common in all congeſtions of the cheſt. He affirms, too, that a degree of jaundice is occaſionally produced, where the bile has free paſſage into the inteſtines, but is there detained, in conſequence of mechanical impediments, as volvulus, ſtrangulated hernia, accumulations of hardened fæces, &c. when it is taken up by the lacteals, and enters the blood-veſſels. On the other hand, he remarks, if we ſometimes attribute diſeaſes to the liver which have their ſeat elſewhere, there are other maladies, actually ſeated in the liver, which are frequently aſcribed to other organs. Thus the contiguous viſcera, ſuch as the right kidney, the diaphragm, the lungs, the ſtomach, and the colon, are ſometimes ſuppoſed to be affected with diſeaſe, which is ſeated excluſively in the liver. Many examples of this are to be found in the writings of Morgagni and Lieutaud. Mr. Portal relates two caſes of ſevere and continued vomiting, connected with diſeaſed liver, the firſt of which proved fatal; and the other was cured, in conſequence of the leſſon taught by the previous diſſection. An enlargement of the liver was felt externally, with great tenderneſs in the epigaſtrium. See Mem. de l'Acad. des Sciences, Ann. 1777; or Mem. ſur pluſieurs Maladies, par Ant. Portal.

It would take up much ſpace to detail the immenſe variety of organic leſions which are met with in the liver. Some of theſe have been clearly accompanied or preceded by chronic inflammation; in others, the coincidence of this action is doubtful. We ſhall not enter into any account of them, ſince we do not find that diagnoſtic ſymptoms, diſtinguiſhing one particular degeneration of ſtructure from another, can be laid down; and, moreover, becauſe no curative indications can be founded even on the ſlight hiſtory of ſymptoms with which pathologiſts have furniſhed us. Indeed hydatids, various kinds of tubercles, ſcirrhus, ſoftening of the ſubſtance of the organ, adheſion of its ſurface with contiguous parts, and effuſion from its inveſting membrane, often produced over the whole of the peritoneum, and giving riſe to dropſy, are more rarely followed by death than the former leſions, which

which are in fact almoſt always fatal. We ſhould except, however, ſoftening of the liver, which is often unattended with danger, or indeed indiſpoſition.

The cauſes of this complaint are various, but the moſt frequent is indigeſtion. It is remarkable that organic alterations in the ſtructure of the liver happen more frequently in drunkards than in thoſe whoſe hepatic functions are deranged from other cauſes. The treatment of this has in ſome ſort pre-occupied our pen while treating of Dyſpepſia; it may be ſummed up in a few words. The adoption of meaſures which will enſure daily but moderate alvine diſcharges; a ſtrict regulation of diet, which muſt be very ſparing; otherwiſe, as the febrile ſymptoms are more clearly or more obſcurely marked, leeching to the region of the liver or to the anus, or even general bleeding if the hardneſs of the pulſe calls for it; and the cautious introduction of mercurial medicines, which may on ſome occaſions be puſhed to the extent of ſalivation; form the whole of the treatment. If mercury is expected to diſagree with the conſtitution, or if, after being tried, it is found uſeleſs, the nitro-muriatic acid both offers a means of correcting hepatic derangement, pleaſant in its modes of application, and often ſucceſsful in its effect. We have anticipated a full account of the mode of applying it under the article NITRO-MURIATIC ACID, vol. xvii. p. 104.

In organic derangements of the liver, a regular and ſtrict attention to what we call, for the ſake of brevity, the dyſpeptic treatment, with abſtinent living, and, if no great nervouſneſs be preſent, counter-irritation by means of an iſſue, offer the only means of palliation. The adminiſtration of mercury, ſo commonly reſorted to, often aggravates the diſeaſe; that is, if the alteration of ſtructure be of long ſtanding; for, while nothing but coagulable lymph is effuſed in the interſtices of the ſtructure of the liver, ſalivation will undoubtedly be of much ſervice.

13. Empreſma ſplenitis, inflammation of the ſpleen: heat, fulneſs, and tenderneſs, in the region of the ſpleen; pain upon preſſure.

The ſpleen is an organ which from its ſtructure is liable to congeſtion, or accumulation of blood, before actual inflammation occurs. Thus in the earlieſt ſtage of the diſorder, the organ is ſwelled from the paſſive ſtate of its veſſels, which receive a greater proportion of blood than they can return. No fever or pain accompanies this ſtate, but leads to inflammation by the tenſion and irritation of the membranes that inveſt the ſpleen, a ſenſe of fulneſs in the left epigaſtrium being the chief ſymptom.

In the ſecond ſtage, the pulſe becomes quicker, and it is long in convaleſcence before it is reduced to its natural ſtandard. The increaſed pulſe is produced by painful irritation at firſt, and next by the actual tenſion of the membranes, proceeding to inflammation and adheſion of the adjoining parts. The quickneſs of the pulſe will aſſiſt in diſtinguiſhing the degree of progreſs of this diſeaſe; for it will be found, by reference to hiſtories, that in a great proportion of caſes there was no warning of the growing miſchief in the earlieſt ſtage; and that painful affection of the left ſide exiſted in many other caſes long before fever was induced, though theſe ended fatally. In the firſt ſtage the patient can lie upon the left ſide, but not upon the right. In the ſecond ſtage it is impoſſible to lie on the ſide affected. The ſpaſmodic action of the diaphragm is more likely to come on in the ſecond ſtage, and may be much aggravated by ſtimulant treatment. There is no emaciation in the firſt ſtage of a morbid kind; nor any conſiderable emaciation in the ſecond ſtage, notwithſtanding the large and continued evacuations.

In the third and laſt ſtage of ſplenitis, emaciation is always an attending ſymptom, combined with hectic or ſlow fever, particularly in middle-aged and elderly people. In this third ſtage diarrhœa ſupervenes, as well as dyſentery, and diſcharges of grumous and dark blood take place, by vomiting and by ſtools: theſe diſcharges give temporary relief in many caſes, and occur long before the final event.

The treatment of this complaint is ſimilar to that of the other ſpecies of this genus. Bleeding muſt generally be the firſt ſtep, to relieve the congeſtion of the portal ſyſtem, and draſtic cathartics for the ſame purpoſes. A derivation to the capillary ſyſtem of the ſkin and muſcular ſyſtem muſt be attempted by antimonials and the warm bath; but, after the bleeding, our chief dependance muſt be on draſtic cathartics. Mercurial remedies are of uſe if the ſpleen becomes permanently enlarged.

The Splenalgia of authors is uſually a ſlight attack of this ſpecies with ſome ſmall degree of fever. Parabyſma ſplenica, or ague-cake, is a frequent ſequel of Splenalgia.

14. Empreſma nephritis, inflammation of the kidneys: pain in the region of the kidneys and ureters; frequent micturition; vomiting; numbneſs of the thigh on the affected ſide; retraction of the teſticle.

The chief difficulty, in this complant, is to diſcover whether the inflammation be idiopathic, or whether it ariſe from the irritation of calculi. The following ſymptoms, drawn chiefly from Dr. Hall's work On Diagnoſis, may afford ſome information as to this diſtinction.

Inflammation of the kidney is accompanied with a pain in the lumbar region, and often along the courſe of the ureter; a feeling of numbneſs of the thigh: retraction and pain of the teſtis; there is a frequent deſire to void urine, which is uſually high-coloured. There are generally nauſea and vomiting; pain, and conſtipation of the bowels. There is more or leſs of an expreſſion of pain in the countenance. The motions of the body are ſomewhat impeded; and certain motions are particularly painful; as bending to one ſide, or lifting up the thigh, eſpecially if the hand be preſſed forcibly on the knee at the ſame moment. Preſſure between the ſhort ribs and ilium, and ſometimes along the courſe of the ureter, induces an aggravation of the pain. The general ſurface is ſoft, warm, but moiſt. The pulſe is accelerated. Sometimes the pain and other ſymptoms affect one ſide only; ſometimes both ſides are affected.

Now, in calculus in the kidney or ureter, we find, at firſt, *paroxyſms* of excruciating pain in the ſituation of the kidney or ureter, attended by great muſcular contraction of the countenance; diſtortion of the body; holding and forcing of the breath; copious perſpiration; a frequent deſire of micturition, or retention of urine; the urine itſelf is ſometimes mixed with a mucous, puriform, or bloody, fluid. The tongue and pulſe are little affected. Theſe paroxyſms are apt to be induced by the violent motions of running, jumping, riding, &c. Sometimes the ſymptoms of calculus are more inſidious and continued, and leſs violent. They are apt to aſſume the character of inflammation, or of chronic diſeaſe of the kidney.

When the kidney is chronically inflamed, it is attended with ſome of the ſymptoms juſt detailed, though in a minor degree. At length perhaps a tumor is perceptible on examination of the region of the kidney and of the ſpace between the falſe ribs and the ilium. Diſeaſe of the kidney is diſtinguiſhed from organic diſeaſe of moſt of the other abdominal viſcera, by obſerving that the degree of emaciation is much leſs, or its progreſs much ſlower; eſpecially when the latter affections are attended by an equal degree of ſuffering. There is generally paleneſs of the countenance and general ſurface. The pulſe is accelerated.

The terminations of nephritis are the ſame as thoſe of other inflammations. In ſlight caſes, reſolution may be obtained; but, where the diſeaſe has continued with conſiderable violence for upwards of a week, ſuppuration may be apprehended. It may happen however, that, when the diſeaſe has been kept down by proper remedies, reſolution may take place as late as the fourteenth day. It is marked by the diſappearance

pearance of the fever, and all the ſymptoms. Suppuration is marked by a remiſſion of the pain, with rigors, throbbings, and hectic fever: in ſome caſes, pus is diſcharged with the urine.

On the firſt coming-on of this complaint, a quantity of blood, proportionable to the ſeverity of the pain, ought immediately to be taken away; and, if the firſt bleeding does not afford conſiderable relief, the operation ſhould be repeated on the ſame day, or on the next at fartheſt. Topical bleeding with ſeveral leeches will alſo be proper.

After bleeding, fomentations and clyſters may be uſed. The patient is at the ſame time to be directed to drink plentifully of barley-water, thin gruel, whey, or linſeed or marſh-mallow tea. The inteſtines are to be emptied by gentle purgatives, as frequently as the occaſion may require, in addition to emollient clyſters. The warm bath, and diaphoretics, ſuch as the ſaline medicine combined with nauſeating doſes of tartariſed antimony, will at the ſame time be proper. When the febrile ſymptoms do not run high, and the inflammation has been ſubdued by a vigorous adoption of antiphlogiſtic remedies, opiates may be uſed occaſionally to ſoothe pain, and may be added to the clyſters. In nephralgia, they are very important remedies, but not in pure nephritis.

In nephritis, the application of bliſters is ſometimes proper. The cantharides uſed in them ſhould be infuſed in boiling water, a mode of proceeding which deſtroys their irritating operation on the kidneys. If this be not done, abſorption of the bliſtering-fluid will do more harm than the local ſtimulus will do good. Towards the termination of the complaint, ſoda is a uſeful remedy. The reader will find ſome further uſeful remarks on this complaint under the articles NEPHRITIS and NEPHRALGIA, vol. xvi. p. 721.

15. Empreſma cyſtitis, inflammation of the bladder: pain and ſwelling in the hypogaſtric region; diſcharge of urine painful or obſtructed; teneſmus. It is often the reſult of wounds, ſometimes of cantharides; more generally idiopathic.

The treatment of this diſeaſe is the ſame as that of nephritis, except that drinking large quantities of fluid muſt be forbidden. Purging clyſters, containing opium, ſhould be injected very freely in this complaint.

16. Empreſma hyſteritis, inflammation of the womb: pain, ſwelling, and tenderneſs, in the hypogaſtric region; heat, pain, and tenderneſs, of the os uteri; vomiting; pulſe quick and low. It has two varieties.

α. H. ſimplex, the organ being unimpregnated: pain permanent, circumſcribed, throbbing; fever a cauma.

β. H. puerperarum: pain leſs acute, leſs circumſcribed; flow of urine difficult; fever a ſynochus or typhus.

The uterus is obviouſly liable to ſuffer inflammation, like the other viſcera of the body, from the common cauſes of inflammatory diſeaſe. In the unimpregnated ſtate, however, it is leſs frequently attacked by this diſorder than moſt of the neighbouring organs; and ſeldom, if ever, is thus affected, except about the periods when its veſſels are in a ſtate of increaſed action, in conſequence of the occurrence of the menſtrual diſcharge. At theſe periods, when not only the uterine ſyſtem, but the conſtitution in general, undergoes a ſlight erethiſm, or tendency to febrile excitement, ſudden expoſure to cold, violent exerciſe, great heats, or very high feeding, occaſionally bring on inflammation in the womb; more eſpecially in females of plethoric habit.

The moſt frequent cauſe of inflammation of the womb, however, is the irritation or injury which it is liable to ſuffer during the proceſs of parturition or abortion; occurrences which ariſe from the preſſure different parts of this organ neceſſarily undergo, during theſe proceſſes. Perhaps the free diſcharge of the lochia, which is a neceſſary conſequence of the ſeparation of the placenta, anſwers the ſecondary purpoſe of local depletion, and thus, like a copious blood-letting inſtituted by art, prevents the evils which would otherwiſe be very likely to enſue. This ſuppoſition is rendered farther probable, from the circumſtance that inflammation of the uterus, when it comes on a few days after child-birth, is connected with a ſuppreſſion of the lochial diſcharge.

Inflammation of the ſubſtance of the uterus uſually begins about the ſecond or third day after delivery; and is firſt known to exiſt by a ſenſation of pain felt at the lower part of the abdomen, which gradually increaſes in violence, and is diſtinguiſhable from after-pains by its conſtancy. *After-pains* are intermittent, like the pains of labour, depending, like them, upon contractions of the uterus; but the pain of *inflammation*, ariſing from the uninterrupted action of the veſſels, is neceſſarily unremitting. The patient complains much of any preſſure applied externally to the region of the uterus; and this organ feels larger than common under the hand, as well as much harder, reſembling almoſt a ſtone in firmneſs. Marks of conſtitutional affection ſoon appear in the increaſe of heat over the whole body, a white and dry tongue, thirſt, head-ache, a hard, full, and ſtrong, pulſe, (when the diſeaſe occurs in full habits,) and in all caſes a frequency of pulſe, from 100 to 120 ſtrokes in a minute. Very ſoon after the attack, the ſtomach is uſually affected with ſickneſs and vomiting; but this ſymptom is not invariable. There is commonly a conſiderable degree of pain in the back, ſhooting round the pelvis to the groins, and down the thighs. Not only the lochial diſcharge, but alſo the ſecretion of milk, is for the moſt part interrupted. The bowels are variouſly affected; often coſtive in the commencement of the diſeaſe, but frequently very looſe as it advances. The urine is commonly high-coloured, depoſiting ſometimes a pink-coloured ſediment, when it can be ſeen unmixed with the uterine diſcharges. It will ſometimes be found, when the diſeaſe has communicated with the neck of the bladder, or when the uterus and bladder have ſuffered, that ſuppreſſion of urine will take place, ſo that the catheter muſt be employed two or three times a-day to draw it off. On the other hand, we have ſeen the inflammation apparently extend to the kidneys, in which caſe no urine was ſecreted for two or three days; yet the patient experienced the ſenſation of an urgent deſire to make water, probably from the inflammation being likewiſe communicated to the neck of the bladder. If the inflammation is very great, it may ſpread to the peritoneum, covering the fundus of the uterus, and lining the cavity of the belly; in which caſe there is great ſwelling, tenſion, and ſoreneſs of the belly; and other new ſymptoms ariſe, ſuch as characterize the child-bed fever, deſcribed under PARTURITION, vol. xviii. p. 674.

In the progreſs of the diſeaſe, ſlight ſhiverings frequently take place at different times in the day, while the acuteneſs of the pain is diminiſhed, and the face of the patient becomes occaſionally fluſhed. Theſe ſymptoms, together with the increaſed frequency and weakneſs of the pulſe, mark the tendency of the diſeaſe either to ſuppuration, or to a dangerous failure of the vital powers. The tongue puts on a fiery red or ſcarlet appearance, which is often followed by aphthæ: ſymptoms of great general irritation ſucceed; and the patient is often cut off in a ſhort time. Now and then, however, a flow of fetid lochia relieves theſe ſymptoms: the pulſe becomes leſs frequent; the fluſhings more rarely appear; the tongue grows paler, and the ſkin, which before had been hot and dry, now relaxes and is cooler; a ſpontaneous diarrhœa comes on, and the patient recovers. The caſe is more favourable, and the proſpect of recovery greater, where theſe ſhiverings and fluſhings have never occurred; but where the uterus gradually becomes ſofter, and leſs tender on preſſure, the lochial diſcharge returns in its uſual quality and quantity, and the ſecretion of milk begins again.

As the diſeaſe is often extended to different organs at the ſame time, and the ſymptoms muſt neceſſarily be

rather complicated, the functions of all the ſuffering organs being in ſome meaſure deranged, an accurate diſtinction of the ſeat of the diſorder is often difficult. This, however, is the leſs important, as the ſame remedies will remove the inflammation, in whichſoever viſcus it may occur. Of theſe, *blood-letting* is the moſt efficacious; and, even in the puerperal ſtate, in ſtrong conſtitutions, it ſhould be early and liberally employed. In the diſeaſe happening independent of parturition, it cannot be omitted with ſafety, perhaps, under any circumſtances; but the repetition of it muſt be determined by the conſtitution of the patient, the violence of the ſymptoms, and the effect of the previous bleeding on the diſeaſe. It may frequently be found neceſſary a ſecond and a third time. A bliſter may be alſo applied to the belly, as near the ſeat of the pain as may be. Gentle cathartics, eſpecially of the ſaline claſs, are evidently uſeful in the caſe of hyſteritis *unconnected with child-birth*; but, in that which follows delivery, a courſe of purging is not to be recommended. It is always right, indeed, in the firſt inſtance, to procure two or three evacuations from the inteſtines; but, afterwards, it will generally be enough to preſerve the regular motions of the bowels, by giving, from time to time, ſmall quantities of caſtor-oil, or a little rhubarb mixed with ſome ſaline purgative. With a view of producing a determination to the ſkin, ſmall doſes of antimony and opium, or the compound powder of ipecacuanha, with the addition of a little rhubarb, and an occaſional ſaline draught, may be uſefully adminiſtered. In caſe a ſpontaneous diarrhœa ſhould come on, it ſhould not be interfered with, farther than taking care that the ſtrength of the patient be not too much reduced by it. Except where there is reaſon to ſuſpect the exiſtence of undigeſted or indigeſtible aliment in the ſtomach, the action of vomiting ſhould always be avoided; inaſmuch as it conſtantly increaſes the pain by the agitation which it occaſions, and the preſſure made by the muſcles of the abdomen on the inflamed uterus.

It is ſcarcely neceſſary to add, that, during the whole courſe of the diſeaſe, every thing heating and ſtimulating ſhould be cautiouſly avoided; that the food of the patient ſhould be of a mild and digeſtible nature, conſiſting of liquid and vegetable ſubſtances, and her drink watery and diluent, every ſort of animal food, and of fermented and ſpirituous liquors, being abſtained from.

As hyſteria occurs, both connected with and independent of parturition, particularly in thoſe who indulge in full diet, and in the uſe of heating food and liquors; ſo the prevention of the diſeaſe muſt depend principally upon temperance and regularity in this reſpect. In the former caſe, this end may be obtained by attention to the proper management of the woman both before and during labour. See Clarke's Eſſays on the Management of Pregnancy and Labour.

The terminations of this complaint are ſimilar to thoſe of the other ſpecies of this genus.

17. Empreſma orchitis, (Hernia humoralis, and Inflammatio teſtium, of various authors.) Inflammation of the teſticle. Pain and ſwelling of the teſticle; nauſea or vomiting; depreſſion of ſpirits; pulſe quick, ſomewhat low.

Subject to the ſame cauſes of inflammmation as other organs of the body, the teſticle is alſo extremely liable to an inflammation vicarious with the urethra. Hence its frequency in blenorrhœa. The firſt appearance of ſwelling is generally a ſoft pulpy fulneſs of the body of the teſticle, which is tender to the touch; this increaſes to a hard ſwelling, accompanied with conſiderable pain. The epididymis, towards the lower end of the teſticle, is generally the hardeſt part. The hardneſs and ſwelling, however, often pervade the whole of the epididymis. The ſpermatic cord, and eſpecially the vas deferens, are often thickened, and ſore to the touch. The ſpermatic veins ſometimes become varicoſe. A pain in the loins, and ſenſe of weakneſs there, and in the pelvis, are other caſual ſymptoms. Colicky pains; uneaſineſs in the ſtomach and bowels; flatulency; ſickneſs, and even vomiting; are not unfrequent. The whole teſticle is ſwelled, and not merely the epididymis, as has been aſſerted.

The treatment of orchitis, whether local or conſtitutional, does not differ eſſentially from that of phlegmon in general. The great ſympathy between the ſtomach and the affected organ indicate the propriety of adminiſtering nauſeating medicines; indeed the diſeaſe has been cured by vomiting when other means have failed.

Genus VIII. *Ophthalmia*, [from ὀφθαλμος, Gr. the eye.] Inflammation of the Eye. Generic characters—Pain and redneſs of the eye or its appendages; intolerance of light; flow of tears, or other excited ſecretion.

This Genus naturally follows the preceding, where inflammations of various parts are treated of; "and might perhaps," Dr. Good obſerves, "have been placed as a ſpecies under *Empreſma*, in which caſe it ſhould have been written *opthalmitis*: but it has various characters peculiar to itſelf, as well in regard to its ſymptoms as to the ſeat of the organ, which ſeems to entitle it to the rank of a diſtinct genus;" and accordingly he has divided it into the following ſpecies and varieties.

1. Ophthalmia taraxis, (Oph. membranarum, *Cullen.*) Lachrymoſe ophthalmy. The tunics of the eye-ball chiefly inflamed: increaſed ſecretion of tears. Divided into,

α. Mitis: limited to the ſurface; pain paſſable, without head-ache.

β. Acuta: extending to the lower part of the eye-ball; ſometimes commencing there; pain burning; tears perpetual and acrid; intolerable head-ache.

2. Ophthalmia purulenta, purulent opthalmy; the internal ſurface of the palpebræ aſſociating in the inflammation of the eye-ball; copious ſecretions of a purulent fluid. Four varieties.

α. Epidemica, Egyptian ophthalmy: epidemic; inflammation rapid and deſtructive; head-ache intolerable; often ſucceeded by delirium; at times remittent.

β. Metaſtatica: apparently produced by a ſudden ſuppreſſion of catarrhal, blenorrhoic, or other morbid diſcharge. The ſecretion often greeniſh.

γ. Intermittens: marked by regular intermiſſions. Nearly allied to the epidemic variety. Probably produced by marſh miaſmata.

δ. Infantum, purulent ophthalmy of new-born children: appearing ſuddenly, and without any oſtenſible cauſe in new-born infants: the palpebræ florid, and peculiarly tumid.

3. Ophthalmia glutinoſa, (Ophthalmia tarſi, *Cull.* Pſorophthalmia, *Ware.*) The inflammation chiefly ſeated on the tarſus; its ſebaceous glands ſecreting a viſcous and acrid fluid that glues and ulcerates its edges, and irritates the eye.

4. Ophthalmia chronica, blear-eye, or lippitude: eye weak and weeping after the inflammation has ceaſed; redneſs permanent, increaſed by ſlight cauſes. Often a relic or ſequel of the preceding ſpecies; and beſt relieved by gentle ſtimulants and aſtringents, as cold water, ſolutions of camphor, zinc, alum, lead; ſlight illinations of French brandy, laudanum, or the nitric oxyd of mercury in the form of an ointment.

Sometimes the eye aſſumes a general redneſs without pain, which is the Ophthalmia indolens of certain writers.

For the cauſes and treatment of moſt of the above ſpecies and varieties, ſee the article OPHTHALMIA, vol. xvii. p. 528.

Genus IX. *Catarrhus*, [Gr. from κατα, and ῥεω, to flow.] Catarrh. This term, like Ophthalmia, has been uſed in various ſenſes and latitudes by different authors. Schneider and Hoffman ſhow a diſpoſition to extend it to inflammation of mucous glands in general: and Parr, enticed by ſuch an example, has made it a genus for including

cluding not only what is commonly underſtood by Catarrh, but the cough of old age, (which he admits is without febrile action,) croup, dyſentery, phthiſis, cyſtirrhœa, leucorrhœa, gonorrhœa, and one or two others. This is the wideſt acceptation of the term: the narroweſt is that of the old pathologiſts, who thus diſtinguiſhed between three ſeparate terms which are now regarded by many writers as ſynonymous:

Si fluit ad pectus, dicatur rheuma *Catarrhus*,
Ad fauces, *Bronchus;* ad nares, eſto *Coryza.*

In the preſent ſyſtem, the following are the Generic characters—Inflammation of the mucous membranes of the fauces, often extending to the bronchia and frontal ſinuſes; infarction of the noſtrils; ſneezing, and for the moſt part a mucous expectoration or diſcharge from the noſe. There are two ſpecies.

1. Catarrhus communis, common catarrh, or cold in the head; in which the fever is ſlight, and the mucous diſcharge conſiderable.

Of thoſe ſlight inflammatory affections of the bronchiæ which are familiarly termed *colds*, and which ſpontaneouſly amend, we have already ſpoken of under Bex humida, p. 181. There are two remarkable varieties in acute catarrh.

The firſt, which commonly appears during ſudden changes of the weather, generally attacks old people, and thoſe of phlegmatic habits. This diſeaſe often deceives by the apparent mildneſs of its attack. The febrile ſymptoms are for the moſt part not ſevere at firſt, when compared with thoſe which uſually attend pneumonia. The patient does not complain of any fixed pain in the cheſt, but of conſiderable uneaſineſs and ſenſe of ſtraitneſs there. He is affected with oppreſſion about the præcordia, and the countenance is expreſſive of anguiſh. To theſe ſymptoms are added laſſitude over the whole body, and a general ſenſe of weight and tenſion over the breaſt. The reſpiration is quick and laborious. By degrees, from the accumulation of the ſecretions, the air-cells are more and more filled up, and a wheezing noiſe comes on. Hoarſeneſs, though not conſtantly, very frequently attends. The patient cannot take a deep inſpiration with the accuſtomed freedom; and the attempt to do ſo often brings on conſiderable cough, or increaſes the pain, if any exiſts. Early in the diſeaſe, the dyſpnœa is not aggravated by lying down, and no inconvenience ariſes from turning on either ſide; but, as it advances, the reſpiration is more free in the erect poſture. In addition to this conſtant dyſpnœa, there are caſes in which the patient is ſubject three or four times in the day to an aggravation of the difficulty in breathing; a ſudden conſtriction acroſs the thorax is complained of, which ſometimes, extending to the larynx, prevails to ſo great a degree as to prevent the voice from being articulate. In a ſhort time, however, ſuch exacerbations remit, and the complaint reſumes its continued form.

A cough is one of the firſt ſymptoms, and from the commencement is uſually accompanied with ſlight expectoration; though in ſome caſes, in the firſt ſtage, there is an unnatural dryneſs of the parts. The expectoration is always ſcanty early in the diſeaſe, and does not at all relieve the cough: but in a few days, if the diſorder begin to ſubſide, a copious ſecretion takes place from the inflamed membrane, and a large quantity of thick viſcid opaque mucus is ſpit up: after which the violence of the cough is uſually diminiſhed. The cough more frequently in this than in pneumonia excites vomiting: this uſually relieves the bronchia of very conſiderable portions of denſe white mucus, which are ſometimes moulded into the ſhape of their ramifications. The patient is frequently ſeized with fits of coughing, which aggravate the dyſpnœa; and, after their violence has ſubſided, he is left almoſt breathleſs, with a painful ſenſation of ſtraitneſs acroſs the cheſt. The urgency of theſe ſymptoms, however, gradually abates if another fit of coughing do not diſturb the reſpiration. Yet the dyſpnœa, in many caſes of this diſeaſe, is by no means proportional to the cough; the latter being often ſlight when the former is very ſevere. The cough and dyſpnœa are generally relieved by a copious expectoration, and more eſpecially in thoſe who are in the decline of life, and have been frequently the ſubject of catarrhal affections.

In almoſt every inſtance the cough is accompanied with intolerable pain acroſs the forehead, which may be ſympathetic, or it may be an actual extenſion of the inflammation. In many caſes drowſineſs and vertigo attend. The tongue is often dry, and the whole mouth feels clammy from viſcid mucus. The ſtomach refuſes all ſuſtenance, and the thirſt is urgent. The urine is ſometimes red and turbid, depoſiting no ſediment; and ſometimes it is ſcarcely changed from the natural ſtate. The frequency of the pulſe in the commencement of the diſeaſe is often not much increaſed; but during its progreſs ſome fulneſs and hardneſs are perceptible, though, in the more ordinary examples, fulneſs is more characteriſtic of this affection than hardneſs; and in thoſe whoſe conſtitutions are impaired by hard drinking, who are frequently attacked with this diſorder, the ſtrength of the pulſe is often rather diminiſhed than increaſed. The temperature of the body is ſeldom much raiſed, although the face is often flushed, and evening paroxyſms of heat and reſtleſſneſs come on. The ſurface is generally dry, unleſs acted upon by diaphoretic remedies. The blood drawn is, for the moſt part, buffed.

The duration of this diſeaſe is uncertain. It is often difficult indeed to determine the preciſe time of its commencement, ſo inſidious is the attack. In ſome caſes it terminates in a few days, whilſt in others it runs on to a much longer period. In the more violent caſes, when the remedies employed do not check the progreſs of the ſymptoms, the pulſe towards the ſeventh or eighth day becomes very quick and much weaker; occaſional perſpirations break out, the nails and lips aſſume a ſlightly livid hue, and the countenance is diſtreſſed, anxious, and pallid, with ſomewhat of a purple tinge. In fact, every ſymptom beſpeaks obſtruction in the air-paſſages. Soon afterwards the extremities grow cold, and the patient dies from ſuffocation.

In caſes of a leſs dangerous nature than above alluded to, the more diſtreſſing ſymptoms begin in ſix or ſeven days to ſubſide. The dyſpnœa becomes leſs urgent, the cough is relieved, and a copious expectoration of a thick white matter takes place. But the recovery is always ſlow, the expectoration continuing for ſome time, and generally preventing the patient from recovering his ſtrength for ſeveral weeks. Moreover, in this ſtate of the diſeaſe the bronchial membrane is particularly liable to be affected by atmoſpheric changes; and thus, not unfrequently, a chronic affection of a very obſtinate nature occurs. If, however, the weather be favourable, after the worſt ſymptoms have been removed, the diſeaſe often gradually diſappears; but not without leaving the mucous membrane much diſpoſed to take on inflammatory action, which will almoſt inevitably occur when the exciting cauſes again operate in any conſiderable degree.

Inflammation of the bronchia, when it takes place in the ſtrong and plethoric, uſually produces ſymptoms of much greater ſeverity. The pulſe, the ſurface, and the tongue, all uſually indicate violent reaction; but the countenance is often peculiarly pallid. The progreſs of this variety of catarrh is more rapid than that of the one before ſpoken of. Even in this, however, there is rarely a fixed pain in any part of the cheſt, but a diſtreſſing ſenſe of *ſtraitneſs* is conſtantly felt. The breathing is hurried and laborious, the patient only experiencing tolerable eaſe in an erect poſture. A cough almoſt conſtantly attends, but it ſeldom bears any proportion to the dyſpnœa; the former being often trifling when the

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latter is very oppreſſive. Some expectoration is generally preſent in the early ſtage of this diſeaſe; and its ceſſation, if the dyſpnœa continue, is one of the worſt ſigns, as it ſhows that there is not ſtrength enough remaining to enable the patient to relieve the cheſt from the matter which is poured out into the bronchia; it muſt conſequently accumulate, and at length entirely fill them and the air-cells. The ſkin, ſays Dr. Badham, is dry, the tongue foul, and the urine high-coloured and ſcarce; the pulſe, however, varies in other reſpects, always hard, the neceſſity of immediate veneſection for the moſt part obvious. Wheezing is not ſo conſtant an attendant on this as on the firſt variety. It is chiefly noticed towards the cloſe of the diſeaſe.

The ſtage of excitement, if not met by appropriate remedies, almoſt invariably terminates in a correſponding ſinking of all the powers of the ſyſtem: dyſpnœa takes place; the lips become purple; the pulſe ſinks, and is much increaſed in frequency; the heat of the ſurface is greatly diminiſhed; the ſkin is generally damp, and the forehead and chin are bedewed with cold perſpiration. Expectoration, from being copious, becomes ſcanty, or altogether ceaſes; and the patient dies from the accumulation of the ſecreted fluids in the air-cells. The violence of the dyſpnœa, and the tendency of this diſeaſe to terminate fatally as early as the fifth or ſixth day, form its moſt ſtriking features.

When vigorous meaſures are early employed, ſo as to make an impreſſion on the conſtitution, theſe dangerous ſymptoms occaſionally give way. The dyſpnœa abates; the conſtriction acroſs the cheſt ſubſides; the cough is relieved, being attended with a more copious and thicker expectoration, which affords much relief. The pulſe, the ſurface, and the tongue, become more natural, and by degrees the patient is free from preſent danger. The great debility which has been induced, however, neceſſarily renders recovery very ſlow; and frequently a tedious chronic diſeaſe enſues, which is characteriſed by a frequent and violent cough, and a very copious expectoration of a pus-like matter. The pulſe is greatly quickened, the face is often flushed, particularly towards evening, and in the night partial perſpirations break out. To theſe ſymptoms is ſometimes added extreme emaciation: indeed almoſt all the ſymptoms of a ſupervening phthiſis appear, and the death of the patient ſeems inevitable.

The diſcrimination of acute catarrhus from pneumonitis is difficult; and theſe diſeaſes cannot be always diſtinguiſhed from each other. The countenance is frequently pallid in catarrhus; it is not ſo in pneumonitis. The dyſpnœa and anxiety are more diſtreſſing in the former diſeaſe than in the latter. Pain is ſeldom complained of in catarrhus, a diffuſed ſoreneſs of, or a peculiar *ſtraitneſs* acroſs, the cheſt being alone felt; whilſt pain almoſt conſtantly attends pneumonia. When the expectoration commences, it is much more copious in inflammation of the bronchial membrane than in inflammation of the ſubſtance of the lungs or pleura. The wheezing noiſe which almoſt conſtantly attends ſome of the varieties of inflammation of the bronchia is ſeldom heard in that of the lungs. There is ſomething alſo peculiar in the reſpiration in almoſt every inſtance of acute catarrhus; it is hurried and anxious; and, as Dr. Badham obſerves, the efforts of all the voluntary muſcles that can be called into action render the oppreſſed ſtate of the lungs ſufficiently evident. The anxiety of countenance is much greater in catarrhus than in pneumonitis. The pulſe is alſo different in bronchial inflammation; it is frequent, but it wants the hardneſs and vibration of the pleuritic pulſe.

We may likewiſe be aided in forming our diagnoſis by attending to the origin of the diſeaſe. If the pectoral attack ſucceed to rubeola, it is more than probable that it is ſeated in the bronchial membrane. In the ſame manner, if difficulty of breathing and cough come on immediately after the diſappearance of any affection of the ſkin, there is good ground to ſuſpect that the mucous membrane lining the air-paſſages may be in a ſtate of diſeaſed action. In variola, when much difficulty of breathing occurs, it is probable that inflammation of the bronchial membrane may have taken place. In chronic ulceration of the trachea, when any ſudden attacks of difficult breathing happen, and continue for ſome time, it is likely that the more minute air-paſſages are inflamed.

The danger from acute catarrh is different in the different varieties; but it is true of both, that, when the breathing is not very difficult, the cough not ſevere, the expectoration copious and free, and affording relief, the pulſe regular and firm, and not very frequent or hard, and the ſtrength not much reduced, the prognoſis is not unfavourable. When the breathing is very high and laborious, a degree of coma ſupervenes, the nails become livid, and the voice is hoarſe and indiſtinct: when the anxiety and ſenſe of oppreſſion are very great, and the pulſe weak, quick, and fluttering, the fatal event will almoſt inevitably occur. There are few diſeaſes, however, in which the prognoſis is more uncertain than in the firſt variety of bronchitis. Our chief dependence may be placed on the ſtate of the expectoration. Whenever the diſeaſe terminates favourably, the expectoration is free and copious; and, in proportion as the danger increaſes, the lungs become more oppreſſed, the expectoration ſcanty, and the debility great.

When bronchitis attacks the ſtrong and plethoric, the danger is ſeldom equivocal. No inflammatory affection of the pulmonary organs is more frequently fatal than this. There is much to dread, even if vigorous meaſures be employed at an early period. The ſenſe of conſtriction acroſs the cheſt; the hurried, anxious, and laborious, breathing; the cough without much expectoration, the dry and hot ſkin, the foul tongue, the high-coloured urine, and the quick pulſe, indicate the ſeverity of the inflammation. The prognoſis is more favourable if the breathing be relieved, and the cough be attended with a free expectoration. But it is much worſe if we obſerve the ſlighteſt purple tinge on the cheeks, or if the expectoration diminiſh, and the breathing become more difficult; or, finally, if the eyes be rather prominent, and the patient alternately reſtleſs and lethargic. The caſe is altogether hopeleſs when the pulſe becomes quite feeble and frequent; or when partial ſweats break out, and the expectoration ceaſes. In young children, the prognoſis is more unfavourable than at any other age.

Catarrhus ariſing from cutaneous diſeaſes is more dangerous than that proceeding from cold.

The following is a conciſe view of the means we have recourſe to for removing theſe inflammatory affections. To moderate the excitement of the ſanguiferous ſyſtem, general blood-letting, and abſtinence from all ſtimulating food. To promote expectoration and perſpiration, antimonial and ſaline medicines. To direct the fluids towards the ſurface, and relieve the congeſtion of the debilitated capillaries, local blood-letting, bliſters, and rubefacients. The above means are general and local. Of thoſe which are general, blood-letting is by far the moſt powerful for diminiſhing the excitement of the ſyſtem; but it is not equally called for in all the varieties of bronchitis. In the firſt variety, where the diſeaſe occurs in phlegmatic habits, veneſection is generally proper; but, on account of the peculiar habit of body, blood-letting ſhould be employed with caution; for Sydenham obſerves, (and all ſucceeding writers have admitted the accuracy of his obſervation,) that patients of this deſcription do not bear bleeding well. The abſtraction of ten ounces of blood from the arm early in the diſeaſe, ſometimes mitigates the ſymptoms; after which it is generally more ſafe to depend upon an attention to diet, proper expectorants, and local evacuations. The peculiar tendency to effuſion often renders the treatment of this

Genus & Dr Davis objects to general bleeding on his grounds in our Phlegmatia.

this affection difficult, as we are ſometimes deterred by that cauſe from purſuing the blood-letting when the inflammatory ſymptoms indicate its employment. In this event we muſt ſubdue the inflammation by thoſe means which are leaſt likely to bring on effuſion.

Catarrhus, however, as has been noticed in the hiſtory of the ſecond variety, ſometimes occurs in robuſt habits, and occaſions violent ſymptoms. The ſtage of excitement in theſe caſes is not of very long continuance; it ſoon terminates in irremediable debility. The ſhort ſpace of time that is allotted for the employment of antiphlogiſtic meaſures ſhould not, therefore, be allowed to paſs without an attempt to make a decided impreſſion on the diſeaſe. With this view, blood-letting ſhould be boldly employed. From twenty to thirty ounces of blood may be taken from the arm in ſevere caſes, at the firſt blood-letting. It is difficult, however, to direct the preciſe quantity of blood. If the patient be of a ſtrong habit, and the pulmonary ſymptoms urgent, and the febrile excitement conſiderable, we ſhould allow it to flow till the pulſe becomes weak, or the pulmonary ſymptoms are relieved. There are few caſes which yield to one blood-letting. The propriety of its repetition ſhould be determined by the degree of benefit obtained, the ſtate of the ſymptoms, and the ſtrength of the patient. Several blood-lettings are ſometimes required. When the diſeaſe attacks children, general blood-letting ſhould be employed as far as the ſtrength will admit. In young children we cannot always obtain blood from the arm, but we may generally ſucceed in taking it from the jugular vein. This practice, indeed, is attended with ſome advantage, as the blood is taken from a veſſel which pours its contents into the thorax. For the moſt part, however, children do not bear the loſs of blood well; but in an attack which is menacing life there is no alternative: we muſt adopt powerful meaſures, for without them the diſeaſe will almoſt certainly prove fatal; but ſuch is its dangerous character, that even by them its progreſs is often not arreſted. When bronchitis is complicated with chronic diſeaſe of the trachea, blood letting to any great extent cannot be always employed; for, if ulceration of the trachea have come on, the ſtrength is often ſo much exhauſted by it, that the loſs of any conſiderable quantity of blood is not admiſſible. Even if relief be obtained by theſe means, it can only be temporary, unleſs the ulceration can be removed. Bronchitis ariſing from the irritation of external tumours requires veneſection; but this remedy cannot give effectual relief, unleſs the cauſe producing the inflammation can be taken away.

Vomiting is ſometimes productive of relief. Several writers have ſpoken very highly of the uſe of emetics in the ſecond variety. The aqueous ſolution of tartarized antimony is in general, perhaps, the beſt remedy for producing it, although in young children it is not ſo ſafe as ipecacuanha, which, in them, ſhould be conſequently preferred. Independently of the action of the former as an emetic, it ſeldom fails to excite diaphoreſis, which if general, and not too profuſe, nor brought out by heating meaſures, is uſually beneficial. But the good effects of antimonials are not confined to thoſe caſes in which we wiſh to produce vomiting. In every variety of acute catarrh, when there is much fever preſent, the greateſt advantage is derived from the ſteady uſe of antimonials. They are indeed the moſt valuable of all medicines; for they not only, by exciting nauſea and opening the pores of the ſkin, conſiderably leſſen the febrile excitement, but, by their action on the exhalant veſſels of the lungs, they promote expectoration, and thus leſſen the inflammation of the mucous membrane. They may be given in combination with ſaline draughts and nitrate of potaſs. In the advanced ſtage, when the inflammation is nearly ſubdued, and the bronchia are clogged, ipecacuanha combined with ſquills is often of great ſervice; but in all caſes of this diſeaſe, as long as the excitement is conſiderable, if antimonial remedies be excepted, no expectorants are ſo uſeful as mucilaginous mixtures.

In every variety of bronchitis, we ſhould keep the body lax; and, in the commencement of the diſeaſe, ſhould adminiſter an active purgative, ſo as to clear the alimentary canal, and ſhould afterwards ſo employ it as to keep up a due action of the bowels. Opium is prejudicial as long as there is much fever; but, when that declines, and irritability of the ſyſtem and air-paſſages ſtill prevails, it not unfrequently allays the cough, and calms the patient. But opiates muſt be employed with great caution, eſpecially in the ſecond variety; for when the ſecretion is copious, and the ſtrength much reduced, they interrupt, for a time, the efforts to expectorate, and may thus prove fatal. In combination with ſmall doſes of calomel, opium may ſometimes be exhibited at an earlier period of the diſeaſe. When conjoined, theſe remedies not only diminiſh the cough and aſſiſt expectoration, but ſeem likewiſe to regulate the ſecretions throughout the ſyſtem. Diuretics have been adviſed by ſome writers of authority; and, when the diſpoſition to effuſion ſhows itſelf, the milder kinds may be of conſiderable ſervice.

Local blood-letting ſhould be uſed under the ſame reſtrictions as in other inflammations. Bliſters are productive of great benefit after the excitement has been conſiderably relieved by blood-letting. But when catarrh occurs in phlegmatic habits, and aſſumes the form of peripneumonia notha, bliſtering may then be employed from the commencement, and is one of the remedies to be chiefly relied on in the cure of that variety. If the diſeaſe be obſtinate, we ſhould not be content with a ſmall bliſter to the cheſt; one of ſufficient ſize to cover the whole of its anterior part ſhould be applied; and, if the ſymptoms do not readily yield, the diſcharge from the bliſtered part ſhould be ſupported, or a ſucceſſion of bliſters employed.

The tepid bath often relieves this as well as other internal inflammations, by removing the tenſion of the ſurface, and exciting diaphoreſis. Local fomentations and cataplaſms may be alſo uſed: they bring a larger quantity of blood into the veſſels of the integuments covering the thorax, and encourage a more copious effuſion of blood from the leech-bites. When the diſeaſe becomes chronic, thoſe remedies are to be had recourſe to which we have mentioned when treating of chronic catarrh. See p. 183 of this article.

The diſſections of catarrhal ſubjects manifeſt morbid appearances in the following order: Redneſs of the bronchial membrane; want of elaſticity in the lungs; mucous, ſanguineous, or purulent, exhalation; ulceration of the bronchiæ; a redneſs or other morbid appearance of the ſubſtance of the lungs, ſhowing the exiſtence of pneumonia and bronchitis.

Dropſy and a variety of dyſpeptic ailments are ſometimes aſſociated with Catarrhus; the dropſy as a conſequence, the dyſpepſia a cauſe, of the pulmonary diſeaſe. Of the dyſpeptic bronchitis we have ſpoken under Dyſpepſia; and the latter does not require a diſtinct treatment. The ſame remark is applicable to the catarrhus attending meaſles and other exanthems.

2. Catarrhus epidemicus, the epidemic catarrh, or influenza: attack ſudden; great heavineſs over the eyes; fever ſtrikingly depreſſive; epidemic.

For an excellent Chronological Table of the beſt writers upon the ſubject, from the Cronica Meteorologica Tuſcana of 1323, by Targioni Tozzetti, to Saillant's Tableau des Epidemies catarrhales, ſee Cullen's Synopſis, in loco. It appears, from what can be gathered from theſe ſources, that the influenza was a catarrh which was no otherwiſe diſtinguiſhed from the firſt ſpecies than by its ſeverity and its being *contagious*. Dogs and horſes are ſubject to a violent and frequently fatal variety of this diſeaſe; in moſt inſtances highly contagious or epidemic. This, among ourſelves, is vulgarly known by the name

of *diſtemper*, or *ſnuffles*: among noſologiſts it is called Catarrhus caninus. Dr. Good mentions it as a ſingular well-aſcertained fact, that dogs which have undergone this catarrh never *generate* lyſſa, or canine madneſs, though they are capable of receiving it by contagion.

Genus X. *Sparganoſis*, [Gr. from σπαργαω, to tumefy and diſtend; *tumeo et diſtentus ſum*, as rendered by Scapula.] Generic characters—Pale, tenſe, glabrous, diffuſed ſwelling of a limb; great tenderneſs; inflammation ſubcutaneous, unſuppurative. There is only one ſpecies.

Sparganoſis puerperarum, milk-ſpread, or Phlegmaſia dolens: occurring, for the moſt part, during the ſecond or third week after child-birth; limited to the lower extremity, and chiefly to one ſide; exhibiting to the touch a feeling of numerous irregular prominences under the ſkin; fever a hectic.

This complaint is not always confined to the puerperal ſtate, but it is ſo in moſt caſes. In about twelve or fifteen days after delivery, the patient is ſeized with great pain in the groin of one ſide, accompanied with a conſiderable degree of fever, which however is ſeldom preceded by rigor or ſhivering. This part ſoon becomes affected with ſwelling and tenſion, which extend to the labium pudendi of the ſame ſide only, and down the inſide of the thigh, to the ham, the leg, the foot, and the whole limb: the progreſs of the ſwelling is ſo quick, that in a day or two the limb becomes twice the ſize of the other, is moved with great difficulty, and is hot and exquiſitely tender, but without any external appearances of inflammation. The pain in the groin is generally preceded by a pain in the ſmall of the back, and ſometimes by a pain at the bottom of the belly on the ſame ſide; the parts which ſuffer the moſt pain are the groin, the ham, and the back part of the leg about its middle. The pain indeed extends over the whole limb, in conſequence of the ſudden diſtention; but in a day or two it becomes leſs ſevere. The ſwelling is general and equal over the whole limb; it is much harder and firmer than in anaſarca, in every ſtage of the diſorder; it is not ſo cold, in any ſtate of the diſeaſe, as the dropſical ſwelling, nor ſo much diminiſhed by a horizontal poſition, neither does it *pit* when preſſed upon by the finger, nor does any water iſſue from it when it is punctured by means of a lancet. The ſurface is very ſmooth, ſhining, and pale; and is even and equal to the touch in every part, except where the conglobated glands are ſituated, which in ſome caſes are knotty and hard, as in the groin, the ham, and about the middle of the leg at its back part.

This diſorder generally comes on in the ſecond or early in the third week after parturition. But Mr. White mentions one inſtance in which it commenced as early as twenty-four hours after delivery, and another as late as five weeks: but theſe are rare and extreme occurrences. The diſeaſe ſubſides in the following order: firſt the pain and ſwelling of the groin and labium pudendi, begin to remit, next thoſe of the thigh, and laſtly thoſe of the leg.

The fever in ſome patients ſubſides in two or three weeks, in others it continues ſix or eight weeks, attended with quick pulſe and hectic ſymptoms. The diſeaſe ſometimes attacks both extremities; but this rarely happens, perhaps not in one caſe in ten. After the diſorder has exiſted a week or two, it is not uncommon for the ſound leg to ſwell towards evening, and become œdematous; but then the groin and thigh are not affected on that ſide, and the leg is much ſofter to the touch than the other, and pits when preſſed upon by the finger. Mr. White (Inquiry into the Nature and Cauſe of that Swelling in one or both of the Lower Extremities, which ſometimes happens to Lying-in Women, 1784), affirms, that he has never known it to ſuppurate or prove fatal, or to be followed by any material inconvenience, after a few months were elapſed, except a little ſwelling of the leg after fatigue, particularly after walking.

The cauſes of this diſeaſe are not very obvious. It attacks women who are in full ſtrength, and thoſe who are reduced by flooding; thoſe who have a moderate diſcharge of the lochia, and thoſe who have a ſmall or a large quantity; thoſe who give ſuck and thoſe who do not, whether their breaſts be drawn or not, and whether they have a great deal or little milk. It attacks women in whatever poſition they have been delivered; but of thoſe who were delivered on the ſide, it appears that the greater number were affected on that ſide in which they lay at the time of delivery. It attacks women of all ranks and of different habits, both the rich and the poor; the moſt healthful, as well as thoſe who have laboured under chronic diſeaſes: the ſtrong and the weak, the lean and the corpulent; the ſedentary and the active; the young and the middle-aged; after the firſt or any other labour, and whether the labour be natural or preternatural. It happens at all ſeaſons of the year indiſcriminately; and in the country as well as in large towns. It never attacks either of the arms, or other parts of the body; and, though it ſometimes occurs in both the lower extremities, in the ſame or in different lyings-in, it never attacks the ſame limb more than once.

The complaint ſeems to conſiſt of an inflammation ſeated in the muſcles, cellular membrane, and interior ſurface of the ſkin, which produces a rapid effuſion of ſerum and coagulable lymph from the exhalants into the cellular membrane of the limb. Dr. Hull, in his learned treatiſe on Phlegmatia dolens, divides the diſeaſe into three ſtages; and treats the firſt, or inflammatory, ſtage, upon antiphlogiſtic principles, applying leeches and bliſters to moderate the local action; and emollient fomentations, liniments, and ointments, to relieve the tenſion of the ſkin. The ſecond ſtage does not require or bear evacuations; but the other parts of the antiphlogiſtic treatment, ſuch as reſt, the removal of irritations, gentle diaphoretics and ſedatives, the warm bath, &c. muſt be continued; and the topical affection is to be remedied by gently ſtimulating liniments. The third, or aſthenic, period, requires the adminiſtration of tonics and ſtimulants, and exerciſe, eſpecially in a carriage; while at the ſame time the topical affection muſt be treated by the application of a tight bandage, by the cold bath, or cold water daſhed on the limb, and by remedies which may increaſe the action of the abſorbents, ſuch as bliſters, friction, heat, electricity, &c. and by the internal medicines which excite abſorption, ſuch as mercury, digitalis, alkalies, &c. Theſe remedies, particularly the evacuants, will of courſe be regulated according to the vigour and habit of the patient.

Genus XI. *Arthroſia*, [Gr. from αρθρον, a joint.] Articular Inflammation, or Joint-ache. Generic characters—Inflammation moſtly confined to the joints, ſeverely painful; occaſionally extending to the ſurrounding muſcles. This genus contains four ſpecies, including gout, rheumatiſm, &c.

The nature of neither gout nor rheumatiſm is preciſely known. The capſules of joints, the ſheaths of tendons, and indeed of the tunica propria muſculorum, appear to be the parts chiefly affected; and it ſeems alſo, that inflammation is the affection in queſtion. The diſeaſes, however, of rheumatiſm and gout vary in their antecedent and concomitant ſymptoms, and alſo in regard to the morbid depoſitions to which they give riſe. It does not ſeem clear, however, that either of theſe diſeaſes is unconnected with conſtitutional malady; becauſe arterial inflammation of the membranes of the joints is not always attended with the ſymptoms of gout and rheumatiſm. The connexion of gout and indigeſtion has been long obſerved; and, from all we have been able to gather, this connexion has been almoſt invariable. The diſeaſe has, in the majority of caſes, attacked plethoric and intemperate perſons; and even the exceptions which have happened have always preſented patients,

who

who from mental exertions, from hereditary predispoſition, or from ſome other of the numerous cauſes of indigeſtion, have had the abdominal viſcera diſordered. In ſpeaking of Dyſpepſia, we have before ſtated, that it was capable of producing nervous irritation in many parts of the body, and that, if it continued very long, was very violent in degree, or if the ſanguineous ſyſtem was debilitated, it would produce inflammation. This it ſeems to do in gout. We infer that it does ſo, becauſe dyſpepſia always precedes gout. It does not indeed appear that it is the long continuance or the violence of the nervous excitement which is the cauſe of the inflammation, ſince neither the one nor the other is often preſent. We muſt look, therefore, to the ſanguineous ſyſtem, which we believe will in all gouty caſes be unuſually full, and its contained blood will be unnatural.

We are quite unable, in the preſent ſtate of our knowledge, to ſhow why the inflammation attacks the limbs and joints rather than other parts; but we are equally ignorant of the cauſes which determine other inflammations to particular parts of the body. We conclude, then, that gout is a diſeaſe of irritation, in which the inflammatory action is brought on by diſtant diſorder. It is no argument againſt the theory in queſtion, that many patients are *quite free from ſymptoms of indigeſtion during an attack of gout*; becauſe, as we have before ſhown under Dyſpepſia, inflammation being eſtabliſhed in a diſtant part, it acts as a counter-irritant to the original diſeaſe, as when long-continued indigeſtion brings on inflammation of the lungs, and the dyſpepſia goes off. Rheumatiſm, on the other hand, ſeems leſs connected with indigeſtion.

Having indulged in theſe few remarks, and being on the whole quite diſſatisfied with our progreſs in the ætiology of either gout or rheumatiſm, we ſhall proceed to detail their ſymptoms and cure.

1. Arthroſia acuta, acute rheumatiſm: pain and inflammation, uſually about the larger joints and ſurrounding muſcles, often wandering; urine depoſiting a lateritious ſediment; fever a cauma. Four varieties.

α. A. artuum: pain chiefly felt in the joints and muſcles of the extremities.

β. A. lumborum, lumbago: pain chiefly felt in the loins; and ſhooting upwards rather than below.

γ. A. coxendicis, ſciatica: pain chiefly felt in the hip-joint; producing emaciation of the nates on the ſide affected, or an elongation of the limb.

δ. A. thoracis, ſpurious pleuriſy: pain chiefly felt in the muſcles of the diaphragm; often producing Pleuritis diaphragmatica.

This diviſion into varieties is rather nominal than real; and all the diſtinctions of rheumatiſm required by practical men is that of acute or chronic, or combined with gout.

Acute rheumatiſm begins, like moſt other febrile diſeaſes, with fits of chilline ſs, which are ſucceeded by increaſed heat, frequent pulſe, thirſt, loſs of appetite, and proſtration of ſtrength. Not unfrequently, however, the peculiar ſymptoms appear before any febrile ſymptom is obſerved; namely, pain and inflammation in the joints. The pain ſometimes affects the joints alone; but often it affects alſo the muſcular parts, ſhooting along the courſe of the muſcles from one joint to another; and it is always increaſed by the action of the muſcles, that is, by any attempt to move the joints that are diſeaſed. Its uſual ſeat is in the larger joints, ſuch as the hips, knees, ſhoulders, and elbows: the ankles and wriſts are alſo frequently attacked; but the ſmaller joints, ſuch as thoſe of the toes and fingers, ſuffer conſiderably leſs. Two, three, or more, of theſe joints, are commonly affected at the ſame time; but the pain is conſtantly ſhifting its place, leaving ſome joint and going to another, and frequently returning again to each of them ſeveral times during the courſe of the diſeaſe; and in this manner the diſeaſe is often protracted for a conſiderable length of time. Soon after, and ſometimes at the ſame moment with the commencement of the pain, the joint ſeized becomes ſwelled and ſomewhat red, and is extremely painful to the touch. The pain is ſometimes relieved by the occurrence of ſwelling, but not always; neither is the joint thus rendered more ſecure from a return of the attack. The patient, thus unable to move the joints affected, which are irritated and acutely pained by external contact, ſometimes even by the weight of the bed-clothes, and in a ſtate of ſevere internal pain, unable to find any poſition of eaſe, lies ſleepleſs and reſtleſs for ſeveral days and nights together. The fever accompanying the diſeaſe is moſt conſiderable during the night, at which time the pains alſo are moſt violent. The pulſe is commonly from ninety to a hundred in a minute, and occaſionally more frequent; often full, and ſometimes hard and ſharp, but moſt frequently ſoft. The heat of the ſkin is conſiderable, and the diſeaſe is commonly attended with ſweating, even from an early period, which is often profuſe and conſtant, but never either relieves the pains permanently or proves a criſis to the fever. The urine, in acute rheumatiſm, is remarkably high-coloured from the beginning, and afterwards depoſits moſt copiouſly a browniſh-red ſediment, like brick-duſt. This ſediment, however, is probably the reſult rather of the profuſe ſweating than of any peculiarity belonging to the diſeaſe; ſince it is commonly ſeen after a doſe of ſudorific medicine, or any other variety of perſpiration. Like the ſweating, it does not occaſion or betoken any favourable change in the fever. The blood exhibits, in a high degree, the buffy coat.

With the ſymptoms above detailed, the rheumatic fever often continues for ſeveral weeks: it ſeldom, however, proves fatal, and perhaps never while the joints alone are the ſeat of the diſeaſe; the fever, indeed, uſually becomes leſs violent after two or three weeks, and the pains leſs ſevere, and leſs diſpoſed to change their place. But occaſionally the inflammation of the joints has diſappeared, and ſome vital organ, as the brain, lungs, or ſtomach, has been ſeized with inflammation, by which the patient has been carried off; or theſe organs have become ſimultaneouſly affected, and the ſame fatal event has enſued.

It has been remarked by Dr. Cullen, as indicative of the peculiar nature of rheumatic inflammation, that the acute rheumatiſm, though it has ſo much of the nature of the other phlegmaſiæ, differs from all thoſe hitherto mentioned in this, that *it is not apt to terminate in ſuppuration.* Indeed this hardly ever happens in rheumatiſm: but the diſeaſe ſometimes produces effuſions of a tranſparent gelatinous fluid into the ſheaths of the tendons. He ſays, "if we may be allowed to ſuppoſe that ſuch effuſions are frequent, it muſt alſo happen that the effuſed fluid is commonly re-abſorbed; for it has ſeldom happened, and never indeed to my obſervation, that conſiderable or permanent tumours have been produced, or ſuch as required to be opened, and to have the contained fluid evacuated. Such tumours, however, have occurred to others, and the opening made in them has produced ulcers difficult to heal. (Firſt Lines, par. 448.) The non-occurence of ſuppuration in theſe violent rheumatic inflammations is of itſelf a ſtriking characteriſtic of the diſeaſe; and the circumſtance, that it is not productive, on the other hand, of what are called *chalk-ſtones*, or of that cretaceous-like ſecretion which is the reſult of the inflammation of gout, diſtinguiſhes it from the latter malady. In addition to this circumſtance, however, there are other points of diſtinction between the *gouty* and *rheumatic* inflammation; namely, that the latter uſually attacks the large joints; that it is not preceded by ſymptoms of indigeſtion; that it does not recur in regular paroxyſms; and that it attacks younger people, and thoſe not liable to gout from their modes of life; and that is uſually the effect of a ſpecific cauſe, *cold.*

The prediſpoſing cauſes of rheumatiſm, are plethora

and

and the other cauſes of inflammation in general. Males, and thoſe between the time of puberty and thirty years of age, are the moſt liable to acute rheumatiſm.

2. Arthroſia chronica, chronic rheumatiſm: pain, weakneſs, and rigidity, of the larger joints and ſurrounding muſcles; increaſed by motion; relieved by warmth; ſpontaneouſly or eaſily growing cold; fever and ſwelling ſlight, often imperceptible.

The varieties are the ſame as thoſe of the preceding ſpecies, of which Cullen regards the diſeaſe as a mere ſequel. It appears however at times to be idiopathic; but it is often difficult to draw the line between the two; and indeed a variety of links connect acute and chronic rheumatiſm together. In moſt inſtances, chronic rheumatiſm is the direct conſequence of an attack of the acute form of the diſeaſe. The febrile ſymptoms, the ſwelling, and particularly the redneſs of the joints, have diſappeared, and the general functions have reſumed their healthy condition; but ſtill certain joints continue to be affected with pains and ſtiffneſs, which are particularly felt on motion, and are often accompanied by a ſpontaneous coldneſs, and a torpor ſometimes almoſt amounting to paralytic. Theſe affections are much influenced by the changes in the temperature and humidity of the atmoſphere; and are diſtinctly aggravated by external cold, and relieved by external warmth. The parts affected are not eaſily made to perſpire; ſo that, when the other parts of the body are brought into a ſtate of free and warm perſpiration, that on the pained joints is only cold and clammy. The pains are alſo, like thoſe of acute rheumatiſm, moſt ſevere in the night.

This chronic affection of the joints, however, is very often altogether independent of any previous inflammation and ſwelling, and occurs in many perſons who have never been ſubject to an attack of acute rheumatiſm. It occurs, indeed, very frequently in perſons ſomewhat advanced in life, and beyond the period when the acute form of the malady is uſually ſeen. In theſe caſes it is commonly aſcribed to the action of cold; very often to partial expoſures of the particular parts of the body in which it takes its ſeat; and it is apt to be produced again and again in thoſe parts which have once ſuffered from expoſure of other parts of the body to cold. Thus, getting the feet wet will induce an attack of lumbago, ſciatica, or a crick in the neck, according to the prediſpoſition induced in theſe reſpective regions by former attacks. Many caſes of chronic rheumatiſm, are aſcribed, however, to violent ſtrains of the muſcles of particular parts, occurring on ſudden and ſomewhat violent exertions, and even to fatigue from long-continued exertions of particular muſcles.

As to the *treatment* of rheumatiſm, this is different according to the ſtage of the malady. In the firſt ſtage of rheumatiſm, free general bleeding muſt be had recourſe to, followed by purgatives and local bleeding. When the diſeaſe is mitigated by theſe meaſures, our endeavours may be directed to the abatement of pain by means of opiates; and alſo to the cure of the diſeaſe by certain remedies empirically adminiſtered; of theſe cinchona and opium have the greateſt reputation. Indeed ſome practitioners have recommended theſe drugs at the onſet of the diſeaſe. This ſeems to us highly improper. The object of cinchona can only be to ſtimulate the veſſels of the inflamed membrane, with a view to the recovery of their natural powers; nor can opium be any further advantageouſly exhibited than as it aſſuages pain, and thus removes one of the conditions of inflammation. Seeing the diſpoſition of rheumatiſm to ſuffer metaſtaſis, we ſhould be very careful not to remove, by any other than conſtitutional remedies, the local affection. Cold lotions may be uſed however to abate the violence of the inflammation.

When the rheumatiſm has become *chronic*, the curative meaſures muſt be changed. We ſhould remove occaſionally general plethora; but our attention ſhould for the moſt part be directed to the nervous ſyſtem; and we ſhall find topical remedies by no means uſeleſs. In addition to the rigid adoption of the dyſpeptic treatment, a free uſe of guaiacum ſhould be reſorted to; or in ſome caſes ſmall doſes of antimony, calomel, and opium, with warm fomentations to the affected joints.

When the ſymptoms are mitigated, counter-irritants may be uſed with advantage. Some other ſubſtances have been employed, with occaſional ſucceſs, in the cure of different caſes of chronic rheumatiſm, which do not appear to poſſeſs any quality in common, and the operation of which, therefore, cannot be ſatisfactorily explained. Among theſe we may mention *ſulphur*, which has long poſſeſſed a ſort of popular reputation for the cure of lumbago, and ſome other varieties of the diſeaſe. Taken nightly in a conſiderable doſe, ſo as to act gently upon the bowels, it has ſucceeded, in ſome inſtances, in affording a very ſpeedy and marked alleviation of the ſymptoms; but, on the other hand, it has very often failed to produce any effect whatever; and under what circumſtances theſe reſpective variations in its operation occur, no one has been able to aſcertain.

As another expedient for the cure of chronic rheumatiſm, the *arſenical ſolution* of Dr. Fowler has been recommended; and, if plethora and dyſpepſia be removed, it may be employed with ſafety, and, as it ſeems to us, with ſucceſs.

The warm or tepid bath, from the temperature of 85° to 95° of Fahrenheit's thermometer, has been much uſed, but ſeems to be ſomewhat ſuperſeded by the application of the *vapour* of hot water to the ſurface. Dr. Bardſley ſays, "whenever the joints were found ſo rigid as to be nearly immoveable, and the pains upon motion exquiſitely ſevere, or when the muſcles had become contracted and almoſt paralytic, and indeed in every protracted caſe of the diſeaſe of the hip-joint, lumbago, or ſciatica, the vapour of hot water, locally and properly applied, afforded (eſpecially in conjunction with other topical applications) a ſafe and often ſucceſsful remedy."

As counter-irritants in chronic rheumatiſm, bliſtering, iſſues, or the ointment of emetic tartar, have been employed with highly-beneficial effects. In ſlight caſes, *rubefacients*, or thoſe ſubſtances which ſtimulate the cutaneous veſſels, and excite a redneſs of the ſurface by cauſing them to be diſtended with blood, will be found uſeful, eſpecially when their operation is aided by *friction*.

Among other ſtimulants which have been employed for the cure of chronic rheumatiſm, eſpecially in thoſe caſes which are obſtinate and of long duration, or are accompanied by conſiderable torpor and rigidity, and a diminution of the vital heat, the influence of the *electric* and *galvanic* fluids has been reſorted to; and many teſtimonies might be adduced in proof of the beneficial operations of both theſe agents. Dr. Bardſley affirms, that the application of electricity by ſparks and ſhocks, eſpecially the former, was manifeſtly advantageous; at the ſame time he acknowledges, that it was chiefly in conjunction with the local application of vapour, and with tonics and anodynes adminiſtered internally, that the moſt marked advantages were produced.

3. Arthroſis podagra, the gout: pain and inflammation chiefly of the ſmaller joints, returning after intervals; often preceded by, or alternating with, unuſual affections of the ſtomach, or other internal parts; unſuppurative. Three varieties.

α. P. regularis: the articular pain, ſwelling, and inflammation, conſiderable; continuing for ſeveral days, often with remiſſions and exacerbations; then gradually diſperſing, and leaving the conſtitution in its uſual or improved health.

β. P. larvata; diſguiſed and lurking in the conſtitution, and producing derangement in the digeſtive or other functions, with only ſlight and fugitive affection of the joints.

γ. P. complicata: the diſeaſe fixing on ſome internal

organ, inſtead of on the joints; or ſuddenly transferred from the joints after having fixed there; producing, in the internal organ affected, debility or inflammation according to the ſtate of the conſtitution.

The gout ſometimes comes on ſuddenly, without any warning of its approach; but it is generally preceded by ſeveral ſymptoms, eſpecially by thoſe of indigeſtion, as heart-burn, flatulence, and heavineſs after meals, with eructations of acid or bitter matters, and ſome degree o languor and torpor of the body; but immediately before the fit the appetite is ſometimes unuſually ſharp. There is alſo often an unuſual coldneſs of the feet and legs for a few days preceding the fit, with the ceſſation of the perſpiration about the former; a frequent numbneſs, alternating with a ſenſe of prickling, along the whole of the lower extremities; occaſional cramps of the muſcles of the legs, and an unuſual turgeſcence of the veins, are occaſionally obſerved.

The attack is ſometimes felt in the evening, but more commonly about two or three o'clock in the morning; when the patient is awakened from a quiet ſleep by a pain affecting one foot, generally the ball or firſt joint of the great toe, but ſometimes the other parts of the foot, or the ankle. This pain is accompanied with more or leſs of chilline ſs and ſhivering, which, as the pain increaſes, gradually ceaſe, and are ſucceeded by a hot ſtage of pyrexia, or ſymptomatic fever, which continues during the ſame time as the pain. The pain becomes by degrees more and more violent: at firſt it is attended with a ſenſation as if warm water were poured upon the membranes affected, and is ſaid to reſemble the pain of a diſlocated joint; as it becomes ſevere, it is ſometimes deſcribed as reſembling the pain of a tenſion or laceration of the ligaments, ſometimes as like that from the gnawing of a dog, and ſometimes as a feeling of weight and conſtriction of the membranes of the part, which becomes ſo exquiſitely tender, as not to endure the weight of the bed-clothes, nor even the ſhaking of the room from a perſon walking briſkly in it. Hence, great reſtleſſneſs of the whole body, and eſpecially of the part affected, always accompanies the fit; the patient conſtantly changing his poſture, with a view to eaſe the pain, which, nevertheleſs, continues ſevere all the following day, until midnight, after which it gradually remits: and about two or three in the morning, that is, after twenty-four hours from the firſt attack, it commonly ceaſes almoſt entirely; and this freedom, with the breaking out of a free perſpiration, allows the patient to fall aſleep. On waking, he finds the pain ſlight, and the part affected with ſome redneſs and ſwelling.

When a paroxyſm has thus come on, although the violent pain, after the period of twenty-four hours, be conſiderably diminiſhed, yet the patient is not entirely without pain. For ſome days he has a return every evening of pain and fever, which continue, with more or leſs violence, till morning. After continuing in this manner for ſeveral days, the diſeaſe ſometimes goes off entirely, not to return till after a long interval; and in ſuch caſes it generally leaves the perſon in very perfect health, enjoying greater eaſe and alacrity in the functions both of body and mind than he had for a long time before experienced.

It often happens, however, that the diſeaſe does not thus ſpeedily quit the patient, eſpecially when he has previouſly ſuffered conſiderably from its attacks. For, inſtead of ceaſing altogether after a few days, it ſeizes the other foot in the ſame manner as it did the former, both in reſpect to the vehemence and duration of the pain. Moſt commonly the foot firſt affected becomes quite eaſy, in ſuch a caſe, and even as ſtrong and healthy as if it had not been diſeaſed; but ſometimes both feet are affected together, and with equal violence. When this happens, the ſucceeding exacerbations, as Sydenham remarks, are leſs regular, both as to the time of coming on, and as to their continuance; but the pain always increaſes in the evening and remits in the morning; and what is called a *fit* of the gout, which goes off ſooner or later, according to the age and conſtitution of the patient, is made up of a number of theſe little fits. For, when this diſeaſe laſts two or three months, it is not to be eſteemed one continued fit, but rather a ſeries or aſſemblage of ſmall fits, the laſt of which proves milder and ſhorter, until the whole is terminated. In ſtrong conſtitutions, and ſuch as have the gout ſeldom, the attack is commonly finiſhed in fourteen days; but in thoſe of advanced life, or who have frequent returns of the diſeaſe, theſe ſeries of fits will continue for two months; and in ſuch perſons as are more debilitated, either by age or the long continuance of the diſorder, it will not go off till the ſummer advances, (beginning, as is moſt common, in January, or early in February,) which ſeems to drive it away.

When the fit is going off, a violent itching ſeizes the foot, eſpecially between the toes; and the cuticle peels off. The appetite and ſtrength return ſooner or later, according to the greater or leſs ſeverity of the preceding fit, and the interval of health between the paroxyſms is generally nearly in the ſame ratio; i. e. longer in proportion to the greater violence of the laſt fit. At the beginning of the diſeaſe, Dr. Cullen obſerves, the returns of it are ſometimes only once in three or four years; but after ſome time the intervals become ſhorter, and the attacks become annual; afterwards they come twice each year, and at length recur ſeveral times during the whole courſe of autumn, winter, and ſpring; and as it happens that, when the fits are frequent, the paroxyſms become alſo longer, ſo, in the advanced ſtate of the diſeaſe, the patient is hardly ever tolerably free from it, except, perhaps, for two or three months in ſummer.

Before the diſeaſe becomes thus inveterate, however, it has gradually aſſumed other appearances, and attacked other parts of the body. At firſt it commonly affects one foot only; but afterwards every paroxyſm affects both feet, the one after the other, and then both together; and its changes of place as it continues to recur, are not only from one foot to the other, but alſo from the feet into other joints, as the hands, wriſts, elbows, knees, &c. ſo that there is ſcarcely a joint in the body that is not, on one occaſion or other, affected. It ſometimes ſeizes on two different joints at the ſame time; but more commonly it is ſevere in a ſingle joint only, and paſſes ſucceſſively from one joint to another; ſo that the patient's affliction is often protracted for a long time. The pains, indeed, are commonly leſs violent, in this ſtate of the diſeaſe, than they were at firſt; but, in addition to them, loſs of appetite, ſickneſs, and other ſymptoms of the atonic gout, now afflict him. Beſides, in the intervals between the firſt paroxyſms of the diſorder, the joints which had been affected were entirely reſtored to their former ſuppleneſs and ſtrength, and were free from pain or uneaſineſs, and all the functions of life were well performed. But in this protracted condition of the diſeaſe, the joints remain not only weak and ſtiff after the termination of the fit, but they become at length ſo contracted and diſabled, that, although the patient can ſtand, and perhaps walk a little, yet it is very ſlowly, and with great lameneſs and difficulty, ſo that he is ſcarcely able to move from room to room; and ſometimes the joints loſe their motion altogether.

In many perſons, though not in all, when the diſeaſe has frequently recurred, this immobility of the joints is farther increaſed by the formation of concretions, of a chalky appearance, upon the outſide of them, and for the moſt part immediately under the ſkin. The ſecretion or depoſition of this matter is characteriſtic of the diſeaſe, being the conſequence of gouty inflammation alone. It ſeems to be depoſited at firſt in a fluid form, but afterwards becomes dry and firm; in which ſtate the concretions have the appearance of a friable earthy ſubſtance, and have been called *chalk-ſtones*, which ſee, vol. iv. p. 75.

From the inveſtigations of Dr. Wollaſton, however, and other modern chemiſts, it has been aſcertained that they contain no calcareous or earthy matter, but conſiſt of a neutral ſalt, formed by the combination of the lithic or uric acid, with the fixed alkali, ſoda; conſtituting a lithate or urate of ſoda. Theſe concretions form principally about the joints of the toes and fingers, in little nodules; but ſometimes they appear about the larger joints, as the elbow and knee, occaſioning a whitiſh ſwelling almoſt as large as an egg, which becomes gradually inflamed and red.

The attack of the *regular* gout is readily diſtinguiſhable from the only diſeaſe which reſembles it, viz. acute rheumatiſm, if all the ſymptoms are taken into conſideration. In the firſt place, gout is commonly a diſeaſe of advanced life; acute rheumatiſm is moſt frequent from the age of eighteen to thirty. Nor does rheumatiſm, like the gout, ſeize the feet in preference to the other joints, or remain for a conſiderable time in the ſame joint; but at the firſt attack it often ſeizes every joint of the body in ſucceſſion, and ſometimes continues for ſeveral months. The colour of the ſkin of the part affected in rheumatiſm, if it be changed, is only ſlightly red, whereas it becomes of a deep bright red in the gout. The pain in the rheumatiſm is not extremely acute while the part is at reſt, but becomes violent when it is moved only; which is not the caſe in the gout. And the ſymptoms of indigeſtion and diſordered ſtomach, which precede the paroxyſm of the gout, together with the marks of diſtinction juſt mentioned, will ſerve particularly to determine the nature of the paroxyſm. It muſt be admitted, however, there are inſtances of the combination of the ſymptoms of the two diſeaſes, which renders it difficult to decide to which of them the individual examples belong.

When the gout is cured in the limbs, inflammation of other organs of the body is often obſerved; and many practitioners have concluded that the tranſlated diſeaſe differed from common inflammation. There appears no juſt reaſon for ſuppoſing this. The ſymptoms of theſe inflammations are ſimilar, and the cure preciſely the ſame. Our knowledge of the previous condition of the patient might induce us to rely more fully on counter-irritation, ſeeing that this proceſs had a curative effect on the original malady; but further no difference ſhould be made between the treatment of gout and that of inflammation, when vital organs are attacked. Simple irritations alſo alternate with gout, and require the uſual treatment: ſevere ſpaſms of the belly by hot and ſtimulating medicines; and ſo on.

The *cure* of gout is no eaſy taſk. It is one, however, which well repays the practitioner for his labour, whether he conſiders the alleviation of human ſuffering, or the pecuniary emoluments he derives from his profeſſion; for no diſeaſe is productive of more pain, or more excluſively attaches itſelf to the higher orders of ſociety.

The connexion between gout and indigeſtion having been pointed out, it remains merely to apply the knowledge of this connexion to the cure of the diſeaſe. In the firſt place, we have ſtated fulneſs of veſſels to be one of the conditions of gout: this therefore muſt be removed. In ſome caſes, a very large bleeding may be neceſſary; in others, a very ſmall one will ſufficiently diminiſh the plethora. The treatment of the local plethora is compriſed in cold lotions, leeching, or cupping; but theſe ſhould not be ventured on till general plethora has been removed by bleeding, and the derangements of the digeſtive organs, which firſt give riſe to the ſymptoms in the extremities, ſet to rights. For the latter purpoſe, temperance and activity are the chief meaſures in which we can place confidence. By *temperance*, however, we do not mean a ſudden relinquiſhment of the nutritious food and ſtimulating liquors in which the patient has indulged; neither, in recommending *exerciſe*, is it our intention to cauſe exceſſive exertions to ſuperſede a life of ſlothful eaſe. The diet muſt retain many of the properties to which the gouty ſubject has long been accuſtomed; and the change which we make ſhould be gradually brought about.

We cannot give any very preciſe rules as to the ſort of diet which it ſhould be our ultimate aim to eſtabliſh. It may be ſufficient to remark, that in plethoric patients this ſhould gradually be deprived of thoſe ſubſtances which are rich and eaſy of aſſimilation, while the quantity is at the ſame time diminiſhed. In patients who are not plethoric, but in whom nervous irritations, whether mental or otherwiſe, have deranged the digeſtive organs, this plan muſt be modified; and the diet of a nutritious though eaſily-digeſtible quality, as jellies, ſoups, &c. muſt ſuperſede the more abſtinent diet.

As to the medical treatment of the gouty, this will in ſome meaſure vary according to the nature of the attending dyſpepſia. The acid ſecretions of the ſtomach require carbonate of ſoda, a medicine which alſo acts on the kidneys. Derangement in the hepatic ſecretion requires calomel; and the inaction of the bowels, purgatives, &c. But, upon the whole, it ſeems generally underſtood, that little medicine is required in the dyſpepſia of gouty patients. The derangement in the ſecretion of the kidneys in gout has made many phyſicians turn their attention to a probable connexion between theſe two affections. In ſpeaking of Dyſpepſia, we have already ſtated the opinion of a diſtinguiſhed pathologiſt, that in that complaint an acid is actually aſſimulated into the blood, and that it gives riſe to gravel; and, as is well known, an acid humour in the blood was once conſidered the proximate cauſe of gout. We have already mentioned objections to Dr. Phillip's views on the ſubject of calculi. It is certain, notwithſtanding, that promoting the ſecretion of the kidneys is attended with ſalutary effects in the complaint under conſideration. The action of the ſkin and of the capillary ſyſtem in general ſhould be excited, in gout, by bathing, and by exerciſing the *ſound limbs*. The ſame treatment, which cures the gout once eſtabliſhed, prevents alſo its recurrence; and indeed, *if temperance and exerciſe were ſtrictly uſed during convaleſcence, it is probable that few would ſuffer from repeated attacks of gout.*

Having then gone through the treatment of gout on principles of pathology, it remains to mention a powerful remedy, of the ſalutary effect of which moſt medical men can bear teſtimony, though they know nothing of its modus operandi. This is the Colchicum, or meadow-ſaffron. It has long been uſed in quack-medicines as a ſpecific for the gout; and was preſcribed by the ancients; and lately it has become extremely popular. It is ſaid to act on the ſkin, the kidneys, and the bowels; but it ſometimes does much good without producing any viſible effect of this kind. It is not, however, a ſpecific for gout: it is a highly dangerous remedy to tamper with; and it labours under the opprobrium, that patients cured by it are very apt to ſuffer attacks of gout at a ſhorter period than when cured by the ordinary plan of treatment. It may be uſed in conjunction with other medicines with great advantage. A variety of formula are advocated by different practitioners; but it does not ſeem that any one of them is preferable to another. We have generally uſed the wine. It is worthy of remark, that if the ſediment be ſeparated from the preparation of Colchicum, its effects are leſs likely to be injurious than if this portion is taken into the body. We repeat, that few patients who are cured by Colchicum, or by any other medicine, will ſuffer a relapſe if they ſtrictly obſerve temperance and exerciſe.

4. Arthroſis hydarthrus, white ſwelling: tenſe, permanent, colourleſs ſwelling, chiefly of the larger joints; inflammation ſlow, and deep-ſeated; pain ſevere and fixed; imperfectly ſuppurative; fever a hectic. Two varieties are noted.

α. Plethoricus, rheumatic white ſwelling: pain diffuſed; ſwelling conſiderable from the firſt; originating

and chiefly ſeated in the cartilages and ligaments of the affected joint; found principally in plethoric habits.

β. Strumatoſus, ſcrofulous white ſwelling: pain circumſcribed and ſhooting from a point; ſwelling from a general thickening of the part; at firſt inconſiderable; originating and chiefly ſeated in the bone. Found principally in ſcrofulous habits.

Theſe varieties are upon the authority of Bell on Ulcers; but Hunter ſays, "I conceive all ſuch collections of matter to be of a ſcrofulous nature: they are moſt common in the young ſubject, and ſeldom found in the full-grown or old. The ſuppuration is not proper pus, nor the ſwelling proper inflammation." Hunter on Blood, p. 391. See the article SURGERY.

Order III. EXANTHEMATICA, [from ἐξανθέω, to ſpring forth, to bud.] Eruptive Fevers; or, cutaneous eruptions eſſentially accompanied with fever. This order contains four genera.

Genus I. *Enantheſis*, [from ἐν, within, and ἀνθέω, to ſpring, or flower.] Raſh, or efflorescence from internal affection. Generic characters—Eruption of red, level, or nearly level, patches; variouſly figured; irregularly diffuſed; often confluent; terminating in cuticular exfoliations. There are three ſpecies.

1. Enantheſis roſalia, (Scarlatina of various authors.) Scarlet fever: raſh a ſcarlet fluſh, appearing about the ſecond day on the face, neck, or fauces; progreſſively ſpreading over the body; and terminating about the ſeventh day; fever a typhus. Of this genus there are two varieties.

α. R. ſimplex: fever moderate, and terminating with the raſh; little proſtration of ſtrength; ſlightly contagious.

As no authors have written on cutaneous diſeaſes ſo ably and ſo fully as Drs. Willan and Bateman, we ſhall extract all our accounts of cutaneous diſeaſes from the works of the latter.

The Roſalia ſimplex conſiſts merely of the raſh, with a moderate degree of fever. The day after the ſlight febrile ſymptoms have appeared, the efflorescence begins to ſhow itſelf, about the neck and face, in innumerable red points, which, within the ſpace of twenty-four hours, are ſeen over the whole ſurface of the body. Theſe, as they multiply, coaleſce into ſmall patches, but on the following day (the third) form a diffuſe and continuous efflorescence over the limbs, eſpecially round the fingers. On the trunk, however, the raſh is ſeldom univerſal, but is diſtributed in diffuſe irregular patches, the ſcarlet hue being moſt vivid about the flexures of the joints and the loins. On the breaſt and extremities, in conſequence of the great determination of blood to the miliary glands and papillæ of the ſkin, the ſurface is ſomewhat rough, like the cutis anſerina, and ſeveral papulæ are ſcattered on theſe parts. See Plate III. fig. 2. On the following (the fourth) day the eruption remains at its acme; and on the fifth it begins to decline, diſappearing by interſtices, and leaving the ſmall patches as at firſt. At this period, and on the evening of the ſecond day, ſome attention is requiſite to diſtinguiſh the ſcarlet raſh from meaſles: the obſervation of the creſcent-like form of the patches of the latter, and the more diffuſe and irregular ſhape of the former, will be a material guide. (Compare Plate III. fig. 1, with Plate IV.) On the ſixth day it is indiſtinct, and is wholly gone before the end of the ſeventh. On the eighth and ninth days a ſcurfy deſquamation of the cuticle takes place. The efflorescence ſpreads over the ſurface of the mouth and fauces, and even into the noſtrils, and is occaſionally viſible over the tunica albuginea of the eye: the papillæ of the tongue too, which are conſiderably elongated, extend their ſcarlet points through the white fur which covers it. The face is often conſiderably ſwelled. There is uſually great reſtleſſneſs, and ſometimes ſlight delirium, which appears to be much connected with the great heat of the ſurface, and continues in various degrees of ſeverity, together with the fever, from three to ſeven days. A few patients eſcape without any fever, almoſt without indiſpoſition.

β. R. pariſthmitica, (Scarlatina cynanchica, *Cullen*; S. anginoſa, *Bateman*.) In this variety, the precurſory febrile ſymptoms are more violent, and an inflammation of the fauces appears, together with the cutaneous efflorescence, and goes through its progreſs of increaſe and decline with it. Occaſionally, however, the affection of the throat commences with the fever, and ſometimes not until the eruption is at its height. With the firſt febrile ſymptoms, a ſenſation of ſtiffneſs and a dull pain on moving are felt in the muſcles of the neck; and on the ſecond day the throat is rough and ſtraitened, the voice thick, and deglutition painful. On this and the two following days, the ſymptoms of fever are often ſevere; the breathing is oppreſſed; the heat of the ſkin is more intenſe than in any other fever of this climate, riſing to 106°, 108°, or even 112°, of Fahrenheit's thermometer. There is ſickneſs, with headach, great reſtleſſneſs, and delirium; and the pulſe is frequent, but feeble: there is alſo an extreme languor and faintneſs. The tongue, as well as the whole interior of the mouth and fauces, is of a high red colour, eſpecially at the ſides and extremity, and the papillæ protrude their elongated and inflamed points over its whole ſurface. The raſh does not always appear on the ſecond day, as in R. ſimplex, but not unfrequently on the third; nor does it ſo conſtantly extend over the whole ſurface, but comes out in ſcattered patches, which ſeldom fail to appear about the elbows. See the Plate, fig. 3. Sometimes too it vaniſhes the day after its appearance, and re-appears partially at uncertain times, but without any correſponding changes in the general diſorder: the whole duration of the complaint is thus lengthened, and the deſquamation is leſs regular. When the raſh is ſlight, indeed, or ſpeedily diſappears, no deſquamation often enſues; while, in other inſtances, exfoliations continue to ſeparate to the end of the third week, or even later, and large pieces of the entire cuticle fall off, eſpecially from the hands and feet. The tumour and inflammation of the throat often diſappear, with the declining efflorescence of the ſkin, on the fifth and ſixth day of the fever, without having exhibited any tendency to ulceration. Slight ſuperficial ulcerations, however, not unfrequently form on the tonſils, velum pendulum, or at the back of the pharynx, ſometimes early and ſometimes later. Little whitiſh ſloughs are ſeen, intermixed with the mottled redneſs; and, when they are numerous, the throat is much clogged up with a tough viſcid phlegm, which is ſecreted among them. When theſe are removed, after the decline of the fever, ſome excoriations remain, which ſoon heal.

R. pariſthmitica ſometimes puts on, towards its termination, much more formidable characters. From its commencement ſome difference is indeed obſervable, though not diſtinctly. The efflorescence is uſually faint, excepting in a few irregular patches, and the whole of it ſoon aſſumes a dark or livid red colour. It appears late, and is very uncertain in its duration; in ſome inſtances, it ſuddenly diſappears a few hours after it is ſeen, and comes out again at the end of a week, continuing two or three days. The ſkin is of a leſs ſteady and intenſe heat: the pulſe is ſmall, feeble, and irregular: the functions of the ſenſorium are much diſordered; ſometimes there is early delirium, and ſometimes coma, alternating with fretfulneſs and violence. The eyes are dull and ſuffuſed with redneſs, the cheeks exhibit a dark-red fluſh, and the mouth is incruſted with a black or brown fur. The ulcers in the throat are covered with dark ſloughs, and ſurrounded by a livid baſe; and a large quantity of viſcid phlegm clogs up the fauces, impeding the reſpiration, and occaſioning a rattling noiſe, as well as increaſing the difficulty and pain of deglutition. An acrid diſcharge alſo diſtils from the noſtrils, producing ſoreneſs,

ſoreneſs, chops, and even bliſters. Theſe ſymptoms are often accompanied by ſevere diarrhœa, and by petechiæ and vibices on the ſkin, with hæmorrhage from the mouth, throat, bowels, or other parts, which, of courſe, but too often lead to a fatal termination. This generally takes place in the ſecond or third week; but, in a few inſtances, the patients have ſuddenly ſunk as early as the ſecond, third, or fourth, day, probably from the occurrence of gangrene in the fauces, œſophagus, or other portions of the alimentary canal; and ſometimes at a later period of the diſeaſe, when the ſymptoms had been previouſly moderate, the malignant changes have ſuddenly commenced, and proved rapidly fatal. Even thoſe who eſcape through theſe dangers, have often to ſtruggle againſt many diſtreſſing ſymptoms, for a conſiderable length of time; ſuch as ulcerations ſpreading from the throat to the contiguous parts, ſuppuration of the glands, tedious cough and dyſpnœa, excoriations about the nates, &c. with hectic fever.

This diſeaſe is not unfrequently followed by a ſtate of great debility, under which children are affected with various troubleſome diſorders. But there is one affection peculiar to the decline of Roſalia, which occurs eſpecially when the eruption has been extenſive; namely, anaſarca of the face and extremities. This dropſical effuſion is commonly confined to theſe parts, and therefore unattended with danger: it uſually appears in the ſecond week after the declenſion of the raſh, and continues for a fortnight or longer. But in a ſmall number of caſes, when the anaſarca had become pretty general, a ſudden effuſion has taken place into the cavity of the cheſt, or into the ventricles of the brain, and occaſioned the death of the patient.

In tracing the ſcarlet fever in its mildeſt form, the interference of medicine is unneceſſary, and in fact hurtful. If the bowels are much confined, a laxative may be given, and ſaline medicines may ſerve to increaſe the ſecurity of the patient; but, further than this, medicine does harm. In the ſecond variety, however, we have reaſon to adopt more efficient meaſures. Although blood-letting has been recommended by Morton, De Haen, and others, the experience of our later writers on this ſubject coincides in deeming it injurious. Dr. Willan ſays, wherever it had been employed great depreſſion and faintneſs were the immediate conſequences, the pulſe becoming more weak and frequent, and often irregular. And Dr. Withering diſcountenances even local bleeding. "Sometimes, where the fiery redneſs of the eyes and the ſtate of delirium ſeemed to demand the application of leeches to the temples," he obſerves, "I have ſeen them applied, but never with any good effect." Upon the whole, it is beſt to confine bleeding in ſcarlet fever to caſes in which the head or other vital part is gravely affected, or in which the ſymptoms lead us to infer that the diſeaſe will terminate in a malignant form. We have found leeches to the pit of the ſtomach of eſſential benefit when the attendant gaſtritis has been extreme.

Emetics have been much recommended; and in the early ſtage of the diſeaſe, probably while the contagious materia is ſtill in contact with the ſtomach, they ſometimes prevent the development of the exanthem: and many have adviſed vomits to be continued, and in large and frequent doſes, during the continuance of the malady, and under all its forms. The propriety of this practice may reaſonably be doubted. Nauſeating medicines are nevertheleſs uſeful; and fox-glove may be given in the early ſtages of the diſeaſe. Gentle purgatives ſhould be regularly adminiſtered; but draſtic cathartics ſhould be entirely proſcribed.

The application of *cold* is a remedy of the greateſt avail in Roſalia, the ſimple obſervation that the ſkin is hot and dry being enough to guide us in its uſe. If the fooliſh prejudices of patients prevent us from uſing this important meaſure, ſponging the body, and eſpecially the epigaſtrium, may be reſorted to. In the latter end of the diſeaſe, i. e. when it puts on the malignant form before deſcribed, cold affuſion is improper. Leeches to the inflamed throat, bliſters in the vicinity of an inflamed organ, and gargles, are local applications of much uſe; but of which plenty of formulæ abound. Plate III. fig. 3, diſplays the appearance of Roſalia pariſthmitica in its moſt advanced or malignant ſtate.

2. Enantheſis rubeola, meaſles: raſh in crimſon ſtigmatiſed dots, grouped in irregular circles or creſcents; appearing about the fourth day, and terminating about the ſeventh; preceded by catarrh; fever a cauma. Three varieties.

α. R. vulgaris: raſh ſlightly prominent, extending over the mouth and fauces; harſh dry cough; inflamed watery eyes. Occurring only once in the courſe of a man's life: contagious. See Plate IV. fig. 1.

β. R. ſpuria: the raſh running its regular courſe with little fever or catarrhal affection; affording no certain ſecurity againſt the common or regular diſeaſe.

γ. R. nigra: the raſh about the ſeventh or eighth day aſſuming ſuddenly a black or livid hue, interſperſed with yellow; prolonged in its ſtay; and accompanied with increaſed languor and quickneſs of pulſe. See fig. 2.

The two laſt varieties are ſufficiently deſcribed in the above definition. It remains, however, to give a more detailed account of the ſymptoms of meaſles in general.

R. vulgaris begins with ſymptoms of fever; flushing of the cheeks; a ſenſation of pain or weight acroſs the forehead and eyes, with diſpoſition to ſleep; ſlight ſoreneſs of the throat, a white fur on the tongue, a frequent and ſomewhat irregular pulſe. On the third and fourth days, the eyes become tender and inflamed, the eye-lids and tarſi a little turgid; there are diſcharges from the eyes and noſtrils, and repeated ſneezing; and afterwards a frequent dry cough, hoarſeneſs, difficulty of breathing, and a ſenſe of conſtriction acroſs the cheſt. Theſe ſymptoms decline with the efflorescence on the ſeventh day. A harſh ſounding cough often precedes the attack, in infants, ſeven, ten, fifteen, or twenty, days. The raſh appears in patients having a delicate ſkin, partially on the third day; in thoſe having a dark or thickened ſkin about the fifth; but moſt uſually on the *fourth*. It is firſt viſible on the forehead, under the chin, about the throat, noſe, cheeks, and mouth; it is formed on the neck and breaſt, early on the fifth day, and is diffuſed, towards night, round the trunk, and on the extremities; during this day it is moſt full and vivid on the face, as repreſented on Plate IV. On the ſixth day the efflorescence on the face begins to decline; that on the body is moſt red and extended, and declines on the ſucceeding day, leaving a roughneſs and itching of the ſkin, with the formation of ſcurf. The colour of the raſh is leſs vivid than in Roſeola; and, on its decline, aſſumes a yellowiſh hue. It commences with diſtinct red and nearly-circular dots; larger patches appear afterwards, approach to the form of a creſcent or ſemicircle, and are gently raiſed under the finger. They conſiſt of a number of the dots juſt mentioned, with which they are alſo interſperſed, leaving, however, large interſtices of the natural colour. Diſtinct papulæ are apt to appear on the face and hands in infants, and on the wriſts and hands in adults: miliary veſicles alſo appear on the neck, breaſt, and arms. On the fourth day, ſmall dark-red patches, of the form deſcribed, appear on the palate, uvula, tonſils, and velum pendulum palati; during the ſucceeding day, they paſs into a general ſtreaky redneſs. If the eruption be repelled by cold, delirium, dyſpnœa, or diarrhœa, occurs, attended with conſiderable danger.

Dr. Wiſlan thus recapitulates the diagnoſtic characters of Rubeola and Scarlatina, (our Roſalia.) "1. The efflorescence in Scarlatina generally appears on the *ſecond* day of fever; in the meaſles it is ſeldom viſible till the *fourth*. 2. It is much more full and ſpreading in the former diſeaſe than in the latter, and conſiſts of innumerable

rable points and ſpecks under the cuticle, intermixed with minute papulæ, in ſome caſes forming irregular patches, in others coaleſcing into an uniform fluſh over a conſiderable extent of ſurface. In the Meaſles the raſh is compoſed of circular dots, partly diſtinct, partly ſet in ſmall cluſters or patches, and a little elevated, ſo as to give the ſenſation of roughneſs when a finger is paſſed over them. Theſe patches are ſeldom confluent, but form a number of creſcents or ſegments of circles, with large intervening portions of cuticle, which retain their uſual appearance. In Scarlatina, when any part of the raſh has a tendency to circular forms, the circles are uſually completed; ſometimes their circumferences interſect each other variouſly. The colour of the raſh is alſo different in the two diſeaſes, being a vivid red in Scarlatina, like that of a boiled lobſter's ſhell; but in the Meaſles a dark red, with nearly the hue of a raſpberry. 3. During the febrile ſtage, the Meaſles are diſtinguiſhed by an obſtinate hoarſe cough, forcing up, in repeated paroxyſms, a tough acrimonious phlegm; by an inflammation of the eyes and eye-lids; by an increaſed diſcharge from the lachrymal gland, ſneezing, &c. The Scarlatina is frequently attended with a cough, alſo with redneſs of the eyes from an extenſion of the raſh to the tunica albuginea, circumſtances which render the diſtinction between this complaint and Meaſles particularly difficult, if other ſymptoms be not clear and deciſive. On minute obſervation, however, it will be generally, perhaps always, found, that the cough in Scarlatina is ſhort and irritating, without expectoration; that the redneſs of the eye is not attended with intolerance of light; that the ciliary glands are not affected; and that, although the eyes appear ſhining and watery, they never overflow. 4. Moſt writers, in diſtinguiſhing Scarlatina from Meaſles, obſerve that there is a peculiar ſenſation of anxiety, depreſſion, and faintneſs, in all caſes of it which are attended with fever. 5. When the raſh appears on the third or fourth day, being ſcattered, and of a dark ſhade of colour, as frequently happens in the two laſt varieties of Scarlatina, the diſeaſe may be diſtinguiſhed from Meaſles, by the appearances in the throat, by the rigidity of the muſcles of the neck, &c."

In the treatment of the mildeſt caſes of Rubeola, as little medical practice is neceſſary as in the milder caſes of Roſalia; and, in caſes of more ſeverity, bleeding is to be confined by the ſame reſtrictions as we have endeavoured to eſtabliſh in its uſe in the latter complaint. That is to ſay, when pain or ſoreneſs in the cheſt, oppreſſed breathing, general anxiety, and reſtleſſneſs, are abſent in the eruptive ſtage of the meaſles, we ſhall have no occaſion to bleed; and, where theſe are preſent, veneſection, either general or local, will almoſt always be neceſſary. But ſometimes it happens, that the breathing is very hurried, the cough frequent, and the pulſe much quickened, about the firſt coming out of the raſh; and yet, if we wait a day or ſo, we ſhall find the reſpiration gradually improve. In irritable children, and eſpecially in infants, the reſpiration often becomes extremely anxious on an attack even of ſimple fever, wholly unconnected with pectoral inflammation; and this is more particularly the caſe when the bowels are diſordered. We muſt be moſt careful to diſcriminate ſuch a ſtate of breathing from that which commonly attends pulmonic inflammation: nor, indeed, is this difficult, becauſe the former is ſeldom permanently the ſame, but varies ſo much, at different times, that the patient will ſeem now much oppreſſed, and again eaſy; whereas, in the latter, there are no changes of this ſort in the reſpiration, for it is ſo conſiderably oppreſſed, as never to be entirely eaſy. Beſides, the anxious breathing, which ariſes from irritation, is generally increaſed by the erect poſition, and that which ariſes from inflammation more or leſs diminiſhed: in the firſt, the child now and then obtains pretty tranquil ſlumbers, with little motion of the cheſt; but, in the laſt, the ſleep is always very diſturbed, and the cheſt may be ſeen heaving up and down with an unnatural labour. When any part of the pulmonary ſyſtem is inflamed in children, both the diaphragm and the abdominal muſcles are generally thrown into an inordinate action; ſo that, if the belly and breaſt be expoſed, one cannot fail of being ſtruck with their forcible movements.

What is here ſaid of pulmonic inflammation is alſo applicable to cephalitis, when it comes on during meaſles: the latter complaint is, however, of very rare occurrence. The reduction of pulmonic inflammation is the chief object in the treatment of meaſles. Cupping or bliſtering to the cheſt are occaſionally required after the general bleeding. For the reſt, the adminiſtration of ſaline medicines, gentle laxitives, and occaſional ſoporifics, fills up our catalogue of remedies for meaſles. Both meaſles and ſcarlet fever are contagious, and affect a perſon once only during life, ſubject however to the ſame exception as ſmall pox or other ſimilar maladies.

3. Enantheſis urticaria, nettle-raſh: raſh in florid, itching, nettle-ſting, wheals; appearing about the ſecond day; irregularly fading and reviving, or wandering from part to part: fever a mild epanetus.

The urticaria begins with pain and ſickneſs at the ſtomach, head-ache, great languor or faintneſs, a diſpoſition to ſleep, a ſenſe of anxiety, an increaſed quickneſs of the pulſe, and a white fur on the tongue. In two days, or ſometimes later, wheals appear, with an efflorescence in patches of a vivid red, or ſometimes nearly of a crimſon colour. They are preceded by fits of coldneſs and ſhivering, and are attended with a moſt troubleſome itching or tingling, which is greatly aggravated on uncovering the body, or during the night, and which prevents reſt for many hours. The patches often coaleſce ſo as to produce a continuous redneſs; they appear on moſt parts of the ſurface, but particularly on the ſhoulders, loins, nates, thighs, and about the knees. They alſo extend to the face; and there is ſometimes a red circle round the palm of the hand, accompanied with a ſenſation of violent heat. They appear and diſappear irregularly, firſt on one part, and then on another; and may be excited on any part of the ſkin by ſtrong friction or ſcratching. During the day the efflorescence fades, and the wheals in general ſubſide; but both return with a ſlight febrile paroxyſm in the evening. The red patches are often elevated above the adjoining cuticle, and form denſe tumours with a hard diſtinct border; the interſtices are of a dull white colour. When the patches are numerous, the face or limb chiefly covered with them appears tenſe and enlarged. At the latter end of the diſorder the eyelids are red and tumefied, and there is often a ſwelling and inflammation on the ſides of the feet. On the appearance of the eruption, the pain and ſickneſs at the ſtomach are in general relieved; but, when it diſappears, theſe ſymptoms return. The whole duration of the affection is ſeven or eight days. On its decline the raſh exhibits a light purple or pink colour, gradually diſappears, and is ſucceeded by ſlight exfoliation of the cuticle.

This diſorder occurs principally in ſummer, in perſons of a plethoric and ſanguine habit, eſpecially from indulgence in eating and drinking. It is often connected with teething and bowel-complaints in infants, whom it affects at one and at two years old. It appears to affect men more than women. A ſimilar affection is induced from eating almonds, muſhrooms, herrings, crab-fiſh, muſcles, lobſters, &c. The Urticaria is liable, from the form of the raſh, to be miſtaken for Rubeola, and, from the ſtate of the general ſurface, for Roſalia, eſpecially on a partial examination. Several parts of the ſurface, and all the limbs, ſhould be inſpected, as the raſh is often diſtinctly marked in one place, although obſcure in others. The character of the eruption; the mode of attack; the abſence of catarrh; and ſore throat; the preſence of tingling and itching, &c. will ſufficiently diſtinguiſh the affection. An emetic of ipecacuanha, followed by a gen-

tle laxative, with light and cooling diet, (with total abſtinence from fermented liquors, and from ſudorific medicines,) conſtitute the ſole treatment which appears to be requiſite for the ſafe conduct of theſe diſorders to their period of decline; at which time the cinchona, with ſulphuric acid, is beneficial.

Genus II. *Emphlyſis*, [from ἐμ for ἐν, within, and φλυσις, a veſicular tumour or eruption.] Ichorous eruption from internal fever. Generic characters—Eruption of veſicular pimples filled progreſſively with an acrid and colourleſs, or nearly colourleſs, fluid; terminating in ſcurf or laminated ſcabs. There are ſix ſpecies.

1. Emphlyſis miliaria, the miliary fever: veſicles ſcattered over the body; of the ſize of millet-ſeeds; tranſparent red, afterwards milky; preceded by a pricking ſenſation, ſighing, anxiety, and ſour ſweat.

The veſicles are at firſt red, from the colour of their under ſurface, or inflamed baſe, being tranſmitted through the tranſparent pellicle; they are afterwards opake and milky, from abſorption of the more attenuate part of the fluid, or from ſome other change. This affection, which is a mere ſymptom of inflammatory fever, generally owes its exiſtence entirely to the hot and ſtimulating practice of our forefathers. In the preſent improved practice, it is ſcarcely ever ſeen; and it requires no particular treatment.

2. Emphlyſis aphtha, the thruſh: veſicles granular, roundiſh, pearl-coloured; confined to the lips, mouth, and inteſtinal canal; terminating in curd-like ſloughs; occaſionally with ſucceſſive crops. Two varieties.

α. Aphtha infantum, white thruſh: appearing in infants ſoon after birth; and often extending from the mouth to the inteſtinal canal; moſtly with ſlight febrile ſymptoms, and white ſloughs.

β. Aphtha maligna, black thruſh: accompanied with great debility of vaſcular action; uſually aſcending from the pharynx into the mouth; ſloughs black; fever a typhus.

To forbid improper diet, preſcribe gentle laxatives, and occaſionally the warm bath, and to cauſe a weak ſolution of borax to be applied to the fauces, conſtitutes all that is neceſſary for the treatment of Aphtha infantum.

The ſecond variety ſhows itſelf at firſt by an uneaſy ſenſation or burning heat in the ſtomach, which comes on by ſlow degrees, and increaſes gradually in violence. After ſome time, ſmall pimples, of about the ſize of a pin's head, appear on the tip and edges of the tongue; and theſe at length ſpread over the whole inſide of the mouth, and occaſion ſuch a tenderneſs and rawneſs of the parts, that the patient cannot take any food of a ſolid nature; neither can he receive any vinous or ſpirituous liquor into his mouth, without great pungency and pain being excited. Little febrile heat attends, but the ſkin is always remarkably dry and without the leaſt moiſture on it; the countenance is pale, the pulſe is ſmaller and more languid than in health, and a general coldneſs is felt over the whole body, but more particularly in the extremities.

This complaint is always combined with chronic gaſtritis, of which it is probably a mere ſymptom; and it requires the ſame treatment, with the addition however of gargles.

3. Emphlyſis vaccinia, cow-pox: veſicles few, or a ſingle one, confined to the part affected; circular, ſemitranſparent, pearl-coloured; depreſſed in the middle, ſurrounded with a red areola. Four varieties.

α. V. nativa, natural cow-pox: veſicles on the hands, or ſuch parts as have been in contact with the affected udder of a cow; of a bluiſh tint; the fluid at firſt limpid; afterwards opake, and purulent; often with enlargement of the axillary glands, and conſiderable fever. A prophylactic againſt the ſmall-pox.

β. V. ſpuria, ſpurious cow-pox: veſicles leſs uniformly circular; purulent from the firſt; without bluiſh tint; with little or no central depreſſion. Affords no ſecurity againſt the ſmall-pox.

γ. Inſerta, inoculated cow-pox: produced by inoculation; veſicle ſingle, confined to the puncture; celluloſe; bluiſh-brown in the middle; fluid clear and colourleſs to the laſt; concreting into a hard dark-cloured ſcab after the twelfth day.

δ. V. degener, degenerate cow-pox: produced by inoculation; veſicle amorphous, or uncertain; fluid often ſtraw-coloured, or purulent; areola abſent, indiſtinct, or confuſed with the veſicle; ſcab formed prematurely. Affords little or no ſecurity againſt the ſmall-pox. See the article INOCULATION, vol. xi.

Since the time at which that article was compoſed, much, very much, has been written on the ſubject of vaccination. But, though ſome intereſting circumſtances of its origin, and the vaſt extent of the world to which it has travelled, have been made known, yet we look in vain through the long liſt of reports, from the moſt illuſtrious bodies of the profeſſion, of caſes, with which our periodicals have ſo long teemed, and even through entire treatiſes on vaccination, for one new practical fact. In a work of this kind it may be neceſſary, however, that we ſhould give our teſtimony in favour of vaccination; leſt, if it ſhould fall into the hands of ſome whoſe prejudices are in oppoſition to the uſe of Jenner's diſcovery, our ſilence ſhould be conſtrued into diſapprobation of it. And this is the more neceſſary, becauſe, in ſome of the early articles of this work, vaccination has been ſpoken of in a ſlight manner. Its value was not then known, as its efficacy was not eſtabliſhed. But we can no longer withhold our conviction of its great benefit in the majority of caſes. We have now the ſupport of the higheſt authorities in ſtating, 1. That vaccine matter, duly inſerted under the ſkin, is capable of preventing the future occurrence of the ſmall-pox. 2. That this matter requires a very ſmall degree of concentration, but that it is liable to degeneration from chemical changes when removed from the body, and alſo while in the ſore if it be taken at an improper time.

Many exceptions exiſt to the firſt rule. If the patient be afflicted with any cutaneous defædation, the vaccination will be generally ineffectual. In many caſes ſmall-pox will come on after cow-pox, notwithſtanding the utmoſt precaution, from peculiar idiopathy of habit or conſtitution; and this happens *in a far greater proportion of caſes than the occurrence of ſmall-pox twice ever happened.* But ſo mild is it under theſe circumſtances, that vaccination might be conſidered one of the kindeſt grants ever conferred by Providence on man, did it never effect any thing more than this modifying operation; for, even in that caſe, we ſhould poſſeſs in the vaccine proceſs all the advantages without any of the evils that are confeſſedly appended to variolous inoculation; and the writer muſt indulge the hope that neither the apprehenſions of the timid, nor the wrong-headedneſs of the obſtinate, will operate to any conſiderable extent, in encouraging the re-introduction of the latter practice. The ſword for ages ſuſpended over us has been blunted to the extent of almoſt entire harmleſſneſs; and it were fully amounting to inſanity, to poliſh it ourſelves into its priſtine power. And, when it is conſidered that by far the majority of vaccinated perſons do not take ſmall-pox under any circumſtances of expoſure or even of inoculation; when it is conſidered, alſo, that in thoſe countries where vaccination is *enforced*, ſmall-pox no longer exiſts; we cannot but view the prejudices againſt it as a great ſtigma on our national character.

4. Emphlyſis varicella, the chicken-pox: veſicles ſcattered over the body; glabrous, tranſparent, pea-ſized; in ſucceſſive crops; pellicle thin; about the third day from their appearance, burſting at the tip, and concreting into ſmall puckered ſcabs, rarely leaving a cicatrix. There are four varieties of this ſpecies noted by Dr. Good.

α. V.

α. V. lentiformis, common chicken-pox: eruption appearing the ſecond or third day, and conſiſting of 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 of its appearance, is generally ſeen firſt on the breaſt and back, afterwards on the face and extremities; diſappears about the tenth day, leaving red marks on the ſkin, without depreſſion.

β. V. coniformis, conoidal chicken-pox, or ſwine-pox: veſicles acuminated: fluid pellucid throughout.

γ. V. globularis, the hives: veſicles globular and larger; fluid at firſt whey-coloured, afterwards yellowiſh.

The varieties are ſometimes intermixed; and the fluid in a few of them occaſionally approaches to a purulent appearance; whence in various inſtances they may have been miſtaken for the ſmall-pox. It muſt be recollected, however, that the puſtules and veſicles do ſometimes riſe into one another, or that pus and ſerum may be produced by different degrees of the ſame action; ſo that the diſtinction in queſtion is not to be depended on. Our readers are well aware, that ſome have inferred that varicella is a modification of the ſmall-pox; and Dr. Bateman has thought proper to give ſome credit to this opinion. In a note on Varicella, p. 208 of his Synopſis, he ſays, "Since the introduction of vaccination, conſiderable differences of opinion have exiſted among medical practitioners, reſpecting the character of the eruption, which has occaſionally appeared, after expoſure to variolous infection, in perſons previouſly vaccinated, ſome denominating it chicken-pox and others ſmall-pox. The moſt careful obſervers muſt have admitted the difficulty of eſtabliſhing a deciſive diſtinction in many of theſe caſes. A ſeries of intereſting obſervations which have lately been made at Edinburgh, have led the ingenious Prof. Thomſon to believe that the chicken-pox itſelf is in fact a ſecond and modified ſmall-pox. While the queſtion is ſtill *ſub judice*, I leave Varicella in its noſological ſeat; but many facts crowd upon my own recollection, which incline me to believe that this ſuggeſtion will ultimately prove to be correct."

The information that has been obtained on this head ſince Dr. B. wrote, has been highly corroborative of Prof. Thomſon's views; but, as the queſtion is by no means at reſt, we ſhall follow the above great authority in leaving Varicella in its "noſological ſeat." The reader may conſult on this head the Edinburgh Med. and Surgical Journal, 1818. and a variety of papers of recent dates in the London Medical Journal. The following are the uſual diagnoſtic marks laid down between theſe diſeaſes.

Varicella may be diſtinguiſhed from ſmall-pox by, 1. The appearance, on the ſecond or third day from the eruption, of the veſicles full of ſerum at the top of the pock. The puſtules which are fulleſt of the yellow liquor reſemble what the genuine ſmall-pox are on the fifth or ſixth day, eſpecially when there happens to be a larger ſpace than uſual occupied by the extravaſated ſerum. It happens to moſt of them, either on the firſt day the little veſicle ariſes, or on the following, that its tender cuticle is burſt: a thin ſcab is then formed on the top of the pock, and the ſwelling of the other part abates *without the formation of pus* as in ſmall-pox. 2. Slight ſcabs cover the chicken-pox on the fifth day, at which time the ſmall-pox are not at their height. 3. The inflammation round the chicken-pox is very ſmall, and the contents of them do not ſeem to be owing to ſuppuration as in the ſmall-pox, but rather to what is extravaſated immediately under the cuticle by the ſerous veſſels of the ſkin over a common bliſter. No wonder, therefore, that this liquor appears ſo ſoon as on the *ſecond* day; and that, upon the cuticle being broken, it is preſently ſucceeded by a thin ſcab. Hence, too, no ſcar is left.

Varicella is a diſeaſe which is by no means dangerous, and which affects a perſon but once in his life. No other treatment is required than the cooling regimen, mild aperients, and ſaline draughts.

5. Emphlyſis pemphigus, veſicular or bladdery fever: veſicles ſcattered over the body; tranſparent, filbert-ſized; with a red inflamed edge, but without ſurrounding bluſh or tumefaction; on breaking, diſpoſed to ulcerate; fluid pellucid or ſlightly coloured; fever a typhus. Three varieties.

α. P. vulgaris: veſicles appearing on the ſecond or third day, occaſionally not till the fifth or ſixth; in ſucceſſive crops; often extending over the mouth and inteſtinal canal; fluid, on burſting, yellowiſh; ſome of the veſicles livid, with a livid baſe.

β. P. glandularis, (P. contagioſus, *Willan*:) preceded by tumefaction of the neck and throat; veſicles chiefly ſeated on the fauces and conglobate glands; occaſionally producing abſceſſes; highly contagious.

γ. P. infantum: veſicles irregularly oblong, with livid edge, and commonly flattened tops; appearing ſucceſſively on different parts of the ſurface, in infants a few days after birth; fluid; on breaking, purpliſh.

Pemphigus is found, for the moſt part, as a ſymptom only in eryſipelas, typhus, plague, and other depreſſing fevers. Dr. Good doubts whether Pemphigus is entitled to be conſidered as a diſtinct and idiopathic diſeaſe; and whether all its varieties and modifications may not reſolve themſelves into certain peculiarities of eryſipelas, or pompholyx, the latter of which conſiſts of ſimilar veſicles or bullæ without fever, or mere ſymptoms of typhus or plague. Dr. Cullen ſeems to have been of the laſt opinion at the moment of drawing up his definition: but the fourth edition of his Synopſis contains a note which intimates that his opinion was altered in conſequence of his having ſeen a patient, ſhown him by his excellent colleague F. Home, and who was labouring under this diſeaſe as an idiopathic affection at the time. And when to this inſtance (ſays Good) "we add the authority, not merely of the earlier writers, Bontius, Seliger, and Langhans, but of Withers, Dickſon, Chriſtie, Ring, and Braune, (Uber den Pemphigus, Leipſ. 1795.) it would be unpardonable not to allow it a diſtinct place in a general ſyſtem of noſology."

Notwithſtanding this ſtring of authorities, it may reaſonably be doubted that idiopathic Pemphigus ever exiſted. In Dr. Bateman's Synopſis this opinion is adopted from a review of all the authors above quoted; and in this it is ſhown that the accounts they have given are highly vague and unſatisfactory.

6. Emphlyſis eryſipelas, St. Anthony's fire: veſication diffuſe; irregularly circumſcribed; appearing on a particular part of the body, chiefly the face, about the third day; with tumefaction and erythematic bluſh; fever uſually accompanied with ſleepineſs, often with delirium. This admits of two varieties.

α. Locale: limited to a particular part; the cuticle raiſed into numerous aggregate diſtinct cells; or the cells running into one or more blebs, or large bliſters.

β. Erraticum: travelling in ſucceſſive patches from part to part; the former patches declining as new ones make their appearance.

Eryſipelas, which ſeems to occur twice over in Dr. Good's arrangement, has been already referred to another diviſion of this work.

Genus III. *Empyeſis*, [i. e. ſuppuration.] Puſtulous eruption. Generic characters—Eruption of phlegmonous pimples; gradually filling with a purulent fluid; and terminating in thick ſcabs, frequently leaving pits or ſcars. But one ſpecies.

Empyeſis variola, ſmall-pox: puſtules appearing from the third to the fifth day, ſuppurating from the eighth to the tenth; fever a cauma; contagious. The ſmall-pox conſiſts of the following four varieties.

α. V. diſcreta, diſtinct or natural ſmall-pox: puſtules pea-ſized; diſtinct, diſtended, circular; the intervening

ſpaces

faces red; the fever ceaſing when the eruption is complete.

The natural ſmall-pox begins with ſenſibility to cold, ſhivering, languor, feveriſhneſs, diſturbed ſleep, pain of the head and of the back, vomiting, and tenderneſs of the epigaſtrium under preſſure. In adults, there is a ſtrong tendency to perſpiration; in infants, ſtupor, and fits ſimilar to thoſe of epilepſy, ſometimes occur about the third day, but there is no tendency to perſpiration. On the *fourth* day, the eruption generally appears on the face, and perhaps on the neck and breaſt; it extends gradually during the enſuing day, and becomes general over the ſurface of the body. The febrile ſymptoms abate on the appearance of the eruption. On the *fourth* and *fifth* days, the puſtules are ſmall, hard, and globular, red and painful, ſeparate and diſtinct from each other, with nearly colourleſs interſtices. They enlarge gradually until the *eighth* day, when they contain a little yellowiſh fluid, and the interſtices become red. From this day the puſtules increaſe in breadth, and have a ſmall pit in their centre, until the *eleventh*, when they become more rounded, and are encircled by rings of roſe-coloured inflammation, which coaleſce when the eruption is numerous. About the *eighth* day, there is frequently a flow of ſaliva, the integuments of the face are apt to become ſwollen, the eyes are often cloſed, and the eyelids diſtended like a bladder. This tumefaction gradually declines; it is much abated, and the puſtules are fully diſtended, about the *eleventh* day, when a degree of ſwelling is ſometimes obſerved about the hands and feet, which, in its turn, ſubſides gradually; about the ſame time too, the tendency to perſpiration diminiſhes, or ceaſes, ſpontaneouſly. The puſtules break, the fluid partly iſſues, and at length dries and forms a ſcab, the cuticle becoming ſhrivelled; a proceſs which is completed on the face about the *fifteenth* day. In a few days more, the ſcabs ſeparate, leaving the ſubjacent part of a browniſh-red colour, and often pitted. The fluid in the puſtules ſituated on the arms and hands, is ſometimes abſorbed, and the cuticle falls down in a flaccid ſtate.

ζ. V. confluens, confluent ſmall-pox, is attended with febrile ſymptoms of a more ſerious kind, reſembling thoſe of Empreſma maligna, and exacerbating towards evening. There are frequently coma, delirium; vomiting, and ſometimes diarrhœa; a frequent, feeble, pulſe; there is leſs tendency to perſpiration; the appearance of the eruption induces leſs, and leſs permanent, relief; and the fever reſumes its violence about the ſixth day. The eruption appears *early*, on the *third* day. It is preceded, or attended, in many inſtances, by exanthema. The puſtules are more numerous on the face; ſmaller, and leſs hard and eminent; during a *ſlower* and leſs marked progreſs, their diameters enlarge; they do not retain the circular and orbicular form, but aſſume an irregular figure, remain flat, and coaleſce, ſo that frequently the face ſeems covered with one extended and continuous puſtule. The interſtices are pale and flaccid, and without the roſe-coloured inflammation obſerved in V. diſcreta. The contained fluid becomes opaque and browniſh, but does not aſſume the yellow, conſiſtent, and purulent, appearance. The puſtules at length break, the cuticle ſhrivels up, the encloſed fluid iſſues; dark brown ſcabs are formed, ſeparate ſlowly, and leave deep pits. The tumefaction of the face, and the ſalivation, take place earlier, and are more conſiderable, than in V. diſcreta; they abate, and the hands tumefy, about the *ſeventh* day. In infants, diarrhœa ſometimes occurs; and there is no ſalivation. On the general ſurface the puſtules are more diſtinct; but they are leſs prominent, and the encloſed matter leſs conſiſtent, than in the former variety. The febrile ſymptoms are mitigated on the appearance of the eruption, but again become more violent, and conſtitute what is termed the ſecondary fever in this diſeaſe.

γ. V. inſerta, inoculated ſmall-pox: produced by inoculation; orange-coloured areola about the puncture; pain in the axilla about the ſeventh day; diſeaſe for the moſt part mild; and the purulent diſcharge ſometimes confined to the punctured part.

δ. Degener, horn-pock, or cryſtalline pock: pimples imperfectly ſuppurating; ichorous or horny, and ſemi-tranſparent.

Now as to the treatment of ſmall-pox. Since it appears very evident, that the danger and violence of the ſymptoms are nearly in proportion to the quantity of the eruption; which is again much connected with the degree of fever that accompanies and precedes it; the firſt indication is, to moderate the eruptive fever.

In the caſe of inoculated ſmall-pox, this proceſs may be commenced in the interval between the inſertion of the matter and the beginning of the diſorder, that is, ſeveral days previous to the origin of the fever; when, by a light and cooling diet, and by the uſe of laxative medicines if the habit be full, the body may be brought into a leſs inflammatory ſtate, and thus rendered leſs ſuſceptible of violent inflammatory diſeaſe. But, in the caſual ſmall-pox, we have commonly no warning of the malady, until the eruptive fever actually commences; nor, when it has already begun, can we be certain, from any peculiar ſymptoms, that it is any thing but an ordinary fever; unleſs it occurs in perſons who, not having previouſly undergone the diſeaſe, have been notoriouſly expoſed to the infection. It is fortunate, however, that our inability to diſtinguiſh the fever which is about to uſher in the ſmall-pox from common inflammatory fever, is of no moment; ſince the ſame remedies are the moſt appropriate in both caſes. According to the degree of violence with which the fever commences, the activity of the meaſures for moderating it will be various. If the ſymptoms are not ſevere, the patient may be recommended not to keep his bed, but to remain, according to the advice of Sydenham, in a cool apartment, having the benefit of cool air; and at the ſame time to diſcard animal food, and adopt that of a cooling nature, vegetable decoctions, acidulous fruits, and diluent drinks, ſuch as plain cold water, lemonade, whey, &c. All his drinks ſhould be given cold; and the bowels ſhould be freely opened by ſome cooling purgative, as by the neutral ſalts, with a little calomel. If theſe meaſures are adequate to keep down the fever, and if, at the ſame time, the eruption appears early, and in ſmall numbers, the ſafety of the patient may be conſidered as aſcertained; and no farther treatment, except a continuance of the antiphlogiſtic ſyſtem, is neceſſary.

Where the fever comes on, however, with great violence, manifeſted by a quick hard pulſe, intenſe heat, and thirſt, a flushed countenance, inflamed eyes, ſevere head-ache, quick and oppreſſed reſpiration, with delirium, very active meaſures ſhould be immediately adopted, eſpecially in plethoric habits. In perſons of this deſcription, the firſt object would be to let ſome blood, the quantity of which muſt be determined by a conſideration of the violence of the ſymptoms. At the ſame time, the cooling plan muſt be adopted to the fulleſt extent in reſpect to the apartment, which ſhould be freely ventilated by the admiſſion of the external air, through open windows and doors, and to the bed, which ſhould be a mattraſs, and as lightly covered as the ſeaſon and the feelings will permit. If the ſkin is intenſely hot and dry, much benefit will be obtained, in the moſt expeditious manner, by ſponging the ſurface occaſionally with cold water, or even by the uſe of the cold affuſion. An active purgative will alſo contribute to relieve inflammatory action, and ſhould be ſpeedily adminiſtered, and repeated according to circumſtances.

If, however, theſe ſalutary meaſures have been omitted, or have proved inadequate to prevent a numerous eruption, eſpecially upon the face; if the puſtules are not diſtinct; and particularly, if, on the fifth day, the fever does not ſuffer a conſiderable remiſſion; the diſeaſe will

ſtill require a great deal of attention. It will ſtill be neceſſary to avoid heat and a heating regimen, and to continue to admit the free acceſs of cool air, although the more active applications of cold, by ſponging or affuſion with water, need not be continued. At this period of the diſeaſe, it may alſo be neceſſary, in adult and plethoric ſubjects, to take away ſome blood. This, however, ſeldom requires to be repeated. But a cooling purgative ſhould be adminiſtered and repeated, or aided by a frequent repetition of laxative clyſters; and the free uſe of diluent drinks ſhould be permitted.

Opium, which has been very much uſed in ſmall-pox, does harm in its early ſtages. In the later periods of the diſeaſe, however, when the febrile excitement is low, and much irritation is kept up by the hardening cruſts, the moderate uſe of opiates is to be recommended.

The *ſecondary fever*, as it is called, occurs about the eleventh day, upon the complete ſuppuration of the puſtules, or at leaſt when theſe are perfectly full and ſtretched to their utmoſt extent. The bowels ſhould be treated by gentle purgatives provided no diarrhœa has occurred. According to the ſtate of the pulſe, and the appearance of the matter in the eruptions, the ſtrength of the patient, and other ſymptoms, more or leſs of a cordial plan of treatment muſt, however, be combined with the laxatives. Light liquid nouriſhment, with a little wine and water as drink, ſhould be frequently adminiſtered; and an infuſion of cinchona, with the mineral acids, will be given with advantage. If the diſeaſe put on a more malignant character, with petechiæ and hæmorrhages, the ſame treatment muſt be continued. Under this cordial plan, the petechiæ will ſometimes diſappear; the empty veſicles will become filled with matter; and the ichorous fluid of others be changed into white thick pus; the other ſymptoms of courſe improving in a ſimilar degree.

If the fever becomes complicated with inflammation of the head, cheſt, bladder, or indeed of any other part, the uſual meaſures for its removal are to be uſed. To prevent as much as poſſible the deformity of *pitting*, which ſucceeds ſmall-pox, about the tenth day of the diſeaſe we ſhould ſpread over the face a maſk of fine old cambric, thinly ſmeared with a mild liniment compoſed of oil, ſpermaceti, and a little wax. This maſk may be renewed three or four times in twenty-four hours, and ſometimes oftener. An agreeable and refreſhing coolneſs is felt for ſome time after each application; and, the apices of the puſtules not being ſuffered to dry and harden, pitting is prevented in a great meaſure.

Small-pox very rarely attacks the ſame individual twice. For inſtances, however, ſee the article SMALL-POX.

Genus IV. *Anthracia*, [from ανθραξ, a hot coal.] Carbuncle, or Plague-ſore. Generic characters—Eruption of tumours imperfectly ſuppurating, with indurated edges, and for the moſt part a ſordid and ſanious core. There are two ſpecies.

1. Anthracia peſtis, (Lœmus, *Greek Authors.*) Plague: tumours bubonous, carbunculate, or both; appearing at an uncertain time of the diſeaſe; fever a malignant typhus, with extreme internal heat and debility; contagious.

The preciſe ſituation which Peſtis ſhould occupy in the noſological ſcale is a matter about which authors have been divided. Dr. Good gives it a place among the exanthems, becauſe "the fever is ſpecific, like that of all the exanthems; it is contagious, like that of moſt of them; and, although capable of occurring oftener than once in a man's life, we have the concurrent teſtimony of all the writers who have been eye-witneſſes of its effects, that it renders him leſs ſuſceptible for a conſiderable period afterwards. The eruption of buboes or carbuncles is unqueſtionably a pathognomonic ſymptom: the fluid they ſecrete is capable of producing the diſeaſe by inoculation; for the moſt part, the earlier they make their appearance the better; and it is the opinion of M. Sotira, and moſt of the French medical ſtaff appointed to the Egyptian expedition, that, provided the bubo freely ſuppurates, the patient receives an indemnity for life. It is true, indeed, that theſe tumours do not always appear in their proper or perfect character; for ſometimes the patient is deſtroyed by the violence of the firſt ſymptoms; and in other inſtances, as in ſmall-pox, the ſpecific fever paſſes through its courſe with an imperfect or trivial fructification; but, unleſs there be an actual germination, or what Sauvages calls a *conatus*, a perfect or an imperfect epantheſis, we have no right whatever to call the diſeaſe a plague, and can only regard it as a ſpecies or variety of ſynochus, or typhus. It has three varieties.

α. P. fructifera: the diſeaſe extending to about the fourteenth day; and relieved by the appearance of the eruption.

β. P. infructifera: eruption imperfect or ſuppreſſed; transferred to ſome internal organ; or ſuperſeded externally by ſtigmata and vibices.

γ. P. erythematica: the body covered over with trails of veſicular erythema, producing deep ſanious and gangrenous ulcerations as it ſpreads, often to the loſs of one or more limbs.

For the beſt deſcription of this variety of Peſtis, Dr. Good refers us to the pages of Thucydides, who deſcribes it from having been an eye-witneſs of its ravages, and a ſufferer under them; or to thoſe of Lucretius, who has copied the account with cloſe and technical punctuality. The following paſſage from the latter may ſerve to illuſtrate this remark. *De Rer. Nat. lib.* vi. 1152. But we give it in the tranſlation:

Forth pour'd the breath moſt fetid from the mouth,
As ſteams the putrid carcaſe: every power
Fail'd through the ſoul, the body, and alike
Lay they liqueſcent at the gates of death:
While with theſe dread, inſufferable ills,
A reſtleſs anguiſh join'd, companion cloſe,
And ſighs commixt with groans; and hiccough deep,
And keen convulſive twitchings ceaſeleſs urg'd,
Day after day, o'er every tortur'd limb,
The wearied wretch ſtill wearying with aſſault.
Yet ne'er too hot the ſyſtem couldſt thou mark
Outwards, but rather tepid to the touch;
Ting'd ſtill with purple dye, and brandiſh'd o'er
With trails of cauſtic ulcers like the blaze
Strew'd by the *holy fire*. But all within
Burn'd to the bone: the boſom heav'd with flames
Fierce as a furnace, nor would once endure
The lighteſt veſt thrown looſely o'er the limbs.

The extraordinary length of this article, and the various and affecting, though not ſtrictly pathological, details which the hiſtory of Plague exhibits, induces us to defer our account of the malady in queſtion till we come to the article PLAGUE.

2. Anthracia rubula, the yaws: tumours numerous and ſucceſſive; gradually increaſing from ſpecks to the ſize of a raſpberry; one at length growing larger than the reſt: core a fungous excreſcence; fever ſlight; occurring only once during life; contagious. Two diſtinct varieties.

α. R. Guineénſis, Guinea yaw: attacking infants and young perſons chiefly; and ſubſiding as ſoon as the eruption appears.

β. R. Americana, American yaw: depaſcent; and deſtroying progreſſively both muſcles and bones; eſpecially the maſter-yaw, which is called *mamanpia*. See YAWS.

Order IV. DYSTHETICA, [from δυσθετεω, I am ill.] Cachexies. "Morbid ſtate of blood or blood-veſſels alone or connected with a morbid ſtate of other fluids producing a diſeaſed habit."

This definition of Dr. Good's is extremely vague. It is very difficult, however, to make any arrangement of cachexies in our preſent ſtate of knowledge without many faults; but, at all events, ſome of the diſeaſes already mentioned might be referred to morbidity of the blood-veſſels; and certainly dropſy has little to do with depravity of the blood as a primary cauſe. We muſt confeſs, however, that this is not the caſe of Plethora, Hæmorrhagies, Paſſiva, Cyrtoſis, Porphyra, and ſome others. We have already expreſſed our opinion that many diſeaſes are referrible to morbidity in the blood: and, after long and unwarrantable diſregard of this important fact, our contemporaries are now returning to the inveſtigation of the nature of the blood in diſeaſe. Their labours have hitherto been little ſucceſsful; and indeed ſcarcely any thing can be ſtated with certainty as to the ſtate of the blood in the majority of diſeaſes, nor in any of them are we able to trace thoſe minute changes on which therapeutical agents would be ſafely ſet in action. It ſeems pretty clear that all material changes in the blood muſt be a work of time. The changes which a ſudden alteration in the blood would induce in the contractility of the vaſcular and ſenſibility of the nervous ſyſtems would be ſuch, that death, or at all events extreme febrile commotion, muſt occur. Moreover, all unnatural matters in the blood would, under ſuch circumſtances, be carried off by the ſecretions; and thus the ſanguineous fluid would return to its natural condition. Blood being ſolely derived from food and air, it is to theſe agents we muſt look for its alterations. As the former can operate only by producing a greater or leſs degree of oxygenation in the blood, and as cachectic diſeaſes are not extraordinarily manifeſted in ſituations where bad air is preſent, we ſhould probably be right in referring cachexis to the ill effects of particular food. Indeed deficiency or bad quality of food and drink is evidently the cauſe of a very large proportion of cachectic maladies, and a ſerious ſource of aggravation to them all. In the natural or healthy ſtate, indeed, we have very clear evidence, that unhealthy chyle is not formed in conſequence of one or two improper meals; but when, from a long-continued uſe of ſubſtances irritating to the alimentary canal, from a reſtriction to one particular kind of food, or from previous diſeaſe in the abſorbent or aſſimulating veſſels, blood is ſlowly and imperceptibly produced of an unnatural quality, we ſhould be prepared to meet with a correſponding change in the contractility of the containing veſſels; we ſhould expect alſo to find the ſecretion ſlowly deranged, and, as the diſeaſe advanced, the nervous ſyſtem debilitated. The changes which the blood undergoes is perhaps very various in different diſeaſes; but we know little of them. We may remark, however, that in all cachectic diſeaſes (properly ſo named), the change in the blood diminiſhes the contractile power of the ſanguineous ſyſtem. Now, it having been proved by experiment, that the quantity of fibrine, and conſequently the degree of coagulation, is in direct ratio to the force of the arterial contractions, we ſhould naturally expect to find the blood containing an unuſual proportion of ſerum, and more ſlow in its concretion, in cachectic diſeaſes, ſince in them ſymptoms of arterial debility are for the moſt part unequivocal. It is only in this view of the ſubject that the firſt genus of this order, viz. Plethora, can be allowed to exiſt; for, from what has been before ſtated with regard to the dependance of the blood-veſſels on the nerves, of the nerves on the veſſels, and of the veſſels on the blood, plethora, exiſting while theſe particular ſtructures retained their natural properties, muſt inevitably terminate in local inflammation. This order contains fifteen genera.

Genus I. *Plethora*, [from πλήθω, to fill.] Fulneſs of blood. Generic characters—Complexion florid; veins diſtended; undue ſenſe of heat and fulneſs; oppreſſion of the head, cheſt, or other internal organ. There are two very diſtinct ſpecies.

1. Plethora entonica, ſanguine plethora. This firſt ſpecies is rarely ſeen as a diſeaſe. It is probably a frequent forerunner of all the ſpecies of Pyrectica and Phlogotica, but exiſts in various degrees in different habits, and in many perſons without manifeſting ſcarcely any ſymptoms of indiſpoſition. The change uſually obſerved in the blood is an increaſe of coagulation, and in the redneſs of its colour.

2. Plethora atonica, or ſerous plethora, is a diſeaſe in which much change is induced in the ſtate of blood. This change conſiſts in an undue proportion of ſerum, and a deeper hue than ordinary. The pulſe is full, frequent, and feeble; the mental actions languid; dullneſs and lowneſs of ſpirits being often met with. The figure is often plump, but inexpreſſive, ſuch as is vulgarly called *dead fat*; and the urine coagulates on the application of heat.

The treatment of plethora is ſufficiently obvious. The firſt ſpecies, being the forerunner of inflammation or inflammatory dropſy, will require briſk purging and bleeding, and a ſpare and vegetable diet. In the ſecond ſpecies, the ſame indication of reducing the bulk of the blood is to be kept in view; but, as free bleeding diminiſhes rapidly the tone of the ſyſtem, and as the vital powers are evidently in a very low ſtate, we muſt proceed with the utmoſt caution; and, contrary to what is practiſed in inflammations, (where our object is to diminiſh the exceſſive action of the heart rather than the quantity of blood,) we ſhould in ſerous plethora bleed very frequently, but in ſmall quantities at a time. An alteration ſhould be made in the diet, which, in the majority of caſes, ſhould gradually become ſparing. The treatment of dyſpepſia united with the chronic hepatitis (diſeaſes uſually combined with the ſerous plethora) ſhould be purſued, and the kidneys excited by means of diuretics.

Plethora, in one or other of its ſpecies, is uſually found as an almoſt-univerſal ſymptom in hemorrhage and dropſy.

Genus II. *Hæmorrhagia*, [from αἷμα, blood, and ῥέω, to flow.] Hemorrage; flux of blood from an organ without external violence. There are three ſpecies, beſides varieties.

1. Hæmorragia activa, active hemorrhage: accompanied with increaſed vaſcular action; blood florid and tenacious.

Active hemorrhages are cauſed by all circumſtances capable of inducing an increaſed momentum in the affected part, or in the ſyſtem generally.

The immediate or proximate cauſe of an active hæmorrhage is the rupture of a blood-veſſel, where the blood flows till, by the permanent contraction of the broken artery, or a coagulum, it is mechanically reſtrained. This retention is much more readily effected if the heart is quieſcent.

Active hemorrhages we muſt conſider as febrile diſeaſes of an inflammatory kind. They are defined by Dr. Cullen, Pyrexia, with an effuſion of blood independent of external violence; and the blood drawn having an inflammatory appearance. Active hemorrhages chiefly occur in full plethoric habits, moſt frequently in the ſpring and in the early months of ſummer. Previous to the fever which uſhers in the diſcharge, ſome general fulneſs and uneaſineſs is felt, with a load on the parts from whence the hemorrhage will flow. The topical heat, ſwelling, or itching, is ſometimes conſiderable. A ſhort rigor which follows is relieved by the uſual heat, and the hemorrhage ſoon comes on during this hot fit. After ſome time the diſcharge and the fever both ceaſe; but every ſpontaneous hemorrhage has a tendency to recur; and, if this recurrence happens more than once, after

after a ſtated time, a habit is formed which is with difficulty overcome. Theſe very marked appearances do not always occur; but traces of ſuch ſymptoms may be often diſtinguiſhed even in the moſt debilitated ſtates. This ſpecies has ſix varieties.

α. H. a. narium, (Epiſtaxis juniorum, *Cull.*) Bleeding at the noſe. In this variety the blood is diſcharged from the noſtrils, uſually preceded by a pain and heavineſs in the head, flushing in the face, heat and itching in the noſtrils, a throbbing of the temporal arteries, and a quickneſs of the pulſe. In other hemorrhages, a coldneſs of the feet, and ſhivering over the whole body, together with a coſtive belly, are obſerved to precede the attack. The intenſity of the head-affection is often very great.

β. H. a. hæmoptyſis, ſpitting of blood. In this complaint, with the common ſymptoms of fever and increaſed arterial action, a flushing of the cheeks comes on, attended with dyſpnœa and pain in the cheſt; a cough follows, by means of which blood is copiouſly ejected.

γ. H. a. hæmatemeſis, vomiting of blood. In this variety, dark-coloured clotted blood is thrown up from the ſtomach, uſually mixed with much phlegm. The diſcharge is often 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.

It is of much conſequence to aſcertain whether the blood comes from the fauces, the noſe, the ſtomach, or the lungs. If from the fauces, either directly or dropping from the noſe, it is inconſiderable in quantity, and not *always* attended with any hawking; and, though this is ſometimes the caſe, the ſymptoms of Hæmorrhagia narium, or inſpection of the fauces, will aſſiſt the diſtinction. Blood, however, ſeldom comes from the fauces, but in paſſive hemorrhage. When a diſcharge of blood is from the ſtomach, it is brought up by vomiting; but patients can ſeldom diſtinguiſh between theſe two operations. In general, when from the ſtomach, the quantity diſcharged *at once* is more conſiderable; it is alſo mixed with the contents of the ſtomach, and not the mucus of the lungs; and faintneſs and nauſea have generally preceded. The pulmonary blood is uſually florid; that of the ſtomach of a darker colour. Complaints of the lungs, preceding the diſcharge, will ſhow that a doubtful hemorrhage probably proceeds from thoſe organs.

The treatment of theſe hemorrhages is very ſimple. The action of the heart being one of the cauſes of the hemorrhage, this is if poſſible to be reſtrained. Blood ſhould be taken with almoſt as much freedom as in Empreſma; i. e. if the pulſe and conſtitution of the patient warrant ſuch a meaſure. We have ſtated that it is neceſſary to take blood very quickly in inflammation, and this is ſtill more neceſſary in active hemorrhage: a large orifice, or ſometimes both arms, ſhould be opened for this purpoſe; for it is not ſo much required to deplete blood as to exhauſt the force of the heart. This being done, if the hemorrhage does not ſtop, the next ſtep is to aſtringe the extremities of the bleeding veſſels. This object is affected in the H. narium by injections of ſulphate of zinc, ſulphate of copper, &c. in hæmatemeſis by ſolutions of ſulphate of zinc, but in very moderate doſes; or by the Tinctura Ferri muriatis, in large draughts of cold water. The ſame treatment is applicable to the paroxyſm both of hæmoptyſis and that of hæmatemeſis. In the bleeding of the noſe, the auxiliary meaſure of daſhing cold water over the face, head, and neck, or even the general cold bath, may be reſorted to. We may remark, that the affuſion of cold water has been uſed in hæmoptyſis; but, for obvious reaſons, it is a dangerous expedient. Plugging the naſal ſinuſes with lint may be adopted as a dernier reſort in violent hemorrhage from the noſe.

The above remarks apply principally to the treatment of a ſudden eruption of blood. When this is ſtopped, the treatment ſhould be conducted ſtill with the ſame view of leſſening the momentum of the blood by veneſection and abſtinent diet. We ſhould avoid all circumſtances capable of ſtimulating the heart, or increaſing the impetus of blood in the affected organ. Animal food ſhould therefore be withheld, quietude enjoined, cool drinks and purgatives adminiſtered. In hæmatemeſis, and ſtill more in hæmoptyſis, digitalis and the ſuperacetate of lead are very uſeful medicines. The former is given in various doſes (uſually from five to twenty drops), according to its effects; and the latter in a quantity varying from one to three or more grains. The ſugar of lead is uſually combined with opium; but we have found it more ſucceſsful when given alone. The fears of ſome practitioners as to this ſubſtance producing colic ſhould not arreſt its exhibition, its conſtipating effects being eaſily corrected by purgatives.

δ. H. a. hæmaturia, bloody urine: evacuated at the urethra; preceded by pain in the region of the bladder or kidneys; and accompanied with faintneſs.

A diſcharge of blood by urine, when proceeding from the kidneys or ureter, is commonly attended with an acute pain in the back, and ſome difficulty of making water, the urine which comes away firſt being muddy and high coloured, but towards the cloſe of its flowing becoming tranſparent and of a natural appearance. When the blood proceeds immediately from the bladder, it is uſually accompanied with a ſenſe of heat and pain at the bottom of the belly. The voiding of bloody urine is always attended with ſome danger, particularly when mixed with purulent matter. When it ariſes in the courſe of any malignant diſeaſe, it indicates a fatal termination.

When the diſeaſe occurs in a plethoric habit, it may be proper to take blood, and purſue the general antiphlogiſtic plan, opening the bowels occaſionally with caſtor-oil, &c. When owing to calculi which cannot be removed, we muſt be chiefly content with palliative meaſures, giving alkalies or acids according to the quality of the urine; likewiſe mucilaginous drinks and clyſters; and opium, fomentations, &c. to relieve pain; uva urſi alſo has been found uſeful under theſe circumſtances; but more decidedly where the hemorrhage is purely paſſive; in which caſe alſo ſome of the terebinthate remedies may be cautiouſly tried; and means of ſtrengthening the conſtitution muſt not be neglected.

ε. H. a. uterina, uterine hemorrhage: blood diſcharged from the uterus; with a ſenſe of weight in the loins, and of preſſure upon the vagina. See *Paramenia*, and the article PARTURITION, vol. xviii. p. 706–9.

ζ. H. a. proctica, (Hemorrhois, *Cull.*) blood diſcharged from the anus ſpontaneouſly; with a ſenſe of weight and pain within the rectum; and often of load in the head. See the genus *Proctica*, p. 166.

2. Hæmorragia paſſiva, paſſive hæmorrhage: accompanied with general laxity or debility; and weak vaſcular action; blood attenuate, and of a Modena red.

Paſſive hemorrhages are much more difficult to cure than the active ſpecies before detailed. Their chief ſymptom, as in the active hemorrhages, is a diſcharge of blood, which however is ſaid to be of a darker colour, longer in coagulating, and the coagulum when formed leſs firm, than in active hemorrhages. The ſymptoms of fever are alſo abſent; and, above all, the pulſe is ſoft and ſmall. The paſſive hemorrhages reſult ſometimes from ruptured arteries; but ſometimes the blood is actually ſecreted. They are not neceſſarily accompanied with plethora, but they are ſo very generally. They are always connected with alteration in the blood; and are conſequently never met with except in old perſons, in dyſpeptics or debilitated habits, or in thoſe who have ſuffered from bad modes of living. The ſame local treatment is neceſſary in both ſpecies; but bleeding, ſo important in the firſt, is of no avail towards relieving the

ſanguine

ſanguine eruption in the ſecond. Between the paroxyſms, however, it is neceſſary, for the moſt part, to take blood, and that frequently; but in ſmall quantities, as directed in ſerous plethora. The dyſpeptic treatment muſt be put in force. Very great benefit is alſo derivable from counter-irritants, as bliſters, &c. and, except in hæmaturia, by diuretics. The treatment of paſſive hemorrhage embraces a wider field of dietetic treatment than probably any other malady. It may be conſidered as the ſame diſeaſe with Porphyra, affecting however another ſtructure. The varieties are ſimilar to thoſe of the firſt ſpecies; viz.

α. Narium: diſcharged from the noſtrils without local heat or head-ache.

β. Hæmoptyſis: thrown up from the reſpiratory organ, uſually with coughing; often accompanied with ſcirrhous or calculous affection: countenance pale and emaciated.

γ. Hæmatemeſis: evacuated from the alimentary canal at either extremity with expulſive effort, nauſea, and faintneſs; but without tenſive pain.

δ. Hæmaturia: evacuated at the urethra; uſually with faintneſs, but without previous pain.

ε. Uterina: diſcharge from the menſtrual organ, with a ſenſe of local weakneſs.

ζ. Proctica: diſcharged from the anus ſpontaneouſly, with little or no pain; uſually with varices or congeſtions of the hæmorrhoidal veins; occaſionally producing a habit. See Proctica mariſca, p. 168, 9.

A remarkable hiſtory is contained in the 33d volume of the London Medical Journal, of a whole family who died at different periods from hemorrhage ſupervening to trifling wounds or ſcratches. But, as the relator made no further remarks as to the conſtitution or ſymptoms of the patients, we know not whether theſe were caſes of active or paſſive hemorrhage. We ſhould be inclined to ſuppoſe the latter.

3. Hæmorragia vicaria, vicarious hemorrhage: catenated with a morbid or ſuppreſſed action of ſome other organ; the outlet being uſually the noſtrils, trachea, vagina, or rectum; at times the urethra. This ſpecies has the ſame ſymptoms and treatment as idiopathic hemorrhage. It may be active or paſſive.

Genus III. *Maraſmus*, [from μαραινω, to grow lean.] Emaciation of the entire body. It has three ſpecies.

Emaciation is a ſymptom of many complaints, and one which often ſerves us to diſtinguiſh idiopathic from nervous or irritative diſeaſes: it being uſually found, that, while in the latter this is often abſent, in moſt chronic inflammations or degeneration of internal ſtructures, early emaciation is met with. A maraſmus from mere exhauſtion, a very unimportant diſeaſe, differs from that which depends on viſceral diſorder in the greater *tightneſs* of the ſkin which the latter exhibits, while in the former its texture is looſe and natural.

1. Maraſmus atrophia, atrophy: complexion pale, often ſqualid; ſkin dry and wrinkled; muſcles ſhrunk and inelaſtic: little or no fever. Three ſpecies.

α. A. inanitorum: the craſis of the blood vitiated by exceſſive evacuations; as ſaliva, ſweat, milk, inteſtinal ſecretion, or blood itſelf.

β. A. famelicorum: the craſis of the blood vitiated by the uſe of food deficient in quantity, and innutritious in quality.

γ. A. debilium: the craſis of the blood vitiated by infirm action of the digeſtive faculty; as in puny infants, and feeble age.

The firſt and ſecond varieties are cured by the gradual exhibition of natural food; the third by the treatment for *Dyſepſia*, which ſee.

2. Maraſmus tabes, decline: general languor; hectic fever; for the moſt part depreſſed ſpirits. Four varieties.

α. T. purulenta: the blood vitiated by abſorption of pus from an external or internal ulcer, or a vomica.

That hectic fever is a common attendant on the formation of pus is unqueſtionable; but whether this ariſes from abſorption is doubtful. Indeed it has rather ſeemed to us to be the particular irritation going on in the ſuppurating part which diſturbs, through the medium of the nervous ſyſtem, the general health. If this were an admitted explanation, it would alſo lead us to ſuppoſe that the beneficial effect of bark was owing to the oppoſite impreſſion it induced on the ſyſtem.

β. T. ſtrumoſa, (T. ſcrophuloſa, *Cull.*) Blood vitiated by a ſcrofulous taint; and, for the moſt part, connected with a ſcrofulous affection of ſome organ or other. See Struma meſenterica.

γ. T. dorſalis: vitiated by exceſs in libidinous indulgences. Accompanied with pain in the back and loins; ſallow, dejected viſage; heavineſs of the head; ſyrigmus; ſleepleſſneſs; horror of mind; extreme genital debility. We believe this dreadful malady is not to be alleviated by any but moral treatment.

δ. T. venenata: the blood vitiated by an introduction of ſome poiſonous or other deleterious material into the ſyſtem; often from the injudicious uſe of quickſilver; perhaps, at times, from ſmall portions of arſenic.

2. Maraſmus phthiſis, conſumption. To attain a knowledge of the cauſes and cure of conſumption, may juſtly be conſidered the higheſt point of ambition to the Engliſh pathologiſt. For, whether we conſider the extraordinary inroads it makes on the population of this country in general, the youth, the beauty, and often the mental endowments, of its victims; or, laſtly, the opprobium its fatality caſts upon our profeſſion; it cannot fail to be an object of the intenſeſt ſtudy and contemplation. Much has been written on conſumption by Engliſh writers; the whole materia medica has been ranſacked for ſpecifics againſt it; yet very little has been done. It ſeems to us, that the pathology of this diſeaſe has not been ſtudied with the accuracy that has been lately applied to almoſt all others. This want of a theoretical view of phthiſis does not indeed ariſe from the deficiency of high ratiocinative powers in the writers of our time. It is that we want actual data on which to found our reaſoning. We want a few eſtabliſhed facts for our premiſes. Moſt men can reaſon accurately on allowed premiſes; but in phthiſis the premiſes are ſo far from being allowed or ſettled, that there is much reaſon to believe that groſs errors are to be found in thoſe moſt commonly received. To trace the operation of air on the lungs, as far as its temperature, its weight, its humidity, its foreign mixtures, and its electrical properties, are concerned, is a taſk which can only be accompliſhed by the united labours of many. And, though numerous deſultory obſervations have been made on theſe points, yet, not being made with the ſpecific object of tracing the cauſe of conſumption, but being generally confined to one only of theſe particulars, our information is very confined. Advancing another link in the chain of the cauſes of phthiſis, the abſence of ſymptoms, and the unfrequency of deaths at an early ſtage of this diſeaſe, have prevented the medical obſerver from accurately tracing the formation of the conſumptive diſorganization to its firſt ſource, and through its ſeparate ſtages.

But, if theſe inveſtigations, conducted with ſomewhat of a philoſophic ſpirit, have failed, what have we to expect from the mere experimenter, who, throwing aſide the laborious toil of comparing the climate and ſituation of diſtant countries with the mortality of phthiſis, or the ſtill more diſagreeable office of numerous and minute diſſections, has been employed merely in practiſing on human life by potent drugs, in the vain hope of diſcovering a ſpecific? We will venture to predict that it is not from this tribe of pathologiſts that conſumption will meet with a cure. Yet how many boaſted ſpecifics have been faſhionable for a time, to fall into merited oblivion! In this ſpecies Dr. Good reckons three varieties.

α. Pht. catarrhalis, catarrhal conſumption; cough frequent and violent; copious excretion of a thin, offenſive, purulent,

purulent, mucus; general ſoreneſs of the cheſt, with tranſitory pains ſhifting from ſide to ſide. Chiefly produced by catching cold, or the neglect of a common catarrh.

β. Pht. apoſtematoſa, apoſtematous conſumption: cough ſevere but dry; fixed, obtuſe, circumſcribed, pain in the cheſt, ſometimes pulſatory; difficult decumbiture on one ſide; at length ſudden and copious diſcharge of purulent matter, occaſionally threatening ſuffocation; the other ſymptoms temporarily, rarely permanently, relieved. Chiefly the reſult of repeated hæmoptyſis.

γ. Pht. tuberculoſa, tuberculous conſumption: cough ſhort and tickling; excretion of a watery whey-like ſanies, ſometimes tinged with blood; pain in the cheſt ſlight; habitual elevation of ſpirits. Uſually the reſult of a ſcrofulous diatheſis.

We cannot, however, minutely follow the above diviſion of conſumption, becauſe, in common with many other diviſions, they are becoming generally abandoned in conſequence of the advance of pathological knowledge. It muſt be granted that catarrh is often accompanied by tubercles, and that theſe formations often precede apoſtema; but the peculiar ſymptoms and the fatality of phthiſis belong only to the third variety; the two former varieties being conſidered as ſevere forms of Bronchitis, or Apoſtema vomica, which ſee. The word Phthiſis is therefore reſtricted in this treatiſe to thoſe diſorganizations of the lungs known by the name of *tubercles*, and to the ſubſequent alteration in ſtructure theſe tubercles undergo. The only diſtinction that can be made out, as far as we conceive, will depend on whether the patient be ſtrumous or not.

Now, as to the formation of tubercles in the lungs, this is a point little known. We have before had occaſion to notice, that two explanations had been afforded of the appearance of tubercles; that one theory affirmed them to be organizations of lymph previouſly effuſed by an inflammatory proceſs; that, on the other hand, ſome referred the production of tubercles to an undefined diſeaſe in the abſorbent ſyſtem; and, as a coincident opinion, that the firſt germ of the tubercle was an hydatid. We are not prepared to decide between the oppoſite parties; but we incline to ſuppoſe that tubercles may originate in both ways. And firſt, of the formation of tubercles from inflammation, we conceive ſome evidence is to be found in viewing their remote cauſes. Variable weather, more eſpecially if in a cold and humid climate, has the effect of preventing the due action of the whole of the cutaneous veſſels; conſequently internal circulation is increaſed. This increaſe in the circulatory fluids is particularly felt in the lungs. This fact is evident to every one; for the moſt common obſerver has not failed to notice the extreme feeling of diſtention in the lungs which follows the application of cold to the ſurface of the body. Now, if it be admitted that plethora can be induced in the lungs by cold and moiſture applied to the ſkin; if it be admitted alſo, that conſumption is moſt prevalent in thoſe ſituations where, from the degree of cold and moiſture, or from their variability, theſe conditions can act moſt forcibly on the ſkin; then, knowing as we do that impediment in the cutaneous increaſes the pulmonary circulation, and that plethora is the chief condition of inflamed parts, we cannot heſitate to aſcribe the production of tubercles to an inflammatory origin in ſome caſes. Further proof of their origin in this ſource might be adduced from the frequency of phthiſis after the pneumonia.

With reſpect to the origin of the tubercles in diſeaſed abſorbents, this, though capable of leſs direct proof, is ſtill probable. It reſts greatly on the ſuppoſed locality of ſcrofula, the latter diſeaſe being uſually conſidered an affection of the lymphatic ſyſtem; and, as ſcrofula and phthiſis are frequently complicated, as in ſcrofulous patients tubercles even in other viſcera are the moſt common degenerations, the origin of phthiſis being the ſame as ſcrofula has been juſtly contended for. It reſts alſo on the grounds, that many people expoſed to the viciſſitudes of climate, and who are ſubject to frequent pneumonites and catarrhs after fever, enjoy nevertheleſs immunity from conſumption. Moreover, tubercles have been found in the lungs of the fœtus. Indeed ſo evident is the fact that phthiſis and ſtruma are often the ſame diſeaſes, that we believe it has never been diſputed. The only queſtion to be decided, is whether chronic pneumonitis will not end in phthiſis, even in conſtitutions not ſtrumous. The very general ſuffering of the French army in Holland, and the teſtimony of Brouſſais, who ſays that all the tuberculous caſes he diſſected there were preceded by catarrh or pheumonia, go to prove the affirmation.

Leaving, however, theſe ſpeculations, on which we cannot throw ſo much light as we wiſh, we proceed to conſider theſe tubercles when formed, their progreſs, and accompanying ſymptoms.

Laennec, in his excellent work on "Mediate Auſcultation," ſtates that the earlieſt ſtage of tubercles he has met with is when they form ſmall ſemi-tranſparent grains of a grey hue, but ſometimes diaphanous and almoſt colourleſs. Their ſize, in the firſt inſtance, varies from that of a millet to that of a hemp-ſeed; they at length become larger, opake or yellowiſh, at firſt in the centre, and ſucceſſively throughout their extent. Thoſe moſt adjacent unite as they develope themſelves, and form then more or leſs voluminous maſſes, of a pale yellowiſh colour, opake, and of a denſity ſimilar to that of the hardeſt ſort of cheeſe: they are then termed *crude tubercles*. It is ordinarily towards this epoch of the diſeaſe, that the tiſſue of the lungs, hitherto healthy, begins to become hard, greyiſh, and ſemi-tranſparent, around the tubercles, from a new production of tuberculous matter in the firſt ſtage of its formation, which infiltrates the pulmonary ſtructure: the latter is ſometimes found without tubercles. The pulmonary tiſſue, thus engorged, is denſe, humid, and wholly impenetrable to the air. Numerous ſmaller opake yellow ſpots then become diſperſed in it, and at length extend throughout it.

In whatever way tubercles are formed, they terminate, after a period of various duration, by becoming ſoft, and at length liquid. This ſoftening begins in the centre of each maſs, and gradually extends to the circumference. Tuberculous matter at this ſtage is in two different ſtates: it either reſembles a thick inodorous pus of a deeper yellow colour than the tubercles, or it is ſeparated in two parts, one of which is very liquid, more or leſs tranſparent or colourleſs, unleſs it be tinctured by blood; the other opake, and of the conſiſtence of ſoft and friable cheeſe. The latter, M. Laennec ſays, is particularly found in ſcrofulous ſubjects. When the tuberculous matter is completely ſoftened, it opens a paſſage into ſome one of the adjacent bronchial tubes; this opening is ſmaller than the diameter of the cavity left after the evacuation of the matter, and remains fiſtulous. Many excavations of the above kind generally co-exiſt; and cavities ſucceſſively formed often open into each other, forming anfractuous excavations of various forms and extent. Bands or columns of condenſed pulmonary tiſſue, often infiltrated alſo by tuberculous matter, frequently traverſe theſe excavations. Bayle has ſtated that theſe bands were traverſed by blood-veſſels; but M. Laennec has hardly ever found a veſſel of any conſiderable ſize in them. The veſſels naturally exiſting in the pulmonary ſtructure are obliterated in thoſe bands. The tuberculous matter, on being developed, preſſes aſide the proper ſtructure of the lungs, and its blood-veſſels are found often very large in ſize, winding about the parietes of the cavities ſoon after the ſoftening of the tuberculous matter, and forming even part of thoſe parietes. Theſe veſſels are ordinarily flattened; they are rarely obliterated; but thoſe of their ramifications which are directed towards the excavation or towards the tuberculous maſſes,

maſſes, are evidently ſo; and liquids injected into thoſe veſſels will not paſs into the cavities, as Dr. Baillie long ſince obſerved.

The ramifications of the bronchiæ appear to be rather enveloped in, than preſſed aſide by, tuberculous matter; and the compreſſion excited on them, apparently, promptly deſtroys them, for they can hardly ever be diſtinguiſhed in the tuberculous maſſes; and yet it is very rare to find an excavation, however ſmall, in which one or more bronchial tubes of different diameters do not open, and in a direction which makes it evident that thoſe tubes were originally extended through the tuberculous matter. The parietes of thoſe excavations, in proportion as they are formed, become lined with a ſort of thin, ſmooth, ſoft, and almoſt friable, falſe membrane, of nearly an opake white hue, and which is eaſily removed by ſcraping it with a ſcalpel. Sometimes a finer membrane of the ſame kind is formed in ſpots on the ſides of the cavities; or ſuch a membrane will exiſt beneath the former, but not adherent to it, and which is attached more intimately than the former to the texture which it lines. It ſeems to be the firſt degree of development of the former. Sometimes neither of theſe membranes is preſent, and the ſides of the excavations are formed by the pulmonary texture, ordinarily hard, red, and infiltrated by tuberculous matter, in different degrees of development.

From this falſe membrane, as well as from the bronchial lining, (a very large portion of which becomes involved in the ſame action,) pus is ſecreted. At times alſo blood is poured forth, giving riſe to the ſanguineous ſputa ſo common in the latter ſtages of conſumption.

If the diſeaſe now remain ſtationary, there is developed, here and there, beneath this falſe membrane, flakes of greyiſh-white and ſemi-diaphanous matter, of a texture analogous to cartilage, but a little ſofter, and which adheres intimately to the pulmonary tiſſue. Theſe flakes at length increaſe ſo as to unite, completely line the ulcerous excavation, and terminate, as by continuity of ſubſtance, in the internal membrane of the bronchial tubes which open into thoſe cavities. Sometimes this cartilaginous ſubſtance is of a light-red colour, apparently from a development of very fine blood-veſſels; ſometimes this formation is as ancient as the tubercles themſelves, an affection which conſtitutes the *encyſted tubercle*. It adheres ſtrongly to the ſurrounding ſtructure of the lungs, but the tubercles it envelopes can be ſeparated from it, although alſo firmly adherent; and the internal ſurface of the cyſt is then found ſmooth and poliſhed, although unequal in its ſurface.

In caſes of recovery, the above cartilaginous cyſt, forming a communication with the bronchial air-cells, and lined with the poliſhed membrane before mentioned, which has the ſame character as mucous membrane in general, becomes no longer a ſource of irritation, and, the unnatural cavity alone remaining, the conſumption is arreſted. A ſtill more perfect cure is effected if the cartilaginous cyſts cicatrize in conſequence of an approximation of their ſides.

By the above-mentioned proceſſes, then, phthiſis is ſometimes cured. In almoſt all caſes, however, other terminations enſue. The tubercles coaleſce, and form enlarged tubica; and then preſſure on the bronchiæ excites a ſevere bronchitis, which terminates in death, or, if life be more prolonged, the cyſts degenerate into foul ulcerations.

The following, then, is the proceſs of pulmonary tubercles: Firſtly, diaphanous miliary granulations; ſecondly, grey tubercles, more voluminous, and yellow and opake in the centre; thirdly, tubercles entirely opake, but ſtill of firm conſiſtence; fourthly, ſoftened tubercles, eſpecially in the centre; fifthly, excavations, more or leſs completely empty; ſixthly, the excavations lined by a mucous membrane, and their external covering formed of cartilage; or, on the other hand, an ulcerous cavity ſecreting pus and blood; laſtly, the cartilage cicatrized, or, fatally and more generally, the ſubſtance of the lungs deſtroyed. It is to be remarked alſo, that, as in other parts of the body, the tubercular cyſt in the lungs ſometimes contains varieties of morbid matter, as a medullary or cerebriform matter, a melanoſe or black matter, a cancerous matter, &c. It is needleſs to ſay that theſe are hopeleſs caſes, and moſt diſtinguiſhable from each other, or from ſimple tubercles, during the life of the ſufferer. They are fortunately rare.

Our taſk is now to trace the ſymptoms which accompany the above-mentioned morbid changes. We have no fear of being contradicted when we ſay, that, notwithſtanding all that has been written on phthiſis, the early ſymptoms of the tubercular formations have never been correctly deſcribed. This has ariſen partly from the confuſion of terms; for, till lately, moſt authors have treated of chronic catarrh, apoſtema, vomica, and other inſidious diſeaſes of the lungs, under the title of *conſumption*; while, in more recent accounts, the ſame deficiency ſtill exiſts from the paucity of examples the phyſician has had an opportunity of witneſſing. Not indeed that there is a ſcarcity of phthiſical patients, but becauſe the abſence of pain or uneaſy ſenſation prevents them from applying to medical men in the beginning of the diſeaſe.

From what we have been able to collect by perſonal obſervation and from contemporary authors, we conceive, that a remarkable pallor of the ſkin, a diminution of perſpiration, and a removal of all thoſe trifling cutaneous roughneſſes or defædations from which ſcarcely any one is entirely free, are among the earlieſt ſigns of conſumption. To theſe alſo is added a feeling of tightneſs in the cheſt on unuſual exertion, as running or the like. Sometimes this tightneſs is abſolutely a pain; ſometimes it is abſent, and a mere quickneſs of breathing follows ſlight exertions. A peculiar placidity of manner is uſually obſerved in patients at this period, and ſomewhat of fulneſs in the face. The next ſymptom is a cough, which ſeems to the patient to ariſe from irritation in the glottis, like that produced by the accidental preſence of a huſk of corn, or other dry ſubſtance. It is familiarly known by the name of an huſky or tickling cough. This, which is uſually worſe towards night, is not however always preſent. Theſe fugacious ſymptoms are of courſe little to be depended on, ſince they are met with in trifling gaſtric irritations; but they may ſerve to direct our attention to the acceſſion of phthiſis at an earlier period than it would otherwiſe have been done.

The ſuſpicion that theſe ſymptoms denote phthiſis will be confirmed, if hereditary prediſpoſition, or if external ſymptoms of ſtruma, ſhould alſo be preſent. The above-mentioned appearances do not always produce more formidable ſymptoms. They do ſo, however, in ſo large a proportion of caſes, that the following deſcription may juſtly be called the *ſecond ſtage*. We believe that when it is the firſt ſtage, or, to ſpeak more plainly, when phthiſis is ſuddenly manifeſted, and is rapid in its courſe, a chronic pneumonitis is always very evident, pain and fever being for the moſt part met with.

In the progreſs of this affection, the pallor of the countenance is interrupted by partial flushing of the cheek. This is attended with a ſenſation of burning heat in the part flushed: it is not confined to the cheek; a ſenſe of burning and redneſs being often ſeen and felt round the palms of the hands or ſoles of the feet. The pulſe becomes frequent; a difficulty of lying on one ſide comes on, attended with pain in ſome particular parts of the cheſt, which is increaſed by ſudden changes of poſition. One portion is generally preferred during the whole diſeaſe. The irritation being now communicated to the mucous membrane of the bronchiæ, or the irritability of that membrane being now ſo far increaſed that ſlight variations of temperature affect it with inflammation, the cough, before dry, becomes attended with copious expectoration. The reſpiration is quick and eaſily accelerated, and the noſtrils are forcibly moved by it. As this diſ-

eaſe

eaſe advances another grade, and as the tubercles begin to ſoften and ulcerate, theſe ſymptoms become more marked; hectic fever is more manifeſt, and ſuffers evening exacerbations. Sweats general or partial, but always debilitating, break out; the blood becomes more highly oxygenated, either in conſequence of its more rapid circulation through the pulmonary organs, or from its more extenſive and cloſe application to the air through the medium of the ulcerated cavities. Hence the phthiſical patient acquires, to a great extent, the high romantic and imaginative ſpirit which has been ſo often remarked to attend the paſſage over lofty mountains, ſituations in which the air is extraordinarily rarefied. Hence the never-dying hope, the abſence of all that deſponding querulouſneſs which excites our pity, not unmingled with contempt, in viewing the victim of hypochondriac malady. It has been ſaid, indeed, that the amicability, ſerenity, and gaiety of temper, of the conſumptive patient, is rather the reſult of the temperament that diſpoſes to phthiſis than of the phthiſis itſelf; but we believe there are few practitioners who have not obſerved that the very firſt approaches of conſumption are marked by much leſs hopefulneſs than the latter ſtages; and, even at times when the conſtitutional diſturbance ſuffers an exacerbation, the ſpirits are higher than uſual.

To proceed with this picture. Caſes of recovery are too rare to allow us much to ſay as to the appearances of amendment. We need hardly caution the practitioner not to be deceived by the cheerfulneſs of the patient, and by the occaſional abſence of all ill feeling which ſometimes laſts for a day or ſo. The ſymptoms which foretel the fatal termination of the malady are well known. All the ſymptoms are diſtreſſingly increaſed: the quick pulſe, the evening exacerbations, the colliquative ſweats, the gloſſy eye, the hurried and difficult reſpiration, the diſtended noſtrils, and the general emaciation, are all moſt ſtrongly manifeſted. To theſe may be added, diarrhœa and ſlight delirium. Theſe arrived at the higheſt pitch endurable by the human frame, the patient calls on the by-ſtanders for breath, ſnaps with horrid energy at the air, and expires. This afflicting termination only occurs, however, when the patient actually dies from dyſpnœa, while the reſt of the frame retains to a high degree the powers of life. More commonly, gradual waſting and decay entirely exhauſts the ſufferer, and he ſinks into the grave without a groan.

According to Laennec, the formation of the ulcerated cavities in the lungs may be known by applying the *ſtethoſcope* (ſo often mentioned) to the cheſt, in which caſe the *voice of the patient ſeems to come through the cylinder.* This phenomenon Laennec calls *pectoriloquiſm.* The ſtudent may make himſelf acquainted with it by applying the ſtethoſcope to the trachea of any individual, or in lean perſons over the infurcation of the bronchiæ. The parts of the cheſt over which the ſtethoſcope is to be applied to aſcertain an ulceration in the lungs are the anterior and ſuperior portion, the axilla, the ſpace between the clavicle and the trapezius muſcle, and the foſſa above and below the ſpinous proceſs of the ſcapula. It may be perfect, imperfect, or doubtful. When it is perfect, it is a certain ſign of the exiſtence of a preternatural cavity in the lungs. It is more clearly evident in proportion to the acuteneſs of the voice of the patient; when the voice is grave or hoarſe, the pectoriloquiſm is like the voice coming through a ſpeaking-trumpet or roll of paper. Accidental circumſtances ſometimes operate to prevent pectoriloquiſm from being clearly evident: Laennec finds it proper, therefore, to examine a patient ſeveral times; and in no caſe where pectoriloquiſm was manifeſt did he fail to recogniſe, by diſſection or by ſymptoms, ulceration in the lungs.

The above circumſtances will diſtinguiſh the latter ſtages of phthiſis from chronic bronchitis; but the diagnoſis of its firſt ſtages is more difficult. In chronic bronchitis the abſence of pain during inſpiration, the capability of reſting on either ſide in bed, (when there is no abdominal diſeaſe,) the wheezing noiſe in reſpiration, the leaden colour of the lips, and the pallidity of the countenance, the appearance of the ſputa, conſiſting almoſt entirely of mucus, are ſymptoms which diſtinguiſh it from tubercular phthiſis. Moreover, the dyſpnœa is greater on exertion in tubercular phthiſis, and the patient cannot take ſo large a volume of air into the lungs as he can in bronchitis. The dyſpnœa too is leſs relieved by expectoration; and there is a peculiar ſenſation of ſtuffing complained of in catarrh, which does not occur in phthiſis. The expectoration is various, but there is always a conſiderable quantity of mucus mixed with the pus-like matter. The quantity of matter expectorated in the former diſeaſe is much greater than in tubercular conſumption. The cough alſo in bronchitis is deep and ſonorous. The paroxyſms of hectic fever are much leſs regular in chronic bronchitis than in tubercular phthiſis. The perſpirations are more, and the emaciation leſs, in inflammation of the mucous membrane, than in tubercular phthiſis, though we do meet with caſes in which the emaciation is as great in the former as in the latter affection. When the pulmonic ſymptoms have ariſen from a diſeaſed liver, it is a ſtrong preſumption that the ſeat of the diſeaſe is in the bronchial membrane; for in almoſt all caſes of this deſcription the mucous membrane is the part affected. When this combination occurs, the ſpirits are always depreſſed; and, in addition to the uſual pulmonic ſymptoms, we have in this form of the diſeaſe a painful and diſtended epigaſtrium, unnatural ſtools, and diſordered digeſtion. The mouth is dry in a morning, and the tongue loaded. The fits of coughing are conſtantly excited when the ſtomach is overloaded, and are apt to come on when the patient is lying on either ſide in bed. If chronic have ſucceeded to acute bronchitis, the emaciation is ſometimes ſo great, the hectic fever ſo complete, and the matter expectorated ſo purulent, that a perſon ſeeing the diſeaſe after it is formed will often be inclined to believe that he has to treat an ordinary phthiſis; but an attention to the hiſtory of ſuch caſes will frequently lead him to diſtinguiſh the former affection from the latter; and the event will uſually juſtify his diſtinction.

The greateſt advantage ariſes from tracing theſe affections to their origin. We ſometimes find that the ſymptoms have come on ſoon after the diſappearance of a cutaneous affection, which ſhould always lead us to ſuſpect that the bronchial membrane is diſeaſed. Notwithſtanding all our attention to the occaſional cauſe by which the diſeaſe is induced, to the habit of the patient, and to the modification of the ſymptoms, in the latter ſtage of the diſeaſe it often becomes impoſſible to diſtinguiſh catarrh from phthiſis.

An ignorance of the preciſe cauſes of phthiſis we have before lamented. We ſhall put down what is uſually ſaid in medical works on this ſubject. The prediſpoſition is frequently hereditary, deſcending from parents whom the diſeaſe had attacked, or who had, at ſome period of their lives, been affected with ſome form of ſcrofula. It is diſtinguiſhed by external peculiarities of form and appearance. Perſons poſſeſſing fine ſkin, with large veins, ſoft hair, light eyes, a florid complexion, tall and thin perſon, long ſlender neck, narrow cheſt, and projecting ſhoulders, may be conſidered as having the phthiſical prediſpoſition. The fine ſkin and complexion, and ſlender form, are however much ſurer emblems of conſumptive prediſpoſition than the colour of the hair and eyes; for the diſeaſe often attacks dark-haired perſons. Brouſſais refers the conſumptive conſtitution to an extraordinary development in the lymphatic ſyſtem. Frequent attacks of pneumonitis ſeem to become cauſes of conſumption. The ſame may be ſaid of catarrh, of hæmoptyſis, or any other diſeaſes which cauſe increaſed afflux of blood into the lungs. But as many perſons, and even whole nations, ſuffer pulmonary diſeaſe without the ſubſequent

ſequent formation of tubercles, we can only conſider the above diſeaſes as aſſiſting the production of, rather than entirely producing, phthiſis.

The cauſe of the frequency of conſumption in England has been variouſly accounted for. It evidently cannot be the coldneſs of the climate; for in ſome of the more northern regions of the globe phthiſis is ſcarcely known: nor, when we conſider the ſudden hurricanes and chilling blaſts which occaſionally alternate with exceſſive heat in hot climates, where the diſeaſe is equally unknown, are we juſtified in referring it to the viciſſitudes of our clime. Some have endeavoured to prove that the dampneſs of our atmoſphere is the cauſe of conſumption; but in Holland, and other humid ſituations, the mortality of conſumptive patients does not equal that of our own country. It will not therefore ſeem improbable, that we muſt look for the cauſe of conſumption in a morbid ſtate of the blood; and that the action of cold and moiſture merely determines, by increaſing the circulation through the lungs, the elimination of its morbid material to thoſe latter organs. What ſeems to bear out this explanation is, that the ſame ſort of temperaments moſt diſpoſed to phthiſis are alſo diſpoſed to tubercular depoſitions in other parts of the body, if circumſtances operate to increaſe the afflux of blood to thoſe parts. The ſame propoſition receives further proof from the known connexion between long-continued impediment to the functions of the liver and phthiſis; and no one can doubt, that inaction of the largeſt gland in the body muſt deteriorate the blood. Still further proof is derived from the well-known circumſtance, that the abſorption of venereal virus does, under certain circumſtances, produce conſumption: an inſtance of this we have now under our care.

We conſider, therefore, deterioration of the blood one cauſe of phthiſis; debility of the functions of the ſkin another. That the functions of the ſkin are injured by cold and moiſture, and ſtill more by changes of temperature; that coldneſs, moiſture, and frequency of change, are the actual conditions of the Engliſh atmoſphere; and that the determination of blood to the lungs is in direct ratio to the inaction of the ſkin; are propoſitions which no one will be inclined to doubt. Whoever views, therefore, the exanguious ſkin of the perſon diſpoſed to conſumption, and contraſts it with the *rough redneſs* of thoſe who, through ſuffering the viciſſitudes of climate and the privation of wholeſome diet, are nevertheleſs wholly exempt from its attacks, cannot fail to learn a wholeſome leſſon as to a mode of preventing conſumption. This is, to increaſe the action of the cutaneous veſſels until a permanent vigour of the ſkin is acquired. As to the means of doing this, much care will be requiſite. It will ſometimes be neceſſary to uſe the warm bath or friction: but, where ſymptoms approaching phthiſis are entirely abſent, the cold bath, followed by ſuch friction as will enſure powerful re-action, would be moſt uſeful. In doing this, however, we muſt be careful that the bather does not ſtop long in the water; and that it be never uſed except redneſs and heat of ſkin follow the immerſion. Regular muſcular exerciſe is alſo indiſpenſible, always taking care that expoſure to wet be avoided. The clothing ſhould be warm, but not heavy; and ſhould be ſo regulated, that, while the ſkin is prevented from ſuffering the evil influence of moiſture, it is not rendered morbidly ſenſible by extreme heat. The filthineſs of the cuſtom would ever prevent its uſe in a civilized ſtate; elſe, conſidering the ſtimulating influence of *oil* on the ſkin, we ſhould conceive that inunction muſt be a very powerful agent in ſtrengthening this important covering. To this practice, however, many northern ſavages probably owe their ability to reſiſt the rigour of their climate. To return to the ſubject. The above meaſures ſhould of courſe be aſſiſted by an attention to the food of the phthiſical patient. The reader will obſerve, that the above remarks apply merely to the bringing up of children born of a conſumptive ſtock, or diſplaying the marks of the conſumptive diatheſis at an early age.

The treatment of phthiſis is now to be diſcuſſed; and it naturally ariſes out of the above deſcription of cauſes and ſymptoms. In almoſt all deteriorations of the blood, ſome exceſs of it will, we believe, be generally found; and indeed moſt authors have ſeemed to conſider bleeding neceſſary to the treatment of phthiſis. Even if plethora did not exiſt generally, the inaction of the ſkin would of courſe throw a greater proportion of blood than ordinary into the larger veſſels, and conſequently into the lungs. At all events, the propriety of bleeding is pretty generally allowed. This evacuation ſhould therefore be made in ſmall quantities at a time, and according to the degree of pain, the rapidity of the attack, and the hardneſs of the pulſe. In the earlieſt periods of the diſeaſe, the bleeding will require to be regulated rather by the fulneſs of the pulſe than by any other ſign. If we are called in at this period of the diſeaſe, our attention ſhould be carefully directed to the removal of all diſtant irritation; for often the diſeaſe of other parts of the body, eſpecially of the liver, is the cauſe of phthiſis. If this be not the caſe, and the malady we have to treat be ſtrictly idiopathic phthiſis, the ſkin muſt be excited, the regulation of diet very cloſely attended to, and the patient placed in a ſituation in which the debilitating influence of cold and moiſture is carefully excluded. The warm bath, the fleſh-bruſh, and a regular uſe of antimony in ſuch doſes as not to nauſeate or produce ſweating, are all the means we are poſſeſſed of for fulfilling the firſt indication. The ſecond muſt be the buſineſs of the patient. It is impoſſible to lay down any exact rules as to what food, or what proportion of it, ſhould be uſed by the conſumptive patient. There is no doubt in our mind, that much, very much, may be effected by what we have before called the dyſpeptic treatment, in curing phthiſis. Not indeed that we are ſanguine enough to ſuppoſe that this will bring about the abſorption of the tubercles; but certainly, if it improves the morbid condition of the blood, it will prevent their increaſe, and it will exert a very beneficial influence on the curative proceſſes which the tubercles undergo in their progreſs to excavation and cicatrization. A concentrated form of diet, as jellies, milk, and mucilaginous preparations, has obtained a popular fame as a regimen for conſumptive patients, but probably without deſerving it. Indeed, conſidering that in phthiſis the action of the ſtomach does not ſeem much impaired, we ſhould rather adviſe ſparing quantities of meat or vegetables, ſince with them the natural juices of the ſtomach and bowels would be mixed, and conſequently the quality of the blood moſt probably improved. We are doubtful whether abſtinence ſhould be carried merely to the extent of improving the digeſtive and aſſimilative powers, or whether it ſhould be ſo far enforced as to produce emptyneſs of the ſyſtem. The latter practice, ſteadily perſevered in, has certainly ſucceeded in removing a variety of morbid growths on the outſide of the body; and, from the reſult of ſome few caſes which have come to our knowledge, we are inclined to favour its adoption in phthiſis. The excellent Brouſſais alſo ſpeaks well of it. Dry feeding has alſo been recommended by ſome; and, as it is pretty well aſcertained that nutrition goes on but ſlowly, even from large quantities of food, unleſs a certain proportion of drink be taken, this may have operated in the ſame way as rigid abſtinence, but it is by no means ſo effectual as actual abſtinence. It is needleſs to add, that ſtimulating drinks ſhould be forbidden in conſumptive caſes.

The third indication, i. e. that of placing the patient in a favourably-conſtituted climate, is next to be attended to. A variety of places have been recommended for conſumptive patients: theſe have generally been ſelected in warmer climates, on the ſuppoſition that the cauſe of conſumption was the coldneſs of our atmoſphere. But an high temperature is by no means enough to enſure

alleviation to the phthifical patient. Many places in hot climates are expoſed to bleak winds: often the winter is as bleak as our own. The moſt proper ſituation is one in which *equability* of temperature throughout the year, protection from wind, and denſity of air, are continued. The occaſional cold induced by blaſts of wind renders the ſituation of Rome, of Piſa, and even of Nice, objectionable. A place called Villa Franca, a ſhort diſtance from Nice, has been recommended as a ſpot in which the temperature is uniform, the ſite low, and the ſoil fertile. But, where pecuniary reſources are wanting, or where the comforts of the native country are relinquiſhed with regret, a ſituation may be found at home, ſcarcely if at all inferior to the boaſted climes of Italy. The lower parts of the well-ſheltered Devonſhire have long been held in repute for the phthifical patient; and Dr. Foſter, in a recent work on the "Climate of Penzance and Land's End," has ſhown that the latter places are ſuperior even to that. The contraſt of Penzance with the famous places of reſort in Italy, is much in its favour, as will be ſeen by the following Table.

Fahrenheit's Thermometer.	Time of Obſervation.	Dec.	Jan.	Feb.	Mar.
Nice, 3 years, (1815-1817)	ſun-riſe	44	44	47	45
Piſa, (1814-1816)	ſun-riſe	42	40	43	41
Rome, (1815-1817)	7 A.M.	42	41	43	42
Penzance, (1815-1817)	7&8A.M.	42	41	44	42

The benefit conſumptive patients derive from a ſea-voyage has induced many to ſuppoſe that the ſea-coaſt muſt be an advantageous ſituation. This notion has been confuted, however, by recent obſervation. Mr. Mansford eſpecially (ſee Mansford on Pulmonary Conſumption) is of opinion, that the vicinity of the ſea ſhould be ſedulouſly avoided. This author conſiders that low inland ſituations which enjoy a tolerably equable and ſomewhat warmer temperature, with a ſecluſion from the keen blaſts of the north and eaſt, are the ſituations to be ſelected from thoſe who are ſuffering under pulmonary conſumption. On reviewing various points in our own iſland, Mr. M. thinks no place preſents ſo many requiſites for the reſidence of conſumptive patients as the low ground which extends ſouthward from the Mendip Hills; of which he thus depicts the leading features: "Its geographical poſition is in the ſouth-weſtern part of the iſland. The ſhelter afforded by the range of hills towards the north, and the lowneſs of its level, while ſpots may be choſen juſt ſufficiently raiſed above the marſhy lands to eſcape the prejudicial and chilling influence of concentrated moiſture, without being ſo high as to defeat the object in view, point it out as one of the moſt eligible. To theſe advantages of a phyſical nature may be added others of a more obvious and inviting character. The varied and romantic ſcenery of the neighbourhood does not fail to charm thoſe who poſſeſs a reliſh for the beauties of nature; while the taſtes and habits of individuals may be gratified in the ſociety of a city, or the ſecluſion of a village."

Now with regard to the drugs which have procured a name in the cure of conſumption, we ſhall paſs over the lichen, ſtramonium, tar-vapour, with a hoſt of others, becauſe the ſhortneſs of their reputation has too clearly indicated their inutility; and paſs to the conſideration of two medicines which are now much in vogue; viz. the digitalis and the pruſſic acid. Thoſe who give the former drug very properly confine its adminiſtration to caſes in which it has the effect of abating the arterial action. This however is only to be found by its exhibition; for we are not acquainted with the external appearances which deſignate the conſtitution in which digitalis accelerates rather than depreſſes the pulſe; it ſhould be given in very ſmall doſes, and gradually increaſed. Though unable to explain its modus operandi, we may remark, that a combination of very minute doſes of this drug, as a quarter of a grain given every night with half a grain of calomel, has done much good, and this in caſes where no hepatic diſorder was apparent. We make this remark becauſe it is well known, that, in phthiſis accompanied by diſordered liver, a cure is often effected by the gradual uſe of mercury; and hence many pathologiſts confine its exhibition to liver-caſes.

The utility of digitalis, when exhibited with the above-mentioned reſtrictions, in conjunction with other meaſures, and not as a ſpecific, no one will doubt. Of the pruſſic acid we cannot ſay ſo much. Indeed, the diſtinguiſhed authors who have introduced it not having ſtated the peculiar effects of the drug, and having deſcribed it as a ſpecific capable of curing phthiſis in an early ſtage, and alleviating it when advanced, we can only ſay, that it appears to us very extraordinary, that the ſame medicine ſhould promote the removal of a tubercle and the cicatrization of an ulcer, ſince theſe operations appear eſſentially different. Moreover, in the caſes in which we have tried the pruſſic acid, a few have been made worſe, and none have recovered. Nevertheleſs it is very probable, that, if we knew more of the preciſe operation of this medicine, and the *time* at which it ſhould be uſed, it might prove a uſeful auxiliary to the treatment of phthiſis.

Exerciſe, by various modes of geſtation, has been frequently employed as a remedy for conſumption. Sydenham indeed aſſerted, that riding on horſeback is as effectual in the cure of phthiſis pulmonalis, as the bark in agues, or mercury in the venereal diſeaſe, provided the journeys be long enough. An example is related in Dr. Darwin's Zoonomia, vol. ii. (the caſe of the late ingenious Dr. Currie of Liverpool,) in which an hereditary phthiſis was removed, by perſevering in a daily journey; at firſt in an eaſy carriage, and ſubſequently, as the ſtrength increaſed, alternately in the carriage and on horſeback. Some phyſicians, however, are of opinion, that exerciſe on horſeback is rather pernicious, than otherwiſe, in phthiſis. *Sailing* ſeems to be conſidered at preſent as the moſt efficacious mode of geſtation, eſpecially if a long voyage is taken, with the double recommendation of removal to a warmer climate. As a ſort of ſubſtitute for this kind of gentle motion, *ſwinging* has been recommended as a remedy for phthiſis; and Dr. Carmichael Smith has written a treatiſe in its favour. In the uſe of any or all theſe modes of gentle exerciſe, however, the ſame precept muſt be purſued; they muſt be reſorted to *early* in the diſeaſe, and varied with the feelings of the patient.

When the diſeaſe proceeds favourably, the ſame treatment as to regular exerciſe, pure air, and nouriſhing diet, is to be perſevered in; and the digitalis and other powerful drugs diſcontinued. When the ulceration of the tubercles is attended with bad ſymptoms, we can only alleviate the ſuffering of the patient. It will be too late to ſend him to a foreign clime, or perhaps to allow exerciſe. The keeping-up of a regular degree of temperature in ſpacious apartments, the occaſional uſe of narcotics, among which opium combined with ſulphuric acid, poppies, and lactucarium, hold the chief rank, compriſes all that can be done for the palliation of ſymptoms, and the prolongation of a wretched exiſtence.

Genus IV. *Cyrtoſis*, [from κυρτος, curved.] Rickets, or curved ſpine. Generic characters—Head bulky, eſpecially anteriorly; ſtature ſhort and incurvated; fleſh flabby, tabid, and wrinkled. There are two ſpecies.

1. Cyrtoſis cretiniſmus, Cretiniſm: chiefly affecting the head and neck: countenance vacant and ſtupid: mental faculties feeble or idiotic; ſenſibility obtuſe; moſtly with enlargement of the thyroid gland: hereditary.

The term Cretiniſm is uſually applied to the idiotic and incurvated patients; bronchocele to the ſame diſeaſe connected with enlargement of the thyroid gland. In this ſyſtem Cretiniſmus embraces both. Cretins are never

never found but where goitres exiſt, though the latter are often found without cretins. This ſeems to ſhow that only a more powerful application of the common cauſe is neceſſary to produce cretiniſm.

The preciſe nature of cretiniſm is unknown. It is ſuppoſed to be a malady cloſely allied to ſcrofula. The ſame may be ſaid of the next ſpecies. It is well eſtabliſhed that cretiniſm is a diſeaſe of *low* and moiſt regions. Profeſſor Fodéré, in his Voyage to the Maritime Alps, had occaſion to make numerous obſervations tending to prove the truth of this opinion. Bronchocele, or goitre, and cretiniſm, accompany each other in the maritime Alps as they do in the Swiſs mountains. Here, as well as in the valley of Aoſta, Maurienne, and the Valais, they are not found in elevated regions; they are not ſeen at Saint Dalmas le Sauvage, nor at Molinet, nor at Tende and Briga; the maritime places, as well as cold and dry, or hot and dry, elevated regions, are exempt from them: but they are commonly met with in the humid parts of both the northern and ſouthern regions, at the foot of the ſecondary Alps. They are moſt frequent in the valley of Viſubia; and at Saint Martin de Lantoſca the greateſt part of the population has goitres; there are here, alſo, fifty cretins from birth: from hence we riſe to Val de Blora, and thoſe infirmities are no longer ſeen; but, on deſcending again into the valley Tinée, they are conſtantly obſerved until we arrive at Saint Etienne, where not a cretin was to be found. In general, in the valley Tinée, the inhabitants of the hamlets on the borders of the river which runs through it, are ſubject to goitre and cretiniſm, whilſt thoſe of the hamlets ſituate on the more elevated parts are free from them. The Valley la Roja preſents alſo ſtriking examples of the ſame kind: there is not a cretin or goitre to be ſeen in the chief village in it, which is ſituate on high ground, whilſt they are numerous in the immediately ſurrounding region, which is comparatively low. The whole of the author's obſervations ſerve to confirm his former remark, that goitre and cretiniſm exiſt and take their courſe with the *degree of the humidity of valleys, in all temperatures and climates.*

In the United States, Dr. Gibſon informs us, bronchocele prevails as an endemic. It is very frequent in many parts of Lower Canada, eſpecially near the marſhes between St. John's and Montreal. At Detroit, Lake Ontario, Oneida, Erie, Huron, and among the Tuſcorora, Seneca, Oneida, and Brothertown, Indians, it is very common. In many parts of the ſtate of Vermont, eſpecially Bennington and Chittenden, bronchocele is well known. It is alſo found at Camden, Sandgate, and Cheſter, in the ſame ſtate. Sandgate, ſome years ago, contained 1020 inhabitants, and out of that number one fourth of the females were affected with the diſeaſe. According to Dr. Traſk, bronchocele is ſo common a diſorder at Windſor in Vermont, that hardly any female is exempt from it. In the ſtate of New York goitre prevails principally in the neighbourhood of Old Fort Schuyler, the Oneida-village, the German Flats, Fort Herkimer, Fort Dayton, Henderſon-town, Onondago-valley, Canaſaraga, Brothertown, the townſhip of Manlius, and the whole of the military diſtrict. At Angelica, in Alleghany-county, ſtate of New York, goitre is a very frequent complaint. In Pennſylvania, where bronchocele is very common, it is found chiefly at Pittſburgh, on the waters of the Alleghany, Sanduſky, Monongahela, French Creek, Cannonſburgh, Brownſville, and throughout the county of Somerſet. In ſome parts of Virginia, eſpecially at Morgantown and on the banks of Cheat-river, it is by no means unfrequent. In certain ſituations on the weſtern ſhore of Maryland, and in North and South Carolina, the diſeaſe is occaſionally met with. It is probable, indeed, that goitre may be found as an endemic diſeaſe in almoſt all the mountainous and marſhy diſtricts throughout the United States. All writers on the complaint agree that it generally prevails in valleys at the bottom of the higheſt mountains, which are particularly expoſed to the influence of eaſterly and ſoutherly winds. In thoſe ſituations, moreover, where the temperature is mild and uniform, where the atmoſphere is moiſt, in the neighbourhood of rivers, of falls or lakes, or of the ſea, where the ſoil is rich and the habitations ſurrounded by fruit-trees, goitres are commonly found.

We ſhall now ſpeak of the Engliſh, or curable *bronchocele.* The ſeat of this diſeaſe is the thyroid gland, which lies juſt below the larynx, round the trachea. The tumour appears in the fore-part of the neck, between the ſkin and the wind-pipe. Women are the moſt frequent ſubjects of it; and in them it uſually appears early. Dr. Hunter met with one caſe of this kind in a young ſurgeon; but it is rarely happens in males.

The cretiniſmal bronchocele is a tumour ariſing on the fore-part of the neck; it generally firſt appears ſome time betwixt the age of eight and twelve years, and continues gradually to increaſe for three, four, or five, years; and ſometimes the laſt half-year, we are told, it grows more than for a year or two before. It generally occupies all the front of the neck, for the whole thyroid gland is enlarged; and it is of a pendulous form, not unlike, as Albucaſis ſays, the flap or dewlap of a turkey-cock, the bottom being the larger part of the tumour. In figure, it varies conſiderably in different caſes. It is ſoft, or rather flabby, to the touch, and ſomewhat moveable; but, when it has continued ſome years after it has ceaſed to increaſe, it becomes more firm or confined. By the ſituation and nature of the complaint, it generally occaſions a difficulty of breathing, which is increaſed on the patient's taking cold, or attempting to run. In ſome the tumour is ſo large, and ſo much affects the breathing, as to occaſion a loud wheezing. Patients, however, ſometimes ſuffer but little from a large tumour, while others ſuffer much from an inconſiderable one: in general, however, it occaſions little inconvenience. Dr. Hunter obſerved, that the tumour now and then ſuppurates.

The bronchocele ſhould be diſtinguiſhed from a ſchirrhus, from an aneuriſm, and from thoſe ſwellings in the neck that ariſe from ſtrains or ruptured veſſels. The diſtinction however is not difficult.

An iſſue, or a perpetual bliſter, applied on ſome other occaſions, has apparently prevented the growth of the bronchocele, though the effect continued only during the irritation. It cannot be extirpated, as it is entangled with the recurrent nerves, and the firſt branch of the external carotid artery; and, if by chance a ſuppuration is formed, an ill-conditioned ulcer, difficultly cured, is the conſequence. In addition to the above directions, attention to the ſtate of the general health, and the regular exhibition of large doſes of uva urſi, or ſoda, comprehends all the treatment. If not cured before the age of puberty, at which time it ſometimes amends ſpontaneouſly, little ſucceſs can be anticipated.

This applies to the common bronchocele of this country. Occurring under the form of cretiniſm, as ſeen in the alpine regions, we are not aware that any treatment has been very ſucceſsful. Dr. Wylie, of Peterſburg, is ſaid to uſe, with good effect, friction with an ointment compoſed of ℥ ſs of litharge ointment, ʒj of calomel, and gr. x. of tartrite of antimony. And we learn in the Appendix to Dr. Clark's "Notes on France, Italy, &c." that M. Quadri thinks highly of the treatment by ſeton. "I find," ſays he, "that all goitres of a ſoft conſiſtence, and not arterial, were cured quickly and ſafely by the ſeton. Of twelve individuals on whom the operation was performed, eight were perfectly cured." Probably removing to a higher ſituation, and living in the beſt manner, might in the courſe of a few generations exhauſt the diſeaſe. See CRETINS, vol. v.

2. Cyrtoſis rachia, the rickets: chiefly affecting the limbs and body; ſpine crooked; ribs depreſſed; articular epiphyſes enlarged and ſpongy; belly tumid; mental faculties clear, often premature.

Uſually the firſt appearance of rickets is in the eighth or

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 fontanel 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 moſtly imperfect.

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. 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. On diſſection, the muſcles are found pale and flaccid, the liver indurated, the meſenteric glands enlarged and hardened, the bones ſpongy. Its uſual period of attack is from ſix months to two years; but it has attacked 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 immediate cauſe of rickets is the want of a due proportion of phoſphate of lime in the bones. The remote cauſes of this deficiency are diſordered ſtate of the digeſtive organs, in conſequence of which bad blood is prepared, and inaction in the veſſels which ſecrete the healthy part of bone. The means employed in the treatment are the ſame as in that of dyſpepſia; viz. regular *paſſive* exerciſe, bathing, medicines which ſlightly ſtimulate the ſtomach, thoſe which open the bowels, and thoſe which promote the ſecretion of bile; nutritive diet, and country air. Months and years will often elapſe before a cure is effected; it is in all caſes a tedious affair.

Genus V. *Alphoſis*, [from αλφος, white.] White leproſy. Generic characters—Cuticle, among negroes, white and colourleſs; hair white and woolly; irids white; pupils roſy; ſight ſtrongeſt in the ſhade; corporeal faculties feeble; mind unimpaired.

There is but one ſpecies, which is the Albino, or White Moor. See the article ALBINOS, vol. i. p. 240.

A variety is found among Europeans with fair cuticle; flaxen hair; irids blue; pupils roſy; corporeal powers weak; mind unimpaired. *Trail*, in Nicholſon's Journal, Feb. 1808.

"The whiteneſs is probably produced by a want of the ſecretion of the pigment that renders the rete mucoſum black; and which does not uſually take place till ſeveral weeks, ſometimes months, after birth; the negro-child being fair when firſt born." The Spaniards and Portugueſe denominate thoſe who are thus affected *Albinos*; the French, *Blafards*; the Dutch, *Kacklacken*.

Genus VI. *Struma*, [from σρωμα, Gr. coacervation; not, ſays Good, from *ſtruo*, Lat. to heap up.] Scrofula, or King's Evil. Generic characters—Indolent glandular tumours, chiefly in the neck; ſuppurating ſlowly, and imperfectly, and healing with difficulty; upper lip thickened; ſkin ſmooth; countenance uſually florid.

The beſt diviſion of Struma is derived from its external or internal appearance. Dr. Good's claſſification accords with this principle. It is long ſince Mr. Abernethy referred to diſorder of the digeſtive organs ſcrofulous diſeaſe; and the ſame opinion has been taken up by Dr. Carmichael Smyth, and more recently by Mr. Lloyd. Neither of theſe authors, however, has advanced the etiology of the diſeaſe one ſtep. Its connexion with diſorder of the digeſtive organs no one can fail to ſee; but the mode by which the latter act on the former is by no means apparent. We are very well able to aſcertain how dyſpepſia diſturbs the nervous and vaſcular ſyſtems of remote parts; but, when we come to conſider it in relation to ſcrofulous diſeaſe, we aſk why every intenſe dyſpepſia does not produce ſcrofula in ſituations and external circumſtances favourable to its development. If it be anſwered, that dyſpepſia produces ſcrofula only in conſtitutions *prediſpoſed* to the latter malady, we aſk in what this prediſpoſition conſiſts. We have already ſhown, that a prediſpoſition to inflammation conſiſts in a want or an exceſs of contractile power in the vaſcular ſyſtem; and that a prediſpoſition to nervous diſeaſe conſiſts in an habitually higher degree of ſenſibility in particular nerves. But the prediſpoſition to ſcrofula is by no means clearly made out. Brouſſais indeed refers the ſcrofulous conſtitution to a preponderance of the lymphatic ſyſtem over the nervous and vaſcular ſyſtems. Upon the whole, it muſt be allowed by all, that the nature of the diſeaſe called ſcrofula is at preſent unknown.

Some recent authors have compriſed under the term ſcrofula a very large proportion of the chronic phlogotica; but, it ſeems to us, without juſt cauſe. We ſhall confine ourſelves in this article to the term in its older and more reſtricted ſenſe. There are two ſpecies.

1. Struma vulgaris: confined to the external conglobate glands: tumour pea-ſized, or cheſnut-ſized; appearing in infancy or youth; ſubſiding on mature age; hereditary.

Two conditions of the body are to be deſcribed in treating of ſcrofula. The firſt, the appearance of the perſon prediſpoſed to ſcrofula; and the ſecond, the appearance of the diſeaſe when formed. The ſcrofulous conſtitution is obſerved to be, in many inſtances, denoted by particular ſymptoms. It has been ſaid that the complexion is fair, and the colour of the hair either reddiſh or of ſome other light tint; but people with dark complexions and black hair are equally ſubject to ſcrofulous complaints. The ſkin is remarkably ſoft and white, and the face often has a ſhining poliſhed ſmoothneſs. The cheeks are in general florid; and the tunica albuginea is frequently of a dead white colour, and more pale than uſual. The edges of the eye-lids are affected with a degree of tenderneſs which eaſily degenerates into a troubleſome inflammation, that diſtreſſes the patient by its continuance, and produces a diſagreeable degree of deformity. This redneſs is very common and remarkable. There is likewiſe very frequently a ſwelling of the upper lip, with ſome thickening of the noſtrils and point of the noſe.

One of the moſt frequent ſymptoms of ſcrofula is a ſwelling in the ſuperficial lymphatic glands, eſpecially in thoſe of the neck. Such glands ſwell without any previous complaint, and often attain a large ſize before the ſwelling attracts notice. The ſwellings are frequently unaccompanied with pain or diſcolouration. The ſame indolence and abſence of inflammatory ſymptoms, which characterize ſcrofulous ſwellings of their glands, likewiſe diſtinguiſh ſimilar affections in other parts of the body. The commencement of the attack is, in general, unperceived, and the progreſs ſlow; though the tumefaction which follows is frequently very conſiderable.

The greater number of ſcrofulous affections are accompanied with a preternatural ſwelling of the parts attacked. The tumour is of two kinds; one remarkable for its ſoftneſs,

neſs, the other of a more firm conſiſtence. Soft ſcrofulous tumours are always formed by the effuſion of a fluid; and it may be remarked that they are ſomewhat variable in their ſize, being one day more prominent and tenſe, the next more ſunk and flaccid. When they are opened in the early ſtate, they are found to contain nothing but a ſerous fluid, which lies in the cells of the cellular membrane. As the fluid is not contained in one common cavity, the tumour has a ſoft flabby feel, and imparts to the fingers of a ſurgical examiner no diſtinct ſenſation, either of elaſticity or fluctuation. But, when the fluid has been for ſome time effuſed, a ſtriking difference occurs, a fluid lodged in a particular cavity now being evidently perceptible. This change ſeems to proceed from the deſtruction of the partitions which are between the cells of the cellular ſubſtance. As theſe collections, however, are not accompanied with any ſenſible degree of inflammation, they are not ſurrounded with a firm, ſolid, circumſcribed baſe; and they do not betray any great tendency to ulcerate the ſkin, and burſt of their own accord. Hence they ſometimes become very prominent, and the ſkin is gradually diſtended to a ſurpriſing degree.

The matter contained in ſuch tumours alſo undergoes a change. After a time, the more ſolid parts are depoſited in the form of little maſſes, reſembling coagulated milk. The remaining portion of the fluid is rendered thinner, and reſembles whey. A quantity of purulent matter is alſo formed on the internal ſurface of the cavity, which ſeems to be attacked with a ſlow kind of inflammation. The admixture of this purulent matter greatly changes the appearance of the contents of the tumour, and they now bear more reſemblance to thoſe of a common abſceſs. They never acquire, however, exactly the properties of healthy purulent matter, being always thinner, more tranſparent, and more of a greeniſh colour.

Although the tendency to ulceration is not conſiderable, the ſkin at length gives way, and allows the matter to eſcape through a narrow opening. After the contents are evacuated, the tumour ſubſides; but, there being in general little diſpoſition in the parts to heal, a ſcrofulous ſore is uſually formed, which diſcharges unhealthy matter, and continues open for an indefinite length of time.

The other more firm kind of ſcrofulous ſwelling always increaſes ſlowly, and moſt commonly attacks the neighbourhood of joints. The affected part enlarges, without acquiring any circumſcribed determinate form. By degrees the tumour becomes ſofter; and at laſt particular portions near the ſurface become more prominent, inflame, ſuppurate, burſt, and diſcharge matter. But, as the ſuppuration is only partial, and the diſcharge inconſiderable, they have little effect in diminiſhing the ſize of the ſwelling, or in producing any other change of importance. The only difference occaſioned is the addition of little ulcerations, which lead to ſinuſes, and emit matter.

A common abſceſs, in a perſon of a ſcrofulous conſtition, often exhibits appearances which betray the diſeaſed ſtate of the ſyſtem. The matter firſt ſecreted is formed with extraordinary rapidity; the ſwelling is ſomewhat more tranſparent, the ſurface more ſhining, and the colour of the tumour more blue, than is obſervable in a caſe of healthy abſceſs. Scrofulous abſceſſes alſo contain, before they burſt, a larger quantity of purulent matter, in relation to their ſize, than common phlegmonic abſceſſes. When abſceſſes in ſcrofulous patients burſt, an empty cavity is not left; but there is ſeen a maſs of cellular membrane apparently deprived of life. It reſembles wet cotton, and often ſeparates in the form of a ſolid maſs. The ſeparation is effected without pain. This ſtate of the cellular membrane bears ſome remote analogy to the death of the central parts in a carbuncle; but it differs from the latter diſeaſe by there being no malignity, pain, nor danger.

The bones of ſcrofulous people partake of the general diſeaſe in the conſtitution; they ſeem to contain a ſmaller proportion of the phoſphate of lime, and a larger one of gelatinous matter, than what exiſts in the compoſition of a healthy bone. They are alſo exceedingly ſuſceptible of morbid action. The particular changes, however, induced in the bones by ſcrofula, are not to be treated of in this place.

With regard to ſcrofulous ulcers, their margin is commonly of a pale red or purpliſh caſt, with a ſhining ſurface; the edges in general thin; and the ſurface of the ſore ſunk ſomewhat below the level of the ſurrounding parts. Theſe ſores are moſtly attended but with a ſmall degree of inflammation, and little pain; they are not very ſenſible, and have no great diſpoſition to ſpread. The matter diſcharged from them is viſcid, having very little colour, and often an offenſive ſmell. In conſequence of its viſcidity it adheres to the ſurface of the ſore, and covers the granulations. It is to be obſerved, however, that ſcrofulous ulcers ſometimes aſſume a more malignant aſpect, having elevated indurated edges, and fungous central granulations, accompanied with pain and an ichorous diſcharge. In theſe caſes, they may counterfeit the appearance of cancerous ulcers; but, though the reſemblance may be very impoſing, we are in general able to aſcertain the real nature of the caſe, by tracing its hiſtory from the commencement, and by inſpecting the reſt of the patient's body with accuracy; when the veſtiges of former ſcrofulous ſores, or other proofs of a ſcrofulous conſtitution, often manifeſt themſelves.

Scrofulous ſores often continue to diſcharge for a long while, with very little change of appearance. In time, however, they begin to heal, and, for the moſt part, dry up altogether at laſt, leaving a very ugly red irregular cicatrix, upon which the ſkin ſeldom recovers its natural look. In general, ſcrofulous complaints are moſt troubleſome in the ſpring, and get better towards the end of the ſummer.

Scrofula is an hereditary diſeaſe. It is doubtful whether it can be communicated by contact, or even inoculation. Kortum tried to transfer ſcrofula from one perſon to another by inoculation; but, although he took great pains to inſert the matter completely, and repeated the experiment frequently, yet all his attempts failed, as no diſeaſe was communicated to the perſon inoculated, nor even any very evident irritation excited at the place where the matter was inſerted. Yet it is unqueſtionably propagable by transfuſion of blood from the diſeaſed horſe, not only to other horſes, but to aſſes, as has been lately proved by profeſſor Coleman at the Veterinary Inſtitution.

The remote cauſes of ſcrofula are well eſtabliſhed. Every circumſtance capable of prolonging for a certain ſpace of time irritation of the bowels; an alteration in the quality of the blood from injuries of the nervous ſyſtem; and, above all, a cold and humid atmoſphere; will produce ſcrofula. The laſt cauſe is perhaps the moſt frequent of all. The means of cure are therefore obvious. The ſame regulations that we have adviſed under phthiſis, for exciting and ſtrengthening the ſkin, are to be put in force. The diet ſhould be regulated; the ſecretions of the mucous membranes gently excited. In performing the firſt indication, much ſtreſs has been laid by Mr. Lloyd upon the neceſſity of warm clothing. This is a very important matter. Flannel ſhould be worn next the ſkin; and the patient ſhould uſe every means in his power to keep up a regular temperature of the body. For this purpoſe, the dreſs ſhould be as heavy at one period of the day as another; and the practice of ſleeping under too many bed-clothes avoided; there being good reaſon to believe that a great majority of perſons err in this latter reſpect. Cold bathing, *when followed by re-action*, ſhould alſo be enjoined; and the patient ſhould remove to a leſs humid air than that in which he has been accuſtomed to live. The regulation of the digeſtive organs

embraces

embraces modifications of dyſpeptic treatment obvious enough. The bowels are to be kept regular; and the hepatic ſecretion excited, if depraved in quality or deficient in quantity. For opening the bowels, the mildeſt purgatives only muſt be uſed, irritation of the mucous membrane being ſedulouſly avoided; for irritating cathartics *aggravate* the diſeaſe. According to the condition it happens to be in, the ſtomach will require to be excited by gentian, ſteel, and aromatics; or, on the contrary, to have its morbid ſecretions corrected by ſedatives and alkalies. The diet will be regulated by the ſame criterion. In moſt caſes ſolid animal food may be allowed; but this of courſe will depend on the powers of digeſtion, ſince, if the food be not properly digeſted, little muſt be taken, and that reduced to a pulpy conſiſtence. If morbid growths are large, and their continuance dangerous, much may be effected towards their diſcuſſion by extreme abſtinence, and the exhibition of ſmall doſes of antimonials daily. The external treatment of ſcrofulous tumours, ulcers, &c. is obvious. Little, in the majority of caſes, need be dōne. If they put on an inflammatory appearance, the uſual means for the reduction of inflammation is to be put in force; if they are indolent, ſlight irritants, or, as the caſe demands, counter-irritants, muſt be reſorted to. The treatment of ſcrophulous ulcers and abſceſſes will receive further notice under the article SURGERY.

2. Struma meſenterica: affecting the meſenteric glands; countenance pale; appetite infirm; abdomen tumid; excrements uſually peculiarly fetid.

The nature of this ſpecies of ſcrofula is pretty evident. The application of irritating matter to the termination of the meſenteric abſorbents is the primary cauſe. This irritant is either improper food, or food undigeſted in conſequence of dyſpepſia. The irritation on the oral extremities of the abſorbents cauſes an inflammation of their veſſels, which is communicated to their glands; the inflammation deſtroys in a great meaſure the abſorbing property of the veſſels; and, when the inflammation terminates in depoſition of morbid matter, as tubercles, &c. thoſe properties are entirely loſt; conſequently the ſupply of chyle to the blood is ſtopped, emaciation and debility follow, and the patient dies. The detail of ſymptoms is ſufficiently full in Dr. Good's definition. As to the treatment of the malady, this is to remove the exciting cauſes; under which plan, during its early ſtages, the diſeaſe may be removed. Gentle doſes of calomel, althelmintics, wholeſome diet, and the other meaſures uſed in the treatment of diſeaſes ariſing from gaſtric, bilious, or inteſtinal, irritation, are to be adopted. In the latter ſtages of the diſeaſe, extreme abſtinence appears to be the only means capable of arreſting the depoſition of tuberculous matter. Dr. Uwins has related a caſe, in which very minute doſes of digitalis, we believe one drop, gradually increaſed, effected a cure. Moſt practitioners truſt to ſmall doſes of calomel and opium.

The ſymptoms of this complaint are very ſimilar to what Dr. Gregory has called "ſcrofulous inflammation of the peritoneum." It is very nearly the ſame complaint, except that the irritation does not ſeem to be derived from the inteſtines. The treatment of this latter diſeaſe, with the addition of occaſional bliſtering, is the ſame as in the Struma meſenterica.

Genus VII. *Carcinus*, [from καρκινος, *cancer*, a crab; on account of the cancriform or crab-like ramifications of the dark diſtended veins of the tumour.] Cancer. Generic characters—A ſcirrhous livid tumour, interſected with firm whitiſh divergent bands, chiefly of the ſecernent glands; pains acute and lancinating, often propagated to other parts; terminating in a fetid and ichorous ulcer. Dr. Good makes but one ſpecies.

Carcinus vulgaris: tumour burning, knotty, with dark cancriform varices; ulcer, with thick livid retorted lips.

A hard unequal tumour that is indolent, and without any diſcoloration in the ſkin, is called a *ſcirrhus*; but, when an itching is perceived in it, which is followed by a pricking, ſhooting, or lancinating, pain, and a change of colour in the ſkin, it is uſually denominated a *cancer*. It generally is ſmall in the beginning, and increaſes gradually; but, though the ſkin changes to a red or livid appearance, and the ſtate of the tumour from an indolent to a painful one, it is ſometimes very difficult to ſay when the ſcirrhus really becomes a cancer, the progreſs being quick or ſlow according to concurring cauſes. When the tumour is attended with a peculiar kind of burning ſhooting pains, and the ſkin hath acquired the duſky purple or livid hue, it may then be deemed the malignant ſcirrhus, or confirmed cancer. Mr. Pearſon further adds, when thus far advanced in women's breaſts, the tumour ſometimes increaſes ſpeedily to a great ſize, having a knotty unequal ſurface, more glands becoming obſtructed, the nipple ſinks in, turgid veſſels are conſpicuous, ramifying around, and reſembling a crab's claws. Theſe are the characteriſtics of an occult cancer on the external parts; and we may ſuſpect the exiſtence of one internally, when ſuch pain and heat as hath been deſcribed ſucceed in parts where the patient hath before been ſenſible of weight and preſſure, attended with obtuſe pain. A cancerous tumour never melts down in ſuppuration like an inflammatory one; but, when it is ready to break open, eſpecially in the breaſt, it generally becomes prominent in ſome minute point, attended with an increaſe of the peculiar kind of burning ſhooting pain, felt before at intervals in a leſs degree, and deeper in the body of the gland. In the prominent part of the tumour, in this ſtate, a corroding ichor ſometimes tranſudes through the ſkin, ſoon forming an ulcer; at other times a conſiderable quantity of a thin lymphatic fluid, tinged with blood from eroded veſſels, is found in it. Ulcers of the cancerous nature diſcharge a thin fetid acrid ſanies, which corrodes the parts, having thick dark-coloured retorted lips; and fungous excreſcences frequently riſe from theſe ulcers, notwithſtanding the corroſiveneſs of the diſcharge. In this ſtate they are often attended with excruciating, pungent, lancinating, burning, pains; and ſometimes with bleeding.

Though a ſcirrhus may truly be deemed a cancer as ſoon as pain is perceived in it, yet every painful tumour is not a cancer; nor is it always eaſy to ſay whether a cancer is the diſorder or not; irregular hard lumps may be perceived in the breaſt; but on examining the other breaſt, where no uneaſineſs is perceived, the ſame kind of tumours are ſometimes found, which renders the diagnoſtic uncertain. Yet, in every caſe after the ceſſation of catamenia, hard unequal tumours in the breaſt are ſuſpicious; nor, though without pain, are they to be ſuppoſed indolent or innoxious. Barren women, old maids, and thoſe who miſmenſtruate, are chiefly the ſubjects of cancer.

The nature of cancer is unknown. It has long been diſputed, whether it was a *general* diſeaſe, a portion of the fluids determined by different cauſes to the affected part, or whether any accident to the organ diſeaſed altered its former habits, ſo as to produce a poiſonous corroſive fluid inſtead of the uſual ſalutary one. We regard it as *local*; and in this opinion many of the beſt practitioners of the preſent day, among whom are Mr. Abernethy and Dr. Baillie, concur. All its ſymptoms impreſs the notion that it is a local inflammation, as far as regards the vaſcular ſyſtem, in which the ſecernents, from hereditary prediſpoſition (which we cannot admit to exiſt in the blood), or from other at preſent unknown cauſes, loſe their natural functions, and acquire a faculty of ſecreting a new and peculiar poiſon. This action of the ſecernents is ſo exceſſive, that no known agents are capable of controlling it. The arguments adduced in favour of the *general* origin of the diſeaſe are theſe; that it is hereditary, and often met with in the ſame family. This can be no argument in favor of it, were it not preſumed that

hereditary predispoſition conſiſts in a peculiar craſis of the blood. But this is ſo far from proved, that the opinion that the ſtate of the nervous ſyſtem conſtitutes predispoſition has the moſt ſupporters. Thus it is ſaid by Dr. Parr (ſee his article CANCER), that in ſix caſes in which he found cancer heal, the ſame diſeaſe broke out in other parts; or apoplexy, enteritis, &c. ſupervened. This proves nothing; or, if any thing, rather againſt the propoſition of the cachectic origin of the malady. For, as to the occurrence of cancer in another part when an old cancer is healed, does this prove the blood diſeaſed? does not the ſame thing follow the healing of ſimple ulcers, and the reduction of common phlegmon? yet no one will refer theſe maladies to diſeaſed blood. And again; how does it happen that apoplexy and enteritis follow the cure of cancer? according to this mode of argument, cancer of the brain or bowels ſhould enſue!

At preſent no remedy for cancer is known; nor has any plan of treatment been laid down for its early ſtages which ſhould warrant us in neglecting to urge, with all the eloquence we are maſters of, the extirpation of the diſeaſed part. Previous to amputation of the breaſt, however, much care will be requiſite to regulate the digeſtive organs, the ſtate of fulneſs of the ſanguineous ſyſtem, and, in women, above all, that of the catamenial flux. Dr. Good makes two varieties of this ſpecies.

α. C. pullulans: granulating occaſionally, and giving deluſive hopes of a cure; pains paſſable.

β. C. ſpongioſus, (Fungus hæmatodes, *Wardrop*:) with fungous and bleeding excreſcences; heat and pain violent.

The latter diſeaſe was firſt deſcribed by Mr. Hey, in his Practical Obſervations in Surgery. "It is a bloody tumour, which forms in every part of the body: painful when ſeated in the muſcles; but producing little inconvenience when in the cellular ſubſtance. It diſtends the integuments; but does not, like an abſceſs, render them thinner. When preſſed with the hands, one part will give the ſenſation of a deep-ſeated fluid; in another the tumour is hard and uneven. When the integuments burſt, the appearances are ſometimes thoſe of an excoriation only; ſometimes a dark bloody maſs protrudes through the aperture. Where the fungus comes into contact with the muſcles, they loſe their natural redneſs and their fibrous appearance, becoming brown, and like the adipoſe membrane. When the fungus appears through the ſkin, it bleeds copiouſly, and the hemorrhage is frequently repeated till the patient ſinks; neither the hydrargyris nitratus ruber, the hydrargyris muriatus, antimonium muriatum, or undiluted vitriolic acid, can repreſs its growth. Amputation is the only remedy; and if the tumour has begun at the lower part of a limb, and the ſlighteſt portion is left at the upper, the diſeaſe returns. It appears to be an organiſed, and has been fancifully conjectured to be a living, pariſitic animal, nouriſhed by the vital fluid of the patient, and capable of abſorbing from the ſubjacent veſſels what is effuſed from its own."

Genus VIII. *Lues*, [from λυω, to diſſolve, or corrupt.] The Venereal diſeaſe. Generic characters—Ulcers on the genitals, inguinal buboes, or both, after impure coition; ſucceeded by ulcers in the throat, copper-coloured ſpots on the ſkin, bone-pains, and nodes. It is now conſidered as divided into two ſpecies.

1. Lues ſiphilis, the common ſiphilis, or pox: ulcers on the genitals circular, ungranulating, thickened at the edge; thoſe of the throat deep and ragged; ſymptoms uniform in their progreſs; yielding to a courſe of mercury, not known to yield ſpontaneouſly.

2. Lues ſiphilodes, pſeudo-ſiphilis, ſibbens, or ſivvens: ulcers undeterminate in their character; ſymptoms irregular in their appearance; uſually yielding ſpontaneouſly; variouſly affected by a courſe of mercury.

This is perhaps only a variety of the preceding; and many other varieties might be noted, but they have not hitherto been ſufficiently defined for claſſification; for which reaſon, and becauſe a full account of the various conflicting opinions upon the nature and various forms of this diſeaſe would increaſe this article to an enormous ſize, we muſt (having given the early and popular hiſtory under LUES, vol. xiii.) refer for farther particulars to the article SIPHILIS.

Genus IX. *Elephantiaſis*, [ſo denominated by the Greek phyſicians, becauſe the ſkin of perſons affected with this diſeaſe reſembles that of the elephant in thickneſs, ruggedneſs, inſenſibility, and dark hue.] Elephant-ſkin. Generic characters—"Skin thick, livid, rugoſe, tuberculate; inſenſible to feeling; eyes fierce and ſtaring; perſpiration highly offenſive;" teſticles waſted. See the article LEPROSY, in this work. There are three diſtinct ſpecies.

1. Elephantiaſis Arabica, the black leproſy. (This is the Elephantiaſis of *Aretæus*, *Sauvages*, and *Cullen*.) Tubercles chiefly on the face and joints; fall of the hair except from the ſcalp; voice hoarſe and naſal; diſorder contagious, and hereditary.

2. Elephantiaſis Italica, ſo called by Dr. Good, becauſe "for a knowledge of it we are almoſt excluſively indebted to Italian phyſicians, by whom it is called Pellagra, *ſkin-affection* from *pellis* and αγρα; a barbarous term, as compounded of two different languages." It is otherwiſe called Mal del Sole, as if brought on by the heat of the ſun. In this ſpecies, the tubercles are chiefly on the body and limbs; ſometimes deſquamating: great tenſion of the ſkin; vertigo; burning lancinating pain in the head; melancholy; at firſt remitting, afterwards fixed, terminating in alienation of mind: hereditary.

3. Elephantiaſis Aſturienſis: (Mal de la Roſa, *Spaniſh*. Lepra Aſturienſis, *Sauvages*.) Tubercles chiefly on the hands and feet; cruſtaceous, deſquammating; continual tremor of the head and upper part of the trunk; baldneſs of the ſcalp as well as of other parts: gloom and terror of mind.

Genus X. *Bucnemia*. [from ϭου, an augmentive particle, and κνημη, the leg.] Tumid leg. Generic characters—Leg enormouſly tumid and miſ-ſhapen; ſkin thickened, livid, rugoſe; often ſcaly; ſcrotum, arms, or other parts, ſometimes participating in the affection. Only one ſpecies, called

Bucnemia Indica, or Barbadoes-leg: bones and muſcles of the affected limb ſound; its motion little impeded by its weight.

This diſeaſe, ſays Dr. Good, "is, in truth, the *dal fil*, or elephant-leg of the Arabians, the Barbadoes-leg of modern writers, and for which no proper technical name has hitherto been offered. Though frequently called *elephantiaſis*, from a miſunderſtanding of the ſecondary meaning of two unequivocal terms in two different languages, it is without the eſſential character of tubercular eruptions; while unlike the Elephantiaſis, which extends over the whole body, it is always limited, and often confined to a ſingle limb. It makes, however, an approach to Elephantiaſis, and ought therefore to range near it, but it cannot be included in the ſame genus. It is very generally known both in the Eaſt and Weſt Indies, in Arabia, and along the whole range of the Polyneſian Iſles; in which laſt it is denominated *yava-ſkin*; as being ſuppoſed to originate from drinking the heating beverage called yava; and, like the gout among ourſelves, is regarded in a ſort of honourable light. Inſtances of it are frequently to be met with in our own country; and, in a caſe that occurred to the author about a twelvemonth ago, the patient, from an attempt to repel it, was ſuddenly attacked with a fit of gout in the ſtomach, which deſtroyed him in three days. Here, however, gout was a conſtitutional diſeaſe."

Genus XI. *Catacauſis*, [Gr. burning.] General combuſtibility of the body. No generic characters are given, and only one ſpecies noted by Dr. Good, which is

Catacauſis

Catacauſis ebrioſa: the combuſtibility occaſioned by a long and immoderate uſe of ſpirituous liquors; and producing combuſtion ſpontaneouſly. For inſtances, ſee Phil. Tranſ. vol. xliii. and lxiv. Journal de Phyſique, l'an viii. Le Cat's Memoires; and the article BURNING in this work, vol. iii. p. 533. Since that article was printed, we have met with ſome caſes more recent and more extraordinary than any there related.

In the year 1811, John Heinrich Kopp, M. D. profeſſor of chemiſtry at Hanau, publiſhed at Frankfort a little treatiſe with the laudable view of exciting attention to ſpontaneous combuſtions of the human body; and eſpecially as being neceſſarily ſubject to juridical inveſtigation. Seventeen authenticated caſes of this kind of combuſtion are related. Sixteen of theſe occurred to females, and the ſeventeenth to a man. This laſt has the peculiarity of the perſon ſurviving the accident three days, and of his being able to give ſome account of the circumſtances and ſenſations by which it was accompanied. The ſingularity of this caſe induces us to give a tranſlation of it; but we regret that it did not come under the immediate obſervation of Dr. Kopp; it is cited by him from a Florentine journal, in which it was inſerted by Joſeph Battaglia, a ſurgeon at Porte Baſto, who attended the patient. "Don G. Maria Bertholi, a prieſt, who lived on Mount Volere, in the neighbourhood of Fivizzani, went on buſineſs to a fair at Filetto. After having walked about the whole day, he went, toward evening, to Fenile, and put up at a relation's. Immediately after his arrival, he retired into his bed-room, and deſired to have a handkerchief placed on his back, under his ſhirt. In a few minutes after this, being left by himſelf, a ſingular noiſe, mingled with cries, was heard from his bed-room. The people of the houſe ruſhed in, and found the prieſt ſtretched on the floor, ſurrounded by a ſmall lambent flame, which retired as the perſons approached, and at length entirely vaniſhed. He was immediately put to bed, and the next morning (ſays Battaglia) I viſited him. On a careful examination, the integuments on the right arm were found looſened from the muſcles, and hanging down. Between the ſhoulders and thighs the integuments were equally injured. An incipient mortification appeared on that part of the right hand which had been moſt injured. On the ſecond day, this part was in a complete ſtate of gangrene. On the third day, the mortification had extended to all the injured parts. The patient now had exceſſive thirſt and fever, violent convulſions, putrid evacuations from the bowels, conſtant vomiting, and delirium. On the fourth day, after lying two hours in a ſtate of torpid ſleep, he expired. At my laſt viſit, during this courſe, I (Battaglia) ſaw with aſtoniſhment that the putreſcence had already made rapid advances; the body of the patient emitted a moſt inſupportable ſtench; worms were ſeen crawling from him; and the nails fell from his fingers. To the queſtion how this accident had happened, the patient anſwered, that he firſt felt a blow, as with a club, on his right arm; and had obſerved, at the ſame time, a ſpark hanging to his ſhirt; and that the latter had in a moment been converted into aſhes. The handkerchief, which had been placed on the bare ſkin of the ſhoulders, was found entire, and not even ſcorched. The drawers he had on were alſo left untouched, but the night-cap was quite conſumed, though not a hair of the head was burned. That this diffuſed fire had conſumed the ſkin, the ſhirt, and the whole night-cap, without touching the hair, is a fact I (Battaglia) can fully warrant. The night, on which this phenomenon happened, was calm, and the air clear. Not the leaſt empyreumatic ſmell, nor the leaſt trace of fire or ſmoke, was perceived in the room. The lamp, previouſly filled with oil, was dry, and its cotton incinerated. No external cauſe can, with probability, be aſſigned for this deplorable accident: if Maffei had ſtill been alive, he would have availed himſelf of it as a plain proof that a lightning proceeds from within and deſtroys us; as noticed in the article BURNING, quoted above. This is the only inſtance upon record of the calamity having happened to a man.

The laſt caſe we ſhall mention is one in which two perſons were involved in deſtruction at the ſame time. It was read to the Medical Society at Paris, by Dr. Charpentier, phyſician to the royal forces of the marine, at Guerigny, near Nevers. "On the 12th of January, 1820, at ten o'clock in the evening, ſeveral neighbours of Mrs. P. of Nevers, perceived a peculiar odour, which they thought ſimilar to that of broiled animal matter and burning wool, only more diſagreeable and nauſeous. They ſaw neither ſmoke nor vapour iſſue from any of the adjacent houſes; and at laſt, agreeing among themſelves that this odour was produced by the burning of the remains of an old Carmelite nun, who had died in the neighbourhood that day, they retired to bed without making any further inquiries. On the 13th, in the morning, a woman, living near the place, who had a ſecond key to the door of the houſe, becauſe ſhe was in the habit of going there daily to aſſiſt the ſervant in attending on her miſtreſs, opened the door to go and perform her ordinary duties. On entering the room, a denſe vapour iſſued out, accompanied with an inſupportable ſtench, that almoſt ſuffocated her. She retreated from the houſe, crying out in the moſt violent manner for help. The neighbours came about her; and, after waiting a few moments to let the vapour eſcape, they proceeded to examine the ſtate of the room, they found neither Mrs. P. nor her ſervant. At firſt they ſaw no appearance of dead bodies, but they immediately recognized that Mrs. P.'s bed was entirely burned. Its different parts, however, preſerved their form; but, on the ſlighteſt touch, it all ſunk away, and the bedſtead, mattreſs, feather-bed, ſheets, blankets, and woollen curtains, were reduced to a cinder. Before they ſtirred theſe cinders they examined the fire-place, in which they found no wood, nor any charcoal, in combuſtion: the fire had not been covered, and it had probably gone out for want of wood. A candleſtick ſtood in the fire-place, and another, on the ground, in the middle of the room; there was no candle in either of them.

"On proceeding to examine the aſhes, or remains of the combuſtion, there was found, in front of the ſpot which had been occupied by the bed, the extremity of a leg covered by a ſtocking, with a ſhoe on the foot, and which was recognized to be part of the right leg of the ſervant. It was the only portion of the body of this woman that had not been reduced to aſhes. The cranium of the miſtreſs, devoid of the ſcalp, which had been burned, was found in a ſituation correſponding with that in which the head would be as the woman lay in bed. This was the only portion of her body that had not been utterly deſtroyed by combuſtion, excepting a ſmall fragment of the neck, or rather the ſkin of the neck, that had been enveloped in a red kerchief, and of which there were yet ſome remains immediately attached to the preſerved portion of the neck.

"Although the room had no ceiling, the beams and rafters, which were very near to the top of the bed were not burned; but they were black, and felt very hot. All the things about the room, eſpecially ſuch as were cloſe to the bed, were extremely humid; which was owing, without doubt, to condenſation of the denſe vapours with which the room was filled on being firſt entered. A wooden clock, hung up againſt the wall beſide the bed, fell into aſhes on the firſt movement.

"There were no other perſons in the houſe but theſe two women. The miſtreſs was ninety years old, the ſervant ſixty-ſix; they were both of a weak conſtitution, thin and meagre; their food was bad, although the miſtreſs had an income of 6000 francs. She, for ſome time paſt, had drunk eau de Cologne to great exceſs; and had eaten hardly any thing ſince this habitual abuſe of ſpirits. The ſervant alſo ate but little; ſhe now and then

took

took a little brandy; but her nouriſhment conſiſted chiefly in good old wine, hot and well ſugared. She often took this in ſufficient quantities to make her tipſy. It is believed that the exceſſive cold of the night (14° Fahrenheit) had led her to drink to exceſs."

Genus XII. *Porphyra*, [Gr. purple, or livid.] Scurvy. Generic chracters—Livid ſpots on the ſkin from extravaſated blood; languor, and loſs of muſcular ſtrength; pains in the limbs.

The term *ſcurvy* has been moſt erroneouſly and abſurdly uſed in popular language; having been applied, in fact, to all *diſeaſes of the ſkin*, of a ſlow and chronic nature, however various in their eſſential character, and poſſeſſing nothing in common with the true ſcurvy. The ſkin, in ſcurvy, is *not* the ſeat of the diſeaſe, but is only deranged, like other organs of the body, in the progreſs of the malady; and that derangement is totally different from the inflammatory, pimply, puſtular, or ſcaly, conditions of the ſkin, which occur in leproſy, tetters, and other cutaneous diſorders, uſually miſcalled *ſcorbutic*. This miſtake requires correction, not merely as a matter of nomenclature, but becauſe a great practical error reſults from it; namely, the adminiſtration of antiſcorbutic remedies in theſe cutaneous diſorders, which cannot be cured, and are often aggravated, by them. The late Dr. Willan conferred a benefit on the profeſſion, by his definite diſcrimination of theſe laſt-mentioned diſorders.

The ſcurvy, properly ſo called, was firſt accurately deſcribed, and received its name, in modern times; and it is the ſubject of diſpute, as in the caſe of ſome other diſeaſes, whether it was known to the ancient phyſicians, or is a malady of more recent origin. The firſt ſpecific accounts of the diſeaſe appeared in the early part of the ſixteenth century, when the name of the malady ſeems to have been familiar among the vulgar: but the ſymptoms were noticed by the early voyagers in the preceding century; for conſiderably more than half the crew who accompanied Vaſco de Gama in his voyage round the Cape of Good Hope, in the year 1497, were deſtroyed by this diſeaſe. Olaus Magnus, in his Hiſtory of the Northern Nations, publiſhed in 1555, has deſcribed it at conſiderable length, and ſtates that it was known to the inhabitants of Saxony by the name of *ſchorbuk*, or *ſcorbuc*; whence the Latin term *ſcorbutus*, and our appellation *ſcurvy*. The term ſignified "ſore-mouth; and was probably applied to the diſeaſe in conſequence of the ſpongy ulcerations of the gums, with hæmorrhages, and looſening of the teeth, which are among the more ſevere ſymptoms of the complaint. Dr. Lind, however, ſuggeſts, with ſtill more probability, that the name was derived from a Sclavonic word, *ſcorb*, ſignifying "diſeaſe;" the ſcurvy being endemic in the northern countries of Europe, from whence we borrowed the appellation.

Moſt of the continental writers have maintained, that although the ancients have not deſcribed the ſymptoms of ſcurvy, as a ſingle diſtinct diſeaſe, they have, however, mentioned ſeveral concurring ſymptoms, which can ſcarcely be ſuppoſed to belong to any other malady; while Drs. Freind, Lind, Trotter, and ſome other authors of this country, contend, that the Greeks, Romans, and Arabians, reſiding in ſouthern climates, and unpractiſed in long voyages, probably never witneſſed the ſcurvy, and thence have no-where accurately deſcribed it. The rarity of the diſeaſe, under ſuch circumſtances, will probably account for the imperfect deſcriptions which they have left: but ſieges and ſeaſons of great dearth were not uncommon in thoſe times, and gave riſe at leaſt to the *ignis ſacer*, which appears to have been nearly allied to ſcurvy; and the following obſervations relate to no other known diſeaſe. Hippocrates, when deſcribing the diſeaſes of the ſpleen, mentions ſome ſymptoms which accompany the enlargement of that organ: "The colour of the body," he ſays, "is changed, and becomes black and pallid, like the rind of a pomegranate; the breath is fetid, and the gums alſo emit a bad ſmell, and fall away from the teeth; ulcerations break out in the legs, reſembling *epinyctides;* the limbs are emaciated, and the bowels do not diſcharge their contents. (Lib. de Internis Affect.) And again, in his ſecond book of Prognoſtics, Hippocrates obſerves, "In thoſe who have tumid ſpleens, the gums are diſeaſed, and the mouth emits a fetid odour; but thoſe whoſe ſpleens are enlarged without any conſequent hemorrhages, ſuch perſons are attacked with ill-conditioned ulcers in the legs, and black ſcars." Here we have an additional ſymptom of ſcurvy, viz. the hemorrhages, which were omitted in the former deſcription. Thoſe, however, who expect to find only the utmoſt accuracy in the works of Hippocrates, will perhaps be ſurpriſed to find that he has again deſcribed, ſtill more diſtinctly, the ſymptoms of ſcurvy under another appellation. For in the ſame book (reſpecting Internal Diſeaſes) in which he has noticed the enlarged ſpleens, he mentions the ſymptoms of the *ileus hæmatites* (ειλεος αιματιτης), or "bloody iliac diſeaſe," in nearly the ſame terms: "This diſeaſe begins in the autumn, and exhibits the following ſymptoms. The mouth and teeth emit a fetid ſmell, and the gums ſeparate from the latter, and blood flows from the noſe; ſometimes alſo ulcers break out in the legs, and, while ſome of theſe heal, others break out afreſh; and the ſkin about them is of a black colour, thin, and tender." This may be deemed a good brief deſcription of ſcurvy; and, if the commentators are right in their correction, the concluding ſymptom is equally characteriſtic: "the patient is indiſpoſed to walk, or to uſe any exertion." The paſſage, as it ſtands in Hippocrates, however, aſſerts the affirmative, that the patient is diſpoſed to exertion; a circumſtance ſo inconſiſtent with ulcerations of the legs, hemorrhages, and the other ſymptoms, that the commentators agree that the negative particle ου muſt have been omitted. Van Swieten remarks, that the epithet of "thin or tender ſkinned," λεπτοδερμοι, which Hippocrates applies to thoſe patients, is particularly characteriſtic of the ſcorbutic ſtate; ſince we obſerve in the ſcurvy, that the ſlighteſt injuries break into the ſkin, and leave ſtubborn ulcerations in it; and this more remarkably happens in the legs, where only ſcratching them with the finger-nails will often raiſe an excoriation, that is followed by an ulcer of long continuance." (Comment. in Boerh. Aph. 1148.) Celſus, when treating of the affections of the ſpleen, mentions this indiſpoſition of ulcers to heal: "Ulcera aut omnino non ſaneſcunt, aut certe cicatricem vix recipiunt." And we may add, that the opinions of the commentators, reſpecting the ſentence above mentioned, is confirmed by the ſtatement of Celſus, who diſtinctly aſſerts, that exertion is painful and difficult.

A diſeaſe is alſo mentioned by Strabo and Pliny, as occurring in the Roman armies in particular ſituations, which can only be referred to ſcurvy. In this diſeaſe, which Pliny aſcribed to drinking the water of a certain well, when it occurred in the army of Germanicus while encamped near the Rhine, an affection of the gums, with a falling-out of the teeth, is ſaid to have been combined with a loſs of muſcular power in the lower extremities; the former affection being called *ſtomacace*, (quaſi στοματος κακια, ſoreneſs of mouth,) and the latter *ſceletyrbe*. (Nat. Hiſt. lib. xxv. cap. 3.) Similar affections, to which the ſame appellations are given by Strabo, are ſaid to have prevailed in the army of Ælius Gallus, when in Arabia. (Geograph. lib. xvi.) Some authors, however, have denied that this *ſceletyrbe* could be a ſcorbutic ſymptom; becauſe Galen has ſtated *ſceletyrbe* to be a kind of paralyſis, in which the patient is unable to walk ſtraight: but ſuch a term might be ſufficiently appropriate to that rigidity of the joints which often occurs in ſcurvy.

On the whole, therefore, we are diſpoſed to believe, with the early writers upon this ſubject, that the *ſcurvy* was known to the Greek, Roman, and Arabian, phyſicians; although, from its comparative rarity in ſouthern climates,

climates, it did not occur ſo often or ſo extenſively as to claim their attention very ſtrongly. In our preſent ſtate of knowledge, it is divided into three very diſtinct ſpecies.

1. Porphyra ſimplex, petechial ſcurvy: ſpots numerous, but ſmall and flea-bite ſhaped; chiefly on the breaſt, arms, abdomen, and legs; paleneſs of viſage. There are two varieties.

α. P. pulicoſa, (Purpura ſimplex, *Willan* and *Bateman*.) In this variety, which is exhibited on the annexed Plate V. fig. 1. there is an appearance of petechiæ, or extravaſations under the cuticle, without much diſorder of the conſtitution, except languor, and loſs of the muſcular ſtrength, with a pale or ſallow complexion, and often with pain in the limbs. The petechiæ are moſt numerous on the breaſt, and on the inſide of the arms and legs; and are of various ſizes, from the moſt minute point to that of a flea-bite, and commonly circular. They may be diſtinguiſhed from recent flea-bites, partly by their more livid or purple colour, and partly becauſe, in the latter, there is a diſtinct central puncture, the redneſs around which diſappears on preſſure. There is no itching, or other ſenſation attending the petechiæ.

β. P. urticans (ſee the ſame Plate, fig. 2.) is diſtinguiſhed by this peculiarity, that it commences in the form of rounded and reddiſh elevations of the cuticle, reſembling wheals, but which are not accompanied, like the wheals of urticaria, by any ſenſation of tingling or itching. Theſe little tumours gradually dilate, but, within one or two days, they ſubſide to the level of the ſurrounding cuticle, and at the ſame time their hue becomes darker, and at length livid. As theſe ſpots are not permanent, but appear in ſucceſſion in different places, they are commonly ſeen of different hues; the freſh and elevated ones being of a brighter red, while the level ſpots exhibit different degrees of lividity, and become brown as they diſappear. They are moſt common on the legs, where they are frequently mixed with petechiæ; but they ſometimes appear alſo on the arms, thighs, breaſt, &c. The duration of the complaint is various, from three to five weeks. It uſually occurs in ſummer and autumn; and attacks thoſe who are liable to fatigue, and live on poor diet; or, on the contrary, delicate young women, who live luxurioufly, and take little exerciſe. Some œdema of the extremities uſually accompanies it, and it is occaſionally preceded by a ſtiffneſs and weight of the limbs.

The cure of the above-mentioned varieties is often difficult. Viewing the diſeaſes as ariſing from dyſpepſia, we ſhould direct an alteration to be made in the diet of the patient, and the bowels to be kept regular. Indeed active purging has been recommended by the beſt authorities. The ſtate of the ſkin, as far as regards its itching or other unpleaſant ſenſation, will alſo require palliative meaſures, as the warm bath, &c. The debility of the ſyſtem may be in ſome meaſure obviated (when the diet and bowels are regulated) by mineral acids and bark, or by gentian.

2. Porphyra hæmorrhagica, land-ſcurvy: ſpots circular, of different ſizes; often in ſtripes or patches, irregularly ſcattered over the thighs, arms, and trunk; occaſional hæmorrhage from the mouth, noſtrils, or viſcera; great debility, and depreſſion of ſpirits. See the Plate, fig. 3.

We often ſee perſons in whom the very ſlighteſt bruiſes or impreſſions turn black. This is moſt generally the caſe in old perſons; and is indeed commonly obſerved in an inverſe ratio to the vigour of the muſcular ſtructure. It is evidently the reſult of want of contractile powers in the capillary veſſels, which conſequently give way, and allow extravaſation; or in which, from the ſame cauſe, the blood ſtagnates. An extreme ſuſceptibility to this lividity is ſeen in the patients of P. hæmorrhagica, except in caſes comparatively ſudden in their acceſſion, and attended from the firſt with high inflammatory ſymptoms.

This ſpecies, like the former, is alſo remarkable for the appearance of petechiæ; but theſe, as Dr. Bateman ſays, are "often of a larger ſize, and are interſperſed with vibices and ecchymoſes, or livid ſtripes and patches, reſembling the marks left by the ſtrokes of a whip, or by violent bruiſes. They commonly appear firſt on the legs, and, at uncertain periods afterwards, on the thighs, arms, and trunk of the body; the hands being more rarely ſpotted with them, and the face generally free. They are uſually of a bright red colour when they firſt appear, but ſoon become purple or livid; and, when about to diſappear, they change to a brown or yellowiſh hue; ſo that, as new eruptions ariſe, and the abſorption of the old ones ſlowly proceeds, this variety of colour is commonly ſeen in the different ſpots at the ſame time. The cuticle over them appears ſmooth and ſhining, but is not ſenſibly elevated: in a few caſes, however, the cuticle has been ſeen raiſed into a ſort of veſicles, containing black blood. This more frequently happens in the ſpots which appear on the tongue, gums, palate, and inſide of the cheeks and lips, where the cuticle is extremely thin, and breaks from the ſlighteſt force, diſcharging the effuſed blood. The gentleſt preſſure on the ſkin, even ſuch as is applied in feeling the pulſe, will often produce a purple blotch, like that which is left after a ſevere bruiſe.

"The ſame ſtate of the habit which gives riſe to theſe effuſions under the cuticle, produces likewiſe copious diſcharges of blood, eſpecially from the internal parts, which are defended by more delicate coverings. Theſe hæmorrhages are often very profuſe, and not eaſily reſtrained, and therefore ſometimes prove ſuddenly fatal. But in other caſes they are leſs copious; ſometimes returning every day at ſtated periods, and ſometimes leſs frequently and at irregular intervals; and ſometimes there is a ſlow and almoſt inceſſant oozing of blood. The bleeding occurs from the gums, noſtrils, throat, inſide of the cheeks, tongue, and lips, and ſometimes from the lining membrane of the eyelids, the urethra, and the external ear; and alſo from the internal cavities of the lungs, ſtomach, bowels, uterus, kidneys, and bladder. There is the utmoſt variety, however, in different inſtances, as to the period of the diſeaſe in which the hæmorrhages commence and ceaſe, and as to the proportion which they bear to the cutaneous efflorescence.

"This ſingular diſeaſe is often preceded for ſome weeks by great laſſitude, faintneſs, and pains in the limbs, which render the patient incapable of any exertion; but, not unfrequently, it appears ſuddenly, in the midſt of apparent good health. It is always accompanied with extreme debility and depreſſion of ſpirits: the pulſe is commonly feeble, and ſometimes quickened; and heat, flushing, perſpiration, and other ſymptoms of ſlight febrile irritation, recurring like the paroxyſms of hectic, occaſionally attend. In ſome patients, deep-ſeated pains have been felt about the præcordia, and in the cheſt, loins, or abdomen; and in others a conſiderable cough has accompanied the complaint, or a tumour and tenſion of the epigaſtrium and hypochondria, with tenderneſs on preſſure, and a conſtipated or irregular ſtate of bowels. But in many caſes, no febrile appearances have been noticed; and the functions of the inteſtines are often natural. In a few inſtances frequent ſyncope has occurred. When the diſeaſe has continued for ſome time, the patient becomes ſallow, or of a dirty complexion, and much emaciated; and ſome degree of œdema appears in the lower extremities, which afterwards extends to other parts. The diſeaſe is extremely uncertain in its duration: in ſome inſtances it has terminated in a few days; while in others it has continued not only for many months, but even for years."

Though the indications for the treatment of this diſeaſe are perhaps as clear as any in medicine, we are uſually diſappointed in our expectations of cure. The firſt thing to be done is of courſe to diminiſh the quantity of the circulating fluid. This practice is obviouſly correct:

rect: it immediately ſubtracts a portion of the irritant which keeps up the diſeaſe of the vaſcular ſyſtem. The taking of blood, however, ſeems only uſeful in reducing the inflammatory action to which its morbid quality has given riſe. The amelioration of the *quality* of the blood is to be attempted by ſtrict attention to the aliment from which the chyle is formed, and the ſtate of the organs which aſſimilate it. It would take much time to expatiate here upon the peculiar regimen which would be neceſſary for particular patients. It is clear enough that no one plan of diet will cure the diſeaſe. If the patient has lived long on vegetables, animal food would of courſe be allowed in moderate quantities; if the action of the ſtomach ſeemed particularly debilitated, it might be proper to have the food ſo prepared by culinary proceſſes as to excite and ſtrengthen the aſſimilating function; and ſo on of other ſtates.

Since the ſecernent ſyſtem acts as an emunctory to the blood, its greater excitation ſhould be enforced; always taking care, however, that the excitation be not ſo great as to direct the diſeaſed action to the excited ſtructure. Thus the bowels and kidneys ſhould be excited, but only by the mildeſt purgatives and diuretics.

In reſtraining the local hemorrhage, the tinctura ferri muriatis, the ſulphate of zinc, and the ſulphuric acid, are the moſt efficacious ſubſtances that we know of. They may be uſed ſometimes in a very ſtrong form. Dr. Struve mentions a caſe in which he applied concentrated ſulphuric by means of a pencil to bleeding petechiæ, and the hemorrhage ceaſed.

3. Porphyra nautica, ſea-ſcurvy: ſpots of different hues intermixed with livid, principally at the roots of the hair; teeth looſe; gums ſpongy and bleeding; breath fetid; debility univerſal and extreme.

The very frequent connexion between long-continued uſe of ſolid meat and ſcurvy, has led to the ſuppoſition, that eating of much ſalt is the cauſe of ſcurvy; but this idea is now conſidered erroneous. The uſe of ſalt ſeems to produce ſcurvy only in conſequence of its extreme quantity irritating and impairing the digeſtive organs; and moreover the loſs of nutritious juices which ſalted meats undergo, may operate to retard aſſimilation: at all events, ſcurvy may be brought on by the uſe of ſubſtances in which ſalt forms a very ſmall part; and it is moſt evidently increaſed or diminiſhed in proportion to the degree of ſpirits or deſpondence which the mind of the patient undergoes. See a very remarkable inſtance of the ſtate of mind in this diſeaſe, vol. xi. p. 500.

Theſe two laſt and moſt important ſpecies were for a long period confounded together, conſidered to be diſeaſes of debility, and conſequently to be cured only by ſtimulating means. We are indebted to Dr. Parry for firſt ſhowing the error of this idea. He firſt pointed out the important fact, that plethora was the ſtate of body which attended the Purpura hæmorrhagica, or land-ſcurvy; and that the dreadful phenomena of this malady aroſe from morbid action of the blood-veſſels; though it is allowed that this morbid action muſt reſult from morbidity of the blood itſelf in the firſt inſtance. The only ſimilarity which is traceable between the land and ſea ſcurvy is that in each the primary cauſe is diſorder of the aſſimilating function. In moſt caſes this ariſes from bad food, whether it be improper in quality, deficient or otherwiſe in quantity. The aſſimilating function is ſubject likewiſe to be influenced by cauſes foreign to the aliment itſelf. Thus we find ſalted meat produces the ſea-ſcurvy, exceſs and irregularity of eating the land-ſcurvy and its peculiar varieties.

In the land-ſcurvy, the gaſtric or inteſtinal diſorder exerts itſelf moſt eſpecially on the capillary ſyſtem, and that in a ſlow and gradual manner; while the condition of plethora is extreme, and worthy of particular attention in the cure. On the other hand, in the ſea-ſcurvy, the muſcular ſubſtance, in conſequence of the deprivation of the fibrine of the blood, is firſt affected, and the contractility of the capillary ſyſtem ſecondarily; nor is plethora generally very apparent, nor the inflammation ſo violent as to require depletory meaſures. We have thought proper to introduce theſe curſory remarks for the ſake of ſhowing the juſtneſs of the preſent arrangement.

The following remarks apply, more or leſs, to the ſymptoms and treatment of all the ſpecies. The firſt indication of the approach of ſcurvy is an averſion to any ſort of muſcular exertion; a lazineſs, or ſtrong inclination to ſit ſtill or lie in bed; which is accompanied with a ſpontaneous laſſitude, or a ſenſe of heavineſs and pain throughout the body, and eſpecially in the muſcles of the limbs and loins, like that which ariſes from great fatigue, which ſoon becomes actual feebleneſs, ſo that the leaſt exerciſe, eſpecially in aſcending or deſcending a declivity, induces fatigue and ſhortneſs of breath. With this averſion to motion and diminiſhed power of exertion, there is alſo very early a change of the complexion, which becomes pale and bloated, or ſallow, eſpecially about the lips and corners of the eyes, where there is a greeniſh tinge. Theſe two ſymptoms, indeed, the diſinclination to exertion, and the ſallow countenance, often portend the approach of ſcurvy, while the patient eats and drinks heartily, and ſeems otherwiſe in good health: and the ſpeedy laſſitude and difficulty of breathing upon motion, are among the moſt conſtant concomitants of the diſtemper throughout its courſe.

As the diſeaſe advances, other ſymptoms appear. Among theſe the *ſtomacace*, or morbid condition of the mouth, is one of the firſt that preſents itſelf. The gums become hot and painful, and ſoon ſwell, growing ſoft and ſpongy, and of a livid hue, and afterwards extremely putrid and fungous, conſtituting one of the moſt diſtinguiſhing features of the diſeaſe. This occaſions great fetor of the breath, and the looſening of the teeth, which become moveable in their ſockets, and may be taken out without force or pain, and even fall out ſpontaneouſly. Hæmorrhages alſo take place from the ſlighteſt preſſure on the gums, or even without any apparent cauſe, as well as from the noſe; and ultimately from other parts of the body, where the cuticle is delicate, or the ſurface broken, in conſequence of the apparent loſs of coheſion in the ſolids, and eſpecially in the vaſcular ſyſtem.

From this cauſe *the ſkin* alſo exhibits ſome of the moſt ſtriking characteriſtics of ſcurvy. It becomes dry, and ſpotted over with diſcolourations of a red, bluiſh, purple, and black, hue, of various ſizes, from the *petechiæ*, or ſpots like flea-bites, to the moſt extenſive *ecchymoſes*, of the ſize of a hand-breadth, or larger, ſuch as are produced by the ſevereſt bruiſes. Theſe appear chiefly on the legs and thighs; but often alſo on the arms, breaſt, and trunk of the body; and ſometimes, though more rarely, on the head and face. They conſiſt, in fact, of effuſions of blood under the cuticle, from the rupture of the ſmall veſſels. As the diſeaſe advances, this laxity and loſs of coheſion in all the ſolids becomes ſtill more manifeſt, by the frequent and profuſe bleedings which are liable to occur from different parts of the body; eſpecially from the noſe, gums, ſtomach, bowels, lungs, kidneys, and bladder, and from the ulcers and fungous excreſcences which ariſe on the ſurface. In ſome patients, the hæmorrhages from the bowels are accompanied by ſevere pains and diarrhœa; while others, without either purging or gripes, diſcharge great quantities of pure blood by the anus. Other marks of laxity appear in the œdematous ſwelling which takes place in the legs, beginning firſt about the feet and ankles; which, however, is more painful than common anaſarca, and retains longer the impreſſion of the finger. They appear remarkably alſo, in the great facility with which the ſlighteſt bruiſes and wounds degenerate into foul fungous ulcers, as well as in the ſpontaneous appearance of ſuch ulcers, and the breaking-out of long-healed ſores, and even the diſunion of old fractures in bones. "Whatever former complaints,"

plaints," Dr. Lind obſerves, "the patient has had, eſpecially bruiſes, wounds, &c. or whatever preſent diſorders he labours under, upon being afflicted with the ſcurvy, his old complaints are renewed, and his preſent rendered worſe." Indeed the ſcurvy often firſt ſhows itſelf by the changes in diſeaſed parts. "Thus, when a perſon has had a preceding fever, or a tedious ſickneſs, by which he has been much exhauſted, the gums for the moſt part are firſt affected, and a laſſitude conſtantly attends; whereas, when one has been confined from exerciſe by having a fractured bone, or from a bruiſe or hurt, theſe weak and debilitated parts become almoſt always firſt ſcorbutic. As for example, if a patient labours under a ſtrain of the ankle, the leg, by becoming ſwelled and painful, and ſoon after covered with livid ſpots, gives the firſt indication of the diſeaſe. And, as old ulcers on the legs are very frequent among ſeamen, in this caſe likewiſe the legs are always firſt affected, and theſe ulcers put on a ſcorbutic appearance, although the patient ſeems otherwiſe perfectly healthy, and preſerves a freſh good colour in his face." The effect of the diſeaſe upon former maladies is ſtrongly depicted by the elegant writer of Lord Anſon's Voyage. "But a moſt extraordinary circumſtance," ſays that gentleman, "and what would be ſcarcely credible upon any ſingle evidence, is, that the ſcars of wounds which had been for many years healed, were forced open again by this virulent diſtemper. Of this there was a remarkable inſtance in one of the invalids on-board the Centurion, who had been wounded above fifty years before at the battle of the Boyne; for though he was cured ſoon after, and had continued well for a great number of years paſt, yet, on his being attacked by the ſcurvy, his wounds, in the progreſs of his diſeaſe, broke out afreſh, and appeared as if they had never been healed. Nay, what is ſtill more aſtoniſhing, the callus of a broken bone, which had been completely formed for a long time, was found to be hereby diſſolved, and the fracture ſeemed as if it had never been conſolidated." (Voyage round the World in 1740—4, by Lord Anſon, compiled by the Rev. R. Walter, Chaplain to the Centurion, p. 102.) The ulcers, which occurred in the legs of the ſcorbutic patients on this occaſion, are ſaid to have been "of the worſt kind, attended with rotten bones, and ſuch a luxuriancy of fungous fleſh as yielded to no remedy." The edges of theſe ſcorbutic ulcers are of a livid colour, and puffed up with the fungous excreſcences, which are not inaptly called by the ſailors *bullock's liver*, ſince to this ſubſtance, when boiled, Dr. Lind ſays, they bear a near reſemblance, both in conſiſtence and colour. They often ariſe in the courſe of a night to a monſtrous ſize; and, although deſtroyed by cauſtics or the knife, (in which laſt caſe, a copious bleeding commonly enſues,) are found at the next dreſſing as large as ever. Dr. Lind affirms, however, that "they continue in this condition a conſiderable time without tainting the bone." (Lind on Scurvy, pt. ii. ch. 2.) Theſe ſcorbutic ulcers, which are ſingular and uniform in their character, are diſtinguiſhed from all others by being ſo remarkably offenſive, bloody, and fungous.

In addition to theſe affections of the lower extremities, (to which however they are not excluſively confined,) in the advanced ſtage of the ſcurvy, the patients moſt commonly loſe the uſe of their limbs, having a contraction of the tendons in the ham, with a ſwelling and pain in the joint of the knee. Indeed, a ſtiffneſs in theſe tendons, and a weakneſs of the knees, appear pretty early in this diſeaſe, generally terminating in a contracted and ſwelled joint.

In the progreſs of the ſcurvy, the patients commonly complain of pains, which are often moving from part to part. Some complain of a general pain in their bones, which is moſt violent in the limbs and loins, and eſpecially in the joints and legs; and a pain, with tightneſs and oppreſſion, in the breaſt, is very common. The head is ſeldom or never affected, unleſs the patient is feveriſh, which is unuſual; for, as Dr. Lind well obſerves, the diſeaſe is altogether of a chronic nature, and fever may be juſtly reckoned among its adventitious ſymptoms. It is remarkable, indeed, that in the worſt ſtages of the ſcurvy, with all the ſevere ſymptoms above deſcribed, with painful ſpreading ulcers of the ſurface, with contracted limbs, hemorrhages, ſpongy, putrid, ſtinking, gums, over-run with ſprouting fleſh, and often deeply ulcerated, with inability to make the leaſt muſcular exertion, without fainting, or perhaps dying; yet the patients, even in this ſtage, have a good appetite with their ſenſes entire; and, though eaſily dejected and made low-ſpirited, yet, when in bed, they make no complaint of pain or ſickneſs, and appear to be in tolerable health. This ſingular characteriſtic of the diſeaſe is well depicted by the reverend author before quoted. "Indeed, the effects of this diſeaſe," he ſays, "were in almoſt every inſtance wonderful; for many of our people, though confined to their hammocks, appeared to have no inconſiderable ſhare of health; for they ate and drank heartily, were cheerful, and talked with much ſeeming vigour, and with a loud ſtrong tone of voice; and yet on their being the leaſt moved, though it was only from one part of the ſhip to the other, and that in their hammocks, they have immediately expired; and others, who have confided in their ſeeming ſtrength, and have reſolved to get out of their hammocks, have died before they could well reach the deck. And it was no uncommon thing for thoſe who were able to walk the deck, and to do ſome kind of duty, to drop down dead in an inſtant, on any endeavours to act with their utmoſt vigour; many of our people having periſhed in this manner during the courſe of this voyage."

The principal phenomena deſcribed in the necrotomy of ſcorbutics, are the general extravaſation of blood, and the diſſolution and ſeparation of parts naturally united. Thus the bodies of the muſcles are often found ſwelled and hard, from the blood fixed among their fibres, ſo that the limbs remain bent or contracted; and the epiphyſes of the bones are found ſeparated, the cartilages of the ſternum looſened from their union with the bony part of the ribs, or the ligaments of the joints are corroded and looſe. The meſenteric glands are generally obſtructed and enlarged, and the ſpleen bigger than natural, often falling to pieces as if it conſiſted of coagulated blood.

It is now generally underſtood that no medicines are of avail in the cure of ſcurvy unleſs the diet be improved; and that, if this be done, medicines are ſcarcely ever required. It has been found, that in the worſt caſes the adminiſtration of freſh vegetables has reſtored the ſufferer to health. Among theſe vegetable productions, lemons hold the firſt rank. Indeed ſo univerſal has been the ſucceſs which has attended the treatment of ſcurvy by the vegetable acids, that ſome have inferred that a want of oxygen in the blood is the proximate cauſe of this diſeaſe; an hypotheſis however which is unſupported by facts. When lemons cannot be preſerved, as in long voyages, citric acid is a very uſeful ſubſtitute. The ſcurvy, which was once ſo formidable in our navy as to deſtroy whole fleets, is now ſo far got under by the regulations introduced into our navy (chiefly through the exertions of Dr. Trotter), that it is ſcarcely more frequent than other diſeaſes.

Genus XIII. *Exangia*, [from ἐξαγγιζω, to pour out from a veſſel.] Enlargement or rupture of a blood-veſſel, without external opening. There are two ſpecies.

1. Exangia aneuriſma, aneuriſm: pulſating tumour of an artery. Three varieties.

α. A. cyſticum, encyſted aneuriſm: tumour circumſcribed; formed by a dilation of the arterial coats within the ſphere of the enlargement.

β. A. diffuſum, diffuſed aneuriſm: tumour diffuſe: formed by the flow of arterial blood into a ſubcutaneous cavity,

cavity, in consequence of a rupture of the coats of the artery.

γ. A. varicosum, varicose aneurism: tumour protracted: pulsating through a superincumbent and dilated vein from an injury common to both. For the treatment of these three varieties, see SURGERY.

δ. A. cardiogmus: obtuse intumescence and constant disquiet of the præcordia; with a sense of internal weight and pulsation increased on the smallest motion. See *Carditis* of this article.

2. Exangia varix: soft livid tumour of a vein. See SURGERY.

Genus XIV. *Gangræna*, [from γραινω, to feed upon.] Gangrene; the death of a portion of the body, while the rest continues alive, and often in a sound state. There are four species.

1. Gangræna sphacelus, mortification: the dead part soft, moist, corrupt, and highly offensive. Divided into,

α. G. inductus, which is preceded by fever, inflammation, local violence, or other exhausting power.

β. G. atonicus; the result of old age or other debility.

2. Gangræna necrosis, dry gangrene: the dead part dry, shrivelled, hard, and dusky. Two varieties here also.

α. G. albida, white gangrene: retaining the natural colour of the flesh.

β. Discolor: the natural colour changed to livid, or a mixture of hues.

3. Gangræna caries: the dead part originating in, or extending to, a portion of the subjacent bone.

4. Gangræna ustilaginea, mildew-mortification, or ergot: gangrene dry, diffuse, divergent; commencing in the extremities without fever or intumescence, and spreading till various limbs drop off in succession: great hebetude of mind and body; often with violent spasms. See the article SURGERY.

Genus XV. *Ulcus*, [ελκος, derived by Eustathius from ελκω, *traho*, as though *distraho*, hereby producing a λυσις συνεχειας, or in the phrase of modern times, which is a literal rendering of the Greek, "solution of continuity."] Ulcer; a purulent or ichorous sore produced by the separation of a dead part. There are five species.

1. Ulcus incarnans: healthy, purulent, and granulating.

2. Ulcus vitiosum: with a vitiated surface and secretion. Three varieties.

α. Callosum: the edges indurated and retracted.

β. Spongiosum: with fungous or spongy excrescences.

γ. Cancrosum: with a hard, livid, lancinating, irregular, fetid, and frequently bleeding, tumour at its base.

3. Ulcus sinuosum: communicating with the neighbouring parts by one or more winding channels. Divided into,

α. Recens: the channel fresh, and yielding.

β. Fistulosum: channel indurated, and of longer standing. For the treatment of these three species, and their varieties, we must refer to the article SURGERY.

4. Ulcus tuberculosum, lupus, or noli me tangere: with tuberculous excrescences, lobed by ragged and spreading ulcerations: chiefly about the alæ of the nostrils.

This is a very rare but formidable disease. Very little is known as to its nature or treatment. It is a slow tubercular affection, affecting the nose, lips, or other parts of the face, or trunk of the body. It commonly ends in ragged ulcerations, which gradually destroy the skin and muscular parts to a considerable depth. Sometimes the disease appears in the cheek circularly, or in the form of a sort of ring-worm, destroying the substance, and leaving a deep and deformed cicatrix: and Dr. Bateman has seen a similar circular patch of the disease, dilating itself at length to the extent of a hand-breadth or more, upon the pectoral muscle.

"By surgical means, i. e. by the knife or the caustic, a separation has sometimes been made of the morbid from the sound parts, and the progress of the disease arrested. And in some cases, where the ulceration was very slow, and unaccompanied by much inflammation, the internal use of arsenic has been found beneficial; a circumstance, which has probably given rise to the opinion, that cancer has been cured by that mineral. In three or four less severe cases of lupous tubercles in the face, which had made no progress towards ulceration, I have seen the solution of muriate of barytes, taken internally, materially amend the complaint. Bateman, p. 299. The disease is said to have been cured in some instances (vide Med. Journal, vol. xv.) by carbonate of iron.

5. Ulcus carious, (Caries, *Sauv. Linn. Cullen*, &c.) Ulcer extending into the substance of the subjacent bone. If the ulceration extends to the medulla, it is often called "arthrocace."

CLASS IV. NEUROTICA, [from νευρον, a nerve.]

DISEASES of the NERVOUS FUNCTION.

Order I. PHRENICA, [from φρην, the mind.] Affecting the Intellect. Error, perversion, or debility, of one or more of the mental faculties. This order contains six genera.

Genus I. *Ecphronia*, [from εκ, out of, and φρην, the mind.] Insanity. Generic characters—Diseased perception, with little disturbance of the judgment, occasionally shifting into diseased judgment, with little disturbance of the perception; diminished sensibility; irregular remissions. There are two very distinct species.

1. Ecphronia melancholia, melancholy: the discrepancy between the perception and the judgment limited to a single object, or train of ideas; for the most part with taciturnity, love of solitude, gloomy fear, or suspicion. Four varieties.

α. M. attonita: fixed, mute, immoveable, melancholy.

β. M. errabunda: roving, restless, melancholy; having a constant desire to change the abode.

γ. M. malevolens: morose or mischievous melancholy; occasionally terminating in suicide, or the injury of others.

δ. M. complacens: self-complacent and affable melancholy; occasionally rejoicing in a visionary superiority of rank, station, or endowments.

See, for examples of this last variety, Hor. Sat. iv. Ep. ii. 2. But of this modification one of the best examples that has ever been drawn, says Dr. Mason, "is that of Don Quixote, taken unquestionably from real life. This variety is connected with all the rest in the leading specific character of the discrepancy between the perception and the judgment being limited to a single object or train of ideas; but it differs from them by the intermixture of a certain degree of *eparsis*, or sentimental elevation, which destroys the common tendency to taciturnity, solitude, and gloomy apprehension."

The more common causes of the disease as a species are false views of religion; severe disappointment; longing after one's native country and friends; and continued grief.

2. Ecphronia mania, madness: the discrepancy between the perception and the judgment general; raving; entony; and empassioned emotion. Four varieties.

α. M. ferox: furious and violent madness.

β. M. exultans: gay and elevated madness.

γ. M. despondens: gloomy despondent madness. The despondent cases are more dangerous than those of hilarity.

δ. M. demens: chaotic madness.

We shall now proceed to give Dr. Good's arrangement of the remainder of this order; without any intention, however, of following our nosologist into an account of the nature or treatment of mental diseases. Indeed much as we respect the talents of Dr. Good, we cannot help smiling at his love of nosology when we find that musing, joy, jealousy, and even love, are styled diseases,

of

of which we may ſay, as Ovid did long ſince of the laſt, that they are *nullis medicabilis herbis.*

Genus II. *Empathema*, [from εν and παθημα, of πασχω, to ſuffer.] Ungovernable paſſion. Generic characters—The judgment perverted or overpowered by the force of ſome predominant paſſion: the features of the countenance changed from their common character. Two ſpecies.

1. Empathema entonicum: the predominant paſſion accompanied with increaſed excitement, ardour, and activity: eye quick and daring; countenance fluſhed and tumid. Divided by Dr. Good into,

α. Iracundiæ, wrath.
β. Superbiæ, pride.
γ. Gloriæ famis, ambition.
δ. Letitiæ, joy.
ε. Philautiæ, ſelf-love, or ſelf-conceit.
ζ. Zelotypiæ, jealouſy.

2. Empathema atonicum: the predominant paſſion accompanied with diminiſhed excitement, anxiety, and love of ſolitude; eye fixed and penſive; countenance pale and furrowed. Six varieties.

α. Deſiderii, longing: eager deſire for an abſent object, whether place or perſon: and hence equally including home-ſickneſs, country-ſickneſs, love-ſickneſs.
β. Auri famis, avarice.
γ. Anxietudinis, preying care.
δ. Mœroris, heart-ache.
ε. Deſperationitis, deſpondency.

Genus III. *Aluſia*, [from αλυς, αλυσις, αλυσμος, *oberratio.* Galen occaſionally employs the ſecond. The theme is αλυω, "errabundâ mente afficior; inquietus oberro:" whence the Latin *allucinatio*, and *hallucinatio.*] Illuſion. Generic characters—The judgment perverted or overpowered by the force of the imagination; the ſpirits permanently elevated or depreſſed; the feelings of the mind depicted in the countenance. Two ſpecies.

1. Aluſia elatio, mental extravagance: romantic ideas of real life; ardent and exalted fancy; pleaſurable feelings; frequent pulſe; great activity; eye keen and lighted up: countenance confident and animated. Divided into,

α. E. heroica, chivalry or romantic gallantry. A generous and high-ſpirited flight of the imagination, but now grown obſolete, and rarely to be met with except in ancient tales and traditions.
β. E. facetoſa, high ſpirits; ſparkling ebullient wit, incapable of reſtraining itſelf; that often ſacrifices a friend at the ſhrine of a jeſt.
γ. E. ecſtatica, falſe inſpiration; viſionary conceits. The judgment urged to miſtake energetic ideas for realities; to believe in phantaſms; in an immediate communication with ſpirits, or in the power of working miracles. Examples may be found in all ages and in all religions. One of the moſt intereſting is that of Saint Tereſa in Butler's Lives. In our own day one of the moſt ſtriking is that of Baron Swedenborg.
δ. E. fanatica, fanaticiſm.

2. Aluſia hypochondrias, hypochondriſm: gloomy ideas of real life; dejected ſpirits; anxiety; dyſpepſy; languid pulſe; indiſpoſition to activity; eye oblique and ſcowling; countenance gloomy and ſullen. Three varieties, all perhaps proceeding from *Dyſpepſia*, which ſee.

α. H. autalgica, vapours: with viſionary or exaggerated ſenſe of pains, or diſeaſe; whimſical diſlike of perſons, places, or things; groundleſs apprehenſions of perſonal danger, or poverty.
β. H. pentæſa, ſpleen: with general liſtleſſneſs, or diſguſt; irkſomeneſs and wearineſs of life.
γ. H. miſanthropica, miſanthropy: with general malevolence, peeviſhneſs, and abhorrence of mankind.

Genus IV. *Aphelxia*, [from αφελκω, to draw away.] Reverie. Generic characters—Voluntary inactivity of the whole or the greater part of the external ſenſes to the impreſſions of ſurrounding objects, during wakefulneſs. Of this diſeaſe, which, as Dr. Good juſtly obſerves, is almoſt, if not altogether, new to noſology, and has ſeldom been dipt into by phyſiologiſts, the doctor gives us three ſpecies.

1. Aphelxia ſocors, abſence of mind: truant attention; wandering fancy; vacant or vacillating countenance.
2. Aphelxia intenta, abſtraction of mind: the attention wound up, and rivetted to a particular ſubject; with ſympathetic emotion of the muſcles and features connected with its general drift.
3. Aphelxia otioſa, brown ſtudy, or liſtleſs muſing: leiſurely liſtleſſneſs; free ſurrender of the judgment to the ſportive vagaries of the fancy; quieſcent muſcles; idle gravity of countenance.

Genus V. *Paroniria*, [from παρα, and ονειρον, dreaming.] Depraved, diſturbed, or morbid, dreaming. Generic characters—The voluntary organs connected with the paſſing train of ideas overpowered by the force of the imagination during dreaming, and involuntarily excited to their natural or accuſtomed actions, while the other organs remain aſleep. Three ſpecies.

1. Paroniria ambulans, ſleep-walking, or ſomnambuliſm: the muſcles of locomotion excited into their accuſtomed action by the force of the imagination during dreaming.
2. Paroniria loquens, ſleep-talking: the muſcles of ſpeech excited into their accuſtomed action by the force of the imagination during dreaming.
3. Paroniria ſalax, night-pollution; (Gonorrhœa dormientum, *Cull.*) The ſexual organs excited into venereal action by the force of the imagination during dreaming.

The reader will obſerve, that the term Paroniria ſalax is reſtricted to night-pollution from dreaming, and does not therefore embrace that kind of night-pollution which requires the aid of medicine.

Genus VI. *Moria*, [from μωρος, ſilly, fooliſh.] Fatuity; defect or hebetude of the underſtanding. Two ſpecies, ſubdivided into varieties.

1. Moria imbecilis, imbecility: defect or hebetude partial or confined to particular faculties of the underſtanding. Four varieties.

α. Stupiditas, ſtupidity: dulneſs and indocility of the apprehenſion; torpitude and poverty of the imagination.
β. Amneſia, forgetfulneſs: feebleneſs or failure of the memory.
γ. Credulitas, credulity: weakneſs and undue pliancy of the judgment, with facility of being duped.
δ. Inconſtantia, fickleneſs: inſtability and irreſolution of the will.

2. Moria demens, irrationality: defect or hebetude of all the faculties of the underſtanding. Three varieties.

α. Stultitia, ſillineſs: ſhallow knowledge; feeble judgment; light frivolous fancy; for the moſt part with good nature, ſometimes with obſtinacy.
β. Lerema, dotage: impotence of body as well as of mind from natural or premature old age; childiſh deſires and purſuits; drawling ſpeech or garrulous babble, compoſed of ideas for the moſt part aſſociated by previous habit.
γ. Anœa, idiotiſm: general obliteration of the mental powers and affections; paucity or deſtitution of ideas; obtuſe ſenſibility; vacant countenance; imperfect or broken articulation; with, occaſionally, tranſient and unmeaning guſts of paſſion.

Order II. ÆSTHETICA, [from αισθησις, perception, of αισθανομαι, to perceive.] Diſeaſes affecting the Senſation. Dullneſs, depravation, or abolition, of one or more of the external organs of ſenſe. This order contains five genera.

Genus I. *Paropſis*, [from παρα, bad, and οψις, ſight.] Diſeaſed viſion; the ſenſe of ſight being vitiated or loſt.

Under this genus, Dr. Good includes all diſeaſes of the eye, except ſimple ophthalmia. We regret that we cannot in this place enter into an account of theſe maladies. When, however, it is conſidered, that the anatomical details, as to the ſtructure, into which we muſt firſt enter, would be long, and that moreover the moſt compreſſed accounts of ocular maladies occupy a ſpace much greater than could be introduced into this article, we are compelled to poſtpone the ſubject until we arrive at the article SURGERY. In the mean time we have much ſatisfaction in referring our readers to two works of the firſt excellence for all neceſſary information upon the diſeaſes in queſtion. We allude to the works of Mr. Travers and Dr. Vetch. Dr. Good's claſſification of theſe diſeaſes, in which there appears no fault except that catarrh, glaucoſis, &c. cannot be conſidered as nervous diſeaſes, is as follows.

1. Paropſis lucifuga, night-ſight: viſion painfully acute in a ſtrong light; but clear and pleaſant in a deep ſhade or the duſk of the evening. Chiefly common to thoſe who live almoſt conſtantly in dark incloſures, as mines or priſons; or who have recently had a cataract depreſſed or extracted; and to ſhort-ſighted perſons. Found alſo, occaſionally, as a ſymptom in ophthalmy, irritation of the optic nerve, and Hydrops capitis.

2. Paropſis noctifuga, day-ſight: viſion dull and confuſed in the duſk; but clear and powerful in broad daylight. It proceeds uſually from a want of ſufficient irritability in the retina; which, in conſequence, is only excited to action by a ſtrong ſtimulus, or powerful light; and hence does not clearly diſcern in the ſhade or towards the cloſe of day. Hens are well known to labour under this defect; and hence they cannot ſee to pick up ſmall grain in the duſk of the evening, and ſo employ this time in going to rooſt: on which account the diſeaſe is ſometimes called *hen-blindneſs*.

3. Paropſis longinqua, long-ſight: viſion only accurate when the object is far off.

In the preceding ſpecies the hebetude ſeems chiefly to appertain to the *retina*: in the preſent ſpecies it belongs chiefly to the *iris*, which is habitually dilated, and not eaſily ſtimulated to a contractile action. For "it is well known," obſerves Dr. Wells, "to thoſe who are converſant with the facts relating to human viſion, that the eye in its relaxed ſtate is fitted for diſtant objects, and that the ſeeing of near objects accurately is dependant upon muſcular exertion." (Phil. Tranſ. 1811, art. xix.) There are three varieties,

α. Vulgaris: common to every period of life, and chiefly produced by habitual relaxation of the iris, moſtly with ſomewhat too flat a cornea.

β. Paretica: from partial paralyſis: as an abſolute incontractility of the iris, by which the diameter of the pupil is rendered unchangeable, and a pareſis of ſeveral other muſcular powers of the eye is ſuperinduced; while the retina continues perfectly ſenſible to the ſtimulus of light. For caſes, ſee Phil. Tranſ. 1793 and 1811.

γ. Senectutis: from old age, in which the cornea uſually grows leſs convex; and hebetude and relaxation become common to all the powers of the eye.

4. Paropſis propinqua, ſhort-ſight: viſion only accurate when the object is near. Mice are ſuppoſed to have this kind of viſion naturally; and hence the name that has been given to it of *myopia*, or mouſe-ſight.

5. Paropſis lateralis, ſkew-ſight. In this ſpecies the patient can only ſee obliquely, in conſequence of ſome partial obfuſcation of the cornea (uſually perhaps from ſcratches or ſlight ſcars), or of the humours through which the light is tranſmitted; or from a partial paralyſis of the retina. This muſt not be confounded with *ſtrabiſmus*, or ſquinting, which proceeds from a different cauſe, and is accompanied with different phenomena. In *lateral viſion*, the axis of the eye affected uſually coincides with that of the ſound eye, though it runs ſomewhat obliquely to avoid the obſtruction in the tunic. In *ſtrabiſmus*, the two axes do not coincide, and the judgment is formed from the ſtrongeſt eye alone. If, however, in lateral viſion, the obſtruction be ſuch as to make the optical axis of the affected eye at variance with that of the ſound eye, ſquinting muſt be a neceſſary conſequence of the diſeaſe.

6. Paropſis illuſoria, falſe ſight: imaginary objects floating before the ſight; or real objects appearing with imaginary qualities. Dr. Good notes two varieties, and ſeveral ſub-varieties.

α. Phantaſmatum: ocular ſpectres, aſſuming various ſemblances; as, dark ſpots, the muſcæ volitantes of various authors; net-work, ſparks, dazzling, irideſcence, &c. "Theſe appearances (ſays Dr. Young) are ſometimes, if not always, occaſioned by an opacity of ſome of the veſſels of the vitreous humour, near the retina. They are ſeen in a full light; and cannot, therefore, as Sauvages has juſtly remarked, be cauſed by any thing in the anterior part of the eye; and they may often be obſerved to change their form with the motions of the eye; which they could not do if they did not depend on ſome floating ſubſtance. Their apparent change of poſition, when we attempt to follow them with the eye, is a neceſſary conſequence of the motion of the eye itſelf which contains them.

β. Mutationitis: real objects changed in their natural qualities: hence proceed, error of form, when objects appear too large, too ſmall, cut in half, diſtorted; error of motion, which conſiſts uſually in dancing, nodding, or rapid ſucceſſion; and error of number, when objects are doubled, tripled, or otherwiſe increaſed or multiplied.

7. Paropſis caligo, opake cornea, or web-eye: dimneſs or abolition of ſight from opacity of the cornea, or ſpots upon its ſurface. "This is the foul fiend, Flibbertigibbet: he gives the WEB, and the *pin*, ſquints the eye, and makes the hare-lip." *Shakeſpeare.*

8. Paropſis glaucoſis: dimneſs or abolition of ſight from opacity of the humours.

9. Paropſis cataracta, cataract: dimneſs or abolition of ſight from opacity of the cryſtalline lens. Three kinds.

α. C. lenticularis, lenticular: the opacity exiſting in the lens itſelf, and confined to it.

β. C. capſularis, capſular or membraneous: the opacity confined to the capſule, or membrane of the lens.

γ. C. complicata, complicated: the opacity common to the lens and its capſule.

10. Paropſis ſynizeſis: dimneſs or abolition of ſight from contraction or obliteration of the pupil. Two varieties.

α. S. ſimplex, ſimple cloſure of the pupil. The pupil becomes cloſed or obliterated from progreſſive contraction, and at length coalition, of the muſcular fibres of the iris; from inflammation of the ſurrounding membranes; or from protruſion of the iris. In all theſe caſes it is called "ſimple obliteration of the pupil."

β. S. complicata; cloſure of the pupil complicated with cataract or an opake cornea.

11. Paropſis amauroſis, gutta ſerena, or drop ſerene: dimneſs or abolition of ſight, with an unalterable immovable pupil, uſually black and dilated; but without any other apparent defect. Three varieties.

α. A. atonica; with permanent atony and dilatation of the pupil.

β. A. ſpaſmodica; with permanent contraction.

γ. A. intermittens; with periodical ceſſations and returns.

12. Paropſis ſtaphyloma, protuberant eye: enlargement of the ball of the eye; protuberance of the cornea; ſight dim or aboliſhed. *Staphyloma* is from σταφυλη, a grape, on account of the reſemblance of the tumour to the pulpy and ſemi-tranſparent appearance of this fruit. Richter has the credit of having firſt pointed out the real nature of this diſeaſe, of which there are three varieties.

α. St. ſimplex; from increaſed ſecretion of the aqueous or other humour: pupil tranſparent.

β. St.

β. St. purulentum: from flow of pus from an abſceſs in one of the membranes; pupil cloudy. By Plenck called onyx, when between the lamellæ of the cornea; and hypopyum, when in the aqueous humour.

γ. St. complicatum; complicated with a rupture of the iris, and its protruſion upon the cornea; conſtituting a grape-like tumour; ſight aboliſhed.

13. Paropſis ſtrabiſmus, ſquinting: optic axes of the eyes not coinciding on an object.

The optic axis is an imaginary right line paſſing from the centre of the vitreous humour, lens, and globe, of the eye, to the object of viſion. In perfect viſion, the optic axis of the one eye is in uniſon with that of the other, and conſequently they converge or coincide at the ſame point; and the object, which would otherwiſe appear double, as being ſeen by each eye, is contemplated as ſingle. In order to this coincidence, the muſcles of each eye muſt conſtantly aſſume the ſame direction, their poſition and configuration be preciſely alike, and the ſight be of an equal power and focus: a deviation from each of which poſtulates muſt neceſſarily produce ſquinting, or an inaccordant action of one eye with the other. From common and early habit we acquire an equal command over the muſcles of both, and are able to give them any direction, and to fix them againſt any object we pleaſe: and ſuch is the power of habit, that at length they involuntarily aſſociate in the ſame action, and it is difficult for us to give to the one eye a different direction from that of the other, or, in other words, to make their optic axes diverge inſtead of converge. In perſons born blind, no benefit can be derived from this unity of action; hence it is never attempted; and, the muſcles being never ſubjected to diſcipline, the eye-balls roll at random, and wander in every direction. And hence one of the moſt difficult taſks to be acquired by ſuch perſons after obtaining ſight, is that of keeping their eyes fixed, and giving the ſame bearing or convergent line to each; and hence, again, they ſee things double at firſt, and in a ſtate of great confuſion. When one eye is naturally ſtronger, or of a more favourable focus, or more frequently employed than the other, as among watchmakers and jewellers, the latter from comparative neglect relapſes into an undiſciplined ſtate, and leſs readily obeys the control of the will. Its muſcles do not aſſume the ſame direction, and if they do, in the two former caſes, the object appears double; and hence the neglected or weaker eye wanders and ſtares at one or at various objects, while the eye relied upon is fixed upon ſome other. And it is this divergence of the optic axes, this inaccordance of direction, or looking at different objects at the ſame time, that conſtitutes the diſeaſe called ſtrabiſmus, or ſquinting. From the above-mentioned cauſes, we divide the ſpecies into three varieties.

α. Str. habitualis, from habit, or the cuſtom of uſing one eye and neglecting the other; whereby the latter grows gradually more unſteady, and the will has no longer an equal command over both.

β. Str. atonicus, from debility of the affected eye; whence the ſound eye poſſeſſes a different focus and power of viſion, and is alone truſted to: in conſequence of which the weak or neglected eye inſenſibly wanders as above.

γ. Str. organicus, differently conſtructed in form or poſition: ſo that the ſituation or figure of one eye, or of particular parts of one eye, are inaccordant with thoſe of the other; whence, as in the preceding varieties, one eye is chiefly depended upon, and the other neglected.

14. Paropſis ectropium, everſion of the eye-lids: everſion of one or both the eye-lids; and conſequent expoſure of the red internal tunic.

The oppoſite affection, or *inverſion* of one or both eye-lids, is denominated *entropium*. It is often a very troubleſome complaint, from the irritation produced by the inverted eye-laſhes. But it is, perhaps, in every inſtance a ſymptom or ſequel of ſome other diſorder, as a tumour ſeated on the affected lid, or a contraction of its internal membrane from a cicatrix, or other cauſe.

Genus II. *Paracuſis*, [παρακοη of Hippocrates, from παρα, bad, and ακουω, to hear.] Senſe of hearing vitiated or loſt. There are ſix ſpecies.

1. Paracuſis acris: hearing painfully acute, and intolerant of the loweſt ſounds. A ſymptom of increaſed nervous excitement, as in cephalitis, epilepſy, &c. When idiopathic, i. e. when a mere nervous diſeaſe of the part, and unconnected with general plethora or general exaltation of the cerebral function, it will require the ſame treatment as in other local irritations; that is, the ſubduction of noiſe, opening medicine, and, in violent and diſtreſſing caſes, the belladonna may be uſed.

2. Paracuſis obtuſa: hearing dull and confuſed, and demanding a clear and modulated articulation. Hardneſs of hearing is divided into,

α. Organica; from organic defect.

β. Atonica, or nervous deafneſs; from local debility. This, which ariſes from deficient energy of the auditory nerves, is much relieved by electricity.

γ. A meatu obſtructo; from obſtruction in the auditory tube or paſſage; as by mucus, wax, ſordes, an inſect, or any other extrinſic body. When any ſubſtance is lodged in the part, it muſt be extracted by ſyringing; and in ſome caſes, as where the Euſtachian tube was cloſed in conſequence of inflammation, the tympanum has been ſucceſsfully punctured by Sir A. Cooper. For the mode of performing this operation, ſee the article SURGERY.

3. Paracuſis perverſa, perverſe hearing: the ear only ſenſible to articulate ſounds when excited by other and louder ſounds intermixed with them.

Of this extraordinary diſeaſe, Sauvages has collected various examples from unqueſtionable authorities. The firſt caſe is that of a woman who could never underſtand what was ſpoken to her unleſs a drum were beating cloſe to her at the ſame time; and who, on this account, kept a drum always in the houſe, which was conſtantly played upon while ſhe was converſing with her huſband. Another caſe is that of a bell-ringer, who could never diſtinguiſh ſpeech except while the bells were ringing. A third caſe relates to a perſon who was always deaf except when travelling in a carriage; during which time, from the rattling of the wheels, he was perfectly capable of hearing, and engaging in converſation. Sauvages ingeniouſly aſcribes this diſeaſe to torpitude or pareſis of the organs of the external ear, which require this additional ſtimulus to rouſe them into action, ſo as to convey the proper ſounds addreſſed to them beyond the tympanum. And he cloſes with the following illuſtrations: "Sic ſomnolenti oculos non aperiunt, nec proinde aptant ad viſum, niſi magna lux oculos commoveat; ſic organa genitalia ganeonum à torpore excitantur quandoque per flagra, de quorum uſu in rea venereâ ſcripſit Meibomius." Tom. I. 757.

4. Paracuſis duplicata, double hearing: the action of the one ear inaccordant with that of the other: ſounds heard doubly and in different tones or keys.

Sauvages has given two or three very curious examples upon this laſt affection: A muſician, while blowing his flute, heard two diſtinct ſounds at every note. The ſounds were in different keys, and conſequently not in harmony; and, as they were heard ſimultaneouſly, the one could not be an echo of the other. This ſingular affection ſeems to have been the reſult of a catarrh, and ceaſed on its termination. On another occaſion he was conſulted by a perſon who for ſeveral months antecedently had been troubled with a hearing of two diſtinct voices whenever he was ſpoken to: the one at leaſt an octave higher than the other, but not in uniſon with it, and hence producing a harſh and inſupportable diſcordancy. Tom. I. 756.

5. Paracuſis illuſoria, imaginary ſounds: internal ſenſe

ſenſe of ſounds, without external cauſes. Three varieties are given.

α. Syrigmus, ringing or tinkling; a ſharp, ſhrill, ſuccuſſive, ſound.

β. Suſurrus, whizzing; an acute, continuous, hiſſing, ſound.

γ. Bombus, beating; a dull heavy intermitting ſound. This appears to be very nearly of the ſame nature as the firſt ſpecies.

6. Paracuſis ſurditas, deafneſs: total inability of hearing or diſtinguiſhing ſounds. Three varieties are noted.

α. S. organica; from organic defect.

β. S. atonica; from local debility.

γ. S. paralytica; from local palſy.

Genus III. *Paroſmis*, [from παρα, and οζω, to ſmell.] The ſenſe of ſmell vitiated, or loſt. (Anoſmia, *Sauv. Linn. Vog. Cull.*) There are three ſpecies.

1. Paroſmis acris, acute ſmell: ſmell painfully acute, or ſenſible to odours not generally perceived.

Generally ſpeaking, the ſenſe of ſmell in all animals is in proportion to the extent of the Schneiderian or olfactory membrane with which the noſtrils are lined, and over which the branches of the olfactory nerves divaricate and ramify. And hence this membrane is much more extenſive in quadrupeds and birds, which chiefly truſt to the ſenſe of ſmell in ſelecting their food, than in man; for it aſcends conſiderably higher, and is for the moſt part poſſeſſed of numerous folds or duplications. It is hereby the hound diſtinguiſhes the peculiar ſcent thrown forth from the body of the hare, and the domeſtic dog recognizes and identifies his maſter from all other individuals. Under peculiar circumſtances, however, the ordinary apparatus for ſmell poſſeſſes an activity, and ſometimes even an intolerable keenneſs, which by no means belongs to it in its natural ſtate. M. Virey, who has written a very learned treatiſe upon the ſubject of odours, aſſerts that the olfactory ſenſe exiſts among ſavages in a far higher degree of activity than among civilized nations, whoſe power of ſmell is blunted by an habitual expoſure to ſtrong odours, or an intricate combination of them, and by the uſe of high-flavoured foods. And he might have added, that this ſenſe, like every other, is capable of cultivation, and acquiring delicacy of diſcrimination by uſe; that ſavages, many of whom make a near approach to the life of quadrupeds, employ it, and truſt to it, in a ſimilar manner; and that this is, perhaps, a chief cauſe of the difference he has pointed out. It is in like manner relied upon by perſons who are deprived of one or two of the other external ſenſes, as thoſe of ſight or hearing, or both; and in theſe caſes it often acquires an extraordinary degree of nicety. In the intereſting example of the boy born blind and deaf, lately given to the world by Profeſſor Stewart, and who, in conſequence was obliged to rely upon the two faculties of ſmell and touch alone, in diſcriminating almoſt all the objects that ſurrounded him, he is ſaid, in Mr. Wardrop's hiſtory of the caſe, to have employed the ſenſe of ſmell on all occaſions, like a domeſtic dog, in diſtinguiſhing perſons, and chiefly to have depended on it. By this ſenſe he identified his friends and relatives; and conceived a ſudden attachment or diſlike to ſtrangers according to the odour of the effluvium that eſcaped from the ſkin.

The Journal des Sçavans, anno 1667, gives a curious hiſtory of a monk, who pretended to be able to aſcertain, by the difference of odour alone, the ſex and age of a perſon, whether he were married or ſingle, and the manner of life to which he was accuſtomed. This, as far as the fact extended, may poſſibly have been the reſult of obſervations grafted upon a ſtronger natural ſenſe than belongs to mankind in general; and is ſcarcely to be ranked in the liſt of diſeaſed actions. But among perſons of a highly nervous or irritable idioſyncraſy, Dr. Good had met with numerous inſtances, and doubtleſs other practitioners have alſo, of an acuteneſs of ſmell almoſt intolerable and diſtracting to thoſe who were labouring under it, which has fairly conſtituted an idiopathic affection; and ſometimes nearly realized the fanciful deſcription of the poet, by making its poſſeſſors ready, at every moment, to "die of a roſe in aromatic pain."

There is a curious and ingenious paper in the Tranſactions of the Swediſh Academy, tom. i. from the pen of Linnæus, containing a variety of uſeful obſervations on the peculiar qualities given to the ſmell, taſte, and other properties, of animals, in conſequence of their feeding on different foods.

2. Paroſmis obtuſa, obtuſe ſmell: ſmell dull and imperfectly diſcriminative.

3. Paroſmis expers, want of ſmell: total inability of ſmelling or diſtinguiſhing odours. This may be,

α. Organica; from organic defect, or accidental deſtruction of the olfactory nerve, or its branches; or of the Schneiderian membrane over which they are ſpread. Or,

β. Paralytica; from local palſy.

Genus IV. *Parageuſis*, [from γευσις, taſte.] The ſenſe of taſte vitiated or loſt. (Ageuſtia, *Sauv.* and *Cull.*) There are three ſpecies.

1. Parageuſis acris, acute taſte: taſte painfully acute, or ſenſible to ſavours not generally perceived.

2. Parageuſis obtuſa, obtuſe taſte: taſte dull and imperfectly diſcriminative.

3. Parageuſis expers, total inability of taſting or diſtinguiſhing ſavours. The papillæ of the tongue deſtitute of guſtatory nerves, or covered with a mucous or other ſheath which they cannot penetrate.

The firſt and laſt ſpecies are perhaps chiefly ſymptomatic, though not always ſo. The ſecond is common, and is often connected with obtuſe ſmell; for phyſiologiſts have remarked a ſtriking coincidence and ſympathy between theſe two ſenſes; and ſome have conceived them to be mere modifications of each other. Dr. Good had a lady of twenty-four years of age under his care, of great mental taſte and accompliſhments, who had always poſſeſſed a conſiderable hebetude of both ſenſes. She could diſtinguiſh the ſmell of a roſe from that of garlic, and the taſte of port wine from mountain or madeira; but ſhe could not diſcriminate between the odour of a roſe and that of a lily; or between the taſte of beef, veal, and pork; and conſequently, upon all theſe points, had no preference of reliſh.

The loſs of taſte, and the peculiar changes of the ſame faculty, in fevers and moſt inflammatory diſeaſes, are well known.

Genus V. *Paraphſis*, [from παρα, and αφις, touch.] Senſe of touch, or general feeling, vitiated or loſt. Three ſpecies.

1. Parapſis acris: touch painfully acute, or ſenſible to impreſſions not generally perceived. Four varieties.

α. P. teneritudo, ſoreneſs: painful uneaſineſs or tenderneſs, local or general, on being touched, with a preſſure uſually unaccompanied with troubleſome feeling. Occaſionally unconnected and idiopathic, but more frequently a ſymptom or ſequel of fevers, debility, laſſitude, violent exerciſe, or catching cold.

β. P. pruritus, itching: painful titillation, local or general, relieved by rubbing.

γ. P. algor, coldneſs: ſenſe of temperature, local or general, below that of pleaſant and natural warmth. As an idiopathic affection chiefly local, and moſt common to the head and feet.

δ. P. ardor, heat: ſenſe of temperature, local or general, above that of pleaſant and natural coolneſs. As an idiopathic affection occurring chiefly in plethoric and irritable habits. Found alſo as a ſymptom in the ſecond ſtage of fevers, inflammations, and entonic empathema.

2. Parapſis

2. Parapſis expers; total inſenſibility to objects of touch. Divided into,

α. Simplex, numbneſs: confined locally or generally to the ſenſe of touch; ſometimes accompanied with uneaſineſs.

β. Complicata: complicated with inſenſibility in ſeveral or all the other ſenſes.

3. Parapſis illuſoria: imaginary ſenſe of touch or general feeling in organs that have no exiſtence. Common to thoſe who have ſuffered amputation. Found alſo, occaſionally as a ſymptom, in hypochondriaſis and other mental affections.

Order III. CINETICA, [κινητικος, from κινεω, to move.] Diſorders affecting the Muſcles. Irregular action of the muſcles or muſcular fibres; commonly denominated *ſpaſm*. This order contains four genera.

Genus I. *Entaſia*, [from εντεινω, to ſtretch.] Tonic ſpaſm. Irregular muſcular action, producing contraction, rigidity, or both. There are ſeven ſpecies.

1. Entaſia priapiſmus, priapiſm; ſo called from Priapus, the ſon of Venus and Bacchus, who is uſually thus repreſented in paintings and ſculptures. Permanent rigidity and erection of the penis, without concupiſcence. For the moſt part the conſequence of cold, cantharides, clap, or dyſury. It ſeems to ariſe from a ſpaſmodic contraction of the erectores penis, wholly unconnected with the ſtate of fulneſs of the veſiculæ ſeminales. It is a diſeaſe of advanced life. Priapiſmus affords a ſtriking inſtance of ſpaſm ariſing from debility. Camphor and opium at night, with purgatives and diluents in the daytime, are the beſt remedies; but we can in general only palliate; the diſeaſe is ſeldom removed.

2. Entaſia loxia, ſtiff-neck: permanent contraction of the flexor muſcles on the right or left of the neck, drawing the head obliquely in the ſame direction. Three varieties.

α. L. diſpars; from diſparity in the length of the muſcles oppoſed to each other.

β. L. entonica; from exceſs of muſcular action on the contracted ſide.

γ. L. atonica; from direct atony of the antagoniſt muſcles. Found alſo, occaſionally, as a ſymptom, in ſprains or inflammations of the neck; in catarrh; and in contractions of the ſkin of the neck from ſevere burns.

This and the following ſpecies will require to have their treatment varied according to the exciting cauſe; and, when not ariſing from inflammation or injury, may be ſubject to the ſame treatment as that which applies to atony of the muſcles in general. Theſe indications we ſhall more particularly develope under our deſcription of Tetanus.

3. Entaſia articularis, muſcular ſtiff-joint: permanent and rigid contraction of one or more articular muſcles or their tendons. Three varieties,

α. Entonica, articular ſpaſm; from exceſs of action in the muſcles contracted.

β. Atonica; from direct atony of the antagoniſt muſcles.

γ. Inuſitata; from long confinement or neglect of uſe. Found alſo occaſionally, as a ſymptom, in articular inflammations, abſceſſes, and ulcers ſecreting an irritating fluid.

4. Entaſia triſmus, locked jaw: permanent and rigid fixation of the muſcles of the lower jaw. This has alſo three varieties.

α. Tr. naſcentium; attacking infants during the firſt fortnight after birth. Probably the reſult of acrimony in the ſtomach. This is principally found in hot climates; and reſults occaſionally from irritation in the digeſtive organs, and in other caſes from the irritable ſtate of the divided funis. As it is ſeldom cured when once formed, practitioners in hot climates ſhould be careful to keep the bowels open, and inſpect occaſionally the ſtate of the funis.

β. Tr. traumaticus; occurring at every age as the conſequence of a wound, puncture, or ulcer; chiefly in hot climates.

The following varieties of this, and of all the next ſpecies, will be treated of together, as being of the ſame nature, and differing in appearance merely from the peculiar muſcles affected.

γ. Tr. algidus; occurring after expoſure to cold and damp, eſpecially the dew of evening.

5. Entaſia tetanus: permanent and rigid fixation of many or all the voluntary muſcles; with incurvation of the body, and dyſpnœa. Four varieties.

α. T. anticus, (Emproſthotonus, *Auct. var.*) tetanus of the flexor muſcles: body rigidly bent backward.

β. T. dorſalis, (Opiſthotonus, *Auct. var.*) tetanus of the extenſor muſcles: body rigidly bent forward.

γ. T. lateralis: tetanus of the lateral muſcles: body rigidly bent laterally.

δ. T. catochus: tetanus general, with little or no difficulty of breathing; chronic and periodical.

Tetanus is very ſtrictly a nervous malady. It follows mechanical or chemical irritations, under circumſtances of high temperature or irritable habit of body, and ſometimes without theſe circumſtances. The irritations are of various kinds. The moſt common is a wound, puncture, or bruiſe, particularly if a large nerve be wounded. Next in order come gaſtric and internal irritations; and theſe are ſo generally met with even when external injury exiſts, that one might almoſt infer that they always form a link in the chain of morbid action. Another cauſe is put down in medical ſyſtems; viz. the ſudden application of cold to the heated body. From whatever cauſe, however, the irritation ariſes, its effects are exerted in ſuch a manner on the muſcular ſyſtem, as to produce a rigid and permanent degree of contraction. Unlike what is obſerved in nervous diſeaſes in general, this diſorder does not abate when its original cauſe is removed. If the limb be amputated on which the irritating wound has been inflicted, no relief follows. Hence it ſeems that the violence of the irritation in the firſt inſtance cauſes an actual diſeaſe of the nervous ſyſtem capable of exciting continually muſcular action. What this ſtate may be we know not. It has been aſſerted, that it is inflammation of the ſpinal marrow. The ſtate of the vaſcular ſyſtem does not bear out this aſſertion; neither is it borne out by the mode of attack, which generally comes on firſt in the jaw, a part not depending on the ſpinal marrow for its nervous ſupply. Moreover the effect of remedies does not bear out the above propoſition; the moſt extravagant bleedings have often failed to procure relief; while ſtimulants have been ſometimes ſucceſsful. We ſhould conclude, therefore, that tetanus is a diſeaſe which ariſes from irritation of the extremities of nerves, which conſiſts in ſuch a change of the nervous centres of motion, that they continually and exceſſively maintain their ſtimulation on the muſcular powers; and that, when this ſtate of diſeaſe (when it may be) is induced, it goes on independently of the cauſes which produced it. This explanation by no means involves the queſtion, whether or not tetanus be ſpinal inflammation: it only refuſes to adopt the affirmative, on account of the paucity of diſſections on which it is founded.

The firſt ſymptom the attentive practitioner remarks in tetanus, is a tranſient ſtiffening of the limbs during ſleep, and ſometimes ſpaſmodic twitches. Another ſymptom, which is only uſeful as indicating that tetanus is likely to occur, is ſuſpenſion of the alvine diſcharges. The next ſymptom is ſlight ſtiffneſs in the back part of the neck and about the ſhoulders, which, gradually increaſing, impedes the rotatory motions of the head, and alſo its flexion forwards: ſo that the patient cannot look downwards, or to either ſide, without turning his whole body. This uneaſy feeling, being chiefly felt on motion, very much reſembles what occurs from rheumatiſm, but it is accompanied with a ſenſe of general laſſitude and debility. The rigidity now extends from the back of the neck to the

muſcles of the jaw, and of the root of the tongue, ſo that both maſtication and ſwallowing become difficult and painful; and at length impoſſible. The attempt at deglutition is attended with convulſive efforts; eſpecially when liquids are endeavoured to be ſwallowed. So great is the diſtreſs which accompanies theſe convulſions, that the patient becomes very reluctant to renew the trials, and refuſes all nouriſhment; and it ſometimes inſpires him with even a dread of the ſight of water.

As the diſeaſe advances, another ſet of ſymptoms appears, bringing with them a conſiderable increaſe to the ſufferings of the patient. A ſudden and violent pain is felt ſhooting from the lower extremity of the ſternum to the ſpine, in the ſituation of the diaphragm. Theſe ſpaſms recur from time to time, at ſhort intervals; and at each recurrence, give the ſignal for an immediate aggravation of all the other ſpaſms. The muſcles of the neck and jaw are immediately called into violent action; the head is pulled ſtrongly backwards; and the jaw becomes firmly clenched. Theſe periodical acceſſions of ſpaſm become more ſevere, and their effects more durable; ſo that the head continues to be in a ſtate of retraction, and the jaw is permanently cloſed, the teeth being ſo firmly ſet together, as not to admit of the ſmalleſt opening. Such conſtitutes what may be regarded as the firſt ſtage of the diſeaſe; which ſometimes takes up three or four days. At other times the diſeaſe eſtabliſhes itſelf, with its whole train of dreadful ſymptoms, in a few hours; in which caſe the danger is imminent; as death generally takes place in from twenty-four to forty-eight hours, and the patient very rarely paſſes over the third day.

The continuance of the diſeaſe, if the patient ſurvive the immediate attack, is marked by the increaſing ſpaſm of the diaphragm, which now returns every ten or fifteen minutes, and is inſtantly ſucceeded by a ſtronger retraction of the head, and rigidity of the muſcles extending down the back, along the ſpine, and affecting even thoſe of the lower extremities. Their contractions increaſing in force, the body is frequently raiſed in the form of a bow, reſting upon the head and feet alone: a ſtate which is more particularly denominated *opiſthotomos*. The countenance is pale and contracted; the maſtoid, coraco-hyoid, and ſterno-hyoid, muſcles, together with the others concerned in deglutition, and the deltoid and pectoral muſcles, are moſt violently contracted, ſo that the ſhoulders are ſtrongly raiſed forwards, and the arms are ſtretched out, or drawn acroſs the body; but the wriſts and fingers ſeem not to be affected. In a few ſeconds a remiſſion takes place; the ſhoulders and arms recline, and the inferior extremities relax; yet not ſo entirely, but that generally ſuch a degree of rigidity continues as to prevent their being bent, even when this is attempted by another perſon. The muſcles on the ſides and fore part of the neck continue ſtill contracted, although not ſo ſtrongly; but their action is overcome by the number and ſtrength of the poſterior ones; ſo that the contraction of the head conſtantly remains. The patient breathes quick for ſome minutes, as if he had been exceſſively exerciſed, and the pulſe is ſmall, fluttering, and irregular; but both become more calm and ſlow. The face is ſometimes pale in the intervals, but oftener fluſhed; and the whole countenance expreſſes ſtrong appearances of the moſt melancholy diſtreſs; as well on account of the terror the patient feels at the approaching paroxyſm, as from the torture he has ſuffered from the laſt, of which the painful contractions he ſtill feels perpetually remind him. He, for the moſt part, deſires to lie ſtill as much as poſſible, and to avoid all attempts at drinking, ſpeaking, or any kind of motion; all of which are apt to occaſion a return of the ſpaſm in all its horrors. Some, indeed, are ſolicitous to try a change of poſition, in hopes of obtaining one of greater eaſe; but the act of turning the patient never fails to bring on an attack of the convulſion, by which the head is drawn back to the ſpine: and it is at length found, that the beſt means of avoiding this is for him to lie perfectly ſtill on the back.

It may, in general, be obſerved, that the extenſor muſcles are affected with ſpaſm before the flexors. In the lower extremities, indeed, both the flexor and extenſor muſcles are commonly at the ſame time affected, and keep the limbs rigidly extended. The flexors of the head, and the muſcles that pull down the lower jaw, become affected in the progreſs of the diſeaſe, together with the abdominal muſcles; ſo that the belly is ſtrongly retracted, and feels hard, like a piece of board. The ſpaſm of theſe and the other flexor muſcles, becoming ſo powerful as to balance the action of the extenſors, is a circumſtance that marks the advance of the diſeaſe, and may be regarded as conſtituting the commencement of a *third ſtage*. In this ſituation the body and limbs are perfectly ſtraight and rigid, and incapable of being moved in any way; and it is to this condition that the term *tetanus* has been more eſpecially applied. It is a ſtate of the moſt exquiſite ſuffering: the patient is on the rack from the continual recurrence of the ſpaſm, which has ſcarcely any remiſſion. The recti muſcles of the abdomen often contract unequally, producing the appearance of hard balls in particular parts. The whole belly is drawn inwards, and does not yield in the leaſt to the deſcent of the diaphragm in inſpiration. Although the lower extremities are always rigid at this period, yet their action is ſo violent during the height of the paroxyſms, that, were it not for the ſtanders-by, the patient would be projected feet-foremoſt off the bed; or would, at other times, be puſhed upwards with ſuch an impetus as to ſtrike the head with great force againſt whatever might happen to be in the way. Occaſionally, the flexor muſcles acquire the preponderance over the extenſors, and the trunk of the body is bent forwards, the chin being fixed to the breaſt. This is what has been called *emproſthotonos*, and occurs only in the moſt violent, and of courſe the leaſt frequent, form of the diſeaſe. It would appear from ſome caſes reported by Sauvages, that theſe oppoſite ſtates are diſpoſed to alternate with one another.

In extreme caſes, there are hardly any of the voluntary muſcles that remain in their natural ſtate. The face and eyes are diſtorted; the tongue is ſuddenly darted out between the teeth, and often miſerably lacerated from their cloſing at the ſame moment. Even the ſmall muſcles of the ear partake of the ſpaſmodic action, which ſo univerſally prevails in the ſyſtem. While the tongue is thruſt out, the muſcular fleſh, which is ſituated between the arch of the lower jaw and the upper part of the trachea, is drawn upwards within the throat. The countenance is much contracted; a general ſweat breaks out; the eyes are watery and languid; and a pale or bloody froth bubbles out from between the lips. Tetanus, in theſe violent forms, is perhaps the moſt painful diſeaſe that can affect the human frame. So exquiſite a degree of pain would ſcarcely be compatible with life, were it not occaſionally aſſuaged by the ſhort and imperfect remiſſions of ſpaſm which occur. A more continued and ſevere ſpaſm, or a general convulſion, generally finiſhes the tragedy, and releaſes the unhappy victim from all his miſery: or, if already too exhauſted by the ſeverity of pain to admit of this mode of termination, delirium often enſues, protects the patient by a happy inſenſibility to further ſuffering, and ſmooths the avenue to death, which is then preceded by a general relaxation of the ſpaſms.

Such are the ſymptoms which peculiarly belong to tetanus: and it is, perhaps, the moſt remarkable circumſtance attending the diſeaſe, that hardly any function is primarily affected, except that of muſcular action. The ſenſes and appetites are perfect and entire; the intellectual functions are undiſturbed; and the natural functions proceed in their uſual courſe. Fever is neither an eſſential nor a common attendant on the diſeaſe. In the firſt ſtage, when the ſpaſm is confined to a few muſcles, the pulſe is not affected: it becomes accelerated only when the ſpaſmodic actions are general; and this merely in conſequence, as it would appear, of the mechanical

effect

effect produced on the blood-veſſels by the contractions of the muſcles, which will hurry on the circulation, and throw the blood upon the heart in larger quantity than uſual, rendering the pulſe contracted, frequent, and irregular. The reſpiration is hurried from the ſame cauſe, and the temperature of the body, as might be expected, is increaſed in the ſame proportion. That theſe ſymptoms are not the effect of fever, appears from the ſtate of the blood, which is found to be of a looſer texture than natural, and never exhibits the buffy coat, as in inflammatory diſeaſes. On ſome occaſions, indeed, when the diſorder is very violent, the arterial actions are increaſed, and a febrile ſtate prevails; and this appears to take place more frequently when the diſeaſe has originated from cold, than when it has been excited by wounds. The ſkin is at firſt natural, but, as the diſeaſe advances, is covered with a cold ſweat. The tongue is always moiſt. Vomiting ſometimes takes place early in the complaint, but it commonly ſubſides in the progreſs of it: it is even uſual for the appetite of hunger to remain through the whole courſe of the diſeaſe; and what food can be got down appears to be ſufficiently well digeſted. Some local effects ſeem to be attributable to the contractions of the abdominal muſcles. The ſphincter of the bladder is occaſionally affected with ſpaſm, ſo as to impede the diſcharge of urine, which is voided with pain and difficulty: at other times, its ſecretion is ſuppreſſed. When it can be obſerved, it is ſtated as being high-coloured, and ſomewhat turbid. The bowels are found to be, in every inſtance, obſtinately coſtive, a ſtate which may partly be accounted for by the effect of opiates, which are ſo generally adminiſtered for the cure; but which, independently of this cauſe, appears to be inherent in the diſeaſe itſelf. The bowels require the moſt draſtic purgatives; and there is a great ſenſe of uneaſineſs about the precordia. In the latter ſtages of this diſorder, indeed, when the powers of life begin to decline from the vaſt expenditure of energy occaſioned by the violent muſcular actions, every function in the ſyſtem partakes of the general diſorder; the intellect gives way, and the patient ſinks from exhauſtion alone, if a general convulſion does not occur to haſten his end. It is mentioned by Dr. Cullen, that, in ſeveral caſes, a miliary eruption has appeared upon the ſkin; but he expreſſes a doubt whether this was a ſymptom of the diſeaſe, or the effect of a certain treatment of it. It has not been obſerved, he adds, to denote either ſafety or danger, or to have any effect in changing the courſe of the diſtemper.

Tetanus ariſing from wounds is in general ſlower in its progreſs than that which proceeds from cold: but is attended with more danger to life. It is often eight or ten days, and ſometimes much longer, after the infliction of a wound, before the firſt ſymptoms of tetanus make their appearance: and this frequently happens when the effects of the injury on the part itſelf appear to have ſubſided; when the wound has healed, and no pain or uneaſineſs has remained.

Sometimes the diſeaſe is very ſudden in its acceſſion, when it is alſo more ſevere. Generally, however, it makes its attack in the gradual manner before deſcribed. The moſt rapidly fatal caſe that has ever been recorded, is one that we have on the authority of the late profeſſor Robiſon of Edinburgh. It occurred in a negro, who was a waiter at a tavern, and who happened to ſcratch his thumb with the broken edge of a china plate, and who died of tetanus a quarter of an hour after this apparently ſlight accident.

In the late campaigns of our armies in the peninſula of Spain and Portugal, according to the report of ſir James Macgrigor, tetanus occurred in every deſcription, and in every ſtage of wounds, from the ſlighteſt to the moſt formidable, from the healthy and the ſloughing, from the inciſed and lacerated, from the moſt ſimple and moſt complicated. It occurred at uncertain periods; but it was remarked, that, if it did not commence before twenty-two days from the date of the wound, the patient was ſafe.

As to the appearance of a ſore which gives riſe to tetanus, this is by no means peculiar. Some have ſtated that the ſore is generally in an irritable and morbid ſtate, and by no means diſpoſed to ſuppuration. M. Larrey ſtates that the wound is generally dry, or affords only a ſcanty ſerous exudation. Certain it is, however, that tetanus, as before noticed, is no uncommon attendant on wounds completely healed.

It has been ſuppoſed by many, that tetanus aroſe from the partial diviſion of ſome nervous fibres, in conſequence of which the undivided filaments were unequally and violently ſtretched: a ſtate which would be remedied by their complete diviſion. Experience, however, the ſtubborn enemy to ſo many hypotheſes, has by no means proved favourable to this opinion. From the more violent forms of the diſeaſe hardly any inſtance of recovery has been known to take place. On the other hand, the mere protraction of the ſymptoms is an indication of the comparative mildneſs of the diſeaſe. Indeed it is a remark as old as Hippocrates, that, if a patient ſurvives the fourth day without ſuffering an exacerbation of his complaint, he is ſafe. Dr. Parry has adduced the velocity of the circulation as an uſeful criterion of the danger of the diſeaſe; and obſerves, that, if the pulſe be not above 100 or 110 by the fourth or fifth day, the patient almoſt always recovers; but, if it be quickened early, that it proves fatal; and yet there are a few inſtances of recovery where the pulſe has riſen to 120 on the firſt day. We muſt remark however, that, in upwards of twenty caſes of this diſeaſe which Dr. Morriſon witneſſed among negroes, the pulſe was in no inſtance accelerated in the manner related by Dr. Parry. This author never knew it above 98, whether the termination was favourable or fatal. The following prognoſtic paſſage we ſhall tranſcribe. "When the diſeaſe comes on gradually; when for the firſt three or four days the muſcles of the jaws are ſolely affected, and that perhaps not in any alarming degree; when the abdomen is not preternaturally hard, or the bowels obſtinately coſtive; when the ſkin is moiſt and moderately warm, and above all when the patient enjoys ſleep; we may (by the means hereafter to be ſpoken of) entertain ſtrong hopes of an eventual recovery. An increaſed flow of ſaliva, where mercury has or has not been uſed, is always to be regarded as favourable; the leſs the general air of the countenance is changed, the better. On the other hand, when the attack is violent and ſudden; when the muſcles of the neck, back, and abdomen, are rigidly contracted; when the patient complains of a ſhooting pain from the ſternum towards the ſpine; when the belly feels hard like a board, and the leaſt preſſure thereon produces ſpaſmodic twitchings or contractions of the muſcles of the neck, jaws, &c. or when the ſame effect is brought about by the preſentation of any ſubſtance (ſolid or fluid) near the mouth, we have much reaſon to fear a fatal termination. Spaſmodic ſtartings of the muſcles ſet in ſometimes early in the diſeaſe, and, recurring every eight or ten minutes, are to be regarded as very unfavourable."

The only diſeaſe which tetanus can be confounded with, is rabies contagioſa. In the latter, however, there is generally fever; frequently increaſed heat of the body. In rabies, vomiting is common at the commencement; not ſo in tetanus. The delirium, too, of hydrophobia, is abſent in tetanus. The ſhooting pain from the ſternum to the ſpine is ſeldom wanting in tetanus or preſent in the other.

Few patients fall a ſacrifice after the ninth or tenth days, which period they never could have attained, unleſs the violence of the complaint had in a great meaſure ſubſided. In this milder form, however, it may be prolonged ſeveral weeks; and ſometimes the ſpaſmodic diſpoſition remains even for months, before health is completely reſtored. The pulſe, in theſe caſes, continues

ſlow and hard, and the belly bound: but, if blood be drawn, it does not exhibit any difference from its uſual ſtate. Under every circumſtance of recovery, indeed, the convaleſcent labours long under general debility, and cannot, for months, raiſe himſelf from a ſupine or recumbent poſture without aſſiſtance, nor without pain.

Occaſional deviations from the courſe above deſcribed are met with in different caſes. The moſt ſingular of theſe anomalies is the one recorded by ſir Gilbert Blane, in which tetanus prevailed to a very conſiderable extent, without affecting the patient with the leaſt degree of pain. The ſpaſms were, in this inſtance, accompanied with a tingling ſenſation, which was even rather agreeable than diſtreſſing. The caſe, however, terminated fatally; but, to the laſt, no pain was experienced. In two caſes mentioned by the ſame author, the ſpaſms affected only the ſide of the body in which the wound was ſituated.

The reſult of diſſections of patients who have died of tetanus throws little light on the nature of this terrible affection. Sometimes there are found ſlight effuſions within the cranium; but, in general, no morbid appearance whatever can be detected in the head. There appears to be always more or leſs of an inflammatory appearance in the villous coat about the œſophagus and ſtomach in the neighbourhood of the cardia. Beſides the redneſs and increaſed vaſcularity of theſe parts, M. Larrey ſtates that he found the pharynx and œſophagus much contracted, and covered with a viſcid reddiſh mucus. Dr. M'Arthur found, in ſeveral caſes, the inteſtines much inflamed; and in two of them a yellow waxy fluid, of a peculiar offenſive ſmell, covering their internal ſurface: but whether the inflammation was primary, or only a conſequence of the preſſure of the abdominal muſcles, which contract ſo violently in this diſeaſe, he is unable to decide. More recent diſſections have diſplayed inflammation and its conſequences in the ſpinal marrow; but the caſes hitherto publiſhed are too few in number to allow us to draw general concluſions from them.

The obſcurity which involves both the *ratio ſymptomatum* and the proximate cauſe of tetanic affections, has occaſioned the practice in theſe diſorders to be moſtly empirical. The indication of cure which is generally applicable in all diſeaſes, namely the removal of the exciting cauſes, has but little place in a morbid condition, which is the conſequence of cauſes that in general have ceaſed to act, or which it is not in our power either to remove or control. In thoſe caſes where we could ſuppoſe local irritation to be ſtill operating, the moſt effectual method of counteracting its effects on the ſyſtem, would obviouſly be to intercept all communication between the ſeat of the irritation and the ſenſorium. If, however, the diſeaſe has already eſtabliſhed itſelf, and the ſevere ſymptoms have come on, it does not appear that this would ſucceed in arreſting the courſe of the diſorder. Experience has but too fully ſhown, that amputation of the limb from the injury of which the tetanus had ariſen, will very ſeldom procure even a mitigation of the ſymptoms, if performed after a certain period from their firſt appearance. This plan was fully tried in our army at Toulouſe, and totally failed. In ſome inſtances, however, it is ſaid that a favourable change has enſued, and that patients have even recovered by the ſacrifice of the wounded limb: and it has been remarked, that the ſpaſms relaxed immediately on the diviſion of the ſoft parts by the knife, and before the ſaw was applied to the bone, in order to complete the operation. It is, therefore, highly probable, that *the free diviſion of the parts above the wound*, or ſtill more certainly the amputation of the limb, would, at a certain ſtage of the affection, ſecure the patient from the approach of tetanus. But the difficulty is here to eſtimate the probability of the patient's having the diſeaſe, as nothing ſhort of the certainty of its being at hand could well juſtify the operation.

As it is matter of experience, that an early and highly irritable and painful condition of the wound has a tendency to excite tetanus, as well as a ſtate in which the diſcharge is of a peculiar unhealthy character, or is ſuppreſſed altogether, our immediate object ſhould be to allay as much as poſſible the local irritation, and to re-eſtabliſh a healthy ſecretion of pus. Mechanical cauſes of irritation ſhould as much as poſſible be obviated, by early attention to remove ſplinters of bone, balls, or other foreign bodies that may be lodged in the wound. Poultices and ſoothing applications will anſwer the double purpoſe of quieting local inflammation, and bringing on healthy ſuppuration: the irritability of the ſurface may ſometimes be moſt effectually deſtroyed by lunar cauſtic; after which, an emollient poultice may be applied. An oppoſite plan of treatment has been recommended by Dr. Ruſh; namely, that of exciting conſiderable inflammation in the wounded part, by epithems of turpentine, and other highly-ſtimulating applications; which, though it may in certain caſes have ſucceeded in preventing tetanus, does not appear to be generally applicable, and ſeems accordingly to have been abandoned. On the contrary, it has of late been the univerſal practice in the navy, to add tincture of opium to the dreſſings applied to wounds, with a view of preventing tetanus. With the intention of re-exciting ſuppuration where there is no diſcharge, M. Larrey recommends the application of bliſters as near as poſſible to the wound, and adduces inſtances of ſucceſs from this mode of treatment.

But the cure of tetanus, when once it has commenced, is to be ſought for more by the uſe of general than of topical remedies. The ſeat of the diſorder has been transferred to the cranial and ſpinal nervous ſyſtem, and our efforts muſt be directed to allay their inordinate action. Bleeding has received the fulleſt trials in tetanus. Occaſionally this has cured the diſeaſe; occaſionally it has mitigated the ſufferings of the patient, and ſmoothed the way towards death; and ſo perfectly innoxious does it ſeem in all caſes, that it may be fearleſsly tried in all. A caſe has been related in which the application of leeches to the ſpine was attended with a good effect. It is given, however, on the authority of one who conceived that ſpinal inflammation and tetanus were the ſame.

The affuſion of *cold water* has in general been attended with great benefit. It is a practice particularly recommended by Dr. Wright, in the London Medical Obſervations, and is ſanctioned by the concurring teſtimonies of Dr. Cochrane in the Medical Commentaries, and of Dr. Currie in his Medical Reports, as well as by many other practitioners. A large pailful of cold water ſhould be thrown upon the patient every two or three hours; he is to be immediately wiped dry, and laid in bed after each affuſion, and an opiate draught adminiſtered. Some remiſſion of the ſpaſms will in this way be generally obtained; and many inſtances are upon record, of complete cures being effected by perſeverance in this plan. Before the introduction of this practice, the warm bath was very commonly employed; the patient, after uſing it, being placed in bed, without being dried, between two blankets, with a view to bring out a ſweat. It does not appear, however, that this plan was attended with any general or permanent advantage; and is certainly inferior in efficacy to the cold affuſion.

But neither bleeding nor cold affuſion offers ſo much to depend on in the cure of tetanus as active purging. The diſordered ſtate of the alvine diſcharges in this diſeaſe firſt led Mr. Abernethy to adopt the practice of purging for its cure; and of late the moſt unequivocal teſtimonials of its efficacy have ariſen from all quarters. Mr. Abernethy aſked what was the ſtate of the bowels between the infliction of external injury and the coming on of tetanus? and the anſwer to this is pretty well known, the bowels are generally in a coſtive or otherwiſe morbid condition. And ſince this fact has been known, the proportion of tetanic caſes from wounds has been much leſs than formerly. Under theſe circumſtances, it

is therefore highly neceſſary to purge the patient as ſoon as the diſeaſe has made its attack. Should triſmus be ſo great that the opening of the jaws is prevented, one or more teeth muſt be drawn, and purges conveyed by means of the elaſtic catheter and ſyringe into the ſtomach in large and repeated quantities; at the ſame time clyſters muſt be given. Men of the beſt experience recommend ſalivating the ſyſtem, as early as poſſible, with mercury; and conſequently direct us to give calomel by the mouth, and rub mercury-ointment along the courſe of the ſpine and other parts, with a view to induce ſalivation; and this has often had a good effect. Opium is a very uſeful remedy; it allays the irritation of the nervous ſyſtem in an extraordinary degree; and, though we have heard much of the *ſtimulating* effect of opium, we cannot but view it as directly *ſedative* as far as regards the ſpinal marrow and medulla oblongata, notwithſtanding it may have a ſtimulating influence on thoſe ſuperior portions which are conſidered by moſt philoſophers to be the inſtruments of the mental operations. At all events, experience decidedly favours the uſe of opium in alleviating, if not in curing, tetanus. It muſt be given in large doſes: from one drachm to half an ounce of laudanum may be preſcribed according to circumſtances; always providing that its operation be cloſely watched, and its repetition regulated by its effects.

We paſs over a variety of drugs which have obtained a name for the cure of tetanus, becauſe the caſes related of their efficacy are ſo few as to warrant us in ſuppoſing them ſpontaneouſly cured. Reaſoning from the ſedative effect which the rubbing of belladonna on the forehead has upon the eye, we would ſuggeſt that this meaſure might be tried with advantage along the courſe of the ſpine for the relief of tetanus. Its internal exhibition might likewiſe be uſefully reſorted to.

The uſe of bliſters has not been attended with much ſucceſs in this diſeaſe. They are uſeful adjuncts applied along the ſpine. As ſhowing in a ſtrong light the good effects of counter-irritation in this diſeaſe, we ſhall probably be pardoned by our readers for preſenting the following account of a barbarous remedy uſed in the Tonga iſlands. The inhabitants of theſe places adopt a remedy which they borrowed of thoſe of the Fiji iſlands. It conſiſts in the operation of *tocolóſi*, or paſſing a reed firſt wetted with ſaliva into the urethra, ſo as to occaſion a conſiderable irritation and diſcharge of blood; and, if the general ſpaſm is very violent, they make a ſeton of this paſſage, by paſſing down a double thread, looped over the end of the reed; and, when it is felt in the perinæum, they cut down upon it, ſeize hold of the thread, and withdraw the reed, ſo that the two ends of the thread hang from the orifice of the urethra, and the doubled part from the artificial opening in the perinæum; the thread is occaſionally drawn backwards and forwards, which excites very great pain and abundant diſcharge of blood. The latter operation Mr. Mariner ſaw performed ſeveral times; but only twice for tetanus, ariſing in both inſtances from wounds in the foot; in theſe caſes the ſpaſms, but particularly the convulſive paroxyſms, were exceedingly violent, extending to the whole body, neck, face, trunk, and extremities; but in neither caſe was the jaw permanently locked, though on every caſe it was violently cloſed for a few ſeconds. In both caſes the diſeaſe came on ſuddenly, three or four days after the wound was received, which was from an arrow not barbed. The moment the ſymptoms became evident, tocolóſi was performed. In the ſhort ſpace of two hours, one of them was greatly relieved, and the other in about ſix or eight hours. The following day, the one was quite well, and afterwards had no other attack; conſequently the thread was withdrawn: but the other, on the ſecond day, was not quite free from ſpaſmodic ſymptoms; and, a paroxyſm coming on, the ſeton was moved frequently, which in two or three hours gave him great relief, and he afterwards had no other attack; it was thought prudent, however, to keep in the ſeton till the fourth or fifth day, when it was withdrawn. The effect of this operation was a conſiderable pain and tumefaction of the penis, but which gradually ſubſided in about five or ſix days. The artificial openings in both caſes healed ſpontaneouſly, without any difficulty. (Mariner's Account of the Tonga Iſlands.)

6. Entaſia acrotiſmus; failure or ceſſation of the pulſe; with little or no diſturbance of perception or voluntary power. Two varieties.

α. A. univerſalis; extending over the whole arterial ſyſtem; and connected with ſternalgia. The inſtances on record of this affection are few. The following liſt we copy from Dr. Good. "Suſpenſions of pulſation, without any other affection of the ſyſtem. *Anecdotes de Médecine*, p. 199. *Marcell. Dom.* lib. vi. cap. 2.—For ſeven days, without other affection. *Riodlin*, Lin. Med. 1696.—Seven days before death. *Valiſneri*, Opp. iii. p. 278.—Chronic, and continuing through the whole term of life. *Berryat* Hiſt. de l'Acad. des Sciences à Paris, 1748." See alſo Mr. J. Hunter's affection in Sir Everard Home's Life of him, prefixed to his Treatiſe on Inflammation, p. xlvi. conſiſting of a total ſuſpenſion of pulſation for nearly an hour, with ceſſation of involuntary breathing for the ſame time; countenance pale and ghaſtly; faculties of the mind, and power over the voluntary muſcles, perfect; internal ſtimulants uſeleſs. Notwithſtanding the high authority laſt quoted, it does ſeem a circumſtance contradictory to all the phenomena of life that have been obſerved, that the faculties of the mind, and the power of the voluntary muſcles, could continue perfect while the circulation was ſuſpended. It ſeems more reaſonable to ſuppoſe (and indeed ſome warm advocates of Mr. Hunter's doctrines do ſuppoſe), that the action of the heart was not in his caſe entirely ſuſpended, but at the ſame time ſo far leſſened that no pulſation was conveyed to the hand. The ceſſation of pulſation might actually take place in the wriſt from the feeble action of the heart. The caſe of Mr. J. Hunter is however one of much intereſt, and worthy of attentive conſideration.

Dr. Cheyne, in one of his medical treatiſes, relates a caſe, the accuracy of which is eſtabliſhed by an irrefragable combination of evidence, of a man who could die, to all appearance, at any time that he choſe, and, after having lain for a conſiderable period exactly as a corpſe, was able, as it ſhould ſeem, by a voluntary ſtruggle, to reſtore to himſelf the appearance and all the various functions of animation and intellect. It is to be inferred from the latter part of the ſtory, that the unnatural and painful exertion by which this perſon aſſumed the ſemblance of diſeaſe, produced at length a really fatal reſult. Death would be no longer mocked with impunity. The counterfeit corpſe, a few hours after its revival, relapſed into a ſtate which was capable of no ſubſequent reſuſcitation. But the caſe is ſo intereſting and remarkable as to deſerve our giving it in all the detail with which Dr. Cheyne preſents it to his readers. "He could die or expire when he pleaſed; and yet, by an effort, or ſomehow, he could come to life again. He inſiſted ſo much upon our ſeeing the trial made, that we were at laſt forced to comply. We all three felt his pulſe firſt; it was diſtinct, though ſmall and thready; and his heart had its uſual beating. He compoſed himſelf on his back, and lay in a ſtill poſture for ſome time; while I held his right hand, Dr. Barnard laid his hand on his heart, and Mr. Skrine held a clear looking-glaſs to his mouth. I found his pulſe ſink gradually, till at laſt I could not feel any by the moſt exact and nice touch. Dr. Baynard could not feel the leaſt motion in his heart, nor Mr. Skrine perceive the leaſt ſort of breath on the bright mirror he held to his mouth. Then each of us, by turns, examined his arm, heart, breath; but could not, by the niceſt ſcrutiny, diſcover the leaſt ſymptoms of life in him. We reaſoned a long time about this odd appearance as well as we could; and, finding he ſtill continued in that condition, we began to conclude that he had indeed carried the experiment too far; and at laſt we were ſatisfied that he was

actually dead, and were juſt ready to leave him. This continued about half an hour. By nine o'clock in the morning, in autumn, as we were going away, we obſerved ſome motion about the body, and upon examination found his pulſe and the motion of his heart gradually returning; he began to breathe gently and ſpeak ſoftly. We were all aſtoniſhed to the laſt degree at this unexpected change; and, after ſome further converſation with him and with ourſelves, went away fully ſatisfied as to all the particulars of this fact, but not being able to form any rational ſcheme how to account for it. He afterwards called for his attorney, added a codicil to his will, and calmly and compoſedly died about five or ſix o'clock that evening."

β. A. particularis; confined to particular parts of the arterial ſyſtem. "Over the whole ſyſtem except the heart, which pulſated violently. *Beggi* in Pachioni opp.—Confined to the arteries of a ſingle arm. *Camerar.* Memorab. Cent. ii. p. 54." It is ſometimes the reſult of aneuriſm or partial paralyſis. This is by no means rare, certain irregularities with regard to particular arteries being often remarked.

7. Entaſia ſyſtremma, cramp. (Tetanus dolorificus, *Darwin.*) Sudden and rigid contraction and convolution of one or more muſcles of the body; moſtly thoſe of the ſtomach and extremities, vehemently painful, but of ſhort duration. Chiefly produced by a ſudden chill, as that of the night-air, or of water when ſwimming in it; often occaſioned by an uneaſy poſition, or undue diſtention of the muſcles; and hence frequently attacking in ſleep. Found alſo, as a ſymptom, in cholera; and occaſionally in pregnancy and during labour.

Cramp, or ſpaſm, is one of the moſt painful diſeaſes we are liable to; at the ſame time it is the leaſt dangerous. Change of temperature, and agents which increaſe the tranſmiſſion of nervous impulſe to the cramped part, readily effect a cure. Of courſe this does not apply to ſpaſms ariſing from diſtant irritations (for theſe latter muſt then be removed), or to the ſpaſms of the parturient ſtate, which are induced by preſſure on nerves or blood-veſſels.

Genus II. *Neuralgia*, [from νευρον, a nerve, and αλγος, pain.] Contraction and diſtortion of a particular muſcle or group of muſcles, with partial trepidations, and acute lancinating pains in the courſe of the principal nerves; paroxyſm ſhort, recurring at irregular periods. There are two ſpecies deſcribed by Dr. Good, which however are perfectly analogous.

1. Neuralgia faciei, tic douloureux: contraction and diſtortion ſeated about the ala naſi and upper lip; pains ſhooting to the orbit; often to the ear, and over the cheek, palate, teeth, and fauces.

2. Neuralgia pedis: racking and intolerable pain ſeated about the heel; tremuloufly ſhooting in irregular directions towards the ancle and bones of the tarſus. This ſpecies is deſcribed from a very marked caſe which occurred to Dr. Good in a gentleman, otherwiſe of good health, about forty-five years of age, who had been long a victim to it. The pain during the paroxyſm was ſo ſevere as nearly to make him faint, and was generally compared by him to that of ſcalding verjuice poured over a wound. Here the tibial branch of the iſchiatic nerve ſeemed to be affected, and perhaps the peroneal.

In this diſeaſe (we ſpeak chiefly of the firſt ſpecies), the pains vary in their degree of intenſity; at one time exciting the moſt piercing cries, and diſtracted writhings and motions, in the miſerable patient; while at another they are more bearable. When at the acmè of their violence, the parts affected are often convulſed, and ſometimes various contortions and grimaces are obſervable. Theſe are to be diſtinguiſhed from the convulſive twitchings of the muſcles with which the diſeaſed nerves communicate, and which are occaſioned by irritation from the exceſſive pain; while the contortions and grimaces are voluntary, being cauſed by the patient's writhing and twiſting from the agony of his torture, and may be prevented by a firm reſolution to reſiſt any impulſe of ſhrinking from the attack.

The pain does not always confine itſelf to the ſeat of the diſeaſe, but darts with the rapidity of lightning to the neighbouring parts, ſhooting in different directions like radii from a centre. It rarely gives warning of its approach, and often the firſt ſign of an attack, is the patient's ſtarting up in a ſtate little ſhort of phrenſy. In this condition, ſome patients beat the part with violence, or forcibly rub it with ſome rough ſubſtance till excoriation takes place; and, in ſome inſtances, they have ſucceeded in thus diminiſhing the intenſity of the pain.

The pains are more frequent during the day than in the night, probably from there being fewer cauſes of irritation during the latter ſeaſon; and they are more frequent during converſation than in ſilence; and ſtill more ſo at the time of maſtication, when the attacks often ſucceed each other with ſuch rapidity as to appear like one continued paroxyſm, with ſcarcely an interval of ceſſation. The eye at times is red, inflamed, and watery, as we ſometimes obſerve in ſevere tooth-ache; in other caſes it is particularly dry; and in ſome patients a copious flow of ſaliva ſucceeds a paroxyſm. In general, only one ſide of the face is affected with this dreadful malady; but, as there are caſes recorded in which both ſides ſuffered at the ſame time, we cannot lay it down as a certain characteriſtic of the diſeaſe. Fouquet obſerved at Montpellier two women who had both cheeks affected at the ſame time; and Pujol knew a lady, who, for ſeveral months, had the pain in one cheek, which after a while was free from pain; but the other cheek was immediately attacked in the correſponding place, the pain continuing for two months, and then reſuming its former poſition.

When the diſeaſe continues for a great length of time with increaſing violence, the patient can neither obtain reſt by night nor by day, and his appetite fails. The complaint uſually terminates without any apparent cauſe, leaving the patient for a time to enjoy the comforts of life. But whoever has had one attack may with conſiderable certainty anticipate another; and, though he is to-day well, and free from all pain, to-morrow's dawn may uſher in a renewal of his torment. So varied is the duration of this affection, and ſo limited is our knowledge of it, that we can aſſign no determinate or even probable period for its continuance; and, unleſs a cure is effected, it returns at intervals more or leſs frequent, and with increaſed violence, till the great final cataſtrophe, which, however, it does not ſeem to accelerate. For, though Dr. Banſch is ſaid to have died of it, we can place little reliance on the report; and ſubſequent caſes and obſervations do not corroborate ſuch a ſuppoſition.

This malady is confined to the nervous ſyſtem, the patient ſeldom diſplaying fever or acceleration of the pulſe. It is moſt generally remarked in perſons who have an unuſual degree of nervous irritability in general, and more eſpecially when this nervous temperament is joined to bilious and gaſtric diſturbance. It is increaſed by all circumſtances which impair the tone of the digeſtive organs, or by any local irritation; in ſome caſes even by the trifling one of ſhaving.

A variety of ſpecifics for neuralgia have come in and gone out of faſhion. They have generally been medicines of the narcotic and ſedative claſs; as cicuta, belladonna, &c. and might have deceived their employers leſs often than has been the caſe, had their exhibition been preceded by medicines which act on the alimentary canal, and its collatitious viſcera. Indeed the ſtate of the digeſtive organs is the firſt thing to be attended to in neuralgia, as in ſo many other diſeaſes. Mr. Abernethy is ſaid to have cured many patients by this alone; and, when it does fail to cure, it never we believe fails to mitigate. We ſhould therefore urge moſt ſtrongly the ſtrict regulation of the digeſtive organs in tic douloureux. As the local detraction has a ſedative operation on excited

nerves

nerves, even when plethora is not the cauſe of the excitation, leeching or cupping ſhould be alſo reſorted to in all ſevere caſes. If the pain continues unabated, belladonna or conium may often be preſcribed with advantage; and we give preference to the former, as being more powerful.

Many caſes of Neuralgia have been cured by dividing the diſeaſed nerve. Nevertheleſs it has ſo often failed entirely, in conſequence of the intenſity of ſome nervous fibril which has cauſed the irritation; its effects have been ſo little permanent, and the operation itſelf ſo painful; that it is of all others the laſt ſurgical operation we ſhould undertake. It ſeems that in neuralgia, as in nervous irritation in general, the irritant being removed, the diſeaſe ſtill continues from ſome internal change having taken place in the nerve itſelf. It is in ſuch caſes that arſenic is a uſeful remedy. The uſe of this powerful mineral has however lately been ſuperſeded by the carbonate of iron introduced by Mr. Hutchinſon: it is given in doſes of a half drachm or a drachm twice or three times a-day. It is in this advanced and habitual ſtage of the diſeaſe that electricity ſometimes performs a cure.

Genus III. *Clonus*, [i. e. agitation, perturbation; from κλονεω, to ſhake.] Convulſive ſpaſm. Generic characters—Forcible agitation of one or more muſcles in ſudden and irregular ſnatches. There are ſix ſpecies.

1. Clonus ſingultus, hiccough: convulſive catch of the reſpiratory muſcles, with ſonorous inſpiration; iterated at ſhort intervals.

This diſeaſe is merely ſympathetic of diſtant irritation. Flatulence of the ſtomach, diſeaſe of the liver, or indeed of any of the viſcera contiguous to or ſituated near the diaphragm, will cauſe the ſymptom. It is often found to attend ſevere operations; and is well known as a fatal indication in mortifications. Otherwiſe it may ſometimes exiſt for days without injury to the patient.—It is ſometimes periodic. *Bonet*, Sepulchr. lib. iii. Obſ. 4. Sometimes chronic; and has continued three months. *Schenck*, lib. iii.—Four years. *Bartholin.* Hiſt. Anat. Cent. ii. hiſt. 4.—Twenty-four years. *Alberti*, Diſſert. Caſus ſingultus chronici. Hall, 1743. See alſo *Hunter* on Blood, p. 410.

2. Clonus ſternutatio, ſneezing: irritation of the membrane of the noſtrils, producing ſudden, violent, and ſonorous, expiration through their channel.—At times periodic. *Breſl. Sammlung.* 1725. ii. 82. *Eph. Nat. Cur.* Cent. V. Obſ. 19.—Of long continuance. *Horſtii* Opp. ii. 298.—Three hundred times in a paroxyſm. *Eph. Nat. Cur.* ann. iii. obſ. 138. It is particularly induced by phlogoſis of the mucous expanſion of the air-paſſages. Hence its frequency in meaſles, catarrh, &c.

3. Clonus palpitatio, palpitation: irregular and vibratory motion of the heart or arteries. There are three varieties; the moſt frequent of which is,

α. P. cordis, or palpitation of the heart alone.—The palpitation has ſometimes been ſonorous. *Caſtell* (P. V.) Exercit. et effect. thoracis. Tr. IX. Toloſa, 1616. *A Vega*, de Arte Med. So violent as to diſlocate the ribs. *Horſt.* ii. 137. 139.—To break them. *Schenck.* Obſ. 215. ex Fernelio. *Victorius*, Conſil. n. 97. In like manner the humerus has been diſlocated by a convulſion-fit.

The moſt important circumſtance to be underſtood in regard to palpitation of the heart, is whether it depends on nervous irritation or organic alterations. Its nature, when ariſing from the former cauſe, the reader will find diſcuſſed under *Dyſpepſia*; and, when from the latter, under *Carditis.* The two following varieties appear to anſwer to the diſeaſe we have deſcribed under the title of Arteritis, p. 246.

β. P. arterioſa; of the arteries alone.

γ. P. complicata; extending from the heart more or leſs through the courſe of the arteries.

4. Clonus nictitatio, twinkling of the eye-lids: rapid and vibratory motion of the eye-lids.

5. Clonus ſubſultus, twitching of the tendons: ſudden and ſubſultory elevations of the tendons. This ſeems to ariſe from a deficient ſupply of nervous powers to the muſcles, or at leaſt a ſupply ſuddenly applied and exhauſted. It is found in moſt caſes when the nerves have been much weakened, as after long fatigue, fevers, and towards the approach of death.

6. Clonus pandiculatio: tranſient elongation of the extenſor muſcles, with deep inſpiration and ſenſe of laſſitude. Two varieties.

α. P. maxillarum, yawning or gaping.

β. P. artuum, ſtretching of the limbs, frequently noted as a ſymptom in fatigue, hyſterics, reſtleſſneſs, dyſpepſy, and the acceſſion of fevers. As an idiopathic affection, acquired chiefly from a habit of idleneſs.

Genus IV. *Synclonus*, [from συν, together, and clonus.] General ſpaſm. Generic characters—Tremulous, ſimultaneous, and chronic, agitation of various muſcles, eſpecially when excited by the will. There are four ſpecies.

1. Synclonus tremor, trembling: ſimple, tremulous agitation of the head, limbs, or both; moſtly on voluntary motion.

2. Synclonus chorea, St. Vitus's dance: alternately tremulous and jerking motion of the face, legs, and arms, eſpecially when voluntarily called into action; reſembling the grimaces and geſtures of buffoons; uſually appearing before puberty.

According to Horſtius, the name of St. Vitus's dance was given to this diſeaſe, or more probably to a diſeaſe poſſeſſing ſome reſemblance to it, in conſequence of the cure produced on certain women of diſordered mind upon their paying a viſit to the chapel of St. Vitus near Ulm, and exerciſing themſelves in dancing from morning to night, or till they became exhauſted. He adds, that the diſeaſe returned annually, and was annually removed by the ſame means. But the French give to another ſaint the honour of exciting or of curing this diſeaſe: they call it Dance de Saint Guy.

Dr. Hamilton, in his work on Purgative Medicines, gives the following excellent hiſtory of this diſeaſe. "Chorea Sancti Viti attacks boys and girls indiſcriminately; and thoſe chiefly who are of a weak conſtitution, or whoſe natural good health and vigour have been impaired by confinement, or by the uſe of ſcanty or improper nouriſhment. It appears moſt commonly from the eighth to the fourteenth year. I ſaw it in two young women, who were from ſixteen to eighteen years of age. The approaches of chorea are ſlow. A variable and often a ravenous appetite, loſs of uſual vivacity and playfulneſs, a ſwelling and hardneſs of the lower belly in moſt caſes, in ſome a lank and ſoft belly, and, in general, a conſtipated ſtate of the bowels, aggravated as the diſeaſe advances, and ſlight irregular involuntary motions of different muſcles, particularly of thoſe of the face, which are thought to be the effect of irritation, precede the more violent convulſive motions, which now attract the attention of the friends of the patient. Theſe convulſive motions vary. The muſcles of the extremities and of the face, thoſe moving the lower jaw, the head, and the trunk of the body, are at different times, and in different inſtances, affected by it. In this ſtate the patient does not walk ſteadily; his gait reſembles a jumping or ſtarting; he ſometimes cannot walk, and ſeems palſied; he cannot perform the common and neceſſary motions with the affected arms. This convulſive motion is more or leſs violent, and is conſtant, except during ſleep, when, in moſt inſtances, it ceaſes altogether. Although different muſcles are ſometimes ſucceſſively convulſed, yet, in general, the muſcles affected in the early part of the diſeaſe remain ſo during the courſe of it. Articulation is now impeded, and is frequently completely ſuſpended. Deglutition is alſo occaſionally performed with difficulty. The eye loſes its luſtre and intelligence; the countenance is pale, and expreſſive of vacancy

vacancy and languor. Theſe circumſtances give the patient a fatuous appearance. Indeed there is every reaſon to believe, that, when the complaint has ſubſiſted for ſome time, fatuity to a certain extent interrupts the exerciſe of the mental faculties. Fever, ſuch as ariſes in maraſmus, is not a neceſſary attendant on chorea; nevertheleſs, in the advanced periods of the diſeaſe, flaccidity and waſting of the muſcular fleſh take place, the conſequence of conſtant irritation, of abating appetite, and impaired digeſtion, the common attendants of protracted chorea; and which, I doubt not, may, in ſome inſtances, although contrary to the opinion that chorea is not fatal, have been the forerunners of death."

In the old practice of antiſpaſmodics and cordials, little good was done for chorea. Since the general promulgation of the grand fact, that, in nine caſes out of ten, nervous diſeaſes of all kinds ariſe from diſorders of the abdominal viſcera, this diſeaſe has been more ſucceſsfully treated. Full purging is the chief remedy at preſent. The purges uſed ſhould be rough and draſtic, and ſhould be continued for ſome time, even when their efficacy is not at firſt apparent. In chorea, as in neuralgia, where habit only keeps up the malady, medicines capable of powerfully influencing the nervous functions may be uſed; as, for inſtance, the arſenical ſolution.

3. Synclonus raphania: ſpaſtic contraction of the joints; with trembling and periodical pains. So called by Linnæus as being ſuppoſed by him to be produced by eating the ſeeds of Raphania raphaniſtrum, the wild raddiſh, or jointed charlock. It is chiefly found in Sweden and the adjoining countries; and has hence been chiefly treated of by Swediſh writers. There is a paper upon the ſubject by Dr. Rothman, in the Amœnitates Academicæ, vol. vi. who aſſerts that it is neither a new diſeaſe, nor confined to the Baltic countries. He has traced it, he ſays, as an affection common to Europe, in the works of various writers up to the year 1596. It ſeems to depend upon ſome deleterious vegetable intermixed with the grain employed in making bread: ſome ſpecies of Lolium or Secale (darnel or rye) have been ſuſpected; but there is more reaſon (he ſays) for aſcribing it to the Raphania raphaniſtrum. It is ſometimes accompanied with cutaneous ulcerations, and extenſive exfoliations of the cuticle and cutis.

4. Synclonus beriberia: ſpaſtic retraction of the knees on walking: trembling and painful ſtupor of the limbs; ſenſe of formication; hoarſe voice.

The beriberia has been found chiefly in the Eaſt Indies, and is a ſpecies of palſy, in which, according to Bontius, patients ſeem to imitate ſheep in lifting their legs when they walk. This palſy conſiſts in a partial deprivation of the motion and ſenſation of the hands and feet, and ſometimes of the body. Sagar once ſaw ſome ſheep, obſerving a wolf, ſeized with this ſpaſmodic affection; and they, whether ſtanding ſtill or walking, momentaneouſly retracted their knees, which immediately returned to their natural ſituation. The cauſe is generally thought to be expoſure to the cold vapours of the night too ſoon after exerciſe. Dr. Good ſuppoſes that the ſwallowing of ſome paraſitic plant, or animalcule, in the food or drink, is the cauſe of it.

The diſeaſe is not mortal, except by ſeizing the muſcles of the breaſt, ſo as to obſtruct reſpiration and the voice. In the cure, moderate exerciſe and frictions are uſeful: the Indians uſe a ſemicupium made of water, in which is boiled an aromatic herb called *lagondi*; or, in want of it, camomile and melilot. The affected parts are rubbed well with a mixture of the oils of mace and roſes. Bleeding is not required; but, on the contrary, ſtimulants and tonics are to be uſed, with an occaſional gentle purge. Decoctions of ſarſaparilla and guaiacum are alſo of ſervice.

The term beriberi is ſtill preſerved in Ceylon, but applied to a different diſeaſe; a peculiar ſort of dropſy, commencing with ſtiffneſs and œdema of the lower extremities, which ſhortly ſpread over the whole body, producing dyſpnœa, vomiting, *convulſive motions*, and death. The ſymptoms have been given at ſome length by Mr. Colhoun, and Mr. Chriſtie, inſpector-general of the hoſpitals in Ceylon. The Engliſh forces eſtabliſhed at Ceylon are occaſionally ſubject to it. See "Eſſay on the Diſeaſes incident to Indian Seamen or Laſcars on long Voyages, by William Hunter, A. M. Member of the Aſiatic Society of Calcutta, &c." In like manner lord Valentia, in his Travels, vol. i. p. 318. "a complaint, as far as I have learnt, peculiar to the iſland (Ceylon) is the *berri-berri*. It is in fact a dropſy that frequently deſtroys in a few days."

Order IV. SYSTATICA, [from συνιστημι, I collect together.] Diſeaſes affecting ſeveral or all the ſenſorial powers ſimultaneouſly. Irritation or inertneſs of the mind extending to the muſcles or external ſenſes; or of the muſcles or external ſenſes extending to the mind. It contains nine genera.

Genus I. *Agrypnia*, [from α, priv. and υπνος, ſleep.] Sleepleſſneſs. There are two ſpecies.

1. Agrypnia entonica: ſleep retarded by an inordinate excitation of the mind to a particular ſubject; liſtleſſneſs to ſurrounding objects.

2. Agrypnia chronica: habitual wakefulneſs; mind tranquil; attention alive to ſurrounding objects. Moſtly common to advanced age.

Genus II. *Dyſphoria*, [from δυς, difficulty, and φερω, to bear, or endure.] Reſtleſſneſs. Generic characters—Troubleſome and reſtleſs uneaſineſs of the nerves and muſcles; increaſed ſenſibility; inability of fixing the attention. There are two ſpecies.

1. Dyſphoria ſimplex, fidgets: general; and accompanied with a perpetual deſire of changing the poſition.

2. Dyſphoria anxietas, anxiety: chiefly affecting the præcordia; with depreſſion of ſpirits, and perpetual deſire of locomotion.

All the above ſymptoms, when not accompanied by the derangement of the ſyſtem denominated fever, may be referred to ſome of the numerous forms of dyſpeptic malady. *Anxiety* is more particularly referrible to exceſſive eating, or weakneſs of the muſcular coat of the ſtomach. The *fidgets* are frequently obſerved in thoſe who have nothing to do, and ſeem to be the reſult of want of exerciſe for the brain; in conſequence of which, its energies are exerted on trifling ſubjects. On the other hand, *ſleepleſſneſs* is a common attendant on the literary character, the over-exertion of the mind keeping up a continual ſtate of irritation in the brain. Hence the ſleep is broken, light, and troubled with dreams. For the cure, &c. ſee *Dyſpepſia*, under which head this ſubject is ſomewhat copiouſly diſcuſſed.

Genus III. *Antipathia*, [from αντι, againſt, and παθος, feeling.] Antipathy. Internal and unaccountable horror at the preſence of particular objects or ſubjects; with great external reſtleſſneſs, or deliquium. Two ſpecies are noted by Dr. Good.

1. Antipathia ſenſilis: antipathy produced through the medium of the external ſenſes. As, at the ſight of a drawn ſword in king James I. *Digby* Theatr. Sympathet. —Sound of muſic. *Eph. Nat. Cur.* Dec. I. obſ. 134.—Smell of roſes. *Id.* Dec. II. ann. x. obſ. 8.—Of ſtrawberries. *Id.* ann. v. obſ. 214.—Taſte or ſmell of cheeſe. *Zacut. Luſit.* Frax. admir. lib. iii. Obſ. 103. *Eph. Nat. Cur.* paſſim.—Eraſmus, though a native of Rotterdam, had ſuch an averſion to fiſh, that the ſmell of it gave him a fever.—Ambroſe Paré mentions a gentleman who never could ſee an eel without fainting.—Joſeph Scaliger and Peter Abono never could drink milk.—Cardan was particularly diſguſted at the ſight of eggs.—Uladiſlaus, king of Poland, could not bear to ſee apples.—Henry III. of France, could never ſit in the room with a cat.

2. Antipathia inſenſilis: produced through an unknown medium. Chiefly in the caſe of cats, at hand, but neither ſeen, touched, ſmelt, nor heard.

Genus

Genus IV. *Lyſſa*, [that is, madneſs; probably from λυω, to diſſolve, becauſe the ſenſes are impaired or melted away.] Madneſs from the bite of a rabid animal, commonly called hydrophobia. Generic characters—Great reſtleſſneſs; anxiety; hurry of mind; horror; and conſtriction of the muſcles of the cheſt; ſupervening to the bite of a rabid animal: preceded by a return of pain and inflammation in the bitten part. There are two ſpecies.

1. Lyſſa felina, feline madneſs: the paroxyſm periodical, and returning with the full moon; produced by the bite of an enraged cat. Anxietas à morſû felis iratæ. *Morgagn. Ep.* lxi. 14.

In the caſe here referred to, the paroxyſm took place four days after the bite: there was great anxiety of the præcordia, but no water-dread. Local and general bleedings were uſeleſs; frequent repetition of the warm-bath afforded relief; but it only yielded to an ephemera with copious ſweat. It returned with the full moon for two years: the bitten part firſt becoming highly irritable; and the general ſymptoms ſucceeding, which were now relieved by bleeding. After this period it returned with every fourth full moon for two years more. See another caſe, which terminated fatally on the firſt paroxyſm, in the Tranſ. Med. Soc. of London, vol. i. p. 78.

2. Lyſſa canina, canine madneſs: (Pantophobia, *Cæl. Aur.* Rabies canina, *Boerhaave.* Hydrophobia, *Sauv. Linn. Sag. Cull.* &c.) The conſtriction extending to the muſcles of deglutition, which are violently convulſed at the appearance or idea of liquids; produced by the bite of a rabid dog, and fatal on the firſt paroxyſm.

The term *hydrophobia*, which has been ſo generally applied to the Lyſſa canina, has been deſervedly reprobated, becauſe the "dread of water," the literal meaning of the word, is not a pathognomonic mark of the diſeaſe. The older writers uſed the terms *aërophobia*, or a "dread of air," and *pantophobia*, or a "fear of all things," as appropriate names for the diſeaſe, becauſe the impreſſion of cold air ſometimes excites terror, and the diſorder is marked by a ſingular degree of general timidity and diſtruſt. The term *hydrophobia*, being erroneouſly applied to the rabies of the dog, has induced a ſuppoſition that no dog is rabid while he continues to drink; whereas he is conſtantly endeavouring to quench his thirſt in that diſeaſe. And again, the appellation of *madneſs* has led to a belief that violence and fury are characteriſtic of rabies in the dog; but, though he is irritable and peeviſh, there is nothing of wildneſs in his diſpoſition. In conſequence of this miſtake, dogs have been allowed to go about, fondled, and even ſlept with (ſee Mem. of Swediſh Acad. 1777), in a rabid ſtate.

Ariſtotle is the firſt writer who expreſsly mentions this diſeaſe. He ſays that all animals, *except man*, are infected by the bite of a mad dog, and deſtroyed by it. This imperfect ſtate of knowledge reſpecting the malady, is a proof that it was a matter of recent obſervation; for, although ſeveral perſons might be bitten without ſuffering the diſeaſe, and, from the length of time which commonly elapſes between the infliction of the bite and the appearance of the ſymptoms, ſeveral caſes might occur before it was referred to its true ſource; yet no very long time would be requiſite to clear up theſe doubtful points. Accordingly, we find ſubſequent writers treating of the diſeaſe in a familiar manner. Plutarch affirms that the hydrophobia was firſt ſeen at Rome in the days of Aſclepiades; after whoſe time, we meet with frequent notices of this diſeaſe in the works of the ancients.

The ſymptoms of Lyſſa, as they appear in the dog, have been inſerted under the article HYDROPHOBIA, in our 10th volume. We proceed, therefore, to diſcuſs the nature and origin of the diſeaſe. It is known, that animals of the dog-kind, including the wolf and the fox, are moſt frequently the ſubjects of Lyſſa; and moſt writers have maintained that, although it may be received and propagated by other animals, yet it always originates with ſome of the canine race. It is likewiſe ſaid, that the generation of Lyſſa is confined to male dogs. Like the origin of many diſeaſes emphatically called ſpecific, as ſmall-pox, ſiphilis, and itch, the origin of this in the ſimple inflammatory or irritative proceſſes is unknown; yet we cannot but believe, that to ſuch proceſſes all ſpecifics owe their firſt production. However this may be, it is a fact, that, at certain periods of the year, dogs are more prone to Lyſſa than at others. The diſeaſe, however, has by no means the character of an endemic. It ſeems to require a very rare and peculiar combination of circumſtances for its ſpontaneous development, though, when once formed, it ſpreads with the moſt alarming rapidity, in conſequence of its infectious nature. Various meaſures have been ſtated for the prevention of hydrophobia in dogs; as vaccination, worming, &c. but, we believe, with no ſucceſs. Of the exciting cauſes of this diſeaſe we know nothing. Great heat has been aſſerted as one cauſe; though it muſt be recollected, that the diſeaſe is leſs frequent in the tropical climates than with us. Boerhaave alſo enumerates "a very hot climate, or one expoſed to the extremes of heat and cold; feeding upon putrid ſtinking maggotty fleſh; want of water; worms bred in the kidneys, inteſtines, brain, or cavities of the noſe." But the influence of theſe circumſtances in producing the diſeaſe is not eſtabliſhed by a ſufficient number of obſervations.

All domeſtic animals, birds as well as beaſts, are ſuſceptible of the poiſon of the rabid dog. We do not find that there is any race of animals exempted from its effects. But whether every animal labouring under the diſeaſe is capable of infecting others, or whether this power is confined to a few only, we are yet to learn. Boerhaave affirms that the diſeaſe has been communicated by infection to others by dogs, cats, wolves, foxes, horſes, aſſes, mules, ſwine, apes, cocks of the poultry breed, and men, when affected with rabies, (Aph. 1132.) and the cow has alſo been ſaid to propagate it. Van Swieten has ſtated ſome inſtances, from old authors, of hydrophobia occaſioned by the beak of an enraged cock wounding the hand and arm. But there is little doubt that, in ſuch caſes, the ſpaſmodic and fatal diſeaſe, which enſued, was *tetanus*. It is certain, however, that not only animals of the canine ſpecies, but cats, have produced hydrophobia in the human ſpecies by their bite; and a ſuppoſed difference of ſymptoms has led Dr. Good, as we have ſeen, to ſeparate Lyſſa into two ſpecies.

It ſeems very natural to ſuppoſe, that every animal ſuſceptible of the diſeaſe had the power of communicating it, provided their natural habits led them to bite and tear with their teeth ſuch animals as came in their way, while in an enraged ſtate. With reſpect to men under the influence of hydrophobia, although the popular notion of their general diſpoſition to bite thoſe around them is erroneous, yet there are inſtances on record in which hydrophobic patients did bite ſome of their attendants, but no ill conſequences have been known to follow. From this, however, as Dr. John Hunter juſtly remarks, we can draw no poſitive inference; for it is but a ſmall proportion (about one in ſixteen), of ſuch perſons as are bit by dogs undoubtedly mad, who are infected with the poiſon. The experiments, however, of Mr. Cline, throw great doubt on the infectious qualities of the ſaliva of the human ſubject. He took particular pains in inſerting this ſecretion, while freſh, into a dog, three rabbits, and ſeveral fowls: "but in none of theſe inſtances was there the leaſt appearance of the diſorder at the expiration of three months." Mr. Aſtley Cooper, on the other hand, inoculated a dog, a pig, a fowl, and a rabbit, with the ſaliva of a dog, which had recently died of rabies, by inſerting, from the point of a lancet, between two and three drops under the ſkin of the inner part of the thigh of each. The dog and fowl were kept confined for nine weeks, and the pig ſeven, but without any appearances of hydrophobia. The dog afterwards became the property of a gentleman, who kept him nearly twelve months, and he

had never any marks of the diſeaſe. The rabbit was accidentally killed on the fourth day from the experiment. But the experiments of Majendie led to a reſult preciſely oppoſite.

With regard to the activity of the poiſon of the rabid dog, the facts which have been collected have been ſo vaguely ſtated, that the inferences are quite inconcluſive. Among the older writers, indeed, there was much credulity, and they have tranſmitted to us many fabulous hiſtories in regard to the operation of the rabid virus. "Scarce any poiſon known (ſays Hillary, relying upon the truth of thoſe tales) is ſo infectious, or ſo eaſily and readily communicated by ſo many and various ways, as this of a mad dog is: for the ſlighteſt bite, only tearing the ſkin, without drawing blood; or the ſmalleſt quantity of the ſlaver of the mad animal, either freſh or dried for ſome time, taken upon the tongue or lips; or rending a perſon's clothes and leaving the ſlaver on them to dry, has produced this diſeaſe; as a woman had her coat torn by a mad dog, which ſhe a conſiderable time after ſewed up, and bit off the thread with her teeth, and ſome time after died rabid from biting off that thread. (Hildanus Obſ. Chir.) Alſo a man only kiſſing his children to take his leave of them when he had the rabies upon him, they all ſoon after died rabid. (Palmarius de Morb. Contag.) Kiſſing a favourite dog that was mad had the ſame effect, &c. and produced this moſt fatal diſeaſe." See Hamilton, vol. i. p. 98.

In the London Medical Repoſitory for April 1814, are two caſes, from which (if we could be certain that the diſeaſe was Lyſſa) it would appear probable that a dog, free from any characteriſtic mark of hydrophobia, and apparently in the higheſt ſtate of health, may communicate by its bite this moſt dreadful malady. One of the caſes was that of a dog, apparently ailing nothing, who had repeatedly licked a woman's chopped hands. The other of a dog, who afterwards continued in health, and remained in the family it belonged to, having bitten a boy ſeverely in order to eſcape, when it was teaſed by that and other boys. This laſt caſe is ſo very remarkable, that we cannot refrain from giving it at length. It is related by Mr. Parkinſon, ſurgeon, of Hoxton-ſquare.

"The ſubject of this caſe was a boy, about ten years of age. He came to me, accompanied by four other boys older than himſelf, he having been bitten by a dog. The canine teeth had paſſed quite through between the metacarpal bones of the firſt and middle finger, and of the ring and little finger; the ſkin of the back of the hand and of the fingers was alſo torn in ſeveral places. By inquiry of the boy himſelf, apart from his companions, I learnt, that, as they were going along a rather narrow walk, one of the boys cried out, 'There he is!' meaning a dog which they had been in the habit of teaſing; that, as they were between him and his home, they ranged themſelves acroſs the walk to ſtop him; and that the dog, after making one unſucceſsful attempt, made a puſh between him and the wall; which he endeavouring to prevent by putting out his hand, the dog ſeized it, and then ran by and gained his home. As obtaining correct information was here of ſo much importance, I examined all the other boys ſeparately, who all confirmed the account of the unfortunate boy, and were all ſatisfied that it was the ſame dog that they had been accuſtomed to teaſe. Diſcovering no circumſtance whatever which would warrant a ſuſpicion of the bite having been inflicted otherwiſe than defenſively, I waſhed the wounds with ſpirits of turpentine, and dreſſed them with a terebinthinate liniment. Still anxious as to the ſtate of the dog, I made additional inquiry reſpecting it; when I obtained every aſſurance of the dog being in perfect health.

"The wounds were dreſſed with red precipitate and a terebinthinate ointment, and healed in about five days. But, at nearly three weeks from the infliction of the bite, I was ſent for to the boy, he having had ſome ſlight feveriſhneſs the night before, which was rather increaſed. My ſon accompanied me, and we ſoon diſcovered that the dreadful malady was eſtabliſhed. Ignorant of any meaſures that could be relied on, and as Pyrexia, with evident inflammation of the tonſils, exiſted, we agreed on the experiment of taking away blood, which was done to the quantity of ſix or ſeven ounces, by which a ſlight degree of faintneſs was produced, without any apparent amendment. The aſſiſtance of Dr. Yellowly was now requeſted, and immediately obtained; when, it being conſidered that no medicine had manifeſted any remedial powers in this diſeaſe, it was agreed to make trial of the effects of lead, and to endeavour to moderate the more urgent ſpaſms by the employment of henbane. The experiment was fully made, the ſuperacetate of lead and the extract of hyoſciamus were had recourſe to, but without the leaſt advantage; the child, after ſuffering from every decided ſymptom of hydrophobia, being ſeized with convulſions ſo violent as to require two men to retain him in the bed; to which ſucceeded a ſtate of quiet inſenſibility, laſting about half an hour, and terminating in his death, which took place on the third day from the attack.

"After this fatal termination, the dog, which had inflicted the bite, again became the ſubject of inquiry. Dr. Yellowly and myſelf immediately, therefore, went to its maſter, who regretted very feelingly the ſad cataſtrophe, but at the ſame time ſaid that he doubted how it could be attributed to his dog; ſince, although he had reaſon to believe, from the provocation the boys were perpetually employing, that he might have inflicted the bite; yet, as we ſhould ſee, he did not appear to be in a ſtate which would have enabled him to communicate ſo dreadful a malady. The dog, a fine healthy ſpaniel, now ruſhed in, and flew on his maſter's knees, licking his face and mouth with much fondneſs; his maſter permitting him thus to manifeſt his affection for ſeveral minutes, for the purpoſe of evincing his reliance on the healthineſs of the dog. I then again queſtioned the other boys in the moſt particular manner, and found them all agreeing in the dog which we had juſt ſeen, and the dog which had inflicted the bite, being the ſame. Not ſatisfied even with this, I watched the dog during its continuance in the neighbourhood, which was for at leaſt two years, without ſeeing reaſon to ſuſpect it of a diſpoſition to injure any one. Within theſe laſt five days I have repeated my inquiries, and have learnt that the dog was well a few months ago.—J. P. Feb. 1814."

According to the relater of a caſe quoted by Dr. Hamilton, the diſeaſe, which took place on the eighth day, and was fatal on the eleventh, aroſe from contact only of the rabid ſaliva, without any injury done to the perſon. The ſame author ſays, "A young woman had her apron torn and ſlavered by a mad dog leaping on her, and attempting to bite. Fortunately ſhe received no other injury from him, by the timely aſſiſtance offered, and by the looſe part of her clothing which he laid hold of. But imprudently, and without proper reflection, ſhe began to mend the rent in her apron before the part was either waſhed or well dried; and as imprudently, or through habit, inſtead of cutting the thread with ſciſſars, bit it off with her teeth. Lo, what followed! In a few weeks ſhe was ſeized with hydrophobia, which proved fatal." There is good reaſon to believe, however, that there muſt have been ſome ſlight ſcratch, unperceived by the patient, in the firſt of Hamilton's caſes, through which the virus made its entrance; and, in the ſecond, it of courſe found its way into the conſtitution through the abſorbents of the mouth. After all, theſe aſtoniſhing accounts are perhaps for the moſt part falſe; for an exceſſive fear of a diſeaſe often leads to extravagant aſſumptions as to its activity; as we know, from the caution which ſome old popular writers evinced, that we ſhould not drink out of the ſame cup, uſe the ſame towel, &c. as that which has been uſed by a patient of Lues.

The part of the body which is bitten ſeems to have ſome influence on the probability of the attack. A bite in the

the face is ſaid to be moſt generally followed by the diſeaſe; which might ſeem to imply, that parts much ſupplied with veins moſt rapidly propagated Lyſſa. A bite on the hands, however, is equally formidable; ſo that we naturally conclude, that the expoſed parts of the body ſuffer more readily from the bite than the covered parts; becauſe, in the latter, the clothes rub off part of the virus from the teeth before they penetrate the ſkin. Some have ſuppoſed, that, if a guſh of blood follows immediately on the bite, the chances of exemption are in favour of the patient; but, in Brera's Memoria per la Cura dell' Idrofobia, four caſes are related in which this occurrence happened, and nevertheleſs the patients died.

It is a fortunate circumſtance, that men are leſs diſpoſed to lyſſa than dogs: and of the latter ſcarcely one eſcaping, while, of the former, it is computed that only one in ſixteen, who have been bitten, contracts the diſeaſe.

The wound inflicted by the bite of a rabid animal has nothing peculiar in its appearance, and heals as readily as the bite of an animal that is not rabid. From the time of the bite until the period when the ſymptoms appear, there is no derangement of health, nor any perceptible change in the conſtitution, provided the perſon bitten be not under the influence of fear. The interval between the infection and the commencement of the diſeaſe varies conſiderably in different inſtances: the moſt common period appears to be about forty days or ſix weeks. Dr. Hamilton draws the following concluſions, as to the interval between the bite and the occurrence of the diſeaſe, from a table of 131 caſes. Only three took the diſeaſe before the 18th day, none before the 11th—from the 18th to the 30th, ſeventeen were ſeized: ſixty-three began to be ill from 30 to 59 days after the bite; twenty-three were attacked from two to three months incluſive; nine from three to four months; two at five months; one at five months and eleven days; one at ſix months; one at ſeven months; two at eight months; one between eight and nine months; two at nine months; one at eleven months; one at fourteen months; two at eighteen months; and one at nineteen months. The laſt-mentioned interval is, he thinks, the longeſt to which any credit can be given. On the other hand, a caſe is related by Dr. Bardſley of Mancheſter, which proved fatal, as is uſual; and every inquiry reſpecting which corroborated the patient's repeated aſſertion, "that he had never ſuffered the leaſt injury from any animal, except the bite, inflicted *twelve years ſince*, by an apparently-mad dog." (Memoirs of the Lit. and Phil. Soc. of Mancheſter, vol. iv. p. 431.) In this inſtance, the nature of the diſeaſe was perfectly clear, and the evidence as to the bite not leſs ſatisfactory.

At an uncertain time, then, after the infliction of the bite, the patient feels a degree of pain, or uneaſy ſenſation, in the bitten part, which is ſometimes compared to a ſcorching by heat, is ſometimes attended with itching, and ſometimes ſuppoſed to be rheumatic. This pain, when the bite, as is moſt frequent, is in the hand, ſpreads up the outſide of the arm to the ſhoulder (not affecting the axilla) and the neck. In ſome caſes the cicatrix left by the bite is ſaid to become inflamed, and even to diſcharge. Theſe pains are ſoon ſucceeded by a general depreſſion of ſpirits, and eſpecially a ſenſe of undeſcribable liſtleſſneſs and anxiety. Sometimes a general rigour or chill occurs, as in the commencement of a fever. The night is paſſed in the ſame reſtleſs ſtate, without ſleep. The appetite begins to fail, and ſome thirſt is preſent. And now the peculiar ſymptom which gives the diſeaſe its name, the *dread of liquids*, is diſcovered, often accidentally, on attempting to take drink; as the liquid approaches the lips, a ſudden convulſive ſob, or catch in the breath, with a momentary ſenſation of choking, takes place, which is renewed at every attempt. As the diſeaſe advances, this attempt is not thought of without horror, and the very idea excites theſe ſpaſmodic fits of choking in the throat, and catching of the breath.

This dread of liquids is, as we have before ſtated, not always preſent, nor is its preſence a certain ſign of the diſeaſe; and in dogs and other animals is ſo far from being general, that they often ſwim through rivers, and drink copiouſly. The cauſe of this ſymptom, in man, has engaged the attention of many pathologiſts. It can only be referred to two cauſes: firſt, an actual experience of difficulty of ſwallowing, which renders the patient fearful to attempt an action which gives him ſo much pain; or, on the other hand, a dread of the water itſelf from ſome fearful aſſociation connected with it, an aſſociation, as it would ſeem, quite unconnected with the will. For our own parts, we cannot conceive the hydrophobia to ariſe from experience of the difficulty of ſwallowing, becauſe in the moſt violent caſes no difficulty of ſwallowing food attends; becauſe alſo the ſymptom often comes on ſuddenly, on the ſight of water, before any difficulty has been experienced; conſequently before the patient can have had any experience on the matter. Moreover, a ſtream of air, a flaſh of light, nay the reflection of light from a looking-glaſs, has ſometimes filled the patient with an equally ſevere emotion of horror as water has; and often again, when the ſight of water was painful, wine has been freely drank. It is not, however, an eaſy taſk to explain how the hallucination of mind in lyſſa ſhould be particularly directed to water. It may be that the nervous ſyſtem, excited to the higheſt degree, acknowledges, with a quickneſs and intenſity amounting to pain, thoſe *undulating* motions which are ſo peculiarly manifeſted in almoſt all the natural phenomena which impreſs our nerves. Hence the undulating motion of a candle excites uneaſineſs; the ſight of water excites the recollection (unacknowledged by the will) of the roaring of the ſea, the dizzy whirl of the current, or perhaps of the danger to which we are often expoſed on this element. That on ſome occaſions wine has been ſwallowed when water could not, may ariſe from the different recollections to which wine gives riſe. That it is the ſight of water, and not the difficulty of ſwallowing it, that produces hydrophobia, is corroborated by this; that a child requeſted his father to put ſome tea in a tea-pot, ſo that he might be able to drink it out of the ſpout, *without the pain of looking at it*.

But the dread of ſwallowing liquids, although the moſt ſingular ſymptom of the diſeaſe, conſtitutes but a ſmall part of this diſtreſſing malady. The ſtate of diſorder into which the nervous ſyſtem is thrown, is evinced by the extreme irritability of the whole frame, mind and body, and the exceſſive ſuſceptibility to all impreſſions. Hence the conſtant watching and inquietude; and the ſudden fits of anger and impatience, ariſing from the moſt trifling cauſes, as the patient himſelf readily allows, and even wonders at, and apologizes for, in the ſucceeding moments of compoſure. Hence alſo the diſtreſs, and even the recurrence of his ſpaſms, occaſioned often by the ſlighteſt motion of the air, as from opening the door, from the approach of any perſon, or even of a perſon's hand, in front of him; or even by the buzzing of a fly. This morbid excitability of the nervous ſyſtem is farther manifeſted in the extreme timidity and ſuſpicion of the patient, in the imaginary objects of terror and uneaſineſs which the ſenſes frequently repreſent to him, and in the occaſional delirium and incoherence of ideas, from which, however, he eaſily collects himſelf.

There are ſome other circumſtances belonging to the diſeaſe, of leſs note, which remain to be mentioned. One of theſe is a conſtant collection of a thick ropy tenacious ſaliva in the fauces, which is often productive of extreme diſtreſs; for, as the miſerable ſufferer is unable to make the ſmalleſt attempt to ſwallow it, without exciting the convulſive choking, he ſpits it out inceſſantly, and with great vehemence and difficulty, often cautioning the by-ſtanders to keep out of the way. The pulſe in the beginning

ginning is not quick, nor is the ſkin hot; and there is none of the muſcular debility ſo remarkable in fever; but, as the diſeaſe proceeds, there is ſome feveriſh heat, and the pulſe becomes quick; varying, however, exceedingly as ſlight cauſes of irritation influence the patient: as death approaches, it uſually becomes very quick and tremulous. Sickneſs and vomiting often occur, when a little phlegm, tinged with brown or yellow bile, is brought up. There is often a ſenſe of great oppreſſion and ſtricture about the breaſt, or what has been called anxiety about the præcordia; and which is probably an affection of the heart; for it is accompanied with ſighing and deep irregular inſpirations, and the patients find ſome relief from motion, as running and walking, which ſhow the lungs not to be the ſeat of the oppreſſion. The countenance is generally ſorrowful, and often expreſſive of a great degree of horror and diſtreſs.

There is a conſiderable variety in the ſymptoms in different conſtitutions: even the hydrophobia, or dread of ſwallowing liquids, occurs in very different degrees. But there is no part of the diſeaſe that admits of greater variation than the degree of mental derangement, which in ſome does not amount to more than extreme irritability and impatience; in others to muttering and incoherent talking, yet giving rational anſwers when queſtions are aſked; and in a few it riſes into ſhort fits of the moſt violent rage and fury, in which the patients bite and tear themſelves and every thing near them. In general they manifeſt no diſpoſition to miſchief; yet popular prejudice is ſtill on the watch for the "barking and biting like a dog," as the diſeaſe advances. In a caſe related by Dr. Marcet, the byſtanders confidently expected the ſymptom of *barking*, which they "thought at laſt to have clearly diſcovered in the peculiar noiſe which he made in breathing." Dr. Wavell, ſpeaking of this ſort of reſpiration, ſays, "the noiſe he made in drawing air into his lungs was undoubtedly peculiar; but neither in my opinion, nor in that of any other medical gentlemen who attended him, did it bear the leaſt reſemblance to the barking of a dog." (Med. Records and Reſearches, p. 151.) Were this notion of the canine metamorphoſis, which the diſeaſe has been ſuppoſed to effect in man, merely ſpeculative, it would be leſs important to confute it; but it is to be lamented, that the practical reſult of it, in the cruel and murderous plan of ſuffocating the patient, has been followed, both in France and in this country, within the laſt twenty years of the eighteenth century. See Hamilton on Hydrophobia, vol. ii. p. 140. and App. p. xxviii.

The duration of life, after the commencement of the ſymptoms of hydrophobia, has been on an average about *four days*; it varies from thirty-ſix hours to five, ſix, or many more, days. The termination of life is likewiſe various in different inſtances: death is often very ſudden, being produced by one of the convulſive attacks, ſuch as occur on the attempts to drink; at other times, more general convulſions carry off the patient; while in other inſtances, again, the ſtrength ſinks gradually, and the patient dies comatoſe.

Diſſection of hydrophobic caſes diſplays inflammation of the ſpinal marrow, and, in a ſlight degree, of the membranes of the brain. The ſtomach, eſpecially at its cardial extremity, and alſo at the œſophagus, is uſually found in the ſame ſtate. The obſervance of redneſs and other marks of phlogoſis on the mucous membrane of the bronchiæ has induced Trollet to infer, that this membrane is the ſeat of hydrophobia, and that the infectious matter is a morbid ſecretion from it: but this opinion, like every other on the etiology of Lyſſa, reſts on very ſlight grounds. Some other inconſiderable changes have been obſerved; but they ſeem to have been moſtly adventitious.

From the peculiar nature of the ſymptoms above detailed, it might be conceived that no difficulty could occur, in diſtinguiſhing *rabies canina* from every other diſeaſe to which the human body is liable. But this is very far from being the caſe; for many hiſtories are related, in which, although the diſeaſe was the conſequence of a bite, it partook more of the nature of tetanus; and others are detailed, in which no bite had preceded the diſeaſe, or had occurred at ſo diſtant a period as to render its influence in exciting the diſeaſe extremely queſtionable. It muſt be obſerved, however, that the *tetanic* ſpaſms generally commence within a few days after the injury, or in a much ſhorter period than thoſe of rabies; that the jaw is commonly rigidly locked in tetanus, and the muſcles of the neck and back moſt particularly affected; that the ſpaſms are of a more fixed or "tonic" ſpecies, (in the language of Cullen,) conſiſting of rigid and long-continued contraction, rather than of ſhort convulſive action, and are relieved rather by remiſſion of their violence than by a complete ſolution of the ſpaſm; that there is leſs feveriſhneſs, quickneſs of pulſe, and thirſt, in tetanus; and, above all, that there is little of that extreme mobility of feeling, and anxious, impatient, and apprehenſive, ſtate of mind, which marks the hydrophobic condition.

It muſt be obſerved, that many inſtances are recorded of patients who have actually frightened themſelves into a ſtate very cloſely reſembling hydrophobia. Indeed, Dr. Percival has remarked, that it has ſometimes been brought on by the imagination alone; and Dr. Ferriar ſays, "I met with an inſtance of this kind lately, in which it was very difficult to prevent a perſon from rendering himſelf completely hydrophobic. Himſelf and his wife had been bitten by a dog which they ſuppoſed to be mad. The woman thought herſelf well; but the man, a meagre hypochondriacal ſubject, fancied that he had uneaſineſs in his throat, and that he could hardly ſwallow any thing. When he firſt applied to me, a medical friend who was preſent, aſked him whether he had any ſenſation of heat at the pit of the ſtomach. He anſwered in the negative, doubtfully; but, next day I found him in bed, complaining of heat in the pit of the ſtomach, difficulty of ſwallowing, tremors, and confuſion in the head. He continued to perſuade himſelf he was ill of rabies, and confined himſelf to bed, expecting death for near a fortnight. At laſt I remarked to him, that perſons who were attacked by rabies never ſurvived more than ſix days; this drew him out of bed, and he began to walk about. By a little indulgence of his fears, this might have been converted into a very clear caſe of ſpontaneous hydrophobia, and the patient would probably have died." We are inclined to doubt the fatality of this ſpontaneous hydrophobia, which is, in fact, nothing more than a nervous diſorder.

As to the *treatment* of lyſſa, we have but one remark to make; viz. that the bitten part muſt be cut out as ſoon as poſſible; for on that practice only can we rely. As to the time at which it is expedient to perform this operation, little can be ſaid with certainty. Of courſe it is of no uſe when hydrophobic ſymptoms are manifeſt. Often it is of uſe before that period; and ſo irregular are the caſes of the abſorption of animal poiſons, that we are juſtified in cutting out the part at any period before the coming-on of the ſymptoms. With regard to the operation itſelf, we ſhould firſt aſcertain the extent of the wound, and the direction it has taken; and, as a precautionary meaſure, the puncture may be ſtuffed full of lint. The part is to be dried from blood; and the inciſion carried completely under the punctured or lacerated wound. The excided piece muſt then be examined, leſt the knife ſhould not have completely taken away the whole of the lacerated cavity. Should more than one wound be made, they can be cut out ſeparately, uſing the precaution to take a clean knife for each cut, leſt that before uſed, having touched the part imbued with the canine virus, ſhould again inoculate the ſufferer with the diſeaſe. As to prophylactics for hydrophobia, we entirely diſbelieve their exiſtence; and of remedies not one

is yet known that has been able to arreſt the progreſs of this terrible diſeaſe. Majendie has made numerous experiments, even by injecting the moſt famous drugs into the veins, (a much ſurer means than giving them by the mouth:) and the reſult of theſe experiments ſhows convincingly, that no known ſubſtance has the leaſt control over the diſeaſe; and that the diſcovery of a ſpecific is ſcarcely even to be expected. But the ſame diſtinguiſhed pathologiſt has made one experiment, which ſeems to ſhow that there *may* yet be diſcovered a more direct method of relieving hydrophobia than any yet adopted. The experiment conſiſted in emptying a dog of a large portion of his blood, and throwing in warm water inſtead of it. The dog was effectually rendered quiet by it; but, in conſequence of the proportion of water being over great, effuſion took place in the lungs, and the animal died.

It may be aſked, Are we then to give up to certain deſtruction every patient who is ſeized with ſymptoms of hydrophobia? We reply, No; but the hope of cure is ſo ſmall, that no one bitten by a mad dog ſhould be allowed to refuſe the exciſion of the bitten part: the moſt urgent remonſtrances, nay, when it can be done, force ſhould be employed, to prevent this fatal procraſtination. When the diſeaſe is once formed, the exhibition of mercury till ſalivation is induced, with the belladonna in doſes ſo large and ſo often repeated as to produce the moſt alarming effects on the ſyſtem, ſeems to afford the beſt chance of ſucceſs. Four patients thus treated by Dr. Brera recovered. Bleeding, the warm and cold bath, mercury, bliſtering, belladonna, opium, the ſcutellaria, the Aliſma plantago, chlorine, cantharides, arſenic, with a hoſt of drugs ſo inert that they could under no circumſtances have influenced the human frame in the ſlighteſt degree, have been lauded, from the recovery of individual caſes, as cures for Lyſſa. The laſt remedy which has reached us is the oxygenated muriatic acid, which Dr. Previſali of Pavia has preſcribed with ſucceſs, (as he ſays,) where the ſymptoms were advanced, in a liquid form, from a drachm to a drachm and a half daily, in citron water, or ſyrup of citron. Theſe trials were made ſo recently as the month of January, 1822.

Genus V. *Cephalæa*, [from κεφαλη, the head.] Headache. Generic characters—Aching pain in the head; intolerance of light and ſound; difficulty of bending the mind to mental operations. There are five ſpecies, beſides varieties.

1. Cephalæa gravans, ſtupid head-ache: pain obtuſe; with a ſenſe of heavineſs extending over the whole head; ſometimes intermittent.

2. Cephalæa intenſa, chronic head-ache: pain vehement, with a ſenſe of tenſion over the whole head; periodic; often chronic.

3. Cephalæa hemicrania, megrim: pain vehement; confined to the forehead, or one ſide of the head; often periodic.

4. Cephalæa pulſatilis: pain pulſatory, chiefly at the temples; often with ſleepleſſneſs and a ſenſe of drumming in the ears.

5. Cephalæa ſpaſmodica, ſick head-ache: pain partial, ſpaſmodic; often ſhifting from one portion of the head to another; chiefly commencing in the morning; with ſickneſs and faintneſs.

All theſe ſpecies are mere ſymptoms of other diſeaſes: chiefly plethora and indigeſtion.

Genus VI. *Dinus*, [i. e. whirling round.] Dizzineſs. Generic characters—Apparent giration of objects, with hebetude of the ſenſorial powers. Three ſpecies.

1. Dinus vertigo, ſwimming of the head: dizzineſs; ſenſe of undulation in the ground; unfitneſs for mental exertion.

2. Dinus illuſorius: dizzineſs, with dimneſs of ſight, and imaginary objects before the external ſenſes. Two varieties.

α. Phantaſmatum: ocular ſpectres in the ſemblance of net-work, dark ſpots, dazzling or rainbow hues before the eyes; murmuring or whizzing in the ears.

β. Mutationis: real objects changed in their natural qualities, by error of form, of motion, or of number.

3. Dinus ſcotoma, nervous head-ache: dizzineſs with blindneſs and tendency to ſwoon; often ſucceeded by head-ache.

Theſe ſpecies are mere ſymptoms of plethora or dyſpepſia.

Genus VII. *Syncope*, [from συγκοπτω, to cut down.] Fainting. Generic characters—Motion of the heart and lungs feeble or imperceptible; diminiſhed ſenſibility, inability of utterance. Five ſpecies.

1. Syncope cardiaca: returning at irregular periods: occaſional palpitation of the heart during the intervals. Divided into,

α. Plethorica: from ſurcharge of the cardiac or neighbouring blood-veſſels.

β. Vitioſa: from polypous concretions, or other morbid affection of the cardiac or neighbouring blood-veſſels. See *Carditis*.

2. Syncope inanitionis: accompanied with a ſenſe of inanition, and extreme general debility. Two varieties.

α. A fame; from hunger or long faſting.

β. A fluxu; from ſudden and immoderate flux, whether of blood, pus, or any other fluid.

3. Syncope doloris: preceded by pain or irritation of body.

α. Interna; from internal pain or irritation; produced by poiſons, worms, or other ſimilar cauſes.

β. Externa; from external pain or irritation; produced by wounds, or other accidents or injuries.

4. Syncope pathematica: preceded by the exerciſe of ſome ſudden and overwhelming paſſion.

5. Syncope metaſtatica: accompanied with retroceſſion or repulſion of gout, exanthems, or other diſeaſes.

Fainting, or ſwooning, is a ſymptom in ſo many diſorders that it cannot be neceſſary to treat it as a ſeparate diſeaſe.

Genus VIII. *Syſpaſia*, [from συσπαω, to draw or contract.] Convulſions. Generic characters—Clonic ſpaſm; diminiſhed ſenſibility; inability of utterance. Three ſpecies, and many varieties.

1. Syſpaſia convulſio, convulſion-fit: muſcular agitation violent; teeth gnaſhing; hands forcibly clenched; tranſient.

In aſſigning convulſions a place in noſology, we are evidently and confeſſedly deſcribing a ſymptom of a great many other diſeaſes, and a mere ſymptom in all; ſince the muſcular agitation which conſtitutes convulſion forms no part of the diſeaſe, and indeed ſeems to be one of thoſe ſalutary proceſſes, which, though depending on diſorder, tend nevertheleſs to remove it. The diſeaſes in which this ſymptom is moſt found are teething, worms, and other inteſtinal irritations; affections of the kidneys, parturition, and labour; various fevers, wounds of the head and other organs. Dr. Good makes five varieties.

α. C. erratica; ſhifting irregularly from one part to another.

β. C. univerſalis; attacking every part ſimultaneouſly: occaſionally protracted or habitual.

γ. C. intermittens; returning after intervals, regular or irregular.

δ. C. ejulans; accompanied with ſhrieks or yellings, but without pain.

ε. C. infantium; occurring in infancy; ſenſibility nearly ſuſpended; features of the face for the moſt part hideouſly diſtorted.

In all theſe caſes we muſt endeavour to diſcover the irritated nerves, and excite them to a new kind of action. In the laſt variety, the infantile convulſion, we ſhould look chiefly to the teeth and bowels. If any irritation ſeems likely to exiſt about the former parts, they muſt be freely lanced; if about the latter, purgatives muſt be given. If, on the other hand, pain and dizzineſs of the head be very ſevere, leeches may be applied. The warm-bath is the firſt thing to be had recourſe to when a child has a convulſion-fit; and the attendants ſhould be cautious not to forcibly open the clenched hands, or in any other way attempt to counteract the muſcular motions, ſince reſiſtance merely increaſes their exertion.

2. Syſpaſia hyſteria, hyſterics: convulſive ſtruggling, alternately remitting and exacerbating; rumbling in the bowels; ſenſe of ſuffocation; drowſineſs; urine copious and limpid; temper fickle. Two varieties.

α. H. atonica; from debility of conſtitution; without any evident proximate cauſe.

β. H. irritata; from ſudden emotion of the mind, or irritation of the ſtomach or bowels.

In tracing the nervous diſeaſes which grow out of dyſpeptic ailments, we have been very full and explicit on that form of hyſteria which has its origin in gaſtric irritation, and eſpecially that which is generally called the *irregular* forms of hyſteria. Hyſteria, as it ariſes from uterine irritation, will now be diſcuſſed; and this for the purpoſe of introducing the ſymptoms of an hyſteric fit. The treatment will in no means deviate from that before laid down. The ſtate of the uterine ſyſtem will be of courſe looked to; but ſo great is the ſympathy between the uterine and aſſimilating organs, that irritation in the former generally impairs the functions of the latter; conſequently the general plan of treatment cannot be different.

The paroxyſm or fit of hyſteria is commonly preceded by a ſenſe of laſſitude, coldneſs of the feet, and a copious diſcharge of pale limpid urine: often by pain in the head, loins, or ſtomach; which latter organ, as the fits commence, is ſometimes affected with vomiting. The paroxyſms commonly begin by ſome pain and fulneſs felt in the left ſide of the belly. From this a ball ſeems to move, with a grumbling noiſe, into the other parts of the belly; and, making as it were various convolutions there, ſeems to move into the ſtomach, and more diſtinctly ſtill riſes up to the top of the gullet, where it remains for ſome time, and by its preſſure upon the larynx gives a ſenſe of ſuffocation. There is occaſionally much difficulty of breathing, and a palpitation of the heart at the onſet. By the time the diſeaſe has proceeded thus far, the patient is affected with a ſtupor and inſenſibility, while at the ſame time the body is agitated with various convulſions: the trunk of the body is writhed to and fro, and the limbs are variouſly agitated; commonly the convulſive motion of one arm and hand is that of beating with the cloſed fiſt upon the breaſt very violently and repeatedly. The whole of the belly, and particularly the navel, is often drawn ſtrongly inwards; ſometimes there is a violent working, or alternate riſing and falling, of the belly, attended with conſiderable noiſe. The ſphincter ani, during the fit, is ſometimes ſo firmly conſtricted as not to admit a ſmall clyſter-pipe; and there is at the ſame time an entire ſuppreſſion of urine. This ſtate continues for ſome time, with ſome remiſſions and renewals of the convulſive motions; but they at length ceaſe, leaving the patient in a ſtupid and ſeemingly ſleeping ſtate. More or leſs ſuddenly, and frequently with repeated ſighing and ſobbing, together with a murmuring noiſe in the belly, the patient returns to the exerciſe of ſenſe and motion, but generally without any recollection of the ſeveral circumſtances that had taken place during the fit.

Such fits are very liable to recur from time to time, and during the intervals the patients are ſubject to involuntary motions, to fits of laughing and crying, with ſudden tranſitions from one to the other; while ſometimes falſe perceptions and ſome degree of delirium alſo occur, as well as all the various incongruities of the diſeaſe to which we alluded above. The preceding account is that of the moſt common form of the *hyſteric paroxyſm*; but this is conſiderably varied in different perſons, and even in the ſame perſon at different times. It differs chiefly by having more or fewer of the circumſtances above mentioned, by the greater or leſs degree of violence of theſe, and by the different duration of the whole fit. See Cullen, Firſt Lines, par. 1514.

The hyſteric paroxyſm ſcarcely reſembles any other affection of the body, except occaſionally the paroxyſm of *epilepſy*; but in epilepſy, the convulſive motions are generally much more violent, and the inſenſibility more complete; there is foaming at the mouth, and a ſtate of coma, or profound ſleep, follows the fit; on the contrary, there is no globus riſing into the throat, no agitation of the abdomen, no ſcreaming, laughing, or crying, nor any copious diſcharge of limpid urine, as is common in the commencement of the hyſteric fit.

For the relief of hyſteric fits, our means will vary according as the peculiar mobility of the nervous ſyſtem, on which the diſorder chiefly depends, is connected with a plethoric habit, and a purely ſanguine temperament, or with an habit the reverſe of plethoric, in which a conſiderable degree of debility, and a pale and phlegmatic temperament, prevail. If the patient be of a robuſt and plethoric conſtitution, *blood-letting* is the moſt effectual antiſpaſmodic that can be employed; and, when the convulſions are ſevere, or long continued, with a fluſhing or fulneſs of the veſſels of the face and external parts, it is the only antiſpaſmodic that can be adminiſtered with ſafety. At the ſame time, the turgeſcence and activity of the blood-veſſels, and the conſequent over-irritation of the nervous ſyſtem, may be diminiſhed by the application of cold to the head and abdomen, or to the body in general. The uſe of nauſeating emetics has alſo been recommended for this purpoſe. Where the plethora is not ſo conſiderable as to warrant general blood-letting, cupping from the neck, or from any part in pain, may be ſubſtituted.

But in thoſe habits which exhibit no marks of plethora or of conſiderable ſtrength, evacuations of blood, ſo far from being beneficial, are extremely detrimental, and are abſolutely enumerated among the cauſes which induce the diſeaſe. In ſuch conſtitutions, the hyſteric paroxyſm is to be diminiſhed or cut ſhort by ſtimulant and antiſpaſmodic medicines. Of theſe, opium, in its various preparations, is one of the moſt effectual; and its efficacy is conſiderably aided by a combination with the more diffuſible ſtimulants, eſpecially with æther and ammonia, or the volatile alkali. It is moſt commonly not difficult to force the patient to ſwallow twenty or thirty drops of ſulphuric æther and of tincture of opium, in any liquid, at the commencement or during the continuance of the fit; and this is frequently followed by a ſpeedy ceſſation of the ſpaſmodic motions. Various other ſtimulant medicines, eſpecially thoſe of ſtrong and pungent odour, may be adminiſtered with good effect under the ſame circumſtances; ſuch are the preparations of valerian, muſk, caſtor, camphor, aſſa-fœtida, oil of amber, oleum animale, &c. At the ſame time, any ſtrong impreſſion made upon the nervous ſyſtem will frequently arreſt the progreſs of the paroxyſm; as the application of any ſtrong-ſmelling ſubſtance to the noſtrils, ſuch as burning feathers and volatile ſalts. The ſtimulus of heat may likewiſe be reſorted to for the relief of the paroxyſm, when it is obſtinate; and it may be applied to the whole body, by means of the warm bath; or to the lower extremities, in the way of pediluvium.

After the paroxyſm is over, the complaint requires a ſteady regulation of the circulating and digeſtive ſyſtem, of the muſcular motions, &c. in the manner before adverted

verted to. This diſeaſe is without danger, except when it terminates in epilepſy, a termination by no means uncommon to this and other nervous maladies. This remark naturally leads us to,

3. Syſpaſia epilepſia, the epilepſy, or falling ſickneſs: general muſcular agitation, without ſenſation or conſciouſneſs; recurring at regular or irregular periods.

Of the two firſt propoſitions contained in the above definition, we have to remark, that they are liable to much uncertainty. The muſcular agitation is of various kinds. In the more common form, in which the attack of the diſeaſe is ſudden, it conſiſts in a convulſive or twitching agitation; in another form of the diſeaſe, the muſcles are in a ſtate of fixed rigidity, like tetanus. The limbs are ſtretched, and the whole trunk extended and fixed by a rigid ſpaſm; the eyes are widely open; not reverted, but ſtaring frightfully; the pupils contracted, and quite inſenſible to the ſtimulus of the ſtrongeſt light: "Erigitur quoque penis in infantibus; in adoleſcentibus ſemen ejicitur, et ſæpius urina ad magnam diſtantiam prorumpit." In other caſes, again, the muſcular ſyſtem is perfectly relaxed throughout the epileptic fit. Sometimes one ſide of the body is more convulſed than the other; ſometimes irregularity is obſerved. Some of the muſcles of the face being more affected than others, exhibit various and violent diſtortions of the countenance. The tongue is often affected, and thruſt out of the mouth, while the muſcles of the lower jaw are alſo affected, and, ſhutting the mouth with violence, often wound the tongue grievouſly. A ſymptom much leſs variable than the muſcular agitation before adverted to, is the ſtate of ſtupor or inſenſibility during the paroxyſm. In a very great majority of caſes this amounts to complete coma; but, in others, a ſlight degree of ſenſibility or conſciouſneſs remains during the paroxyſm. This ſtupor generally comes on ſuddenly, and without any premonitory ſymptoms. Sometimes dizzineſs and pain in the head, and viſual deceptions, are felt before the attack. Sometimes the remarkable ſenſation called *aura epileptica* precedes the attack: this is a ſenſation of ſomething moving in ſome part of the limbs or trunk of the body, and from thence creeping upwards to the head; and, when it arrives there, the perſon is immediately deprived of ſenſe, and falls into a fit. It is deſcribed ſometimes as reſembling that of a cold vapour, ſometimes as like a fluid gliding, and ſometimes like the ſenſation of a ſmall inſect creeping, along the body; and very often the patients can give no other diſtinct idea of their ſenſation, than as in general of ſomething moving along. It might be ſuppoſed that this ſenſation aroſe from ſome affection of the extremity or other part of a nerve, acted upon by ſome irritating cauſe; and that the ſenſation, therefore, followed the courſe of ſuch nerve. But it is not found to follow the courſe of any nerve diſtinctly, and it generally ſeems to paſs along the integuments.

During the epileptic convulſions, the face becomes red, then livid and ſwelled, from the interruption to the circulation through the head; and there is commonly at the ſame time a frothy moiſture iſſuing from the mouth; and in the moſt ſevere caſes the urine and alvine excrements are involuntarily diſcharged. In ſome inſtances a hiſſing or ſtertorous noiſe is emitted. The convulſions have for a few moments ſome remiſſions, but are ſuddenly again renewed with great violence. Generally, after no long time, this terrible ſtruggle ceaſes altogether, and the patient remains for ſome time without motion, in a ſtate of abſolute inſenſibility, and under the appearance of a profound ſleep. After ſome continuance of this ſeeming ſleep, he ſometimes ſuddenly, but for the moſt part by degrees only, recovers his ſenſes and power of motion, but without any memory of what had paſſed from the firſt ſeizure of the fit; and complaining of head-ache, and exceſſive pain in all the limbs, as if from ſevere fatigue. During the convulſions, the pulſe and reſpiration are hurried and irregular; but, when they ceaſe, theſe return to their uſual regularity and healthy ſtate.

It is a remarkable and diſtreſſing fact, that epileptic attacks happen much more frequently during ſleep than in waking hours. The diſeaſe pretty equally affects males and females; nor are there any temperaments, habits, or conſtitutions, exempt from its attacks. There are periods of life at which epilepſy is more prone to occur than at others. Infants are ſubject to the diſeaſe; but in them it generally ariſes from irritation in the bowels, and diſappears with the exciting cauſe. The firſt dentition alſo is a critical period; but, if the diſeaſe appear then, it generally goes off when the dentition is completed. Epilepſy often appears, for the firſt time, about the eighth, tenth, or twelfth, year; in which caſe there is danger of its becoming habitual. Still there is a proſpect of its ſubſiding at puberty; but, if this period paſs without amendment, there is little hope afterwards. In females, the coming forth of the catamenia ſometimes aſſiſts the conſtitution in getting rid of the diſorder; but it much more frequently gives riſe to it; at leaſt there is no period of life in which females are ſo frequently attacked with epilepſy as the period of firſt menſtruation. The intimate connexion between epilepſy and other nervous diſorders we have before adverted to.

The pathology of this diſeaſe is obſcure. Many eminent writers have contended that epilepſy conſiſts in an unuſual fulneſs of the veſſels; and they inſtance the flushing and turgidity of the countenance, the pulſation of the carotids, the dilatation of the pupils, the relief afforded by blood-letting, the appearances on diſſection, &c. in proof of their opinion. We may remark, however, that while we admit that plethora of the head is a very frequent condition of epilepſy, and that it is almoſt always the ſole cauſe of its fatal termination, we cannot allow that epilepſy ariſes from plethora of the brain. If that ſtate were indeed the cauſe of epilepſy, how happens it that epilepſy is not a frequent occurrence in fever, where there is evident cranial plethora? How happens it that it is not more obſervable in caſes in which a mechanical hindrance is oppoſed to the return of blood from the head? How happens it that the ſymptoms of epilepſy vary from thoſe of apoplexy, which is evidently a diſeaſe of fulneſs of the head?

To the appearances on diſſection we ſay, that theſe appearances are not uniform; that frequently no turgeſcence of veſſels is found on necrotomy, eſpecially if the ſubject be young. If, on the contrary, plethora were the cauſe of epilepſy, ſhould we not always find it on diſſection? Granting that *ſome part* only of the brain was affected with *vaſcular fulneſs*, ſhould we not find that part always and undeviatingly the ſeat of turgeſcence on diſſection? But we do not find this. We find a fulneſs of blood in the head; but we do not perceive it more remarkable on the baſe than on the top of the brain, nor do we find it in all caſes any-where. The fact that bleeding does good in epilepſy, is no proof of the inflammatory origin of the diſeaſe, becauſe bleeding may do good by diminiſhing nervous excitability generally, or by diminiſhing the action of the ſecernents; in which caſe they may ſecrete leſs of the fluid; which, it may be preſumed, irritates ſome part of the nervous ſyſtem. In a word, ſo many are the effects of bleeding on the ſyſtem, that we cannot found any theory on its effects; and if we were to do ſo, the event would not bear us out in it. Bleeding often fails in epilepſy, eſpecially in protracted caſes; and we ſcarcely have heard of a caſe in which bleeding alone was ſucceſsful.

For our own part, we ſhall attempt no theory of this diſeaſe. We believe that the ſtate called irritation (a ſtate we are ignorant of the nature of, but which is manifeſted to us by exaltation of the cerebral functions) is the firſt diſeaſe of the brain; that the intenſity of this gives riſe to cerebral plethora, a ſtate which, by over-diſtending the capillaries, paralyzes the movements of the

ſuperior

ſuperior parts of the brain, which are already debilitated by the over-excitement of that part of the brain (the baſe and ſpine) from which the nerves of voluntary motion are derived; the phenomena of epilepſy evidently diſplaying exaltation of one ſet of nervous functions, with diminution or complete loſs of others. The appearances of diſſection, as we have before hinted, are generally thoſe of inflammation; redneſs of the membranes or ſubſtance of the brain, ſlight adheſions and affuſions in the ſame part, are the moſt remarkable. Irregularity in the bones of the cranium, ſome of their projecting parts preſſing on the brain, tubercles and oſſification of the inveſting membranes, are ſometimes met with.

In the *treatment* of epilepſy, we have two objects in view. The firſt to diminiſh the ſanguineous plethora which is the immediate cauſe of the fit: hence bleeding may be practiſed during the fit, or as ſoon after as may be, eſpecially if fulneſs of pulſe be felt, if vertigo or muſcæ volitantes have preceded, or if pain in the head has followed it. The degree to which this evacuation is to be carried muſt be regulated by circumſtances. Caſes which ariſe from idiopathic cerebral irritation, will generally allow of more copious abſtractions of blood than thoſe which ariſe from ſympathetic or diſtant irritations. Theſe caſes, of what may be called idiopathic cerebral irritation, are comparatively rare. The more frequent forms ariſe from irritation in the liver, bowels, or ſtomach. In theſe caſes, local plethora will ſtill require to be obviated. But our attention muſt chiefly be directed to the treatment of the malady during the remiſſion, by means of regular and ſparing diet. Free purging may at firſt be uſed in all caſes; but, in thoſe under immediate conſideration, this muſt ſhortly give way to milder laxatives, leſt the over-action of the bowels become a freſh cauſe of irritation. When uterine irritation occaſions the epilepſy, (and when we conſider the high importance of this ſyſtem in the female economy, we ſhall not be ſurpriſed at the frequency of this cauſe;) emmenagogues if the catamenia are ſuppreſſed, or ſedatives and tonics according to other circumſtances, muſt be reſorted to. The main indication being ſtill, as in all other caſes, to keep a certain balance of excitement; by diminiſhing local plethora, and exciting the ſecreting and motive organs.

The inſufficiency of this plan alone ſuggeſts the adoption of other meaſures in addition to them. Theſe meaſures, however, we have no faith in, unleſs the digeſtive organs and the ſtate of the cerebral circulation be at the ſame time attended to. The firſt meaſure is counter-irritation. This may be done by ſetons in the nape of the neck; perhaps more favourably by iſſues or ſetons on the ſacrum, or above the knees. If theſe applications are too troubleſome, an iſſue in one or in each arm will have a ſimilar effect, in a certain degree. If there are any conſtitutional diſorders which may act as drains or diverſions, they ſhould be encouraged. A ſeton in the ſcalp has been found uſeful.

Among the medicines which ſeem to alter the action of the nervous ſyſtem, and which conſequently do good in protracted epilepſies, arſenic and the nitrate of ſilver hold the firſt reputation. The former drug has often cured this diſeaſe: it is given in the uſual moderate doſe of ten drops of Fowler's ſolution, to be gradually increaſed. It is certainly not ſo much to be depended on as the nitrate of ſilver, but is free from an unpleaſant effect which we ſhall preſently note as belonging to the latter medicine. The nitrate of ſilver is a medicine of great power; and, given when the conſtitutional treatment has been ſtrictly purſued for ſome time, will, we believe, rarely fail. The unpleaſant effect above alluded to conſiſts in a remarkable blackneſs or diſcolouration of the ſkin which has in ſome caſes followed its uſe, and which, when once formed, laſts for life. It is ſaid, however, that this may be obviated by keeping out the rays of the ſun during the exhibition of the medicine. It is alſo ſtated, that a period of from three to ſix months' continuance in the uſe of the argenti nitras has always preceded this diſcolouration: it is therefore adviſed that we ſhould never continue the medicine for many weeks together; and in fact, if its good effects are not apparent in a month or ſix weeks, we believe it will be found quite uſeleſs.

Dr. Good makes four varieties of this diſeaſe.

α. E. cerebralis: attacking abruptly, without evident cauſe, except ſometimes a ſlight giddineſs. The remote cauſe is external violence to, or internal injury, malformation, or diſeaſe, of the head.

β. E. rigida: the limbs fixed and rigid, with agitation of particular organs.

γ. E. ſympathetica: catenating with ſome morbid action of a remote part, with a ſenſe of a cold vapour aſcending from it to the head.

A remarkable but authenticated fact is, that the tourniquet applied round the limb before this *aura* has aſcended, often ſtops its progreſs, and wards off the diſeaſe; but, as mental emotion has great effect in keeping off epilepſy, (as the well-known ſtory of Boerhaave, who threatened his patient out of it, teſtifies,) we ſhould be inclined to attribute this effect to the influence of the imagination.

δ. E. irritata; from ſudden emotion of the mind, or irritation of the ſtomach or bowels.

Genus IX. *Carus*, [κάρος, deep heavy ſleep; from κάρα, the head.] Torpor. Generic characters—Muſcular immobility; mental or corporeal torpitude; or both. There are ſix ſpecies.

1. Carus aſphyxia, ſuſpended animation: total ſuſpenſion of all the mental and corporeal functions. Four varieties.

α. A. ſuffocationis; from hanging or drowning; countenance turgid and livid.

β. A. mephytica; from carbonic acid gas, or other irreſpirable auras, by the miners called *damps*, (from the German *dampff*, vapour, exhalation.) In aſphyxy from this cauſe, the countenance, inſtead of being livid, is pallid.

γ. A. algida; from ſevere cold: limbs rigid, countenance pallid and ſhrivelled.

The three grand organs, the brain, lungs, and heart, ſupport motion and ſecretion by their action and re-action on each other; and the functions of any one of them cannot be ſuſpended without the ſuſpenſion of the other two. If the action of the heart ceaſes, the brain ceaſes to tranſmit the nervous energies neceſſary to the action of the reſpiratory muſcles, neceſſary perhaps alſo to the oxygenation of the blood. If the action of the nervous power be ſuſpended, the heart retains its powers a ſhort time; but, the reſpiratory proceſs being ſuſpended, the exertion of thoſe powers is prevented; and ſo on.

From theſe premiſes it follows, that all caſes of death are traceable to the ſuſpenſion of the uſe of theſe functions. In moſt caſes this ſuſpenſion depends on actual *deſtruction* of the *powers* or *properties* of the part; and conſequently revival is impoſſible. In many caſes the *powers* remain unimpaired, but latent; and are quiet only becauſe the ſtimulus to them is abſent. The wheel of motion, kept up by the action of the heart, lungs, and brain, on each other, has been ſtopped; but, the powers of action ſtill remaining in thoſe parts, if it is once ſet going, their reciprocity of action will keep it up. We conſequently find ſudden death uſually from ſuſpenſion of the function of breathing, as from hanging, drowning, or the like; or from rupture or ſtoppage, or from mechanical impediment, of the heart; or, laſtly, from ſome unknown change in the brain; preſumptively, and indeed certainly in many caſes, from rupture of blood-veſſels, or general preſſure from diſtention of veſſels. To the firſt of theſe claſſes we ſhall confine ourſelves; the ſecond is of courſe

courſe remedileſs; and the third claſs will be treated of under apoplexy, with the exception of a brief notice in this place.

In the reſuſcitation of perſons drowned or hanged, or rendered inſenſible by mephitic vapours, the firſt object will be to place the ſyſtem in that ſtate of temperature moſt favourable to the development of the nervous function; viz. that of warmth. The ſame remark is applicable to caſes of ſuſpenſion of life from cold. It is to be ſtrictly obſerved, however, that the reſtoration of heat to the body be not ſuddenly effected; for, if *ſtimulation be diſproportionate to excitability*, excitation will not be manifeſted, conſequently the increaſe of temperature ſhould in all caſes be at firſt very ſmall, and gradually augmented. With reſpect to the quickneſs with which the increaſe of heat is to go on, this muſt vary according to circumſtances. We may go on much quicker when ſuſpended animation ariſes from hanging, drowning, or breathing foul air, than when the body has been frozen. We alſo begin with a higher temperature at once; for, in the latter caſe, the friction of the body with water, or even ſnow, muſt be the prelude to higher degrees of temperature, while in the former we may at once put the patient into a warm bed, or immerſe him in warm grains or water, or whatever may be at hand.

A flexible pipe being introduced through the pharynx into the ſtomach, a little warm wine and water, with a very minute doſe of ammonia, may be injected; ſome adviſe alſo injection per ano. While this is doing, the lungs are to be inflated: this is beſt done by cutting a hole in the front of the trachea, and introducing a tube affixed to Hunter's bellows; or, if they are not at hand, a common bellows may ſuffice; the lungs being alternately filled with air, and then exhauſted of it by preſſure on the cheſt. Oxygen may be uſefully employed when procurable, eſpecially in caſes of A. mephytica. If a ſigh beat at the heart, if the ſlighteſt change in the colour of the ſkin, ſhould indicate an effort on the part of the heart to reſume its functions, a little blood ſhould be drawn from the arm, and a ſhock of electricity of the moſt inſignificant degree paſſed through this organ. The force of the electricity may gradually be increaſed.

The above rules embrace all that is requiſite for the reſuſcitation of life. With reſpect to the *time* at which they are admiſſible, no rule can be laid down. We may reaſonably hope for ſucceſs when the patient has not been more than a quarter of an hour deprived of air. Seldom do they recover after twenty minutes. Yet ſo many aſtoniſhing caſes of reſuſcitation, after the moſt extraordinary lapſe of time, are on record, (e. g. ſixteen or eighteen hours, three days, fifteen days, ſee Parr's Medical Dictionary, p. 627.) that we ſhould uſe ſome meaſures even in any caſe within the bounds of probable reſtoration. But, after twenty minutes' hanging, or three or four hours of ſubmerſion, we ſhould be careful not to revive the hopes of the ſufferer's relatives merely to plunge them into deeper affliction, by commencing any plans of reſuſcitation. We cannot paſs over, on this ſubject, a neglect very common among practitioners in general; viz. the deſertion of perſons ſuddenly falling (apparently) dead in a fit. It is uſual to open a vein or artery; and, if no blood flow, the patient is given up for loſt. This practice, deſervedly reprobated by the higher orders of the profeſſion, and by no means truſted to in our hoſpitals, chiefly belongs to the general practitioner. It is acknowledged that theſe ſudden viſitations are often irremediably fatal; but nevertheleſs we are wrong in ſuppoſing them to be always ſo. Often when the veins do not bleed, and the heart remains perfectly quieſcent, both theſe phenomena will appear if ſtimulating inflations be thrown into the ſtomach and inteſtines, and a ſhock of electricity paſſed through the heart. On this account, theſe ſalutary meaſures, as well as inflating the lungs, ſhould never be neglected.

This groſs abandonment of our fellow-creatures has been feelingly and forcibly dwelt upon by Mr. White in his work on the "Diſorder of Death." This author inculcates the adoption of reſuſcitative meaſure in all caſes of ſudden death. We ſhould, for obvious reaſons, not have recourſe to it, however, in any but doubtful caſes. Dr. Good gives us another variety of Carus, quite beyond the reach of the art of medicine.

δ. A. electrica; from lightning, or ſevere ſtroke of electricity: limbs flexible; countenance pale; blood uncoagulable. In this variety the ſyſtem ſeems to be totally exhauſted of its irritable and contractile power.

2. Carus ecſtaſis, ecſtacy: total ſuſpenſion of mental power and voluntary motion; pulſation and breathing continuing; muſcles rigid; body erect and inflexible. Said to be produced by profound contemplation or attention of mind, or overwhelming paſſion; in which caſe it is reverie with a ſpaſtic diatheſis. Dr. Cullen regards it as a modification of apoplexy.

3. Carus catalepſia, trance: total ſuſpenſion of mental power and voluntary motion; pulſation and breathing continuing; muſcles flexible; body yielding to and retaining any given poſition.

In this ſpecies the countenance is ſaid to be florid, and the eyes open, and apparently fixed intently upon an object, but without viſion. It is a diſeaſe of rare occurrence; and varies in its duration from a few hours, or even minutes, to two or three days. It returns ſometimes at ſtated periods. Forty grains of tartar emetic have been given without effect. (Behrends, in Baldingen N. Magazin, Band ix. p. 199.) In the caſe of a ſchool-boy, aged eleven years, the paroxyſms recurred ten times in twenty-four hours, and never exceeded three minutes in duration. If the attack commenced while walking, the ſame pace was maintained, though without the direction of the mind. (Stearns, Americ. Med. and Phil. Regiſt. v. i. viii.) The noſologiſts, however, mention a variety, in which the powers of deglutition and digeſtion continue, the food being thruſt into the mouth. It has been found to be produced by the ſame cauſes as the preceding ſpecies; and in theſe caſes is perhaps reverie with a ſpaſtic diatheſis. Cullen ranks this alſo as a modification of apoplexy; but, like the preceding, it is deſtitute of ſtertorous ſleep. The exiſtence of catalepſy may however be reaſonably doubted. It has been often feigned by impoſtors.

4. Carus lethargus, lethargy: mental and corporeal torpitude, with deep quiet ſleep. The term is applied by the Arabian phyſicians, not only to the varieties enumerated below, but to comatoſe affections generally.

α. L. abſolutus: without intervals of ſenſation, waking, or conſciouſneſs.

β. L. cataphora, ſomnolency: with ſhort remiſſions or intervals of imperfect waking, ſenſation, and ſpeech.

γ. L. vigil, apparent ſleep: perfect lethargy of body, but imperfect lethargy of mind; wandering ideas, and belief of wakefulneſs during ſleep.

Each of theſe varieties is found as a ſymptom in fevers of various kinds; concuſſion or other injuries of the brain; and repelled gout, or other ſuppoſed humours or exanthems.

5. Carus apoplexia, apoplexy: mental and corporeal torpitude, with ſtertorous ſleep. Dr. Good notes two varieties.

α. A. ſanguinea, ſanguine apoplexy; with a hard full pulſe and fluſhed countenance.

β. A. ſeroſa, ſerous apoplexy; with a feeble pulſe and pale countenance.

The varieties of Dr. Good we ſhall not adopt. The recent light which the continental phyſicians have thrown on the ſubject of apoplexy by their diſſections, and the experience of our own practical authors, unite in overturning the above diſtinction. A number of arrangements have been made from the few facts known, which will as inevitably be diſcarded. In the mean time we may remark, that the dividing a diſeaſe into many

varieties anſwers no good purpoſe. It makes the pathological ſtudent expect to find diſeaſes exactly to correſpond with the varieties laid down by his noſologiſt, while every one knows that will never be the caſe; conſequently it ſeems better to us to deſcribe the various forms of apoplexy under one head, when the ſtudent eaſily perceives their connexion, and the probability of his meeting with many intermediate forms.

We uſually find the apoplectic patient in a ſtate in which, as Dr. Cooke accurately ſays, "the animal functions are ſuſpended, while the vital and natural functions continue; reſpiration being generally laborious, and frequently attended with ſtertor." According to Serres, the ſtertorous reſpiration is often ſloweſt when the pulſe is quickeſt; and this want of correſpondence between the two functions of circulation and reſpiration this author conſiders to be a pathognomonic ſign of apoplexy.

Although the attack is often ſudden, yet, where patients have paid attention to their own ſenſations, there have uſually been ſome of the following premonitory ſymptoms; as, pain in the head, ringing in the ears, vertigo, diſpoſition to ſomnolency, numbneſs of the limbs, or ſenſe of formication; dimneſs of ſight; flaſhes of light before the eyes, with ſwelling and watering of thoſe organs; fluſhing of the face; turgidity of the jugular veins; trembling and faultering of the voice; failure of the memory; deep breathing, &c. After more or leſs of the foregoing premonitions, the attack is uſhered in, according to Dr. Abercrombie, in one of the three following forms.

"In the firſt form, the patient falls down ſuddenly, deprived of ſenſe and motion, and lies like a perſon in a deep ſleep; his face generally fluſhed; his breathing ſtertorous; his pulſe full, and not frequent, ſometimes below the natural ſtandard; in ſome caſes, convulſions occur. In this ſtate of profound ſtupor, the patient may die after various intervals, from a few minutes to ſeveral days, or he may recover perfectly without any bad conſequences of the attack remaining, or he may recover with paralyſis of one ſide. This paralyſis may diſappear in a few days, or it may ſubſide very gradually, or it may be permanent; other functions, as the ſpeech, may be affected in the ſame manner; and, ſometimes, recovery from the apoplectic ſtate is accompanied by loſs of ſight.

"The ſecond form of the diſeaſe begins with a ſudden attack of violent pain in the head; the patient becomes pale, ſick, and faint, generally vomits, and frequently, though not always, falls down in a ſtate reſembling ſyncope; the face very pale, the pulſe very ſmall. This is ſometimes accompanied by ſlight convulſion. In other caſes, he does not fall down, the ſudden attack of pain being only accompanied by ſlight and tranſient loſs of recollection. In both caſes, he recovers in a few minutes; is quite ſenſible, and able to walk; continues to complain of intenſe head-ache; after a conſiderable time, perhaps ſome hours, becomes oppreſſed, forgetful, and incoherent, and thus gradually ſinks into coma, from which he never recovers. In ſome caſes, paralyſis of one ſide occurs; but in others, and I think the greater proportion of this claſs, there is no paralyſis.

"In the third form, the patient is ſuddenly deprived of the power of one ſide of the body, and of ſpeech, without ſtupor; or, if the firſt attack is accompanied by a degree of ſtupor, this ſoon goes off; he appears ſenſible of his ſituation, and endeavours to expreſs his feelings by ſigns. In the farther progreſs of this form of the diſeaſe, great variety occurs; in ſome caſes, it paſſes gradually into apoplexy, perhaps after a few hours; in others, under the proper treatment, the patient recovers perfectly in a few days. In many caſes, the recovery is gradual, and it is only at the end of ſeveral weeks or months that the complaint is removed. In another variety, the patient recovers ſo far as to be able to ſpeak indiſtinctly, and to walk, dragging his leg by the moſt painful effort, and after this makes no further improvement. He may continue in this ſtate for years, and die of ſome other diſeaſe, or he may be cut off by a freſh attack. In a fifth variety, the patient neither recovers nor paſſes into apoplexy; he is confined to bed, ſpeechleſs and paralytic, but in poſſeſſion of his other faculties, and dies gradually exhauſted, without apoplexy, ſeveral weeks or months after the attack." Theſe two laſt varieties belong to palſy, properly ſpeaking.

In the ſeverer degrees of this diſeaſe, the function of reſpiration is generally much embarraſſed; ſlow and laborious at the beginning of the paroxyſm; frequent, weak, and irregular, towards the fatal termination. Stertor, though not always, is very commonly preſent; and ſome of our ableſt phyſicians meaſure the violence and danger of the diſeaſe by the degree of the ſtertor. This laſt remark is equally applicable to the frothy ſaliva, or foam, excreted from the mouth, and ſometimes blown away from the lips with conſiderable force. In reſpect to the *pulſe*, it is obſerved by Dr. Cooke, that it is "at firſt regular, ſtrong, full, and ſlow, beating from fifty-five to ſixty-five times in a minute; but, as the diſeaſe advances, it becomes weaker, and more frequent; and, in the end, irregular or intermitting." Dr. Gregory, in his Lectures, obſerves, that "it is a fatal ſign when the pulſe is firſt ſmall, and afterwards becomes very full." When apoplexy terminates fatally, as the diſeaſe proceeds, the abolition of ſenſe and voluntary motion ſeems to become more complete; the reſpiration and pulſe more weak and irregular; cold clammy ſweats affect the face and whole body; the features ſhrink, and convulſions ſupervene, which terminate in death.

The prediſpoſing cauſes are, age, (few patients ſuffering apoplexy before the age of 40,) cold and moiſture, plethora, and intenſe thinking. Any circumſtance indeed which fills the blood-veſſels inordinately, prevents their due activity in the general circulation of the body, or cauſes extraordinary action in the brain, may prediſpoſe to or actually cauſe apoplexy. We ſhould alſo mention, among the cauſes of apoplexy, diſeaſe of the heart, whether this ariſe from exceſſive action of this organ generally or from diſproportionate action of one of its cavities. The connexion between cardiac and apoplectic diſeaſe, which has recently been much dwelt on by the French, is worthy of particular attention. The pathology of apoplexy uſually laid down, is that it ariſes from concuſſion of the brain, its fatality being cauſed by a coagulum of blood or an effuſion of ſerum, forming the compreſſing body. Many diſſections, however, diſcovered no kind of leſion of the above-mentioned ſort; and M. Serres, in his experiments on animals, found that compreſſion did not produce apoplexy; and in his diſſections of the human body, he ſometimes found coagula of blood in the brain without the antecedence of this diſeaſe. Hence it became allowable to doubt the correctneſs of the eſtabliſhed doctrine. M. Serres, from numerous diſſections, infers, that apoplexy, in all inſtances except thoſe attended with paralyſis, is a diſeaſe of the membranes of the brain; hence he calls it *meningeal apoplexy*. That the inflamed, and conſequently thickened, and generally effuſing, ſtate of the membrane may produce apoplexy by its uniform and extenſive preſſure over the ſurface of the cranium, cannot be denied; but it may reaſonably be queſtioned whether apoplexy is membranous inflammation, when we conſider the extreme pain uſually attendant on that ſort of diſeaſe; nor do we find that the appearances repreſented by M. Serres are corroborated by the teſtimony of other authors. It ſhould be recollected alſo, that we are not obliged to admit, that, becauſe preſſure from a clot of blood does not produce apoplexy, (as ſtated in the experiments and diſſections of M. Serres,) therefore preſſure is not the cauſe of the diſeaſe. For the diſtention of the blood-veſſels muſt induce a very great preſſure, and one which is uniformly exerted through the whole ſubſtance of the brain. Of courſe, when we conſider the compact

compact and unyielding ſtructure of the cranium, and the incompreſſibility of the ſubſtance of the brain, we ſhall perceive, that a very ſlight increaſe in the momentum of the blood muſt exerciſe a powerful preſſure on ſome part or other; and it ſeems to us, that this part will be the *extreme terminations* of the *arterial branches*. Theſe terminations, having a ſtrong tendency to diminiſh their caliber in a ratio increaſing with the diminution of their ſize, naturally exert this power in a much greater degree than the larger arteries, which poſſeſs not only leſs of this power, but are ſo much nearer the heart as to ſuffer in a greater degree from its impulſes: conſequently they will be emptied by the preſſure of the larger arteries to a degree that will counterbalance all vis a tergo; ſo that the circulation of the brain will be kept up ſolely by the middle-ſized arteries and veins. That this is the caſe does not admit of direct proof; yet it is ſupported by ſtrong inferences, for it is allowed by all, that the brain cannot be diminiſhed in its volume by preſſure, except by the emptineſs of its veſſels. It is alſo allowed, that the pulſations of the arteries going to the head manifeſt vigour and fulneſs; and it is alſo pretty generally believed, that the blood comes back freely enough through the jugulars; and hence we have the ſtrongeſt reaſon to believe, that the capillary ſyſtem, and that only, is emptied of its blood in apoplexy.

This hypotheſis explains the phenomena of apoplexy in a very clear manner. It explains the loſs of conſciouſneſs that attends this diſeaſe; a phenomenon always depending on want of due ſupply to the arterial terminations of the cerebrum, as we ſee in ſyncope from bleeding. It explains how apoplexy is cured by veneſection, which, by reſtraining the action of the heart and the plethora, diminiſhes the preſſure. It ſhows how, when effuſion of blood takes place, and paralyſis comes on, there is ſome amelioration of the apoplectic ſymptoms; i. e. becauſe the *general* preſſure is removed, and one merely local remains; conſequently affecting only particular nerves and their dependant functions. That there are exceptions to the laſt fact only ſhows, that the effuſion of blood may not always be followed by the dilatation of the capillaries; a fact not more ſurpriſing than that emptied arteries do not always contract on their contents, as we have reaſon to believe happens in phlogoſis unreſtrained by bleeding.

The appearances on diſſection are various. M. Serres ſtates, as we before hinted, that in all ſimple apoplexies (i. e. unaccompanied by paralyſis) the membranes of the brain are alone affected. The diſeaſe of membranes is ſometimes attended with effuſion, which is ſerous, ſanguineous, or ſero-ſanguineous. Sometimes it conſiſts only of redneſs, diſtention of the veſſels, of the pia mater, ſhrinking of the dura mater, and opacity, ſometimes accompanied with whitiſh granulations, of the tunica arachnoides. Moſt authors ſtate, that the blood-veſſels in the ſubſtance of the brain are always found much diſtended. It is in the ſubſtance of the brain that ſanguineous extravaſation from rupture of the veſſels is uſually met with; the corpus ſtriatum and the thalamus nervorum opticorum being the preciſe ſituations of this leſion.

When apoplexy terminates by paralyſis, and the latter in convaleſcence, the changes which the diſeaſed ſtructure undergoes are very numerous. In the firſt place, the apoplexy terminates in paralyſis, in conſequence of the rupture of an artery or vein, which renders the preſſure, before general, merely local; and conſequently, when death does not ſpeedily follow, allows the cerebrum to reſume its functions in ſome part. The extravaſated blood after a time becomes ſurrounded with a cavernous pouch, ſomewhat like an aneuriſmal ſac, and which frequently opens by a rent into the ventricles, or on the ſurface of the cerebrum. The parietes of this cavern is very ſoft, tinged ſtrongly by the blood, about a line or two in thickneſs, unequal, anfractuous, and evidently lacerated on its internal ſurface, and preſenting flaky filaments when agitated in water. It is ſurrounded by a layer of cerebral ſubſtance, about three lines in thickneſs, of a pale yellow colour, and the conſiſtence of thick cream, ſcarcely miſcible with water: this layer becomes gradually blended with, and loſt in, the ſurrounding healthy brain.

From this cyſt, abſorption of the effuſed blood gradually takes place; or at leaſt the brain gradually accommodates itſelf to the impreſſing body. "After the abſorption of the blood, (ſays M. Rochoux,) the parietes of the cavern, or pouch, above deſcribed, approximate, and in ſome meaſure cicatrize, by the intervention of a cellular and vaſcular connexion, forming various areolæ, between which is found a reddiſh ichorous fluid, more or leſs abundant, and ſometimes glutinous. Theſe parietes are much denſer than the reſt of the brain, about a line or two in thickneſs, and of a yellowiſh-brown colour. I affirm that theſe caverns are conſtantly found after apoplexy terminating in paralyſis; and their number always correſponds with the number of attacks." This laſt remark of Rochoux's agrees with that long ſince made by our illuſtrious countryman Hunter. See Hunter on the Blood, p. 213.

The *treatment* of apoplexy varies as it is accompanied with ſymptoms of paralyſis or as theſe are wanting. In the firſt attack of the diſeaſe, however, the treatment is the ſame in each variety. The object is to deplete the cerebral veſſels. For this purpoſe the jugular vein ſhould be opened, the patient fixed in an erect poſture, and blood drawn until ſome return of ſenſation is manifeſted. Frequently, however, this relief is expected in vain. Seeing the difficulty, therefore, of removing apoplexy, when once formed, it ſhould be the care of the practitioner to notice its premonitory ſymptoms with peculiar attention. The occurrence of viſual deception, the moſt trifling aberration of the cerebral functions, if attended with ſanguineous fulneſs, or if occurring in patients prediſpoſed to apoplexy from age or formation, will warrant us in taking a large quantity of blood from the arm, and exhibiting a ſtrong draſtic purge. The latter being repeated from time to time, and low diet enjoined, by theſe means an attack of this formidable malady may in almoſt all inſtances be warded off.

To return to the treatment of the diſeaſe when formed. Inſtead of the jugular vein, ſome practitioners have ſtrongly recommended arteriotomy, and have ſelected the temporal artery for this purpoſe. It does not ſeem of much conſequence whether the temporal artery or the jugular vein be opened, provided a ſufficient quantity of blood be drawn, and that quickly. The ſmallneſs of the temporal artery, however, often prevents a ſufficient flow of the blood; and no ſuch objection is in force againſt the jugular vein. When from one of theſe ſources a ſufficient quantity of blood has been drawn, our attention muſt be directed to the ſtate of the alimentary canal. If a large meal has been taken within five or ſix hours of the attack, or if the patient has been known to ſuffer under dyſpepſia for ſome time previous to the occurrence of apoplexy, a full doſe of ipecacuanha, with copious draughts of warm water, may be adminiſtered. In the nervous apoplexy deſcribed under Dyſpepſia, this meaſure might precede or ſuperſede blood-letting. Unfortunately, however, the diagnoſis between nervous and ſanguineous apoplexy is very obſcure. When the emetic has operated, aperient clyſters are to be given; and theſe may be followed by draſtic purges. The peculiar kinds it is ſcarcely worth while to ſpecify, as they are ſufficiently known. We may remark, however, that the oil of croton, from its intenſe and ſudden action, promiſes much benefit in apoplexies. If under theſe circumſtances the diſeaſe in ſome meaſure goes off, reſtoring conſciouſneſs and feeling to the patient, it will be right to prevent the recurrence of the fit by counter-irritating diſtant parts; as bliſtering the legs, giving draſ-

tic

tic purges, and exciting the kidneys by turpentine or ſmall doſes of tinctura lyttæ. As to the time it may be right to perſevere in theſe meaſures, or in bleeding, when little apparent amendment is produced, no general rule can be given. The termination of apoplexy is generally rapid: but, as we have before noticed, exceptions occur ſufficiently often to juſtify the adoption of every meaſure till the lateſt period. When the diſeaſe terminates in paralyſis, it will be neceſſary to bear in mind the manner in which a cure is effected. But we ſhall not enlarge on this ſubject, becauſe it has received full conſideration in another part of this work. See PALSY, vol. xviii. It may be right, however, to remark, that we ſhould keep up a briſk action of the bowels, and take every means to obviate ſanguineous fulneſs and gaſtric irritation, as meaſures moſt likely to procure abſorption. In palſy ſtrictly local, or in caſes of ſuch old ſtanding that we have reaſon to conſider the morbid depoſition no longer the cauſe of the diſeaſe, and that the paralyſis depends on inertneſs of nerves from mere *habit*, electricity will be found uſeful.

6. Carus paralyſis: corporeal torpitude, and muſcular immobility, more or leſs general; without ſomnolency. Three varieties.

α. P. hemiplegia; affecting, and confined to, one ſide of the body.

β. P. paraplegia; affecting, and confined to, the lower half of the body on both ſides.

γ. P. particularis; affecting, and confined to, particular limbs.

Palſy is found alſo, under one of theſe varieties, occaſionally as a ſymptom in fevers; exanthems; colic, and other affections of the inteſtinal canal; gout, rheumatiſm, ſtruma, ſiphilis, trichoma; diſeaſes of the external organs of ſenſe; wounds, and other external injuries. We do not find that we have any thing material to add to what has been ſtated in the recent article PALSY, vol. xviii. p. 301–3.

CLASS V. GENETICA, [from γινομαι, to beget.]

DISEASES of the SEXUAL FUNCTION.

Order I. CENOTICA, [from κενωσις, an evacuation.] Affecting the Fluids. Morbid diſcharges; or exceſs, deficiency, or irregularity, of ſuch as are natural. This order contains five genera.

Genus I. *Paramenia*, [from παρα, bad, and μην, the menſes.] Morbid evacuation, or deficiency of the catamenial flux.

The catamenial flux is a ſecretion from the mucous membrane which lines the uterus and ſuperior part of the vagina. It differs from the ordinary mucus ſecreted in theſe parts, in coagulating, in occurring periodically (for it appears in health only once a-month), and in its poſſeſſing the colour of blood. Its red colour is however the only property which it has in common with blood, it being in every other reſpect totally different from that fluid, as Hunter has very clearly ſhown. See Hunter on the Blood, p. 88. In warm climates, women begin and leave off menſtruating at a much earlier period of life than in cold ones. The quantum of catamenial diſcharge, allowing for great varieties dependant on climate and conſtitution, may be fixed at a mean ratio of five or eight ounces, and the time of its flowing at from four to ſix days. Nothing is known as to the intimate proceſſes of the human economy by which this monthly action occurs in the female; but it is known that the menſtrual flux is in ordinary caſes neceſſary to fit the uterus for conception, and that its interruption or irregularity exerts a very unpleaſant influence over many of the functions of the body. The immediate ſituation of Paramenia is of courſe, as before ſtated, the uterus and ſuperior part of the vagina. But theſe parts are often affected by diſtinct maladies, which we muſt remove before remedies acting on the ſecernents of the uterus will avail. This genus contains five ſpecies, beſides varieties.

1. Paramenia obſtructionis. In this complaint the catamenial ſecretion is *obſtructed* in its courſe; ſometimes altogether, ſometimes only to a certain degree. From the retention of a large quantity of fluid in the blood, ſymptoms of plethora are often preſent; and, from the ſtrong ſympathy between the ſtomach and uterus, the former organ becomes diſordered, and draws into diſorder the reſt of the chylopoietic viſcera: conſequently the uſual dyſpeptic ſymptoms of acid and rancid eructation, load at the pit of the ſtomach, coſtiveneſs, low ſpirits, &c. are hardly ever entirely abſent. There are two varieties.

α. Emanſio, retention of the menſes: obſtructed on their acceſſion, or firſt appearance. Feet and ancles edematous at night; eyes and face in the morning; with other chlorotic ſymptoms.

β. Suppreſſio, ſuppreſſion of the menſes: obſtructed in their regular periods of recurrence. Head-ache, dyſpnœa, palpitation of the heart.

From theſe ſymptoms it is ſufficiently obvious, that *ſuppreſſion* of the menſes is attended with ſtronger marks of plethora than *retention* of the menſes, while in the latter diſeaſe the dyſpeptic ſymptoms are more predominant.

Retention of the menſes ariſes from an inactive ſtate of the uterine ſecernents; (excepting, of courſe, caſes of imperforate hymen.) This inaction may be the reſult of an inſufficient flow of blood to the uterine ſyſtem, or from a debility which the ſecernents in general always ſuffer when thoſe of the ſkin and alimentary canal are debilitated. Some have ſaid that the diſeaſe ariſes "from a want of power in the ſyſtem to propel blood into the uterine veſſels with a force ſufficient to open their extremities;" but ſurely this pathology is overturned by the fact, that *vigour* of pulſe is ſometimes met with in retention of the menſes. We muſt therefore look to the diſordered ſtate of the ſecernents for the cure of this diſeaſe. It is to be remarked, that, while ſome women begin menſtruation without any unpleaſant feelings, others ſuffer much pain and illneſs previous to their acceſſion. Moreover the diſcharge is often irregular, both in quantity and time of occurrence. The firſt appearance of them is generally at the age of fifteen or ſixteen, ſometimes not till eighteen or nineteen. Theſe facts are mentioned in this place to guard againſt the uſe of medicine for the relief of theſe natural irregularities, (if we may be allowed the expreſſion,) while general ill feelings are abſent. They do not of courſe arreſt the adoption of remedial meaſures when unpleaſant ſymptoms ariſe in conſequence of the retention.

The treatment of the firſt variety is ſufficiently ſimple. It conſiſts in exciting the ſecernent ſyſtem generally, and that of the uterus in particular. In the firſt place, the treatment of dyſpepſia muſt be put in force. The uſual palliatives, alkalies and opiates, muſt correct the diſeaſed ſecretion of the ſtomach; ſlight mercurials muſt be made to operate on the liver; the bowels muſt be kept in a regular and healthful ſtate by means of laxatives and appropriate diet; and exerciſe muſt be regularly taken. After this, the ſkin is to be excited by means of the cold bath, followed by friction to produce re-action; and moderate doſes of ſtimulating medicines, as gentian, and more particularly ſteel, may be given. The indications of exciting the uterus is to be effected by the uſual popular means of the warm bath applied to the feet or over the hips; and the milder laxatives may give way to purges ſomewhat draſtic. To theſe meaſures may be added, in obſtinate caſes, mild emmenagogues, as the miſturæ myrrhæ comp. or decoct. aloes conf. in the uſual doſes. The addition of ten or twelve drops of tincture of bliſtering-fly, or of the

black hellebore, to each dose of the above mixture, will aid their effect. Emmenagogues may be done without in most cases; and they are of little use, unless the dyspeptic treatment precedes or accompanies their administration.

The two following species of mis-menstruation, and the treatment of suppression of the menses, we shall discuss together, because, as we shall presently show, a few simple principles will better accord with our practical information as to their treatment, than any artificial details drawn from external appearance.

2. Paramenia difficilis, laborious menstruation: catamenia protruded with great local pain, and especially in the loins; part of the fluid coagulable.

3. Paramenia superflua, excessive menstruation: catamenia excessive, and accompanied with hemorrhage from the menstrual vessels. Two varieties.

α. Crebra; excessive from a too frequent recurrence.

β. Profusa, profuse menstruation; (*Issue of blood*, Matth. ix. 20.) Excessive from too large a flow at the proper periods.

Of that species of mismenstruation which is characterized by a more frequent return of the complaint than natural, we can afford no satisfactory pathology, because we are unacquainted with the cause which brings on the catamenia even during health, and consequently cannot be supposed to know the cause of its more frequent occurrence. The improvement of the general health will be generally attended with the cure of this malady. As to suppressed, painful, and profuse, menstruation; the first is sometimes, and the two last frequently, attended with symptoms which characterize a certain degree of periodical inflammation in the parts affected. This is peculiarly the case in these coagulating discharges which are met with in painful menstruation, and which for the most part are of lymphatic construction, and accurately coincide with the surface from which they are exuded. The latter fact is not however perceived, unless the coagula are placed in water, where they gradually display a placental or a tubular form, evidently corresponding with some portion of the uterus. Again; profuse menstruation is sometimes attended with a quick and full pulse, and more especially when an actual hemorrhage takes place. In each of these cases it will be necessary to deplete the system in a moderate degree; in suppression of the menses, by leeching, and to excite the relaxation by a warm hip-bath and brisk cathartics; in painful menstruation, it may in some cases be allowed to take blood more generally; and, in addition to the warm bath, &c. opiates should be given in somewhat ample doses. When the uterine discharges become profuse, the very nature of the complaint itself forbids the use of bleeding; but nevertheless, by low living and by the exhibition of digitalis or plumbi superacetatis, we must in some measure imitate the practice laid down with reference to phlogosis of the mucous membrane, or active hemorrhage.

In the greater proportion of cases, the profuse and the impeded action of the menstruating organs will be found connected with debility of the uterine secernents, and of the body generally; and will require a stimulating treatment. The diet must be regulated so as to ensure general vigour of the constitution, and the bowels and chylopoïetic viscera in general excited to secretion. At the time proper for the menses to come on, the usual means of warm bathing of the lower extremities, emmenagogues, and, lastly, electricity passed through the womb, will ensure the accession of the flux; while narcotics and astringents, as opium and sulphuric acid, &c. with rest, will generally be successful in restraining an excessive *passive* discharge.

4. Paramenia erroris, vicarious menstruation: catamenia transferred to, and excreted at, remote organs.

Vicarious menstruation is curable only by such remedies as excite and irritate the uterine secernents. This disease offers curious examples of that process called metastasis. Dr. Good enumerates many varieties; viz.

α. Ex oculis fluens. *Dodonæi* Obs. cap. xv. *Boerh.* Aph.

β. Ex naribus. *Paræi.* xxv. 12. *Brassavol.* Aph. xxxiii.

γ. Ex alveolo dentis. *Ronssei* de Hom. primord. c. 28.

δ. Ex auribus. *Brassavol.* Aph. xxv. sect. 4.

ε. Ex mammarum papillis. *Amat.* Cent. ii. cur. 21.

ζ. Ex vomitu. *Hipp.* de Morb. Mul. *Aretæi*, lib. ii.

η. Per intestina. *Galen.* in Aph. xxxv. s. v.

θ. Ex podice. *Paræi*, lib. xxiii. cap. 12.

ι. Per urinam. *Brassavol.* Aph. xxx. s. v.

κ. Ex umbilico. *Nicolai Florent.* Serm. ii. c. 8.

λ. Ex digito. *Mercat.* de mulier affect, lib. i. c. 7.

μ. Ex cute. *Haller.* comment. 667. p. 87. See also Cruikshank on Absorb. 4to. p. 54. Phil. Trans. vol. xiv. 121. Richerand's Elem. de Physiol. Aph. clxxi.

5. Paramenia cessationis: catamenial flux irregular at the term of its natural cessation; occasionally accompanied with symptoms of dropsy, glandular tumours, or spurious pregnancy.

The cessation of the menses is, from the unusual quantity of fluids thrown into the general circulation, often attended with a variety of acute and chronic inflammations. These are best obviated by occasional bleedings and purgatives. When they make their appearance, counter-irritants, as setons, &c. are highly useful. On this account we are directed not to heal ulcers and breakings-out in the lower limbs at this period of life. The uterine discharge generally stops at about the forty-fifth year; but it has sometimes continued to a very late period of life. To the age of 71; *Holdefreund*, Erzählungen, n. 4. To the age of 80; *Bourgeois*, Hebammenb. part. ii. cap. 6. To the age of 90; *Hagendorn*, cent. ii. obs. 84. See, for various cases, Pelargus, Med. Jarh. iii. 347, and following.

Genus II. *Leucorrhœa*, [from λευκος, white, and ῥεω, to flow.] Fluor albus, or whites. Generic characters—Mucous discharge from the vagina, commonly without infection; disappearing during menstruation.

The discharges from the female organs of women have been for the most part indiscriminately treated of under the term *whites*. The impropriety of this sweeping designation is evident from the variety of diseases of which a discharge of this kind may be a symptom. The common causes of discharges from the vagina are the same as those of mucous phlogoses in general; viz. cold debilitating the functions of the skin, mechanical irritation (hence the occurrence of leucorrhœa from excessive copulation), diseased secretions poured over the surface of the vagina, as when the uterus is diseased, or distant irritation. The vagina is also exposed to increase of its mucous discharge from relaxation of its muscular coat; for this, of course, allows a greater afflux of blood to pass to the mucous membrane, and hence more copious secretion follows. The discharge has in so many instances been traced to this last source, that most people consider *whites* as the result of weakness, and prescribe stimulating medicines without caution. It should be remembered, however, that all mucous membranes are liable to similar kinds of diseased action; and that inflammation is perhaps of all others the most common affection they are subject to.

The distinction which has been made by Dr. Clarke of the different varieties of this disease are taken from the appearance of the discharge. It appears that a transparent or a white mucous discharge is the result of inflammation of the mucous membrane in the vagina, uterus, meatus urinarium, or bladder; and that a more purulent discharge has its origin from the same source in more violent cases. On the other hand, we find the *purulent* discharge, especially when mixed with blood, a symptom of the corroding or the carcinomatous ulcers of the cervix

vix uteri, of abſceſs of the womb, or abſceſs in ſome part of the vagina. Laſtly a *watery* diſcharge, according to Dr. Clarke, accompanies the cauliflower excreſcence of the os uteri, hydatids of the womb, and the oozing excreſcence of the labia. There are three ſpecies.

1. Leucorrhœa communis, ſimple inflammation of the mucous membrane of the vagina, is characteriſed by a diſcharge of a tranſparent mucus of a gelatinous nature, which does not render water turbid, and which, when it arrives at the external labia, acquires from friction with the air a white colour. This diſcharge may be produced by two different kinds of action in the mucous membrane, which bear a cloſe analogy to two diſeaſes of a ſimilar but diſtant ſtructure; viz. acute and chronic bronchitis. Thus in one inſtance this diſcharge is cauſed by cold, full living, and idleneſs; attacks robuſt and above all corpulent perſons, who for the moſt part menſtruate in great quantities; is attended with much diſorder of the hepatic functions; with vertigo, muſci-volitantes, and other ſymptoms of undue circulation in the head, and with a full pulſe. In a word, all the ſymptoms of plethora are ſufficiently manifeſt. The treatment is in this caſe ſufficiently obvious. It conſiſts in removing the general plethora by bleeding from the arm, and the local fulneſs by leeches or cupping. The bilious diſorder is to be remedied by regular doſes of calomel; the bowels kept open by briſk ſaline, but not draſtic, cathartics; and a low diet enjoined. At the ſame time, the diſcharge, as it is a conſequence of plethora, and as it tends to cure more violent maladies, as hæmorrhage and apoplexy (to which the patients under conſideration are very liable), muſt not be ſuddenly reſtrained. At firſt indeed the warm bath and the frequent injection of warm water into the vagina will be proper, not only to cleanſe the acrimonious diſcharge, but to make it flow more freely; and it will not be till ſome time after the plethoric, biliary, and indeed all unpleaſant ſymptoms except the diſcharge, are gone, that we may venture to order an aſtringent application. This may be a weak ſolution of ſulphate of zinc, or of ſuper-acetate of lead.

But the other form of the complaint which, as we before ſtated, depends on the relaxation of the muſcular ſtructure of the vagina, and ſo connected with actual debility, attacks weak and dyſpeptic patients, thoſe who live in a moiſt atmoſphere (hence its frequency in Holland), thoſe who keep bad hours, inhabit hot rooms, and lie long and late in bed, or who ſuckle their children for too long a time. Pallor, and a yellowiſh exanguious ſtate of the ſkin, with a doughy feel, and in the feet and legs ſlight œdematous ſwellings of the integuments, mark the patients of this malady. The pulſe, ſmall and ſometimes quick, is liable to acceleration from occaſional nervous palpitations. Anorexia, flatulence, coſtiveneſs, and irregularity in the ſecretion of bile, pave the way to a more or leſs marked degree of hectic fever, which eventually leads to other and more eventful maladies.

The treatment of theſe ſort of caſes muſt of courſe be different from that before deſcribed. The removal to a drier atmoſphere, the interdiction of late hours, the ſubſtitution of a daily nap on the ſofa for late indulgence in bed, are the firſt and moſt obvious meaſures. Paſſive exerciſe muſt be uſed in the early ſtages of the malady; and active muſcular motion muſt be reſerved for caſes in which the ſyſtem has recovered, or has not loſt, a certain degree of vigour. The food muſt be at firſt light, and requiring little power in the ſtomach to digeſt it; as ſoups, jellies, &c. but theſe muſt be ſucceeded by ſolid animal food before the vigour of conſtitution will be quite reſtored. The bowels muſt be kept open by mild laxatives; the liver, if inactive, muſt be operated on by a few grains of blue pill every other night. Gentian and carbonate of ammonia will tend, in conjunction with proper diet and a free ſtate of the bowels, to excite the powers of the ſyſtem in a very ſalutary manner. As ſoon as ſome material amendment has taken place in the general health, and not till then, ſhould we turn our attention to the reſtraining of the diſcharge. For this purpoſe the gentian and ammonia may be advantageouſly changed for the exhibition of ſome preparation of iron, combined with an alkali, and occaſionally with myrrh. Cold bathing and aſtringent injections may now be uſed. For the latter, ſolution of alum or ſulphate of zinc are the moſt proper, their ſtrength being, as in other caſes, gradually increaſed.

2. Leucorrhœa nabothi, labour-ſhow: ſlimy, and for the moſt part tinged with blood. Secreted by the glandulæ nabothi ſituate on the mouth of the uterus; and chiefly on the beginning of labour.

The ſame parts are however liable to another diſcharge, coming at a different time, and poſſeſſing characters quite different from the above deſcription. In ſome caſes of of vaginal diſcharge, the fluid ſeems to come from the ſuperior parts; and hence, though probably mixed with the common mucus of the vagina itſelf, exhibits characters ſomewhat different. It is deſcribed by Mr. Clarke, who calls it the *white mucous diſcharge*, as being "opake, of a perfect white colour, and reſembling in conſiſtence a mixture of ſtarch and water made without heat, or thin cream." This diſcharge is eaſily waſhed from the finger after an examination; and it is capable of being diffuſed through water, rendering it turbid. Mr. Clarke is of opinion, that "a morbid ſtate of the glands in the cervix of the uterus probably gives riſe to this diſcharge; at leaſt, the caſes in which it comes away are thoſe in which the ſymptoms are referred to this part; and, when preſſure is made upon the cervix uteri under ſuch circumſtances, the woman complains of conſiderable pain."

It ſeems from the cauſes and ſymptoms of theſe diſeaſes, and from the nature of the curative agents found moſt uſeful in its treatment, that the above morbid ſtate of the cervix uteri is chronic inflammation. With regard to the pathognomonic ſign, tenderneſs of the os uteri, this of courſe is only known by introducing the finger into the vagina. In doing this, little irritation is excited in the vagina itſelf; but, as ſoon as the os uteri is touched, a great degree of uneaſineſs is felt. The ſame ſenſation is alſo felt during the paſſage of an evacuation along the rectum. The cervix uteri feels poliſhed and ſmooth; and this diſtinguiſhes the diſeaſe from carcicoma, in which *hardneſs* is felt; and from ulceration, in which of courſe ſome breach of ſurface is felt. In this affection few ſymptoms are preſent. The patient complains of uneaſineſs in the back, and lower part of the abdomen, which gradually becomes actual pain. Riding, or other motion tending to induce preſſure, increaſe this pain in ſome degree; but the ſtraining required to evacuate indurated fæces renders it very acute. The ſame attempt often ſqueezes from the vagina the mucous ſecretion, which is always accumulated there in a greater or leſs quantity in this diſeaſe; and, as it falls down on the motion, is apt to lead perſons to ſuſpect that ſome diſeaſe in the rectum has given riſe to the diſcharge. A certain degree of ſtrangury alſo is generally preſent; and ſometimes cyſtic tumors in the vagina have been met with, when they have probably been cauſed by the ſame inflammatory action which gives riſe to the tenderneſs of the os uteri. The preſence of a mucous diſcharge, the abſence of pain when the lower part of the belly is preſſed on, and the abſence alſo of periodical exacerbations of pain, diſtinguiſh this diſeaſe from hyſteritis, or inflammation of the ſubſtance of the womb.

The *treatment* differs little from that laid down for leucorrhœa dependant on inflammatory action. Local bloodletting, by cupping or leeching the back or groins, repeated according to circumſtances, forms the baſis of the treatment; and, where ſymptomatic fever preſents itſelf, veneſection is proper, though ſeldom neceſſary. The hip-bath is a uſeful remedy, and the patient may ſit in it twice a-day, at the temperature of 90°. Where this laſt cannot be procured, fomentations to the back or abdo-

men are ſerviceable. Tepid water thrown into the vagina, conſtitutes a direct fomentation to the part affected. Mild laxatives, and, at bed-time, five grains of Dover's powder, and three of camphor, may be reſorted to with advantage. If ſtrangury be conſiderable in degree, a large doſe of opium will be neceſſary, ſuch as 60 or 80 drops of laudanum, and ſmaller doſes frequently repeated afterwards, with mucilaginous drinks. Whenever the bladder is unequal to the expulſion of its contents, the catheter ſhould be uſed; for it will be in vain to truſt to diuretics. Although it is not often neceſſary to keep the patient in bed, yet the horizontal poſition ſhould be perſiſted in for ſome time, and all new cauſes of irritation (eſpecially copulation) avoided.

The next appearance to be noticed in vaginal diſcharges is that of pus. This fluid is ſometimes *ſecreted* from the mucous membrane of the uterus and vagina in conſequence of inflammatory action. It is diſtinguiſhed from the fluid which flows from an ulcer or abſceſs by this circumſtance; that the pus poured from an ulcerated cavity in the uterus is frequently mixed with blood, while that ſecreted from the unaltered membrane during the inflammatory proceſs is rarely diſcoloured by the ſanguineous fluid: it is in fact a muco-purulent diſcharge. Now the ſymptoms of this complaint are, generally ſpeaking, not very different from thoſe which attend the mucous diſcharge which inflammation induces in the parts in queſtion. When the vagina is particularly affected, itching of the external parts, and a ſenſation of *burning*, extended from the labia "up the body" (as it is expreſſed by patients), are experienced; and, when the os uteri is open, little difference is found between this and common phlogoſes of its lining, except perhaps that the pain in the laſt is more violent. Add to this, that in all caſes of purulent diſcharge, even when this is in ſmall quantity, hectic fever and weakneſs and emaciation are ſeldom abſent.

It is to be remembered, however, that the ſtructure of the vagina and of the uterus renders them liable to ſome peculiar ſymptoms from the diſeaſe in queſtion. Thus the cellular ſubſtance of the vagina, being much furniſhed with veſſels, and liable to many ſources of irritation, is liable alſo to have abſceſſes formed, when the mucous membrane has been ſo much diſeaſed as to produce pus. Theſe abſceſſes are of courſe only to be detected by manual examination; and to be treated by the practice uſually followed in other abſceſſes. It is firſt diſcovered on the part of the patient by a ſudden breaking of ſome internal part, followed by a copious diſcharge.

When pus is ſecreted in the womb, and the os uteri, from its cloſure by means of coagulable lymph or from the firmneſs of its contraction, denies an exit to this fluid, a peculiar ſet of ſymptoms ariſe. The uterus ſwells in a rapid manner; ſo rapidly indeed, that it might be taken for pregnancy, if the tenderneſs of the belly, the acute pain in the back, the general diſeaſe of the patient, and the occaſional paſſing of menſtrual mixed with purulent diſcharge, did not forbid ſuch a ſuppoſition. Sometimes the os uteri opens in conſequence of the diſtending form of the encloſed fluid; but on ſome occaſions this has been here ſo far from taking place, that the pus has only found exit by an ulcerated paſſage through the ſtricture of the diſeaſed organ into the rectum. It is ſcarcely neceſſary to add, that the uſual means of moderating vaſcular action, ſoothing the nervous irritability of the part by fomentations, and of the ſyſtem by narcotics, and inducing an healthy ſtate of blood by proper diet and medicine; are required in this diſeaſe to be conducted in the ſame manner as in abſceſs, or in inflammation of the mucous membranes.

3. Leucorrhœa ſeneſcentium: thin, acrid, frequently excoriating and fetid.

Under this term we ſhall include thoſe diſeaſes which, according to Mr. Clarke's arrangement, are attended with a *watery* diſcharge. In doing this, we fear we pay too little reſpect to the noſological arrangement of Dr. Good; but the fact is, that we find no evidence of this kind of diſcharge as an idiopathic diſeaſe; and moreover, we do not find that all the diſeaſes of which it is a ſymptom are ſpecified in our ſyſtem. To leave them out on this account would be unpardonable.

1. A diſcharge reſembling clear water, containing very little or no glutinous matter, reſults from cauliflower excreſcence of the os uteri, hydatids of the uterus, or oozing excreſcence of the labia.

The cauliflower excreſcence is ſo named from its ſtriking reſemblance to the upper ſurface of a cauliflower, or a head of brocoli. The ſurface is granulated, and conſiſts of a great number of ſmall projections, which may be picked off from the ſurface, as the granules may be detached from the vegetable. The firmneſs of the tumour agrees alſo with that of the plant: here the granules will be large and irregular, there ſmall and equal. From a very fine membrane ſpread over the ſurface of this tumour is poured out the aqueous ſecretion. As the tumour occupies the upper part of the vagina, it is concealed from view; but in ſome caſes, where it attained a conſiderable ſize, Mr. Clarke had ſeen it, and aſſerts that it had a bright fleſh colour. It pours out arterial-looking blood very plentifully, if injured during examination, and ſometimes ſpontaneouſly in plethoric habits. This excreſcence has little or no ſenſibility; can never be traced into the cavity of the uterus; is ſometimes rapid in its growth, but much influenced by the contractile power of the vagina, being more rapidly developed in married women who have borne children than in ſingle women. It is highly vaſcular, and is of a ſtructure analogous to the placenta.

A perception of moiſture, and then gradually an inconvenient diſcharge, are the firſt ſymptoms. The diſcharge increaſes; but, being unattended by pain or fœtor, the complaint is neglected, until a tinge of blood is perceived, or the colour of the cheek begins to change, with a correſponding loſs of ſtrength. Then the alarm is taken. A diſcharge of blood almoſt always ſucceeds ſexual intercourſe; the digeſtion begins to be impaired; hyſterical ſymptoms are produced, and all that hoſt of inexplicable phenomena conſequent on derangement of the chylopoïetic viſcera, increaſing the patient's ſtock of bodily and mental miſery. Increaſe of debility is accompanied with decreaſe of abſorption, and, of courſe, with depoſitions of fluid in different parts of the body, producing œdema of the feet at night, and puffineſs of the face and eyelids in the morning. On this account, hydrothorax may deſtroy the patient long before ſhe would have been exhauſted by the diſeaſe itſelf. An alarming hæmorrhage ſometimes induces a fatal ſyncope. No great degree of emaciation, in general, attends the complaint. On the contrary, in ſeveral diſſections, a layer of fat, of conſiderable thickneſs, has been found covering the abdominal muſcles. This fat ſtate of the ſubject of ſuch an excreſcence, forms a remarkable contraſt to the extreme emaciation which attends carcinomatous tumours. The feel of this tumour by the finger diſtinguiſhes it from the hardened cervix uteri of the incipient carcinoma, and from the irregularity of ſurface met with in the ulcerated ſtate of the ſame organ. The diſcharge alſo differs; yet, as in this complaint a diſcharge is preſent, as now and then it is fœtid, as a tumour is found upon examination, and as the diſeaſe has always, ſooner or later, a fatal tendency, it has been too frequently confounded with carcinoma. The prognoſtic, as to the *ultimate event*, it is true, muſt be nearly the ſame; but there is reaſon to believe that the ſize of the tumour may be *diminiſhed* by judicious management, particularly by diminiſhing the action and fulneſs of the blood-veſſels of the neighbouring parts. At all events, enlargement of the tumour will be greatly retarded.

With this view, local blood-letting from the region of the ſacrum and hips is a moſt valuable remedy. The

quantity

quantity of blood to be taken away muſt be regulated by the ſize and degree of reſiſtance in the tumour, and by the quantity of watery diſcharge (always a meaſure of the extent of diſeaſe), regard being paid to the ſtrength of the patient. At the ſame time it muſt be recollected, that if, by the loſs of eight or ten ounces of blood by cupping, the quantity of the watery diſcharge can be diminiſhed from four ounces to two ounces daily, the patient will, at the end of a fortnight, poſſeſs more power than if ſhe had loſt four ounces of blood by cupping, and the quantity of the watery diſcharge had been diminiſhed to three ounces daily.

Local bleeding, however, when intemperately employed, may haſten the patient's diſſolution. It ſhould not be preſcribed when much œdema of the feet is preſent, nor during the prevalence of much debility; in fact, it ſhould not, at any time, be carried farther than juſt to produce the intended effect, as there are many other auxiliary arts in reſerve. If the patient ſhould be a ſtrong woman, and if the diſeaſe has not been of long duration, twelve or fourteen ounces of blood may be taken away: if ſhe ſhould poſſeſs leſs ſtrength of conſtitution, it may be ſufficient to order the removal of ſix or eight ounces only; and to repeat this once in three weeks or a month. The application of leeches to the pudendum is alſo ſerviceable. All general and local ſtimuli are of courſe to be avoided; the diet to be of the mildeſt kind, as puddings, white fiſh, and vegetables. Wine and ſexual connexion to be entirely proſcribed. The bowels ſhould be ſo managed, that one eaſy motion be daily procured; all ſtraining efforts in evacuating the rectum being as injurious in this as in other uterine complaints. The ſulphate of magneſia in infuſion of roſes will be found a mild laxative.

The enlargement of the tumour may be greatly diminiſhed, and the diſcharge conſequently leſſened, by the application of cold to the outſide of the pelvis, and by the injection of cold fluids into the cavity of the vagina. Cold water may be applied to the external parts of generation, to the pubis, and to the loins, by means of a ſponge; and this may be done, not once or twice only in the twenty-four hours, but ſeveral times: by keeping the parts in this way conſtantly chilled, the blood-veſſels will be contracted, and the advantages reſulting from ſuch a mode of treatment will ſoon be made evident, in the diminution of the quantity of the diſcharge, and in the improvement of the conſtitutional health. The recumbent poſture ought to be inſiſted upon; and, in injecting fluids, care ſhould be taken that the ſyringe does not touch the excreſcence, otherwiſe blood will flow. A cylindrical ſyringe, the diameter of which is about three quarters of an inch, the extremity being rounded off, may be uſed for this purpoſe; and the patient ſhould be cautioned not to introduce it farther than an inch, or an inch and a half.

In that aggravated form of the diſeaſe, where the tumour nearly protrudes, the patient ſhould lie down upon the bed with her hips raiſed, and a ſmall quantity of the aſtringent fluid ſhould be poured in between the labia, with a common butter-boat. When the tumour has actually protruded, compreſſes dipped in an aſtringent fluid may be applied, or a ſponge wetted with it may be lightly drawn over the ſurface. The aſtringent injections recommended, conſiſt of ſulphate of zinc and water in various proportions, or alum and water. Solutions of the mineral aſtringents in decoctions of aſtringent vegetables, conſtitute applications poſſeſſed of great power: ſuch as, cort. granat. contuſ. ʒſs. aq. diſtillat. ʒxiij. coque per ſextam partem horæ et cola, dein adde liquori colato aluminis ʒij. Galls, or oak-bark may be ſubſtituted for the pomegranate. The efficacy of the latter formulæ in a great meaſure depends upon the tannin. As this principle has the power of coagulating albumen, ſo as to form an inſoluble precipitate, it becomes neceſſary to prepare the patient for a circumſtance which may otherwiſe occaſion great alarm in her mind, the appearance of thin, whitiſh, or aſh-coloured, flakes, which will come away from time to time. Theſe are frequently thought to be portions of the body, and the agitation of the patient's mind has been very conſiderable, until it has been quieted by ſome explanation. Where irritable vagina exiſts, a mixture of decoction of oak-bark and linſeed tea, forms a leſs irritating lotion.

In many caſes, where the conſtitution has ſuffered, the powers of nature require to be recruited, and we muſt employ ſome light tonic. The muriatic and ſulphuric acids are appropriate medicines. Sulphate of zinc, in ſuch doſes as do not excite vomiting, and combined with an eſſential oil to reconcile the ſtomach to its uſe, is recommended as occaſionally uſeful. Say as follows: Sulphate of zinc, gr. xv. extract of hop, ʒj. oil of cinnamon, gt. iij. ℳ. in pil. xv. one to be taken every night.

In ſome inſtances the reſources of the medical art fail, and then the ligature holds out a proſpect of relief, which has now and then been realized. True it is, that the fungus may, and probably will, be regenerated; but a conſiderable time may elapſe before a tumour of large ſize forms; and in the interim, by the removal of the ſecreting ſurface, the diſcharge will be reſtrained, and time will be afforded for the powers of the patient to recruit.

2. Hydatids of the uterus are connected with the uterus and with each other by ſmall filaments and by portions of ſubſtances partly bloody and partly gelatinous. A ſimilar ſubſtance is attached to the internal part of the uterus, from which the footſtalks of the hydatids grow. The number of theſe hydatids increaſing, the cavity of the uterus enlarges; and, when the organ has attained a large ſize, it contracts upon its contents. When the pelvis can no longer contain the enlarged uterus, that viſcus riſes into the cavity of the abdomen, and may be felt as a circumſcribed tumour through the parietes. The function of menſtruation is uſually interrupted.

In the examination of a patient labouring under hydatids of the uterus, the body of this viſcus will be found enlarged, and ſuddenly bulging out from the upper part of the cervix. All theſe ſymptoms attend other enlarged ſtates of the uterus; but there remains to be mentioned one other ſymptom which ſerves to diſtinguiſh this diſeaſe from all others, and from pregnancy, —and this ſymptom is the diſcharge of an almoſt-colourleſs watery fluid. This watery diſcharge is to be diſtinguiſhed from that which attends the cauliflower-excreſcence, by the irregularity and ſuddenneſs of its appearance and ceſſation; being produced by a rupture of one or more of the coats of theſe hydatids, in conſequence of the occaſional contraction of the uterus upon them, or of any ſudden violence, as in the act of coughing or ſneezing; whereas the diſcharge from the cauliflower-excreſcence, being a ſecretion from its ſurface, is conſtantly eſcaping. The fluid watery diſcharge may be diſtinguiſhed from thoſe ſplaſhes of urine which ſometimes come away from pregnant women, by being wholly inodorous.

Sooner or later a parturient niſus takes place: the os uteri opens; the hydatids are expelled by periodical pains; and then, for the firſt time, danger preſents itſelf in the form of a frightful hæmorrhage. The reaſon of this laſt is obvious. The placenta covers only a limited ſpace of the internal ſurface of the uterus, whereas the hydatids ſpring from every portion of the cavity. No means of curing or arreſting the progreſs of this diſeaſe have hitherto been diſcovered. The patient is to be appriſed of the nature of the complaint, and the event is to be patiently waited for, treating occaſional ſymptoms as they ariſe. When the time arrives at which the uterus ſtruggles to unload itſelf of its contents, then all the ſkill and energy of the practitioner will be neceſſary to control the hæmorrhage, and ſuſtain the powers of the conſtitution. Perfect quietude in the horizontal poſture ſhould be enjoined,

joined, and all ſtimulating food and drink denied. Cold applications are to be uſed to the loins, abdomen, and external organs; and portions of ice (their acute edges being rounded off by being held in the hand) may be introduced into the vagina, or into the uterus. "Let it not, however, be forgotten, (ſays Mr. Clarke,) that the great remedy for uterine hæmorrhage is uterine contraction; and every poſſible mode of exciting this is to be put in practice. The application of a bandage round the abdomen has ſometimes the power of exciting this contraction: but, if the hæmorrhage ſhould continue profuſe, and if any portion of the hydatids ſhould remain in the uterus, an attempt ſhould be made to remove theſe, in order to produce complete contraction of the muſcular fibres. Two or three fingers, or the whole hand, covered with pomatum, ſhould be carefully introduced into the uterus, and carried up between the ſides of the uterus and the hydatids, which are to be detached from the part to which they adhere by the moſt gentle means. The maſs, being now included in the hand of the operator, is to be brought out of the uterus, the ſurgeon recollecting always, in the performance of this operation, that the degree to which the os uteri is dilatable without laceration, is in proportion to the ſize of the whole uterus, both in pregnancy as well as in this diſeaſe. So that, ſuppoſing the uterus in this diſeaſe to be enlarged to the ſize of that viſcus in the ſixth or ſeventh month of pregnancy, the whole hand of the operator may be, if neceſſary, introduced through the cervix; whereas, in ſmaller dimenſions of the uterus, if any attempt is made to introduce the whole hand through the cervix, however carefully it may be attempted, a laceration of it may enſue, and thus the patient may be involved in a new danger. The expulſion over, and hæmorrhage reſtrained, the conſtitution muſt be invigorated by ſuitable means, particularly by the cinchona and mineral acids.

3. *Oozing Tumour of the Labium.* In this, the diſcharge ariſes from the ſurface, or rather from the interſtices of the tumour. The fluid is of a watery nature, and ſometimes very abundant in quantity, being renewed almoſt immediately after the ſurface has been dried by a napkin. Blood never iſſues from the tumour, ſo that it has no analogy with cauliflower excreſcence. The tumour is ſometimes ſo large as to occupy the whole of the labia, extending even to the mons veneris. It ſeldom projects more than a line or two above the plane of the ſurrounding ſkin. The colour of the tumour varies little from that of the cuticle of the neighbouring parts. In the immediate neighbourhood of the tumour œdema is occaſionally met with, but the tumour is not œdematous; ſoon after the ſurface of the tumour has been wiped quite dry, a watery fluid begins to ooze from it, and to form drops, which, having become large, at length run off, and keep the ſurrounding parts in a ſtate of conſtant humidity; ſometimes ſoreneſs and excoriation take place, as upon the upper lip when the ſecretion from the noſtrils is increaſed, but the tumour itſelf is ſeldom rendered more ſenſible.

The ſecretion from this tumour correſponds, in appearance, with that from the cauliflower excreſcence. The diſeaſe having begun, it continues to enlarge; and inſulated patches of it appear in the neighbouring parts, at length running into each other. The complaint ſeldom attacks young women. The principal inconveniences of this diſeaſe are, an itching, ſometimes preternatural ſenſe of heat, and a watery diſcharge. When excoriations of the neighbouring parts are preſent, or an eryſipelatous bluſh appears upon them, more advantage will be derived from the internal exhibition of the cinchona in ſubſtance than from any other medicine; but no impreſſion will be made upon the diſeaſe itſelf by this valuable remedy; and even the ſymptoms above mentioned will frequently recur, and call for the employment of other remedies.

A nutritious diet, and a moderate allowance of wine, ſhould be preſcribed. External applications may mitigate, but never cure, the complaint. Common ſtarch-powder, repeatedly ſprinkled over the parts till it cakes upon them, is a very efficient remedy; but it will be neceſſary to keep the patient in the horizontal poſture during its uſe; a poſition indeed which has a beneficial influence in itſelf. A mixture of ſtarch-powder and cupri ſulphas, very finely levigated, has been found ſerviceable; or a ſolution of cupri ſulphas, or of argentum nitratum, may be uſed. A ſolution of gum arabic in decoctum quercûs may be tried. Cold water is alſo a valuable remedy, and there are no caſes in which it will not afford much temporary comfort. Perhaps the moſt effectual applications are of a ſpirituous nature. Strong new port-wine has afforded great relief; and, when this has failed, brandy or arquebuſade may be employed, or even alcohol. The complaint, upon the whole, is very rare.

Genus III. *Blenorrhœa*, [from βλεννα, mucus, and ῥεω, to flow.] Muculent diſcharge from the urethra or vagina; generally with local irritation, and dyſury; not diſappearing during menſtruation. (Gonorrhœa, *Sauv.* and *Cullen.*) Three ſpecies.

1. Blenorrhœa ſimplex, (Gonorrhœa pura, *Sauv.* and *Cull.*) Simple increaſed ſecretion from the mucous glands of the urethra.

That a mucous ſecretion may ariſe from the meatus urinatus of the female without ſpecific venom, is well known; and hence, were not caſes on record to prove the fact, we ſhould ſtill infer the poſſibility of a gonorrhœa exiſting without copulation. We may remark, however, that this is perhaps one of the rareſt diſeaſes we are ſubject to. It would of courſe require the very ſimple means of plentiful dilution and mild purgatives.

2. Blenorrhœa luodes, (Gonorrhœa impura, *Cull.*) Clap. Muculent diſcharge from the urethra or vagina intermixed with ſpecific venom; burning pain in micturition; produced by impure coition; infectious.

We ſhall enter into no ſpeculations as to the nature of clap, whether it be lues, owing its character to the peculiar ſtructure it occupies, or whether it be a diſtinct diſeaſe. At all events, its appearance and its cure are quite different; and, whether the mucous membrane is unfavourable to the abſorption of the virus, or whether the virus of clap is not capable of affecting the conſtitution at large, ſecondary ſymptoms do not follow this diſeaſe. It comes on from forty-eight hours to four days after copulation; and is uſually preceded by tingling and itching of the penis. The above definition embraces all the characters of Blenorrhœa in men. In women the diſeaſe is apt to be confounded with ſome forms of Leucorrhœa communis. We muſt diſtinguiſh the diſeaſes chiefly by conſidering the life and habits of the patient, and whether any cauſe has been preſent which was likely to bring on Leucorrhœa. The Leucorrhœa, as Dr. Good obſerves in his definition, ſtops during menſtruation, which is not the caſe in Blenorrhœa. It is alſo ſaid, that in women the early ſtage of Blenorrhœa luodes is marked by an unuſual deſire for ſexual intercourſe, and an itching of the labia. Pain in micturition, ſo common in clap, is ſeldom felt in Leucorrhœa. The nature of Blenorrhœa is this. A peculiar ſtimulus, acting on the ſecernents of the mucous membrane of the vagina or urethra, excites them to an action which elicits from the blood the ſame material as this ſtimulus itſelf conſiſted of. This diſeaſed ſtate of the ſecernents induces an inflammatory affection of the blood-veſſels of the ſame part, which inflammation ſeems to be actually neceſſary to keep up the diſeaſed ſecretion. Gonorrhœa therefore is cured in two ways. Firſt, by reducing the inflammation, when we ſhall merely have ſecretion from laxity of veſſels to contend with. Secondly, by inducing a ſtimulus of ſo oppoſite a kind in the diſeaſed ſecernents, that they at once loſe the property of ſecreting morbid matter. With the firſt view, cold applications to the exter-

nal ſurface of the penis, or mons veneris, act by ſympathy in reſtraining internal inflammation: low living and keeping the penis tied up towards the belly act in the ſame manner. Large quantities of water or tea, and diuretics, by diluting the ſalts of the urine, render them leſs irritating, and conſequently act as a ſedative on the inflamed membrane when this fluid paſſes through it. The action of ſoda, in neutralizing any free acid in the urine, operates alſo in the ſame way. Under this plan, the inflammatory ſtage of Blenorrhœa generally goes off; the *pain in making water* (which is always a ſign of inflammation) ſubſides; and a mere chronic diſcharge, from laxity of veſſels, remains. This is curable by the uſe of injections, as ſolutions of ſulphate of zinc or alum, and by the exhibition internally of copaiba. In very obſtinate caſes the copaiba may be applied locally, by means of a bougie. In this ſtage the malady is called a *gleet*, is often very troubleſome, and requires frequently to have a variety of ſtimulants tried before any one will ſucceed in altering the action of the ſecernents.

We have before ſaid, that certain ſtimulants applied even in the earlieſt ſtages of Blenorrhœa had the property of ſo affecting the ſecernents as to ſtop their ſecretion, and conſequently the inflammation which aroſe out of them. Thus ſome patients have uſed aſtringent injections as ſoon as the tingling ſenſation at the end of the penis (the firſt ſymptom) made its appearance, and with ſucceſs. This, however, is a very hazardous experiment; for, if the tendency to inflammation be, from conſtitutional or other cauſes, very ſtrong, orchitis is apt to enſue, and prove a troubleſome malady.

A more ſoft and efficient ſtimulus is the cubeba, a drug taken internally in doſes of from one to three drachms three times a-day. This medicine ſometimes indeed totally fails; but at all events never has appeared injurious, and in the majority of caſes cures the Blenorrhœa without leaving behind it any gleet or other unpleaſant ſymptom. If its good effects are not apparent in about a week, it is proper to leave it off, and commence the antiphlogiſtic plan before laid down. The tincture of cubebs, combined with equal parts of the balſam of copaiba, is a very excellent medicine in old-ſtanding gleets. From the above ſtatement it very clearly appears, that Blenorrhœa is in itſelf a diſeaſe of no great danger or importance, and one which is eaſily cured; but it is occaſionally accompanied by diſeaſes which are the effect of an inflammatory character, and are troubleſome both to the patient and the practitioner. Theſe are, inflammation of the teſticle, ſimple bubo, chordee, and ſtricture.

The inflammation of the teſticle generally comes on when the diſcharge from the urethra is ſtopped, and ſubſides as the latter returns. It is treated in the ſame manner as Empreſma orchitis in general, which ſee, p. 264. The bubo which accompanies Blenorrhœa, does not ſeem, like the true venereal bubo, to depend on the abſorption of matter, but rather to owe its origin to an irritation conveyed along the abſorbents. This alſo requires the ſame treatment as ſimple bubo, which ſee.

Chordee is uſed to expreſs an affection in which the penis is curved downwards at the time of erection, the under ſurface of this organ having a hard line running along, and being attended with the moſt excruciating pain. This ſymptom ariſes from an unuſual degree of inflammation affecting the corpus ſpongioſum of the inferior part of the penis, which conſequently is permanently contracted, and cannot follow the dilatation of the corpora cavernoſa, or ſuperior parts. Leeches to the penis or perinæum are proper, with cold bathing of the affected part when the irritation comes on. If nothing be done, the patient, after ſuffering the moſt intolerable torment for ſome days, is relieved by the ſpontaneous reſolution of the inflammation, or by a rupture of veſſels, from which copious bleeding and ultimate relief follow.

Stricture of the urethra is the moſt ſerious diſorder which is liable to attend on Blenorrhœa. It comes on, however, from other irritation beſides clap; but is treated in the ſame way, whatever may have been its firſt cauſe. There is ſome difficulty in explaining what a ſtricture is. It has been generally ſuppoſed to be a contraction of certain muſcular fibres ſurrounding the mucous membrane of the urethra. Mr. Shaw, in a paper in the tenth volume of the Medico Chirurgical Tranſactions, has ſhown, however, that the muſcular ſtructure of the urethra cannot be demonſtrated in man or in the larger animals. Yet we cannot infer that contractile fibres do not exiſt becauſe *red* muſcular fibres are not found; neither can we allow, that, becauſe they are ſo diminutive, they muſt have no power, when we conſider the favourable poſition in which circular muſcles act. Moreover it ſeems to us, that the complete expulſion of both ſemen and of urine indicates a contractile power in the urethra; and it ſeems alſo, that no other aſſumption explains the *form* of a ſtricture; for if, as Mr. Shaw ſeems to infer, it is merely an inflammatory proceſs of the mucous membrane, we ſhould naturally expect to find the morbid thickening on one ſide, and a ſomewhat extended ſurface of the membrane, and not in this peculiar round form. As far, however, as practical facts are concerned, we are quite ready to agree, that our treatment ſhould never be directed to the dilatation of a contracted muſcle, for that no ſtricture can ariſe from this cauſe alone. It ſeems probable that the irritation which exiſts in the mucous membrane of the urethra calls forth a ſpaſmodic contraction of ſome filament of contractile fibre. It muſt be granted, indeed, that at firſt this contraction will not, on account of the weakneſs of the fibre concerned, impede the flow of urine. It ſeems to us, that this latter effect will not take place till inflammation and thickening of the mucous membrane enſue; this inflammation being viewed as a conſequence of the contraction of the contractile fibre on the one hand, and the irritation the contracted portion is ſubjected to by the dilating force of the urine on the other. This thickening of the mucous membrane will of courſe be liable to ſome variations; it may undergo ſpaſmodic action, in conſequence of a contraction of the arteries which enter in the compoſition of the thickened ſtructure; but it is in that part of the urinary canal (viz. the neck of the bladder) which is evidently furniſhed with muſcle, that ſpaſmodic ſtricture is moſt commonly found. The preciſe nature of the irritation that brings on ſtricture is not very apparent. Stricture is certainly more common in hot climates, and with intemperate perſons, than under other circumſtances. It is alſo more frequently a conſequence of clap than of any other kind of urinary ſtimulus; but it does not ſeem to have any proportion to the violence of the clap. Strictures are often produced by the incautious uſe of injections, and are aggravated by copulation. A ſtricture of the urethra often produces other diſeaſes, as a paraphimoſis, or a ſwelled teſticle.

The ſymptoms of a ſtricture are rather obſcure. There is a ſlight diminution in the ſize of the flow of urine, often with a degree of twiſting or bifurcation of it; and on ſome occaſions the ſtream is ſcattered in various directions; on others it is completely ſtopped, or at leaſt with the exception of a little dribbling. A diſcharge of thin mucus alſo attends, which is liable to be miſtaken for a gleet. The impediment to making water is always increaſed by the patient's catching cold, or indulging in a debauch. A pain at the end of the glans penis is often found in ſtrictured perſons; and in old caſes a variety of diſorders are engendered. Theſe are at firſt merely irritative diſeaſes, as unuſual irritability of the bladder, nocturnal emiſſions, pricking and ſhooting ſenſations about the fundament, &c. but in ſome caſes actual inflammation of the bladder and its inveſting peritoneum has come on. In almoſt all caſes, the reſiſtance cauſed by a long-ſtanding ſtricture cauſes the bladder to acquire a great increaſe of thickneſs and muſcular power.

Much may be learnt of the precise situation of a stricture by means of the bougie. This instrument passed down to the stricture shows its situation. The impression it receives from the stricture, when it has passed through, shows the size and form of the latter; and the resistance it meets with in passing shows the degree of the stricture. A stricture is, cæteris paribus, more dilatable when the body is in a state of general relaxation than at other times: this arises from the loss of contractile power which all the contractile fibres undergo; for, though it may be doubted whether a stricture dilates or contracts in itself, still it is certain, that, when irritated, a spasmodic resistance is afforded to the passage of an instrument. But we should rather refer this circumstance to the sympathetic contraction of the healthy fibres of the canal.

From the statements we have made concerning the probable structure and mode of formation of a stricture, its *treatment* clearly follows. Viewing the mere contraction of some contractile fibre as an action which is always antecedent to and coexistent with that resistance to the discharge of urine which we call stricture, it is obvious, that local and mechanical means of removing that contraction must be put in force, in most cases, before a cure can be effected. At the same time, the removal of the morbid thickening of the mucous membrane of the urethra by absorption should be chiefly attended to. For the former purpose, *bougies* are generally used. Of these instruments we shall speak presently. The latter is to be effected by constitutional remedies; and, when we consider the very small portion of membrane affected, and the little sympathy this membrane altogether seems to hold with the general system, we cannot fail to be surprised at the great benefit these remedies afford to the malady in question. Attention to the bowels, and to the state of the secretions in general, with mild diet and copious dilution, will often cure recent strictures without local application; and, whenever it does become necessary to use the latter, their efficacy will be diminished or increased in proportion as the general health is deranged or the reverse. Now the advantageous employment of a bougie will depend much on the manner of its introduction. The bougie should be of a sufficient diameter to resist entanglement in the lacunæ of the urethra; and the grand principle which should direct its introduction, should be to pass it through the stricture so as to dilate it, and thereby cause absorption of its membranous substance; and also relaxation of the contractile fibre, if indeed we can bring our minds to believe that that fibre has any thing to do with the continuance of a stricture once formed. If much force be used, we shall stand a chance of injuring other parts of the membrane besides the strictured one, and thereby cause much mischief. At the same time, much pressure is sometimes required to dilate a stricture. But on this head we shall not enlarge. A great deal of tact, and an attention to many minutiæ, are requisite to the safe introduction of instruments through the urinary passage; and we shall defer further notice of the passing of bougie, the simple and caustic or armed, the catheter, &c. till we come to the article SURGERY.

It must be remembered, that, when the simple bougie has failed, caustic has been applied to the urethra with success. Used as an agent which is to eat through a stricture, and consequently employed of great strength, it has no doubt often done harm. Viewed as a local stimulus which excites the injured part to ulceration and absorption, and consequently used in *weak proportion*, and in such a manner as to ensure its exact application to the strictured surface, and to that only, we will venture to assert, that it is a valuable auxiliary to the treatment of this troublesome disease.

3. Blenorrhœa chronica, gleet: slimy discharge from the mucous glands of the urethra, without specific venom or infection; slightly irritating; chronic. (Gonorrhœa mucosa, *Cull.*)

Mostly a sequel of the preceding; and usually accompanied with stricture or enlarged prostate gland. Though without specific venom, occasionally so acrimonious, as to produce great local inflammation on the person cohabited with, while the secreting organ which has undergone the morbid change is torpid, or nearly so, to its virulence. Its treatment has already received due notice under the preceding species.

Genus IV. *Spermorrhœa*, [from σπερμος, seed, and ῥεω, to flow.] Involuntary emission of seminal fluid without copulation. There are two species.

1. Spermorrhœa atonica, (Gonorrhœa libidinosa, *Sauv.* G. laxorum, *Cull.*) Involuntary emission of a dilute and nearly-pellucid seminal fluid; with libidinous propensity, but without erection. The last symptom is, however, not always observable.

This disease is generally accompanied with much mental disturbance; lowness of spirits, in a remarkable degree, generally attending it. It seems most commonly to owe its origin to the indulgence of solitary vice, and is extremely difficult of cure. This may however be effected, in less severe cases, by stating to the patient the dangerous consequences of his vicious propensity, and cautioning him to resist at all times the first approaches of sensual ideas. In violent cases it is absolutely necessary to combat the disposition for solitude by every kind of dissipation; and indeed it may be a question whether it might not be allowable to lead the sufferer into the haunts of libidinous females rather than suffer this much more dangerous disease to gain ground. The writer of this article once attended a young man, over whose mental energies this horrible propensity acquired so extreme an influence, as to induce, on repeated occasions, attempts at suicide. Advice was thrown away upon one in whose bosom religious feeling was strong, and who nevertheless abandoned himself to this vice in utter despair of overcoming it. Nor could the less-excusable measure of inculcating *natural* sin be used with one whose copulative desires failed on the approach of a female. Two or three furious attempts at self-destruction induced the writer to adopt bleeding; and for the bad state of the bilious secretion he was obliged to prescribe calomel. The success of the depletory plan caused it to be continued frequently; and, the calomel being persisted in, the mouth became affected with violent ptyalism. After this, the patient returned to his profession (the law) with renewed health and spirits, and has never since been afflicted with this malady. The above case is narrated as a curious one; but the practice is by no means held out to general example.

When this disease is merely local, it probably is inflammation of the epididymis. Counter-irritation by blisters to the perineum, with occasional bleeding, generally cure it.

2. Spermorrhœa entonica: involuntary emission of proper semen, with erection; mostly from indulgence of libidinous ideas.

This species is not worthy of particular consideration; it seems rather an effort of nature to relieve glandular fulness than a disease, and is not of frequent occurrence or of dangerous consequence. Indeed a famous physiologist has asserted that it is a perfectly natural and salutary process.

Genus V. *Galactia*, [from γαλα, milk.] Morbid flow or deficiency of milk. Five species.

1. Galactia anticipans: efflux of milk during pregnancy. A pint and a half has sometimes been poured forth daily as early as the fifth month. *Sauv.* ii. p. 412. See also Timæus Cas. p. 220.

2. Galactia impotens: inability to suckle upon childbirth. Two varieties.

α. Atonica; from want of secretion.

β. Organica; from imperfect nipple, or other organic defect.

3. Galactia

3. Galactia depravata; efflux of a dilute or vitiated milk. Two varieties.

α. Serosa; weakened by too large a proportion of serum.

β. Complicata; deteriorated by intermixture with some foreign material.

See Ephemer. Nat. Curios. in which we have examples of a flow of black, green, and yellow, milk. Probably in most instances discoloured by an union with effused blood. Occasionally the quality betrays its source. Of the nature of beer, or of wine. See Eph. Nat. Cur. Dec. i. ann. iv.

4. Galactia erroris: transferred to, and discharged or accumulated at, remote organs, often under a different form. Here we have eight varieties.

α. Transferred to the sauces; and discharged in the form of a ptyalism. *Puzos. Ephem. Nat. Curios.*

β. Discharged from the general surface of the mammæ in the form of sweat. *Idem.*

γ. Discharged from the navel. *Sauvages.*

δ. Discharged from the kidneys in the form of urine. *Journ. de Med.* 1758.

ε. Discharged from the eyes in the form of a milky epiphora. *Sauvages.*

ζ. Discharged from the thigh on scarification. *Weikard*, Verm. schr. i. 47.

η. Discharged from the veins on bleeding. *Sauvages.*

θ. Discharged from the vagina. *Journ. des Sçavans*, 1684. *Paullini* Obs. cent. i.

Like the menstrual flux, there is scarcely an organ to which it has not been transferred. "The blood during the time of suckling is often loaded with milk, and evinces a milky appearance; as are also several of the fluids secreted from the blood; and hence probably many of the above peculiarities." *Good's Nosology*, p. 387.

5. Galactia virorum: secreted in males, and discharged from the proper emunctory. See Collectio Acad. iii. p. 63.

"A milky serum often distils from the nipples of new-born babes of both sexes: but various authors, as Schöltz, P. Borelli, Lauremberg, have given cases of genuine milk discharged in like manner by adult males; occasionally continuing for a long time; and in some instances enabling them to perform the office of nurses." Good ut supra.

Order II. ORGASTICA, [from *orgasm.*] Diseases affecting the Orgasm. Organic or constitutional infirmity, disordering the power or the desire of procreating. This order contains six genera.

Genus I. *Chlorosis*, [from χλωρος, green.] Green Sickness. Generic characters—Pale lurid complexion; languor; listlessness; depraved appetite and digestion; mismenstruation.

1. Chlorosis plethorica: habit plethoric; pain in the head, back, or loins; frequent palpitations at the heart; flushes in the face; pulse full, tense, and frequent.

The orientalists, and especially the Persians, make a male variety of this species, which they call bimariy kodek, or *morbus puerorum*, and is designed to include the affections which often peculiarly mark the stage of puberty.

2. Chlorosis inops: habit debilitated; great inactivity and love of indulgence; dyspnœa on moving; lower limbs cold and edematous, especially at night; pulse quick and feeble.

Both these species of Chlorosis have already received due notice. The former under *retention* of the menses; the latter under Limosis dyspepsia, p. 139.

Genus II. *Præotia*, [from πρωι, premature.] Premature development of sexual organization or power. Two species, of course.

1. Præotia masculina: development of sexual precocity in males. See Journ. des Sçavans, 1688. Leske Aus. Abhandl. Band. ii. p. 354. Various cases, and particularly that of Philip Haworth in his second year, in the Medico-Chir. Trans. vol. i. p. 276. A boy has been for some time past shown in the neighbourhood of Leicester-square, who is a surprising example of Præotia. At six months old signs of puberty appeared, and at three years of age (when the writer saw him) the parts had attained both in magnitude and in external appearance the form of manhood.

2. Præotia feminina: development of sexual precocity in females.

Cases.—Menstruation in infancy common. See Plouquet.—Pregnancy at nine years of age. *Ephem. Nat. Cur.* Dec. iii. ann. ii. obs. 172.—See a second case at the same age; *Schmid. Act. Helvet.* iv. 167. and again, in Germany, *G. E. von Haller*, in Blumenbach Bibl. i. 558.—See also Eccyesis ovaria, Ord. iii. Gen. ii. of the present class, Dr. Baillie's case.—Two cases are given in the Medico-Chir. Trans. vol. ii. 115, by Dr. Wall; and vol. iv. 204, by Mr. Astley Cooper. See, for other instances, Haller's Elem. Phys. lib. xxviii. sect. iii. *Kundman*, Rar. Art & Nat. p. 823, &c. &c.

Genus III. *Lagnesis*, [from λαγνης, lascivious.] Inordinate desire of sexual commerce, with organic turgescence and erection. (Nymphomania, Satiriasis, *Sauv. et Auct. recent.*) Two species.

1. Lagnesis salacitas, salacity: appetency capable of restraint; excitation chiefly confined to the sexual system. Four varieties.

α. S. pubertatis, of puberty. Excess of stimulus produced by the season of adolescence.

β. S. senilium, of old age. From local irritation, produced by debility, or topical malady; as diseased ovaries; calculus in the bladder or kidneys; leucorrhœa; or inflammation of the womb, or neck of the bladder.

See a singular case by Mr. Norris in the Trans. of the Medical Society, vol. i. produced by a blow received a few months before near the prostate gland, followed by a small, but nearly-indolent, tumour on the part affected. The patient was a married man of sixty-seven; and during the violence of the erethismus, from local irritation, which had continued for two months, was reduced to a state of the most wretched and squalid emaciation. The following are Mr. Norris's words: "Nunquam memini, inquit ægrotus, me in venerem propensiorem fuisse, nedum insanâ et insatiabili libidine permotum, ante hos duos menses, quando me diro hoc et teterrimo correptum esse morbo sensi; cujus vis tanta est et tam effrænata, ut expleri nequeat; et ad coitum cum uxore me singula nocte, quindecies saltem, imo vicies nonnunquam, impellat. Hic vero cum ægrotantem meum priapismo laborantem se fallere augurabar, et fortasse, nullâ seminis jacturâ in venerem ruere, paulo curiosius id ab illo quæsivi. Affirmat autem se vix in lecto decumbentem corpus uxoris contingere, cùm tanquam œstro percitus, in repetitam venerem properat, neque unquam nisi pleno coitu res peragitur: seminis quidem emissio potius angere quam voluptatis afficere visa est." The wife, a matronly woman of great modesty, was herself hereby rendered extremely ill from local inflammation. By supporting the system with tonics, and bringing the tumour to suppuration, the disease was effectually cured.

γ. S. plethorica, from plethora, or entonic action; especially in a sanguine temperament.

δ. S. ad assuetudine; from habit or immoderate indulgence. The collectors of medical curiosities give various cases of divorce obtained against a husband on account of ungovernable salacity. See Eph. Nat. Cur. Dec. ii. ann. ii. obs. 121. Plater Obs. lib. i. p. 257. Riedlin. Lin. Med. 1697. Timæus, 52.

2. Lagnesis furor: appetency unbridled, and breaking the bounds of modest demeanour and conversation; morbid agitation of body and mind. Two varieties, of course.

α. Masculinus; in males. Pollutiones centum per diem. *Bartholin Epist.* iii. p. 145.

β. Fæmininus, in females. (Nymphomania furibunda, Furor uterinus, *Auct. Var.*)

The

The ſymptoms of this dreadful diſeaſe are too apparent to require us to enter into its diſguſting hiſtory. From the ſlight laſcivious manifeſtations of leering and ſighing, the female ultimately paſſes to a ſtate of the moſt diſtreſſing and ſhocking intemperance of voice and manner, ſo much ſo, indeed, as to loſe all modeſty, to expoſe the naked body, and plainly ſolicit from ſtrangers the act of copulation. Nothing that we are acquainted with has been done for the cure of this malady; but every circumſtance of diſſection tends to ſhow, that it is the effect of a morbid ſecretion on the vaginal nerves. We ſhould therefore uſe every means to change the action of theſe ſecernents. With this view, injections of belladonna and the ſalivation of the ſyſtem with mercury, hold out ſome proſpect of relief. Thoſe to whom this ſubject is intereſting, will find much information, delivered in a very florid ſtyle, in Dr. S. Wilmot's tranſlation of Bienville's work on Furor Uterinus. In this treatiſe the ſuperacetate of lead in the uſual doſes is ſtrongly recommended.

Genus IV. *Ageneſia*, [from α, priv. and γινομαι, to beget.] Impotence, or male ſterility. (Anaphrodiſia, *Sauv.* and *Cull.*) Three ſpecies are noted.

1. Ageneſia impotentia: imperfection or abolition of generative power. Two varieties.

α. I. atonica; from imbecility or want of tone. Chiefly produced by exceſs of indulgence; long-continued gleet; or paralytic affection of the generative organs.

β. I. organica; from morbid organization, natural or accidental; as amputated, injured, or enormous, penis; teſtes impaired or deſtitute.

Albinus gives a caſe of divorce obtained againſt a huſband from inability to enter the vagina, *ob penem enormem.* Plater relates another from a ſimilar cauſe.

2. Ageneſia dys-ſpermia: imperfect emiſſion of the ſeminal fluid. (Dyſpermatiſmus, *Sauv.* and *Cullen.*) Six varieties.

α. D. entonica; from ſuper-erection, or priapiſm.

β. D. epileptica; from incurſion of an epileptic ſpaſm produced by ſexual excitement during the intercourſe.

γ. D. anticipans; diſcharge ejected haſtily, prematurely, and without due adjuſtment.

δ. D. ignavis; diſcharge unduly retarded from hebetude of the genital organs.

ε. D. refluens; the diſcharge thrown back into the veſiculæ ſeminales or the bladder before it reaches the extremity of the penis.—Semen retrogradum in veſicam ex auguſtatione urethræ. *Petit* Mem. de l'Acad. de Chirurgie, tom. i. p. 434. See a curious caſe by Mr. Home in the Phil. Tranſ. 1795.

ζ. D. organica; the diſcharge obſtructed by mechanical preſſure; as that of ſtricture or hardened mucus in the urethra; indurations in the corpora cavernoſa; or a prepuce nearly imperforate. This is, of courſe, the only variety capable of cure. The indications for this purpoſe are obvious enough.

3. Ageneſia incongrua, doubtful impotence: the ſeminal fluid inaccordant, in its conſtituent principles, with the conſtitutional demand of the particular female.

Genus V. *Aphoria*, [of α, priv. and φερω, to bear.] Barrenneſs, or female ſterility; i. e. inability to conceive offſpring. Five ſpecies.

1. Aphoria impotens: imperfection or abolition of conceptive power. Of two kinds, or varieties.

α. Atonica; from imbecility or want of tone, as in the preceding genus, ſp. 1.

β. Organica; from organic defect, whether natural or accidental, as imperforate vagina, defective fimbriæ, or ovaria; want of ova, &c.

An imperforate vagina does not always preclude conception. It has taken place where the vagina itſelf has been ſo narrow as not to admit the penis. *Ephem. Nat. Cur.* Dec. iii. ann. vii. viii. obſ. 83.—Where, with the ſame impediment, a rigid and unbroken hymen has offered an additional obſtacle. *Hiſt. de l'Acad. de Paris*, 1748. An imperforate hymen does, however, in the majority of caſes, preclude conception. For the mode of perforating this membrane, ſee SURGERY.

2. Aphoria paramenica, barrenneſs from miſ-menſtruation, Three varieties.

α. Obſtructionis; produced by menoſtation, or retention of the catamenia.

β. Difficilis; produced by laborious ſecretion.

γ. Superfluitatis; produced by profuſe diſcharge.

The means before laid down for the treatment of obſtructed, painful, or profuſe, menſtruation, muſt of courſe be uſed when we wiſh to remove barrenneſs produced by theſe maladies.

3. Aphoria impercita; barrenneſs from perſonal averſion or want of appetency.

4. Aphoria incongrua: the conceptive power irreſpondent to the conſtituent principles of the ſeminal fluid received; as in the preceding genus, ſp. 3.

5. Aphoria polypoſa: the cavity of the uterus or vagina, or both, ſo filled and obſtructed by a polypous excreſcence as to preclude the action of the ſeminal fluid. See Baillie's Morb. Anat. Faſc. ix. pl. 4. See alſo the next genus, ſp. 5.

Genus VI. *Œdoptoſis*, [from αιδοιον, the genitals, and πτωσις, fall.] Protruſion of one or more of the genital organs, or of excreſcences iſſuing from them, into the genital paſſage; impairing or obſtructing its courſe. (Hyſteroptoſis, *Sauv. Vog. Sag.*) Five ſpecies.

1. Œdoptoſis uteri, protruſion of the uterus into the vagina. (Prolapſus uteri, Procidentia uteri, *Auct. Var.*) Three varieties.

α. Simplex; the uterus retaining its proper poſture and figure. Different names are frequently given to different degrees of this variety. If the deſcent be only to the middle of the vagina, it is called *relaxatio uteri;* if to the labiæ, *procidentia;* if lower than the labiæ, *prolapſus.*

This diſlocation of the uterus may take place from two cauſes. The firſt, relaxation of the broad and round ligaments of the womb; the ſecond, relaxation of the muſcular coat of the vagina. Theſe two cauſes are commonly united. Whatever debilitates the body generally, or more particularly the vaginal ſtructure, may cauſe relaxation of the vagina. Hence, among general diſeaſes, we may reckon ſevere hæmorrhages, and long-continued dyſpeptic ailments; and, among particular ones, leucorrhœa and exceſſive vomiting. It is pretty obvious, however, that relaxation of the vagina would not be ſufficient to bring on procidentia uteri, except in the moſt trifling degree, unleſs the ligamentous connexions of the uterus were alſo weakened. Now, as to the cauſes of this latter affection, it ſeems, when we conſider how little the ligaments ſeem to ſuffer in general debility of the conſtitution, that conſtitutional malady cannot very ſuddenly or generally induce it. It is to mechanical injury, therefore, that procidentia is commonly traceable. Thus blows may ſometimes bring it on: more generally, however, it follows parturition, when the ligaments, in a ſtretched and weakened condition, are prevented from recovering their natural dimenſions in conſequence of the imprudent practice of riſing from bed early after confinement; a practice the more prejudicial, not only becauſe at the period in queſtion the uterus is more looſely connected and of much greater weight than uſual, but becauſe the vagina is more relaxed, and conſequently offers leſs reſiſtance to the deſcent of this viſcus.

In the beginning of this diſeaſe, the falling of the womb is often very ſlight. The natural projection of the cervix uteri into the vagina is about one inch; the diſtance between the os externum and os uteri is about four inches; and, when the os uteri has approached but one inch lower, we meet with very troubleſome ſymptoms. Among the earlieſt of theſe is a pain in the back,

a ſymptom which often continues a long time without any other. In more advanced ſtages, this pain is deſcribed as of a bearing down or dragging kind, a ſenſation as of a weight dropping into the top of the vagina; pain in the groins extending towards the labia is alſo felt, with a tranſparent vaginal diſcharge, and a ſenſation of fulneſs in all the parts of generation. Strangury likewiſe is occaſionally preſent; and a ſeparation of the bones of the pelvis has been met with by Mr. Clarke in one caſe. The ſympathy between the uterus and ſtomach alſo gives riſe to much abdominal irritation. Anorexia, borborygmus, lowneſs of ſpirits, and languor, are very remarkable. The bowels are irregular in their action; and this ſtate of diſorder, re-acting on the uterine ſecernents, ſo far impairs their powers, that they admit red blood, and hemorrhage ſometimes takes place. Hiccough alſo ſometimes attends this malady.

As moſt of the above-mentioned ſymptoms may be ſimulated by other maladies, it is indiſpenſably neceſſary, when procidentia uteri is ſuſpected, that we ſhould make a manual examination. As the uterus goes up to its natural ſituation, in early caſes, when the patient lies down, it is obvious that the only poſture in which we can place her, to gain any information from examination, is the erect one. We need ſcarcely advert to the delicacy of touch which even in theſe circumſtances will be required on the part of the practitioner; a tactus eruditus only to be learnt, however, by very accurate information concerning the ſtructure of the parts, and ſtill more by midwifery practice. When the cervix uteri has fallen down as low as the external labia, it often reſts on the perineum, and the diſeaſe remains ſtationary. In making this deſcent however, and ſtill more as the uterus begins to form an external tumour, the dragging of this organ on the peritoneum exerts a very injurious influence on the abdominal viſcera; and from the ſame cauſe chronic and ſometimes acute inflammation, ending in adheſion, has been known to attend this diſeaſe.

Beſides impairing the functions, it alſo very materially alters the ſtructure, of the inteſtines and of the bladder: the rectum, inſtead of taking the ſweep of the ſacrum, firſt dips down into the tumour, and afterwards aſcends into the pelvis; the fallopian tubes and ovaria are dragged down with the uterus, as are alſo the ſmall inteſtines and omentum; the former of which fill up part of the tumour when it becomes external to the body. Under the ſame circumſtances, the bladder, falling into the tumour, drags down the meatus urinarius, and ſo far alters the direction of this paſſage, that, in order to introduce a catheter, it will be neceſſary to hold the inſtrument almoſt horizontally. Months and even years often elapſe whilſt the uterus is making its deſcent. While the procidentia is internal, a very profuſe mucous diſcharge ſometimes comes from the vagina. When this happens, the patient ſuffers great debility. When, however, the uterus has fallen out of the body, the mucous membrane of the vagina loſes its ſecreting diſpoſition, and from expoſure to air, and from the ſtretching it ſuffers from the tumour, takes on the appearance of external ſkin, loſes its rugæ and its nervous irritability, ſenſible indeed to preſſure, but not to ſexual deſire. After a time, the prolapſed part, eſpecially the cervix uteri, becomes affected with ſpots or patches of ulceration. Theſe, however, are not deep, and ſeldom of an unhealthy character: they readily heal on the replacement of the tumour in its natural ſituation.

Other tumours are met with in the ſame ſituation as prolapſus uteri; but the latter diſeaſe is diſtinguiſhed from all others by the *horizontal* opening of the cervix uteri; a mark which, contraſted with the *perpendicular* opening of the urethra in the male ſubject, has ſerved to detect the impoſture of thoſe who, having a prolapſus uteri unuſually oblong, have endeavoured to impoſe on credulity by the aſſumption of an hermaphrodite formation.

In the *treatment* of this diſeaſe, we have two indications to perform. The firſt is, to get the uterus back into its natural ſituation; and the ſecond to keep it there. In early caſes, the firſt indication is effected by merely putting the patient in a recumbent poſition, this being attended with a remiſſion of all painful ſymptoms. In the early ſtages of this diſeaſe, all therefore that will be neceſſary for the firſt indication will be to keep the patient generally lying on a mattreſs (in the day-time on a ſofa), and obviating all muſcular movements likely to preſs on the uterus; as coughing or ſtraining at ſtool. The indications of ſtrengthening the relaxed ſtate of the vagina embrace a wider field. It is obvious to every one, that, if the muſcular ſyſtem be in a weak ſtate generally, it is quite impoſſible to render any one muſcle ſtrong by local applications. Now, as it is the muſcular ſtructure of the vagina which we here wiſh to operate upon, we muſt attend to the ſtate of the muſcular ſyſtem throughout the body. The diet muſt be regulated in ſuch a manner as to have the moſt perfect aſſimilation: warm drinks, as tea, &c. forbidden; the bowels kept open by the mildeſt laxatives, and the cold bath uſed regularly. We need not dwell upon the concomitant diſorders which will prevent the uſe of the cold bath; theſe having been ſo often adverted to. We have before ſtated as a general rule, that this meaſure is never to be perſiſted in unleſs followed by re-action. A ſhower-bath impregnated with ſalt is uſeful for perſons of good ſtamina, when the ſimple bath loſes ſome of its influence. Medicines of the tonic kind, as improving the digeſtive powers of the ſtomach, are alſo recommended; as bark, gentian, &c. It is deſirable to join with theſe, medicines which have a power of aſtringing the veſſels of the mucous membranes. We are rather ſceptical as to the control of any particular medicine over local diſorders, except when applied directly to the ſtructure affected; but it is ſtated on reſpectable authority, that certain medicines taken into the ſtomach do relieve relaxation of the vagina, a circumſtance referrible, of courſe, to the known ſympathy which exiſts between the ſtomach and the mucous expanſion in general. Cinchona and ſulphuric acid is a formula much employed. In perſons much debilitated it will not be found ſafe to uſe the cold bath ſo frequently, or to give ſuch powerful aſtringents as we have recommended above; but of courſe all rules of this kind muſt vary with particular circumſtances.

In early ſtages of procidentia, the ſponging or daſhing of cold ſpring or ſalt water on the loins and pudenda, and the injection of aſtringent lotions, are the local means to be chiefly relied on. The aſtringent applications are to be applied to the interior of the vagina by means of a ſyringe, to the conſtruction of which it behoves the practitioner to pay ſome attention. The pewter inſtruments in common uſe are many of them next to uſeleſs; it is indiſpenſible that the pipe preſent a ſufficient curve to allow to uſe the inſtrument with eaſe; that the piſton is perfectly adapted to the barrel, and moves with celerity; and that the holes at the extremity of the pipe are ſmall, and ſituated at the point, and not laterally. The aſtringents beſt recommended are, a mixture of ſolutions of alum and ſulphate of zinc, or one or both of theſe ſalts diſſolved in a decoction of oak-bark. Theſe applications ſhould be thrown up twice or three times a-day.

When procidentia uteri is ſo far advanced as to render the attempt at reduction by the above-mentioned meaſures uſeleſs, we muſt endeavour to give mechanical ſupport to the diſplaced uterus. For this purpoſe an inſtrument called a *peſſary* is uſed. It is various in form and ſubſtance. The form muſt vary with the ſtage or peculiarity of the complaint. The moſt proper ſubſtance at preſent uſed for the formation of a peſſary is *box-wood*. The *circular* peſſary is adapted to thoſe caſes in which the diſeaſe has not made great progreſs, and where the relaxation of the vagina is not conſiderable. Its adaptation to

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the exact ſize of the vagina is a matter of great moment. We have before ſhown, that the contraction of the vagina is one of the means by which the diſeaſe is cured. It is therefore obvious, that any ſubſtance which would prevent this contraction, or would in the ſlighteſt degree dilate the canal, muſt be improper. At the ſame time the peſſary muſt be large enough to *fill* the canal, or it will ſlide out of it. Dr. Clarke ſtates, that it is ſeldom proper to uſe a peſſary of more than two inches and a half in diameter, on account of the preſſure it would exert on the meatus urinarius and rectum. When, therefore, the calibre of the vagina is larger than theſe proportions, it is proper to uſe the *oval* peſſary, which, as its long diameter reſts tranſverſely in the vagina, may receive ſupport from the ſides of this canal, without preſſing on the urinary paſſage before, or the rectum behind. Should the vagina be ſo dilated that a ſmaller one cannot be retained, we may uſe an oval peſſary nearly as large as four inches in its long diameter. The chief objection to this inſtrument is, that it is diſturbed by ſexual intercourſe. This objection is of the more force, becauſe pregnancy is a deſideratum in procidentia uteri, inaſmuch as the aſcent of the womb during that ſtate cures the diſeaſe.

The following are the directions for paſſing theſe inſtruments, given by Mr. Clarke in his Obſervations on the Diſeaſes of Females. The woman ſhould be placed upon her left ſide, and cloſe to the edge of the bed; and her knees ſhould be drawn up towards the abdomen. The practitioner is then (having previouſly examined the ſize of the vagina) to ſelect a peſſary, according to his judgment, of a proper ſize. This inſtrument is then to be covered with ſome ſimple unctuous matter; and, if its form be circular, it is to be placed between the labia, ſo that one edge will be turned towards the os pubis and the other to the rectum: it is then to be moved in a circular direction on its own axis, preſſing it at the ſame time towards the perineum, till it has fairly entered the vagina. As the inſtrument paſſes the edge of the external parts, ſome little uneaſineſs is always felt by the woman; but this ceaſes as ſoon as it has reached the vagina, to the upper part of which it is to be carried, and it is to be ſo placed that the uterus may reſt upon one of the broad ſurfaces of it. The inſtrument is now to be left in the vagina, and a ſyringe full of ſome cold aſtringent injection ſhould be thrown into the parts, to give tone and contraction to the dilated os externum, as, in caſes where the vagina is very much relaxed, it may make a ſmaller peſſary anſwer the purpoſe of ſupport than would be required if no ſuch means were reſorted to. Whatever may be the ſhape of the peſſary introduced, the woman ſhould continue for ſome minutes in the recumbent poſture.

An oval peſſary requires great care in the mode of introduction, and is either a very good or a very bad inſtrument, according as it is well or ill applied. In the choice of it, the ſize of the vagina is to be firſt compared with that of the inſtrument, the extremities of which ſhould not be too acutely pointed, leſt they ſhould injure the parts. The inſtrument being covered with ſome unctuous ſubſtance, one end of it is to be placed between the labia, with the ſhort diameter running from before to behind; and in this direction it is to be carried up into the vagina. The practitioner is then to inſert the point of his fore-finger into the opening in the centre of the inſtrument, and to place it acroſs the vagina ſo that the extremities may be turned towards the ſpinous proceſſes of the os iſchium: if the direction of the opening in the peſſary is made to correſpond with that of the long diameter itſelf, this will be eaſily accompliſhed. The peſſary is now to be paſſed as high into the vagina as it can be without giving pain, and to be left there.

Procidentia uteri ſometimes occurs in women whoſe perinæum has been lacerated to a great extent in labour; in ſuch a caſe, neither the circular nor the oval peſſary can be retained; but the ſacroſciatic ligaments and the os coccygis will ſufficiently contract the lower aperture of the pelvis to enable a globular peſſary to be retained. This peſſary, preſſing equally in all directions, is very conveniently borne; and it may be uſed for widows who have loſt the catamenia with great advantage. The ſize of the inſtrument being adapted to the capacity of the parts, its ſurface is to be covered with unctuous matter as before, and it is to be placed between the labia; by a gentle preſſure it is to be carried into the vagina, giving a degree of rotatory motion to it as it paſſes along, which greatly facilitates the introduction.

In thoſe caſes in which the tumour protrudes out of the body, it is obvious that this muſt be reduced before the peſſary can be made uſe of. Previous to attempting the reduction of a completely-prolapſed womb, we muſt enquire whether at any period of the diſeaſe inflammatory ſymptoms have been manifeſt; as for inſtance, laſting and acute pain, with thirſt, heat, ſmall pulſe, abdominal tenderneſs, vomiting, &c. becauſe, if theſe ſymptoms have been preſent, there will be much reaſon to fear that the peritoneum has contracted adheſions which it would endanger the life of the patient to break through by any forcible attempt at reduction.

When tumours on or above the uterus are the cauſe of this diſplacement, it will ſeldom be adviſable to reduce the womb. In fact, all prolapſes in which the effort at reduction is attended with much pain, ſhould be abandoned. When it is determined, however, to reduce a prolapſus uteri, the bladder and rectum muſt be emptied of their contents: the patient muſt then be laid on a bed with her hips much raiſed, that the abdominal viſcera, which are dragged down into the cavity of the pelvis, may not oppoſe, by their weight, the return of the womb. The patient being now directed not to ſtrain, or in any way to act with her abdominal muſcles, the practitioner is to apply his finger and thumb to the lower part of the tumour, where the os uteri is ſituated; and, by a gentle preſſure, this is to be carried up into the centre of the tumour itſelf. This done, the ſame preſſure is to be continued, and the parts are to be returned into their proper place in the pelvis. A peſſary is then to be introduced into the vagina; and the patient ſhould continue to lie upon an inclined plane, with the hips elevated, for ſeveral hours. In almoſt all caſes in which the degree of the diſeaſe is conſiderable, every peſſary which can be introduced will be forced away by the ſlighteſt efforts of the woman: even the globular peſſary (which is the beſt) will not be retained, neither can it be kept in the vagina by any common bandage. But by the following contrivance the globular peſſary may be kept in the vagina. In the firſt place, a peſſary is to be choſen of the ſize which the caſe requires, and a ſmall ſlip of braſs is to be attached to it by its two ends, leaving a ſpace between the inſtrument and the centre of this piece of braſs: a belt of leather, long enough to go round the patient's body, is alſo to be prepared; to the centre of which, behind, a braſs wire, as thick as a common quill, is to be attached by a ſcrew. This wire is now to be properly bent; and, the peſſary being introduced into the vagina, the wire is to be paſſed between the peſſary and the piece of braſs attached to it; and, being brought up between the thighs, it is to be attached to the fore part of the circular ſtrap. The reduced parts are by this means ſupported by a peſſary, and this is kept in its place by the unyielding piece of metal.

When a ſeparation of the ligaments of the pelvic bones has taken place in conjunction with a prolapſed uterus, the patient muſt wear, in addition to the meaſures before noticed, a broad circular belt paſſed pretty firmly round the hips: this of courſe anſwers the ſame purpoſe as an artificial ligament, and moreover facilitates the re-union of the lacerated or lengthened ſtricture. Strangury requires the uſual treatment.

β. Retroverſa, retroverted womb: the uterus diſplaced, the lower part becoming the upper. Moſtly limited to a ſtate of pregnancy.

γ. Inverſa, inverted womb: the uterus diſplaced, and turned inſide out.

This complaint conſiſts, as the name imports, in an inverſion of the cavity of the uterus, ſo that the fundus comes through the os uteri; conſequently that part which formerly was the inſide of a cavity is converted into the outſide of a tumour, either contained in the vagina or projecting from it. In the preſent improved ſtate of the art of midwifery, this diſeaſe is very ſeldom met with, becauſe it is generally a conſequence of violently pulling the funis for the purpoſe of extracting the placenta. The weight of a large polypus has been ſaid to have inverted the womb; but this is a very rare caſe.

As inverſion of the uterus is (ſtrictly ſpeaking) to be conſidered as one of the immediate conſequences of delivery, (ſee PARTURITION;) no admiſſion would have been given to it in this article, if it were not that it is occaſionally met with in the chronical ſtate attended by a mucous diſcharge. It may be neceſſary to remind the reader, that the removal of the placenta (if adherent), and the immediate replacement of the uterus, are to be effected as ſoon as poſſible when this accident has occurred during labour. The ſymptoms of the chronic ſtate of inverſio uteri reſemble thoſe of procidentia uteri; and, an examination being made, a tumour is found either in the vagina, or hanging out of the external parts. Such a tumour may be miſtaken for polypus; but, in the latter diſeaſe, the os uteri encircles the neck of the tumour; in inverſion of the uterus, the os uteri forms a part of the tumour itſelf. Moreover, the inverted uterus is ſenſible: polypi of the uterus, on the contrary, are void of feeling. The tumour may be miſtaken for procidentia of the uterus; but the difference may be detected by obſerving that there is no opening at its lower part, and by its ſurface ſecreting the catamenia at the regular periods. It is diſtinguiſhed from procidentia of the bladder by being much more reſiſting, by its ſize continuing always the ſame, and by the impoſſibility of finding the uterus behind it. Whilſt the inverted uterus remains in the vagina, the diſcharge (excepting at the period of menſtruation) will be of a mucous kind; but, if the uterus falls lower, ſo as to protrude beyond the external parts, the expoſure of that ſurface, which in a natural ſtate lined the cavity, to air, as well as to occaſional injuries, may induce inflammation and ulceration over a part or the whole of its ſurface; and the mucous diſcharge may be changed to one of a purulent kind, ſo conſiderable in quantity as to debilitate the conſtitution, and to cauſe all the common ſymptoms of weakneſs. If there are any ulcerations upon the ſurface of the upper part of the tumour formed by the inverſion of the vagina, they will be circumſcribed, and rarely cover its whole ſurface. In a caſe where the uterus has been long inverted, and lies in the vagina (the latter cavity having undergone no change except from diſtention), it will not be adviſable to recommend any other remedy than the injection of ſome very mild aſtringent fluid, three or four times a-day, into the vagina. Some reſtraint will be thus placed upon the quantity of the diſcharge, and the parts will be kept clean by it. There is an extreme degree of diſeaſe where the uterus (previouſly inverted) falls out of the body, drawing down with it the vagina, and where the woman is becoming every day more and more weak from the quantity of the diſcharge. Caſes of this kind can receive very little benefit from external application, and indeed are only to be treated by palliative medicines, as narcotics and anodyne applications, unleſs indeed the patient ſhould have paſſed the menſtruating age; in which caſe, ſeeing that her comfort is deſtroyed by the diſeaſe, and that the profuſeneſs of the diſcharge perhaps threatens her with death from the debility which it produces, it may be adviſable to recommend the performance of an operation, which has in many caſes been attended with ſucceſs, even in aged perſons. This operation is the removal of the inverted uterus itſelf. See SURGERY.

2. Œdoptoſis vaginæ: protruſion of the upper part of the vagina into the lower. This, like the deſcent of the uterus, may, according to the degree of the diſeaſe, be relaxation, procidence, prolapſe, or complete inverſion.

The moſt common cauſe of this diſeaſe is an habitually coſtive ſtate of the rectum, in conſequence of falſe delicacy poſtponing the period of natural evacuation. Thus the rectum acquires ſo inordinate a capacity as to preſs in a very great meaſure on the ſurrounding parts. As this preſſure cannot diſplace the bones of the ſacrum, its effects are exerted on the part where there is leaſt reſiſtance; viz. the back of the vagina; and hence an actual pouch is formed at this part, which of courſe drives the membrane out of its natural ſite. The falling-down of cyſts of diſeaſed ovaries between the rectum and back of the vagina, operate in the ſame manner in producing this diſeaſe. A tumour ſlightly external, a trifling degree of pain in the back, a ſlight diminution of the tumour when the patient lies down, with a diſcharge of tranſparent mucus from the vagina, are the ſymptoms of the malady. By the introduction of the finger in ano, the pouch above deſcribed may alſo be felt.

The *treatment* of the diſeaſe follows ſo obviouſly, that little need be ſaid. To evacuate the rectum by ſaponaceous clyſters, or, if theſe do not ſucceed (which is ſometimes the caſe), by the introduction of the finger and a ſcoop in ano, is the firſt thing to be done. The bowels muſt be kept always open by mild cathartics, and a globular peſſary introduced into the vagina, for the purpoſe of ſupporting the vagina and reſtoring the natural diameter of the rectum. Cold aſtringents ſhould be thrown into the vagina; and cold bathing, eſpecially of the loins, uſed externally.

3. Œdoptoſis veſicæ, protruſion of the bladder into the urethra.

This diſeaſe, which has often been confounded with procidence of the uterus or the vagina, and conſequently miſtreated, conſiſts of a falling-down of that part of the bladder which lies poſterior to the entrance of the urinary paſſage. In making this deſcent, the bladder carries the vagina along with it, and, in very bad caſes, the anterior lip of the cervix uteri; the latter indeed to ſuch a degree, that the os uteri has been found to open directly backwards, and lying in contact with the poſterior part of the vagina. As in procidentia uteri, the bladder may deſcend a little only from its natural ſite, or it may form a large external tumour projecting from the labia. Procidentia veſicæ is attended with a ſlight degree of pain, deſcribed by the patient as a bearing-down. This is *aggravated* by the recumbent poſture: hence the patient is much affected with it during the night, at which time alſo ſhe experiences frequent calls to paſs her urine. A ſenſe of tightneſs and pain is alſo referred to the navel; and both this pain and the bearing-down are increaſed by fulneſs of the bladder and relieved by its emptineſs, though perhaps the latter is never complete; for it ſeems that the prolapſed bladder loſes its contractile power, and hence that portion of this viſcera which forms the tumor generally contains ſome water. A mucous diſcharge, ſometimes ſmall and ſometimes very profuſe, attends this diſeaſe.

On examination with the finger, a tumor will be found in the vagina, diſtinguiſhed from procidenti uteri by the abſence of the mouth of the uterus, the anterior lip of which, as we before ſaid, is often found ſtretched down with the bladder. It is diſtinguiſhed from that and from all other diſeaſes of the parts in queſtion, by the evident fluctuation of contained fluid, unleſs indeed we except encyſted tumours, which are diſtinguiſhable however by their uniformity; for, of courſe, theſe are not leſſened in ſize by the expulſion of the contents of the bladder, as is the caſe in procidentia veſicæ. The diſplacement of the

bladder is rarely attended with the gaſtric diſturbance ſo common and ſo ſevere in procidentia uteri. It is only when the expoſed ſtate of the bladder has induced diſeaſe of its ſtructure, that conſtitutional diſturbance becomes ſeverely manifeſted. Relaxation of the vagina and preſſure on the bladder cauſe this diſeaſe; hence it occurs after labour, and eſpecially in thoſe women who have borne many children: hence likewiſe violent coughing and the lifting of heavy weights have frequently brought it on.

Little need be done in the way of conſtitutional treatment. The rectum ſhould of courſe be kept empty; and moſt particular attention ſhould be paid to keep the bladder as empty as poſſible by frequent endeavours on the part of the patient. Of courſe all coughing and ſtraining muſt be prevented. The treatment further than this conſiſts in removing the relaxed condition of the vagina by aſtringent injections and the cold bath, and in keeping the bladder in its place by means of a peſſary. This inſtrument may be either of the oval or globular form, according as the one or the other gives leaſt inconvenience. Whichever is worn ſhould be perforated by four holes for the purpoſe of introducing ſilk, by means of which the inſtrument may be diſplaced when neceſſary. Dr. Good makes two varieties of this diſeaſe.

α. Tunicis interioſis; the inner membrane being protruded.

β. Colli; the neck of the bladder being protruded.

4. Oedoptoſis complicata: protruſion of different organs complicated with each other.

α. Utero-veſicalis; of the uterus dragging the bladder along with it.

β. Vagino-veſicalis; protruſion of the vagina dragging the bladder along with it.

In theſe caſes, the reduction of the ſeparate viſcera being effected, they are to be retained in ſitu by means of the peſſary.

5. Oedoptoſis polypoſa: polypous excreſcence in the courſe of the genital avenue; ſoft, compreſſible, red or reddiſh. Two varieties.

α. P. uteri; iſſuing with a ſlender root from the fundus of the uterus, and more or leſs elongating into the vagina.

β. P. vaginæ, polypus of the vagina; iſſuing from the ſides of the vagina; broad and bulbous.

Of theſe two ſpecies the former is an inſenſible tumour attached to the uterus by a ſmall neck; various as to its ſize, form, and conſiſtence; being ſometimes white, at other times brown; ſometimes hard and tough, at others ſoft and eaſily broken. The ſoft ſtate is the leaſt frequently met with. The ſymptoms which attend this diſeaſe are a copious mucous or muco-ſanguineous diſcharge. Sometimes actual coagula of blood are emitted, which often correſpond with the former polypous ſtructure on which they have accumulated. The retention of theſe coagula ſometimes induces putrefaction, in conſequence of which an highly-offenſive diſcharge takes place; to ſo great a degree, in fact, as to ſimulate the fetid ſmell of the cavernous exudations from the carcinoma uteri. Pain in the back and groins, with a ſenſe of preſſure and bearing-down, are met with in this complaint; all which ſymptoms are proportioned to the ſize of the tumour. Frequent vomiting, the conſequence of the ſtomach's ſympathizing in uterine irritation, is common to this diſeaſe; and, when the bladder alſo is thus ſympathetically affected, ſtrangury is no uncommon occurrence. The latter diſorder, however, as well as retention of fæces in the rectum, is often brought on by the preſſure of the enlarged polypus on the reſpective canals of the urine and ſtools. In protracted caſes, dropſy may accompany this diſeaſe. On manual examination, we find a tumour of little feeling projecting through the os uteri, by which its neck is ſo completely encircled, that we can paſs the finger round it. This polypus is diſtinguiſhed from inverted uteruſ by the hiſtory of its commencement, and by its inſenſibility. It might be confounded with the cauliflower excreſcence, had not the latter an irregularity of ſurface, an origin by a broad baſe from the os uteri itſelf, inſtead of coming through it with a thin peduncle, and were it not attended by a *watery* diſcharge. Theſe circumſtances are ſufficiently apparent to prevent this miſtake. The polypus of the uterus affects both ſingle and married perſons; thoſe who are cachectic, and thoſe apparently healthy, and who have ſuffered no injury of the womb. The only mode of cure conſiſts in tying the neck of the polypus by means of a canula and ligatures, and afterwards extracting the tumour by the fingers or a pair of forceps; (for the mode of doing which, ſee SURGERY.) The vagina is then to be waſhed with a tepid lotion for the purpoſe of keeping the parts clean, and aſtringent lotions thrown up if any remains of the complaint are apparent.

The polypoid tumour which ſprings from the vagina or from the uterus by a broad baſe, is generally different in its anatomical characters from true polypus, and is very difficult of cure. It may be removed by a ligature; and, if the parts are kept clean and the ſtate of the conſtitution (which is oftentimes in fault) amended, the patient will experience a long period of relief; but the tumour will almoſt inevitably return.

Order III. CARPOTICA, [from καρπος, fruit.] Diſorders affecting the Impregnation. Irregularity, difficulty, or danger, produced by parturition.

This order contains four genera; of which, and their ſpecies, we ſhall merely give Dr. Good's arrangement and enumeration, as the ſubjects have been fully diſcuſſed under the articles ABORTION, vol. i. and PARTURITION, vol. xviii.

Genus I. *Paracyeſis*, [from παρα, bad, and κυησις, impregnation.] Morbid Pregnancy. Generic characters—The progreſs of pregnancy diſturbed or endangered by the ſupervention of general or local diſorder. There are three ſpecies, beſides varieties.

1. Paracyeſis irritativa: pregnancy exciting diſtreſs or diſturbance in other organs or functions than thoſe primarily concerned. Five varieties.

α. Syncopalis; accompanied with frequent fainting.

β. Dyſpeptica; accompanied with indigeſtion or ſickneſs.

γ. Dyſpnoica; accompanied with difficult breathing.

δ. Alvina; accompanied with derangement of the alvine canal, as coſtiveneſs, diarrhœa, hemorrhoids, &c.

ε. Varicoſa; accompanied with venous dilatations of the lower extremities.

2. Paracyeſis uterina: pregnancy diſturbed or endangered by diſeaſed affection of the uterus. Four varieties.

α. A. retroverſione; the uterus being retroverted. See Œdoptoſis uteri, β.

β. A. leucorrhœa; the uterus ſecreting, or exciting in the vagina a ſecretion of leucorrhœa, ſo as to produce debility.

γ. Catamenica; the catamenia continuing to recur.

δ. Hæmorrhagica; accompanied with hemorrhage.

Catamenia, unaccompanied with hemorrhage, can ſcarcely be regarded as a diſeaſe. Many menſtruate uniformly for the firſt three or four months of pregnancy. Some through the whole term. A few have never menſtruated at any other time; of which ſome curious caſes are related by Hagedorn, Hopfengartner, and other Dutch writers.

3. Paracyeſis abortus: premature excluſion of a dead fetus from the uterus. If the excluſion take place within ſix weeks after conception it is called *miſcarriage*. If between ſix weeks and ſeven months, or the term of premature labour, it is called *abortion*.

Genus II. *Parodynia*, [from παρα, bad, and ωδιν, or ωδις ινος, labour-pain.] Morbid Labour.—Generic characters—The progreſs of labour diſturbed or endangered by irregularity of ſymptoms, preſentation, or ſtructure. There are ſeven ſpecies.

1. Parodynia atonica, lingering labour: labour protracted

tracted by general or local debility. In the Ephemera Nat. Curios. is the case of a fetus illapsing into the uterus after its head had been denuded, and it had moaned.

2. Parodynia sympathetica: labour retarded or harassed by sympathetic derangement of some remote organ or function. Three varieties.

α. Syncopalis; accompanied with fainting.

β. Convulsiva; accompanied with convulsions.

γ. Pathematica; accompanied with great terror, apprehension, bashfulness, or other emotion of the mind. See vol. xviii. p. 710.

3. Parodynia implastica: labour delayed or injured for want of plasticity, or unkindly dilatation of the soft parts. Three varieties.

α. Rigiditatis; the delay confined to a simple rigidity of the uterus or vagina.

β. Hæmorrhagica; accompanied with hemorrhage.

γ. Lacerans; accompanied with laceration of the perinæum, or uterus.

4. Parodynia perversa, cross birth: labour impeded by preternatural presentation of the fetus, or its membranes. This species is divided into seven varieties, according as the presentation may be that of the face; of the breech; of one or both feet; of one or both arms; of the shoulder; prolapsed navel-string; or, lastly, presentation of the placenta.

5. Amorphica: labour impeded by mis-configuration of the fetus or of the maternal pelvis. Two varieties.

α. A. fetu; the fetus deformed by a preternatural magnitude of head, or some morbid protuberance.

β. Pelvica; the maternal pelvis contracted in its diameter by natural deformity, or subsequent disease or injury. Not unfrequently produced by an hydropic or encysted ovarium occupying a position between the rectum and vagina. The deformed pelvis is the most frequent and obstinate impediment to parturition; but it has already been amply treated of in vol. xviii. p. 690 & seq.

6. Parodynia pluralis: labour complicated by a plurality of children.

7. Parodynia secundaria: diseased action or disturbance succeeding delivery. Four varieties.

α. Retentiva; retention of the secundines.

β. Dolorosa; violent after-pains.

γ. Hæmorrhagica; violent hemorrhage, commonly called *flooding*.

δ. Lochialis; profuse lochia.

Genus III. *Eccyesis*, [from εκ, out of, and κυησις, impregnation.] Extra-uterine fetation; i. e. imperfect fetation produced in some organ exterior to the uterus. There are three species.

1. Eccyesis ovaria: imperfect fetation occurring in the right or left ovarium. (Graviditas ovarii, *Sauv.*) Examples are common. See Ab. Vater Dissert. de Grav. apparente, ex tumore ovarii dextri enormii orta, per tres annos cum dimidio durante. *Ed. Med. Ess.* v. 336. *Ed. Phys. Ess.* ii. 273. *Forrester*, 1798, 379. *Ed. Med. Journ.* ii. 180. Dr. *Baillie* in Phil. Trans. 1789. *Barnes* in *Trans. Medico-chir.* iv. 317.

2. Eccyesis tubalis: imperfect fetation occurring in the Fallopian tube. (Graviditas tubalis. *Sauv.*) See Littre, Mem. de l'Acad. R. des Sçav. 1702. Cyprian. Dissert. de Fetu ex Tubâ exciso, 1700. Haller, in Boerh. v. 329. Santorin, Obs. Anat. c. ii. Trans. Soc. Med.-chir. i. 215. See also a case by Mr. Stanley, in the Trans. College Physicians, vol. vi.

3. Eccyesis abdominalis: imperfect fetation occurring in the cavity of the abdomen. See Krohn, Fetûs extra uterum hist. Dentsch de graviditate abdominali. Mem. Med. Soc. Lond. iii. 176. Wrisberg Observ. Anat. Young, Medico-chir. Trans. i. 241. "For want of a regular passage opening externally, the substance formed often remains for many years in the extra-uterine nidus. Walther gives an instance of twenty-two years; Bayle a case of twenty-six years; Phil. Trans. 1677-1678, vol. xii. The Ephemera of Natural Curiosities, one of forty-six years. *Cent.* x. *Obs.* 48."

Genus IV. *Pseudocyesis*, [from ψευδω, false, and κυησις, impregnation.] Spurious pregnancy. Generic characters—Symptoms of pregnancy without impregnation; chiefly occurring on the cessation of the catamenia. Two species.

1. Pseudocyesis molaris, false conception, or mole: the uterus irritated by a coagulum of blood or other fluid lodged in its cavity, often assuming a fibrous appearance. Frequently exhibiting, on being discharged, hydatids or other vermicles. See, for examples, Marcellus Donatus, lib. iv. cap. 25. Journ. des Sçavans, passim. Ruysch. Obs. 28, 29. Evacuated during dancing; Slevoght, Diss. Fem. mol. labor. Jenæ, 1700."

2. Pseudocyesis inanis: the uterus void of internal substance, and irritated by some unknown morbid action.

Class VI. ECCRITICA, [from εκκρινω, to strain off, drain, or exhaust.] Diseases of the Excernent Function.

Order I. Mesotica, [from μεσος, the middle.] Disorders affecting the Parenchyma. "Pravity in the quantity or quality of the intermediate or connecting substance of organs; without inflammation, fever, or other derangement of the general health." It is very clear that this definition of Dr. Good's by no means applies to all diseases of the excernent function of the parenchyma. Indeed we are much surprised that the very frequent connexion between some of the diseases and "inflammation" and "fever" should have escaped any one. This order contains four genera.

Genus I. *Polysarcia*, [from πολυσαρκος, fleshy, abounding in flesh.] Corpulency, or obesity. Generic characters—Firm and unwieldy bulkiness of the body or its members, from enlargement of natural parts.

Considering the derivation of the word, we are rather surprised that Dr. Good has used the term *Polysarcia* for this genus, since much flesh or muscle is not a disease: it is when the *fat* is superabundant that inconvenience is felt.

Polysarcia adiposa; a single species. Bulkiness from superabundant accumlation of fat. Two varieties.

α. A. generalis; extending over the body and limbs. Sennertus mentions a woman, who at thirty-six years of age weighed four hundred and eighty pounds avoirdupois; and a man who weighed six hundred. Bright of Maldon weighed six hundred and sixteen pounds; and Lambert of Leicester considerably more. In the N. Sammlung Medic. Wahrnehm. iii. 370, is the case of a man who weighed eight hundred pounds.—Carried off by a spontaneous salivation. *Eph. Nat. Cur.* Dec. iii. ann. v. vi. obs. 65.—By a fright. *Samml. Medicin. Wahrnehmungen*, vi. 444.

β. A. splanchnica; confined to the organs or integuments of the trunk, the limbs retaining their gracile form.

Fatness seems to be owing to an inordinate degree of power in the assimilative organs. It has been generally attributed to over-eating; but this is not borne out by facts; neither, when we consider how much intemperance disturbs digestion, should we expect to find this the case. Indeed, in many instances, fat persons are remarkably abstinent in regard to aliment; and it is therefore the active state of the digestive organs, which, undisturbed by mental irritation to which these kind of people are so little subject, assimilates almost every portion of food they take into the blood, that we must in a great measure look for the cause of corpulence. We must confess however, that, even under this hypothesis, we should rather expect to find general plethora than an extraordinary development of adipose stricture. Corpulence is only a disease when, by its pressure on the heart or any of the viscera, it disturbs in an unusual degree the breathing, the circulation, or any other of the functions.

Many plans have been laid down for the reduction of

corpulence, but with little ſucceſs. The moſt exceſſive and fatiguing exerciſe has been taken, the moſt rigid abſtinence adopted, without any benefit. Theſe meaſures ſhould form, however, part of the treatment of moſt caſes; but we believe that a gradual diminution in the periods of ſleep, and the regular uſe of *dry feeding*, the quantity of fluid being brought down to the ſmalleſt poſſible degree, will do more for the cure of corpulence than any other meaſure. Of courſe, if the fat oppreſſes the action of the heart, or if plethora be manifeſt in combination with Polyſarcia, bleeding may be uſed; but otherwiſe the relief it gives ſeems only temporary.

Genus II. *Emphyma*, [from εμφυω, to engender, to produce.] Tumour. Generic characters—Glomeration in the ſubſtance of organs from the production of new and adſcititious matter; ſenſation dull; growth ſluggiſh.

The reader has already been referred to the article TUMOUR in this work for an account of *Phyma*. To the ſame article we ſhall be obliged to defer the conſideration of the genus Emphyma, which indeed belongs more particularly to *Surgery* than to *Pathology* in the preſent acceptation of thoſe terms.

A complete deſcription of theſe productions has been long before the public; viz. Mr. Abernethy's work on Tumours, in which all that is known of their treatment is compriſed; and indeed Dr. Good's arrangement of the genus is entirely formed upon that excellent work. The ſpecies are three, with many varieties.

1. Emphyma ſarcoma, ſarcomatous tumour, (Abernethy.) Tumour immoveable; fleſhy and firm to the touch. Of this there are eight varieties.

α. S. vaſculorum, common vaſcular or organized ſarcoma, (Abernethy.) Vaſcular throughout: texture ſimple: when bulky, mapped on the ſurface with arboreſcent veins. Found over the body and limbs generally. Often found of an enormous ſize in the ſcrotum, conſtituting the ſarcocele, or hernia carnoſa, of authors.

β. S. adipoſum, adipoſe ſarcoma: ſuety throughout: incloſed in a thin capſule of condenſed cellular ſubſtance; connected by minute veſſels. Found chiefly in the fore and back part of the trunk. *Abernethy.*

γ. S. pancreaticum, pancreatic ſarcoma: tumour in irregular maſſes; connected by a looſe fibrous ſubſtance, like the irregular maſſes of the pancreas. Found in the cellular ſubſtance; but more uſually in lymphatic glands; chiefly in the female breaſt.

δ. S. celluloſum, cyſtic ſarcoma: tumour celluloſe or cyſtoſe; cells oval, currant-ſized, or grape-ſized, containing a ſerous fluid; ſometimes caſeous. Found generally, but moſtly in the thyroid gland, teſtis, and ovarium. When in the thyroid gland, it is called bronchocele, botium, or Derbyſhire-neck. The cells are here numerous, the fluid often viſcid, ſometimes gelatinous. See Cyrtoſis Cretiniſmus, p. 288.

ε. S. ſcirrhoſum, ſcirrhous ſarcoma: hard, rigid, vaſcular, infarction of glandular follicles; indolent, inſentient, glabrous; ſometimes ſhrinking and becoming more indurated. When irritated, tending to a cancerous ulcer; and found only in glandular ſtructures.

ζ. S. mammarium, mammary or maſtoid ſarcoma: tumour of the colour and texture of the mammary gland; denſe, and whitiſh; ſometimes ſofter, and browniſh; often producing, on extirpation, a malignant ulcer with indurated edges. Found in various parts of the body and limbs.

η. S. tuberculoſum, tuberculate ſarcoma: tumour tuberculoſe; tubercles firm, round, and cluſtering; pea-ſized or bean-ſized; yellowiſh, or browniſh-red; when large, diſpoſed to ulcerate, and produce a painful, malignant, and often fatal, ſore. Found chiefly in the lymphatic glands of the neck; often, ſimultaneouſly, in other glands and organs. *Abernethy*, p. 47.

θ. S. medullare, medullary ſarcoma: tumour of a pulpy conſiſtence, and brain-like appearance; whitiſh, ſometimes reddiſh-brown; when large, apt to ulcerate; and produce a ſloughing, bleeding, and highly dangerous, ſore. Found in different parts, chiefly in the teſtes; at times propagating itſelf along the abſorbent veſſels to adjoining organs.

2. Emphyma enciſtis, encyſted tumour, or wen: tumour moveable: pulpy, often elaſtic to the touch. (Lupia, *Sauv. Cull.*) Five varieties.

α. E. ſteatoma: an encyſted extuberance containing a fatty or ſuety ſubſtance, apparently ſecreted from the internal ſurface of the cyſt. Found over moſt parts of the body; and weighing from a drachm or two, to twenty or thirty pounds.

β. E. atheroma: encyſted extuberance containing a mealy or curd-like ſubſtance, ſometimes intermixed with harder corpuſcles; apparently ſecreted as the laſt. Found, of different ſizes, over moſt parts of the body. (Molluſcum, *Willan.*)

γ. E. meliceris: encyſted extuberance, containing a honey-like fluid. Found, of different ſizes, over moſt parts of the body.

δ. E. ganglion: encyſted extuberance containing a colourleſs fluid; the extuberation fixed upon a tendon.

ε. E. teſtudo: encyſted extuberance containing a fluid readily hardening into horn or nail; and eſpecially when protruded externally upon an ulceration of the ſurrounding integuments. See *Abernethy*, p. 90.

3. Emphyma exoſtoſis: tumour inelaſtic; often immoveable; hard and bony to the touch. Four varieties.

α. E. oſtea; immoveable; protuberant; ſeated on the ſubſtance of a bone. Sometimes excreſcent, and compoſed of bony ſpicula reſembling cryſtallizations. Sometimes exquiſitely hard and glabrous, reſembling ivory. Both found chiefly in the bones of the cranium.

β. E. perioſtea, node: immoveable; protuberant; from bony enlargement of the perioſteum.

γ. E. pendula: bony tumour hanging pendulous into a joint.

δ. E. exotica: bony tumour moveable or immoveable, ſeated in ſome fleſhy part of the body. See Abernethy on Tumour, p. 102. and On Diſeaſes reſembling Syphilis, p. 85.

Genus III. *Paroſtia*, [from παρα, bad, and οστεον, bone.] Bones untempered in their ſubſtance; and incapable of affording their proper ſupport. Two ſpecies.

1. Paroſtia fragilis: ſubſtance of the bones brittle and apt to break on ſlight exertions, with little or no pain. Moſt frequently an attendant on advanced age. Found alſo, at times, as a ſymptom in lues, ſtruma, and porphyra.

2. Paroſtia flexilis, (Mollites oſſium, *Auct. Var.*) ſubſtance of the bones ſoft; and apt to bend, and become crooked, on ſlight exertions, with little or no pain. Found alſo as a ſymptom in porphyra and other cachectic maladies. See various caſes in the Phil. Tranſ. by Bevan, Pott, Hoſty, Pringle; as alſo Gooch, Surg. p. 178. and Bromfield's Chirurgical Obſervations.—Found at times in new-born infants, more or leſs general.—Univerſal, with perverſion of moſt of the bones. *Morand*, Hiſtoire de la Maladie ſingulière et de l'examen du cadavre d'une femme (Sapiot) devenue tout-à-fait contrefaite par une ramolliſſement général des os, Paris, 1752. We have an engraving lying before us, at the preſent time, repreſenting this extraordinary ſpecimen of diſeaſe. The ſoftneſs of the bones is repreſented ſo extreme as to allow the feet to be placed on each ſide of the head, the femoral bones forming a perfect curve.

Genus IV. *Oſthexia*, [from οστεος, bony, and εξις, habit.] Soft parts more or leſs indurated by a ſuperfluous ſecretion and depoſit of oſſific matter. Two ſpecies.

1. Oſthexia infarciens: oſſific matter depoſited in nodules, or amorphous maſſes, in different parts or organs. In the lungs; *Baillie*, Morb. Anat. Faſc. II. Pl. 6.—In the ſubſtance of the heart, weighing 2 oz. *Burnet*, Med. Pract.

Pract. iii. 254.—In the thymus gland; *Act. Med. Berol.* vol. i. p. 28.—In the thyroid; *Contuli* de Lapid.—In the parotid; *Plater* Obs. lib. iii. 707.—In the deltoid muscle; *Russe*, in Blegny Zodiac, 1680.—In the trachea, contracting its passage; *Kirkring*, Obs. 27.—In the dura mater; *Baillie*, Fasc. X. Pl. 4.

2. Osthexia implexa: ossific matter deposited in concentric layers in the tunics of vessels or membranes, rendering them rigid and unimpressible. Three varieties.

α. I. aortæ; ossification of the aorta.—With a considerable portion of the right ventricle and right auricle of the heart. *Baillie*, Fasc. V. Pl. 2. Valves ossified without palpitation or dyspnœa. *Morgagni* de Sed. et Caus. Ep. xxiii. 11.—Descending trunk wholly ossified. *Genga* Anat. chirurg. *Buckner* Miscel. 1727.—Ascending and descending trunks wholly ossified, compelling to an erect position. *Guattani* de Aneurism.

β. I. membranea; ossification of membranous or connecting parts.—Of the pleura; *Baillie*, Fasc. II. Pl. 3.—General ossification of tendons, membranes, cartilages, and ligaments. *Pecklin*, lib. ii. Obs. 40.

γ. I. complicata; ossification of different parts simultaneously; as of the thoracic duct, ileum, and other abdominal organs. Phil. Trans. 1780.

Order II. CATOTICA, [from κατω, within.] Disorders affecting Internal Surfaces. Pravity of the fluids, or emunctories that open into the internal surfaces of organs. There are three genera.

Genus I. *Hydrops*, [from ὑδωρ, water,] Dropsy. Generic characters—Pale, indolent, and inelastic, distention of the body or its members from accumulation of a watery fluid in natural cavities.

It has been ascertained by physiologists, that, in the healthy condition, a serous or watery fluid is constantly poured out, or exhaled, from what are termed the exhalent extremities of the arteries, into every cavity and interstice in the body, by which the parts are constantly moistened, and their adhesion, or painful attrition, is prevented. But upon the surfaces of the same cavities and interstices the mouths of another set of vessels, the absorbents or lymphatics, open, and take up or absorb this effused fluid before it has remained long, or been accumulated in those spaces, and carry it back into the circulating blood, through the thoracic duct, or general trunk of the absorbents. From this view of the animal economy, it at first seemed obvious that a perfect balance between these opposite functions of exhalation and absorption must exist, in order to maintain the health of the system; and that a dropsical accumulation must be the consequence of the loss of such balance, and must be occasioned in one or other of the two following ways: 1. If the quantity of fluid poured out into any space be greater than the absorbent vessels can at the same time take up, it must necessarily accumulate in such parts; or, 2. Although the quantity poured out be not greater than usual, yet, if the absorption be any-how interrupted or diminished, an unusual accumulation will from this cause also ensue. Dropsy was in general therefore imputed to an increased exhalation or a diminished absorption, in the cavities in which it occurs. It will be found, however, upon an investigation of the various causes which are capable of producing these morbid conditions, that the exhalent vessels are commonly in fault, and that a plethoric state of the blood-vessels of the dropsical part is the next link in the chain of causes. This plethoric condition may or may not be accompanied with inflammation of the red vessels; but, if such action do exist, the effusion of serum will be more rapid, and will be of a tenacious and gelatinous, or otherwise thickened, consistence or structure.

Of all other parts of the body, the serous membranes are most subject to effusions of water. Thus in the peritoneum we meet with ascites, in the pleura with hydrothorax, and in the sigmoidal capsules with similar effusions. They are, however, by no means confined to these parts. The skin, irritated by a blister or by specific disease, gives examples of aqueous effusion under various appearances of vesicles, blebs, &c. The effused fluid exhibits different appearances; being sometimes a perfectly aqueous secretion, like the natural serum of the blood, and at other times quite different. Moreover, the same vessels which, under a trifling excitation, secrete undue quantities of serum, when more morbidly stimulated pour forth pus and coagulating lymph. Every thing that throws an inordinate flow of blood to the serous membranes may occasion dropsy; and in fact peritonitis, pleuritis, ascites, and hydrothorax, may often be traced to the same causes.

Of all other causes of ascites, an accumulation of blood in the peritoneal vessels is the most frequent. Thus we find, that, if the liver be diseased in such a manner as to obstruct the blood which flows from the intestines through the vena portæ to the heart, the ascites is an almost invariable consequence. Now in the case of tubercles or hydatids in the liver, the impediment being of course gradual in its formation, we do not often find inflammatory symptoms accompanying the disease; but, if cold be taken, we frequently find that inflammation does come on. Again; obstruction to the flow of blood through the lungs, as in asthma, brings on various forms of dropsy, but especially hydrothorax. Moreover the presence of the gravid uterus, or of any tumour in the abdomen, by pressing on the great vessels which retain the blood from the lower extremities, give rise to œdematous swellings under the integuments. Dropsy is also a sequel of fevers, especially of Rosalia. Besides increased action of the secernent vessels, dropsy seems to owe its origin to a preponderance of serum in the blood; and in this case passive plethora is generally found in a remarkable degree. General plethora also brings on dropsy; and we find it a very common sequel of repressed discharges, as piles, ulcers, or the like.

Of the mode in which absorption may be disturbed or accelerated we have before spoken at large in another part of this article. The connexion of diminished absorption with dropsical effusion is obvious enough, either as a cause or an effect. Diminution in the quantity of urine is always met with in dropsy; and a distinction has been made by Dr. Blackall between inflammatory and chronic dropsy, according to the degree of coagulability of this fluid. In inflammatory dropsy this author states that the urine is easily coagulable on the application of heat; while in chronic dropsy this coagulation is absent altogether, or at least is very trifling in degree. This distinction has been contradicted; and we are enabled to state, from some experiments of our own, that it is not tenable. By this statement we do not mean to detract from the merits of Dr. Blackall, who must be acknowledged to have done much to improve the treatment of dropsy.

The symptoms vary as this disease affects different parts, as appears from the following details of the species.

1. Hydrops cellularis: cold and diffusive intumescence of the skin, pitting beneath the pressure of the finger. Three varieties.

α. Totius corporis, anasarca, or general dropsy: extending through the cellular membrane of the whole body.

β. Artuum, edema, limited to the cellular membrane of the limbs; chiefly of the feet and ancles, and mostly appearing in the evening.

γ. Dyspnoica; edematous swelling of the feet; stiffness and numbness of the joints; the swelling rapidly ascending to the belly, with severe and, mostly, fatal dyspnœa. This very severe and singular variety is taken from Mr. W. Hunter's Essay, published at Bengal, folio, 1804. The disease appeared with great frequency among the Lascars in the Company's service in 1801. Its attack was sudden; and its course so rapid, that it frequently killed the patient in two days. Mr. Hunter ascribes it

to

to the concurrent effect of breathing an impure atmosphere, ſuppreſſed perſpiration, want of exerciſe, and a previous life of intemperance. Hence probably a very violent kind of inflammatory dropſy.

4. Hydrops thoracis, dropſy of the cheſt; (Hydrothorax, *Sauv. Cullen, &c.*) Senſe of oppreſſion in the cheſt; dyſpnœa, increaſed by exerciſe or decumbiture: livid and puffy countenance; purple lips; urine red and ſpare; pulſe irregular; edematous extremities; palpitation and ſudden ſtartings during ſleep.

The fluctuation of water in the ribs may ſometimes be felt. According to Laennec, *mediate auſcultation* (ſee p. 244, 5.) furniſhes certain indications of the exiſtence of fluid in the cheſt, and even diſcovers its extent. A great diminution, or indeed a total abſence, of the ſound of reſpiration; the appearance, diſappearance, and return, of *egophony*, are the ſigns here manifeſted by the uſe of the ſtethoſcope. When the pleuritic effuſion is very abundant on its firſt formation, the abſence of reſpiration is then totally uniform, and ſo complete that no ſound whatever can be heard, however forcibly the reſpiratory efforts may elevate the thorax. The only part in which there is an exception to this, is an extent about three fingers breadth from the vertebral column. This exception ſeems to depend on the lungs being in contact with the parietes of the cheſt at the part above mentioned; and therefore the interpoſition of fluid between thoſe parts, with its preſſure on the lungs, which are the cauſe of the abſence of the ſound of reſpiration, do not here exiſt. In caſes where the lungs are attached to the ſides of the cheſt in other points, from adheſions of ancient date, the ſame exception may however exiſt in the parts thus affected. Sometimes, although the quantity of fluid effuſed is not diminiſhed, the ſound of reſpiration will return at the end of a few days; but it is without any mixture of *rattles*, unleſs pulmonary catarrh exiſt at the ſame time, which may help to make its diſtinction from pneumonia. When the effuſion is not conſiderable, the ſound of reſpiration commonly reſembles what it is in children. When the fluid is diſappearing, this ſound returns from above downwards, as the ſurface of the fluid deſcends; except in caſes when this order is interrupted by adheſions of the lungs to the thoracic parietes. To the above ſigns muſt be joined *egophony*, which is characteriſtic of it, and conſtantly indicates a collection of fluid when it is moderate in quantity; but it diſappears when the quantity of fluid is very conſiderable. It is moſt evident when the fluid has leaſt conſiſtence; and therefore is generally moſt diſtinct in the ſituation of the upper part of the collection. Egophony may be ſuſpended ſome minutes, or even hours; but it reappears when the patient expectorates. Many authors have noticed an increaſe in the volume of the ſide in which the collection of fluid exiſts in a great degree. This ſometimes exiſts in a very remarkable manner. It diſappears as the cure advances, and the ſide occaſionally becomes at length ſmaller than in the natural ſtate.

5. Hydrops abdominis, aſcites, or dropſy of the belly: tenſe, heavy, and equable, intumeſcence of the whole belly; diſtinctly fluctuating to the hand upon a ſlight ſtroke being given on the oppoſite ſide.

It is this fluctuation which in ordinary caſes diſtinguiſhes dropſy from pregnancy. Antonia Scarpa has however related caſes tending to ſhow, that, either from exceſs of liquor amnii, (in which caſe thirſt is abſent, and the natural form of a belly containing a gravid uterus is retained,) or from effuſion from the peritoneum, (in which caſe thirſt is preſent, and the regular form of the fundus uteri is not found,) dropſy and pregnancy may co-exiſt. Theſe caſes are of courſe very rare, and are to be relieved only from the extreme danger and dyſpnœa which attend them by puncture. Scarpa directs this to be done (when we wiſh to avoid wounding the uterus) in the hypochondriac region, between the edge of the rectus muſcle and the edge of the falſe ribs. As to puncturing the womb itſelf, this is of courſe a very dangerous experiment. Scarpa thinks, however, that it may be tried in caſes of imminent danger; and he quotes inſtances in which it has been done without ill effects. See "Sulla Gravidanza ſuſſequita da Aſcite, Memoriæ del Cav. Ant. Scarpa, 1817."

Dr. Good makes three varieties of this ſpecies, the laſt of which ſeems to us quite out of place, ſince the diſeaſe is the ſame as inflammatory dropſy, though differently produced.

α. Atonica; preceded by general debility of the conſtitution. Often the reſult of ſcurvy, or fevers of various kinds.

β. Parabyſmica; preceded by or accompanied with oppilation, or indurated enlargement of one or more of the abdominal viſcera, uſually the liver; the gall-bladder of which is often enormouſly enlarged and turgid. See Phil. Tranſ. 1710–12. vol. xxvii. Yonge, Mem. de Paris, 1701. Du Verney, Act. Erud. Lipſ. 1713. In the laſt, the bladder weighed ten pounds twelve ounces, had no meatus, contained various tunics, and was filled with a coffee-like liquor. The ſubſtance of the liver is often found loaded with hydatids. In one inſtance it weighed twelve pounds. *Gooch's Caſes, &c.* p. 170.

γ. Metaſtatica; from repelled gout, exanthems, or other cutaneous eruptions.

6. Hydrops ovarii, dropſy of the ovarium: heavy and painful intumeſcence of the iliac region on one or both ſides, with a ſenſe of dragging; gradually ſpreading over the belly; with obſcure fluctuation.

7. Hydrops tubalis, dropſy of the fallopian tube: heavy elongated intumeſcence of the iliac region, ſpreading tranſverſely; with obſcure fluctuation.

8. Hydrops uteri, dropſy of the womb; heavy circumſcribed protuberance in the hypogaſtrium, with obſcure fluctuation; progreſſively enlarging, without iſchury or pregnancy.

In the treatment of no other kind of diſeaſe has the preſent age more reaſon to exult in its improvement in the therapeutic art, than in that of dropſy. No longer trammelled by that fatal devotion to ſyſtem which led the older practitioners to preſcribe in the ſame manner for all diſeaſes in which the prominent ſymptom of watery effuſion cauſed them to be ranged under the ſame title; we look to the *cauſe* of dropſy entirely for the rule of treatment. It is true, we are often puzzled to find this cauſe; but at all events, our knowledge is in the generality of caſes ſufficiently accurate to lead to beneficial treatment. Thus, if it ſeems that local pain has preceded or ſtill accompanies a dropſical effuſion, eſpecially if this pain has its ſeat in the pleura or peritoneum, we do not heſitate to treat it as ſimple inflammation. In doing this, however, we are of courſe as much regulated by the ſtate of the pulſe, the appearance of the blood (generally buffy and the *ſerum eaſily coagulable*), and the febrile commotion of the conſtitution, as the local pain. The meaſure of free bleeding is to be followed by counter-irritation (eſpecially if the diſeaſe owes its origin to ſuppreſſion of ſome accuſtomed morbid action), and by the excitement of the ſecretion of the mucous membrane, eſpecially of the urinary paſſages, by diuretics, and of the bowels by draſtic cathartics. The diſeaſe continuing obdurate, full doſes of mercury will be well calculated to remove it.

If dropſy ſeems to ariſe from mechanical obſtruction, ſtill local bleeding may occaſionally be proper to reſtrain the inflammatory action which all morbid products tend to produce by the ſtimulus; but our chief attention muſt be directed to the removal of the mechanical impediment. Thus, when a ſluggiſh ſtate of the liver exiſts, the excitement of the ſecernents of this organ by mercury affords great relief to the dropſical ſymptoms; but, if tubercles, hydatids, or other arterial morbid tumour, exiſt in the liver, mercury muſt be interdicted; and the only chance we can afford the patient is to keep up a very frequent nauſea by tartar emetic, and cut off the ſupplies from the

tumour by the moſt rigid abſtinence. For the ſame purpoſe, ſmall bleedings are occaſionally proper. Such means will palliate the diſeaſe, and poſtpone its termination, though they will ſeldom cure it.

When dropſy owes its origin to a decreaſe in the quantity of the blood, or in the alteration of its quality, both which are commonly connected, our endeavour muſt be directed to reſtore this fluid to its natural ſtate. Frequent and ſmall bleedings of courſe effect a diminution of its quantity; and a regular attention to the ſtate of the digeſtive organs is the only method of improving its quality. With reſpect to the diet, this ſhould not be too low; and ſmall quantities of wine may be allowed. The bowels muſt be kept open, and the mucous ſecretions in general excited. Exerciſe alſo, either active or paſſive, muſt be uſed regularly. Catarrh and aſthma occurring with dropſy require no difference in their treatment on that account.

When either from the effects of idiopathic inflammation, or from general plethora, or from diſeaſed blood, a ſtate is induced which may be properly called the *chronic* ſtate of dropſy, which is frequently met with ab aborigine in old and debilitated perſons, and in which the diſeaſe ſeems nearly ſtationary, the water very ſlowly collecting, the ſanguineous functions tardy, and the digeſtive organs weak; when, in fact, a diminution of abſorption ſeems the cauſe of the diſorder's continuance, two alternatives preſent themſelves, which muſt be adopted chiefly as the conſtitution of the patient is good or bad, and as the quantity of effuſed liquid is great or ſmall. Theſe are—the removal of the water by ſurgical means, as by ſcarifying the ſkin in Hydrops cellularis, by paracenteſis thoracis or paracenteſis abdominis in hydrothorax and aſcites. (See SURGERY for theſe operations.) A morbid ſtate of the conſtitution, or very old age, would prevent us from ſcarifying the ſkin, leſt gangrene of the wounded parts ſhould enſue; and the puncture of the abdomen ſhould never be uſed unleſs the quantity of fluid contained is very great. It ſhould be remarked alſo, that, if the waters ſeem to be contained in cyſts, no very favourable prognoſis ſhould be given of the ultimate ſucceſs of the operation; and the practitioner ſhould be aware, that in theſe caſes he is apt to meet with ſo gelatinous a ſerum, that it will not always flow through his canula. Paracenteſis thoracis is at all times a dangerous operation; and, though it has on ſome occaſions been found uſeful, yet the danger of wounding the lungs, and the uncertainty of the ſigns of hydrothorax, cauſe it to be very ſeldom uſed.

The means of exciting the abſorbents are few and uncertain; nor will they have any effect, except in the particular caſes under immediate conſideration. Of the medicines which promote the action of the abſorbents, mercury holds a very high rank, but its operation on theſe veſſels is uncertain; nevertheleſs it is found uſeful in practice during the chronic ſtate of dropſy. It ſhould be given in ſmall doſes; and may be advantageouſly combined with diuretics. As a more direct mode of promoting abſorption, *preſſure* has been tried in many caſes. Thus in H. cellularis artuum, bandaging the limbs, and in H. cellularis totius corporis and H. abdominis, frictions with the hand and fleſh-bruſh are advantageouſly employed. The good effects of preſſure in theſe caſes probably induced a phyſician of eminence, Sir G. Blane, to try the ſame practice in chronic hydrocephalus; and, it is ſaid with ſucceſs. When however we conſider the notorious ill effects preſſure exerts on the brain, we ſhould not be inclined to expect much from this practice; but the high authority on which it reſts obliges us to mention it.

As medicines which have exerted a happy influence on dropſy under all circumſtances wherein they could be made to act, we muſt mention diuretics. Theſe medicines are however very uncertain in their operation; and it is a curious anomaly, that the weakeſt ſometimes anſwer where the moſt powerful fail. Their exhibition is of courſe likely to be fruitleſs in caſes where tumours or diſeaſed liver occaſion dropſy; but, in inflammatory and in chronic idiopathic dropſies, they are generally uſeful. The digitalis, in doſes of five to twelve drops thrice a-day in a ſolution of cream of tartar, is perhaps the moſt uſeful diuretic for inflammatory dropſy that we know of. In chronic caſes, ſquill combined with calomel is more potent. But a variety of diuretics are in the Pharmacopœia, as cantharides, turpentine, &c. which may be uſed when theſe common articles fail. On the ſame plan of counter-irritation, draſtic cathartics, as elaterium, ſcammony, and oil of croton, have been uſed: their uſe ſhould (generally ſpeaking) be confined to caſes of inflammatory dropſy.

We muſt now retrace our ſteps to deſcribe two diſeaſes which we paſſed over in Dr. Good's claſſification of this genus, where they occurred as the ſecond and third ſpecies, under the titles of Hydrops capitis (water in the head), and Hydrops ſpinæ (ſpina bifida). We paſſed theſe over becauſe they each of them require a diſtinct elucidation; for they by no means agree in the general characters of dropſy. Hydrops capitis is defined by Dr. Good as an "edematous intumeſcence of the head, the ſutures of the ſkull gaping." This, however, is merely the character of a very rare diſeaſe, and has no reference to the ſymptoms of hydrocephalus in the common acceptance of the term.

The term Hydrocephalus, or Hydrops capitis, does not apply to this diſeaſe in any of its ſtages except the laſt; for, in its firſt ſtage, this malady is actually Cephalitis; Cephalitis, however, varying in intenſity, and traceable to a variety of cauſes. The children who are prediſpoſed to hydrocephalus, are thoſe who have large brains, or unuſual activity of the cerebral functions. But the abſence of theſe phenomena by no means enſures a child from liability to the diſeaſe in queſtion. Generally, for ſome time before more marked ſymptoms come on, unuſual quickneſs of apprehenſion, vivacity of manner, and reſtleſſneſs, are apparent. In ſome children this increaſe of ſenſibility reaches to an aſtoniſhing height, and indeed forms completely that erethiſmal ſtate of brain before deſcribed under *dyſpepſia*, p. 136.

But a more formidable ſet of ſymptoms than the above are thoſe which diſplay *diminiſhed* cerebral energy. The children begin to be indifferent to every thing: their activity, vivacity, and good temper, vaniſh; they diſlike light and notice; the lively colour of their countenance and brightneſs of their eyes begin to fade; and their ſprightlineſs paſſes into dulneſs. Their bowels are confined, their urine ſcanty, their reſt diſturbed. The larger children, on ſitting up in bed, complain of giddineſs; they are alſo ſubject to rheumatic pains in the limbs, but particularly in the nape of the neck, calves of the legs, and ſoles of the feet. The ſmaller children expreſs the ſame feelings by a certain rocking of the head, by ſuddenly becoming ſilent in the midſt of a cry, by whining, and moving their hands towards their heads. The pulſe is irregular, and ſometimes intermits altogether: it is commonly the ſeventh, ninth, ſixteenth, ſeventeenth, or thirty-firſt, pulſation which is weaker or deficient. From a ſtate of reverie they are roufed with a deep ſigh, and begin again to notice thoſe about them, of whoſe preſence they had been apparently unconſcious; the colour of the face changes, and they are alternately flufhed and chilly. When aſked if any thing ails them, they anſwer with an indifferent "No." They walk without firmneſs, and, in ſtepping forward, they often raiſe the foot as if they were ſtepping over a threſhold; they totter and ſtagger as if drunk.

Sometimes in this ſtage, the infant, though in a ſtate of health, frequently vomits, wakes ſuddenly with a cry, becomes ſoporoſe from an overloaded ſtomach, and has an irregular pulſe. Sleepleſſneſs, unuſually continued ſcreaming, without any other complaint; hanging the

head

head after ſuch attacks; alarm on the gentleſt touch; an exceſſive quickneſs of hearing, ſo as to be awakened terrified by the ſlighteſt noiſe; diminiſhed appetite; *an entire abſence or exceſs of thirſt*; a cry denoting pain, on ſlight movements of the body, but ſuddenly becoming ſilent by quick ones; conſtant pulling the nape of the neck with the hand; increaſed warmth of the head, particularly of the forehead and nape of the neck; are the chief guides for the diagnoſis.

A moſt uncommon mode of approach is that, where the healthieſt children are all at once ſeized with violent fever or convulſions, after a ſudden attack of languor, giddineſs, and head-ache, ſtiff neck, inclination to vomit, full hard and ſlow pulſe, ſenſibility to light, and ſinging in the ears. If the practitioner is called to this manifeſtly inflammatory affection, and employs the neceſſary remedies with activity, effuſion may be arreſted much eaſier than in the former caſes, and a greater number of ſuch ſufferers may be ſnatched from death. But if a clear view of the diſeaſe is not taken, and remedies are not applied with overwhelming power, there follows moſt commonly in a few hours the moment of effuſion, which may be recognized by its characteriſtic ſymptoms, and is ſoon ſucceeded by paralyſis and death. This firſt ſtage often laſts only for a few hours; the latter frequently eight, ten, fourteen, and even more, days.

In the ſecond ſtage, the ſymptoms of the phrenitic ſtate ſhow themſelves: the patients complain of ſevere pains in the forehead, affecting the eyes, ſometimes alternating with colicky pains; alſo pains in the limbs, and a ſhooting ſenſation in the nape of the neck. There is no place where they can lie ſtill, and no perſon who can ſoothe them: the eye opens perfectly in the dark only, being very ſenſible to light, and ſhrinks above the upper eye-lid. The head is hot to the hand; but neither it nor any other part of the ſurface of the body is red, nor turgid with blood. In the tumultuous acceſſion of the inflammatory period there is, however, an exception in this point; for the tunica albuginea is ſtreaked with blood-veſſels, and the inner ſurface of the eye-lid is inflamed. In ſuch caſes only there are convulſive movements of the eyes; the pulſations of the carotids are ſtrong; the pale countenance ſhrinks, and rarely becomes œdematous and diſtorted.

Among the pathognomonic ſymptoms of acute hydrocephalus, Dr. Gölis enumerates dryneſs of the noſe, paleneſs, ceſſation of appetite and thirſt; furred tongue; vomiting, which becomes leſs frequent as patients advance to the ſtate of effuſion; the digeſtion of food is moſt commonly altogether ſuſpended; the belly alſo, before tumid, falls away. At this period, there is tenderneſs on preſſure on the region of the ſtomach and liver; there is often obſtinate conſtipation; the urine is frequently ſcanty, paſſed with pain, and has a characteriſtic white ſlimy depoſit; the hearing now becomes acute, and even painful; pains in the belly, nape of the neck, and particularly the head, are conſtantly complained of by moaning; the ſleep is diſturbed often by dreams, in which they cry out; they grind their teeth alſo. Preſſing queſtions only obtain anſwers, and thoſe are ſhort; their movements are languid and compulſatory; they cannot ſit up without nauſea and vomiting; the pulſe is ſlow, unequal, and intermitting, but eaſily accelerated in a moment by pain: the latter ſymptom is alſo conſidered by Dr. Gölis as pathognomonic of this ſtage. The ſkin becomes flaccid, dry, and diſcoloured, and an eruption ſometimes appears about the lips, neck, and ſhoulders. They are reſtleſs, and deſire to be moved from place to place. Thoſe with a very ſlow pulſe, complain of as much pain as thoſe with whom it is accelerated.

In the third, or ſtage of effuſion, the above ſymptoms, after a few hours or days, grow worſe. The patients can no longer ſit up; the reſtleſſneſs ceaſes; they moſt commonly lie on the back, and conſtantly kick up the bedclothes; they carry their hands to their head, mouth, and noſtrils, into which as well as into their ears, they often bore ſo as to make them bleed; they half forget the words they would ſay. All the external ſenſes become dull or annihilated, except that of hearing, which is often quick; the eyes are directed obliquely downwards; the pupils are dilated and oſcillating, but unaffected by ſtrong light; they often ſee double, or falſely; and open and cloſe their eyes repeatedly in a few minutes. A gloomy earneſtneſs is painted in their fluſhed countenance, with a threatening expreſſion: it is a curious contraſt of fierceneſs and patience, which often excites the aſtoniſhment of by-ſtanders. They waſte to a ſkeleton; their dry flabby ſkin hangs on their emaciated legs; partial ſweats break out. The urine is paſſed unconſciouſly; there is conſtipation. The debility of the pulſe, ſighing, offenſiveneſs of the breath, and general weakneſs, increaſe; coma comes on; and, before the laſt tragic ſcene, they ſometimes become conſcious, ſo as to ſit up to eat and drink. They ſometimes even ſwallow with eagerneſs, long for their play-things, and deceive the attendant with momentary hopes, which are followed by more ſevere ſufferings than before.

When the patient ſurvives this ſtate, from ten to thirty days after, more frightful ſymptoms ſucceed: convulſions, followed by paralyſis, moſt commonly of the right ſide, and often cramp, which draws the head backwards and downwards. The features are thus frightfully diſtorted; a violent fever follows; a perſpiration trickles from the head; a hectic redneſs alternates with a deadly paleneſs on the disfigured countenance of the patient. The ſight is loſt; the pupil of the convulſed eye extremely dilated, and inſenſible to light, the tunica albuginea is blood-ſhot. The hearing, from being quick, gradually becomes dull; ſwallowing becomes impoſſible, though there are often moments in which they can take fluids; the urine is ſcanty, and paſſed unconſciouſly; it continues of a deep yellow colour, with a white ſediment; the ſtools are ſtill leſs frequent, but never fœtid, as in the former ſtages. In many, the tips of the fingers become blood-red, and afterwards, on the approach of death, pale. The pulſe is ſtill weaker, and more intermitting than before; the head, however, remains warmer than the reſt of the body; the ſpaſms, which draw the head backwards, and the arms againſt the ſides, ceaſe only with life. For the above detail of ſymptoms we are chiefly indebted to Dr. Gooch's tranſlation of the work of Dr. Gölis on Acute Hydrocephalus.

Hydrocephalus is evidently inflammation of the membranes of the brain; and it is from the arachnoid membrane eſpecially that the effuſion is derived. The cerebral inflammation which precedes this effuſion is of courſe traceable in different inſtances to different cauſes. Among the children of this country, and of the large towns eſpecially, it is very generally found, that irritation of the digeſtive organs is the precurſor of Hydrops capitis; while in other ſituations the action of the ſun's rays is the moſt common cauſe of the diſeaſe. It is to be remarked, however, that the action of the ſolar rays on the head generally induces thoſe ſudden and violent attacks in which ſtupor or raving delirium precede the way to a ſpeedy death; but that the more common precurſors of hydrocephalus cauſe ſymptoms of cerebral excitation to appear long before thoſe of cerebral plethora. In the firſt ſtage, or that in which mere irritation is manifeſted by liſtleſſneſs and exaltation of the mental emotions, the treatment conſiſts chiefly in improving the action of the chylopoïetic viſcera, which are ſo generally impaired. The bowels may be freely opened, to a degree in fact ſufficient to excite counter-irritation; the liver may be acted upon by doſes of calomel, and low diet ordered. When ſtupor or much viſual deception is remarked, we may bleed in this ſtage of the diſeaſe, becauſe theſe ſymptoms are ſigns of fulneſs of the veſſels of the brain; but, if

if theſe ſymptoms are not preſent, the ſtate of the alimentary canal is to be firſt attended to. As ſoon as the ſymptoms of cephalitis become in the ſlighteſt degree apparent, whether it has been preceded by the above ſtage, or makes its attack in a ſudden and unexpected manner, bleeding muſt be had recourſe to. As all that can be done in this diſeaſe muſt be done early, the practitioner muſt at once decide, not only from the conſtitutional appearance, but from the ſtate of the pulſe and of the mental faculties of the patient, the degree to which veneſection may be carried. He will be chiefly guided in his opinion as to this point, by the mode of attack; for, when the diſeaſe comes on ſuddenly, it will, cæteris paribus, require much more ample bleeding than when indiſpoſition has long preceded it. Moſt practitioners truſt to leeches to the head; and in milder caſes theſe may do very well; but we are quite ſure that in the majority of patients the diſeaſe will be more ſuddenly arreſted by the uſe of the lancet. Even in the youngeſt children, this meaſure ſhould, when the diſeaſe is violent, always precede local bleeding; for, as we have before ſhown in this article, the efficacy of bleeding depends much on its action on the heart; and this effect is not increaſed unleſs by a *ſudden* abſtraction of blood. After the general bleeding, the application of leeches will be found of the greateſt benefit; and, in violent caſes, cold water to the head, and counter-irritants, as bliſters, &c. to the feet, may alſo be uſed with advantage. The bowels are to be freely purged by draſtic cathartics. We are cautioned by ſome authors (e. g. by Dr. Gölis) not to carry the uſe of theſe ſubſtances too far, leſt we tranſfer the inflammation from the brain to the inteſtines. Of courſe this effect muſt be watched; but in few caſes of violent Cephalitis will it be found to occur; and, even ſhould it take place, it will ſeldom prove of an obſtinate character, if the irritating medicines be withheld, and local bleedings and anodyne injections reſorted to.

When the third ſtage, or that in which effuſion has taken place, comes on, our treatment muſt be in a great meaſure directed by the hiſtory of the caſe. If the patient has been ſo far neglected, that no bleeding, or even if not enough of this evacuation has been made, we muſt (always keeping in view the fact that aqueous effuſion is in moſt inſtances a conſequence of vaſcular fulneſs) bleed until the pulſe is reduced to a ſomewhat natural time. We may then purge, and counter-irritate. Lowering of the pulſe may be produced alſo by the regular exhibition of digitalis in minute doſes. In that ſtate of aqueous effuſion manifeſted by partial paralyſis, large doſes of this drug afford the only means we know of for palliating the ſufferings of the patient, and relieving the convulſive agonies which attend death. And in thoſe caſes in which all inflammatory ſymptoms have gone off, and the patient has become quiet and idiotic, this drug will be found by no means uſeleſs. We know not whether this medicine relieves the malady in queſtion by its vicarious action on the kidneys, or whether it repreſſes the irritative inflammation which all morbid depoſits tend to excite in the ſtructure they inhabit, whenever the ſyſtem happens to be ſubjected to the influence of inflaming cauſes, as cold, &c. but we have lately ſeen two very marked caſes of chronic hydrocephalus cured by the exhibition of ſmall doſes of digitalis in conjunction with a very cloſe attention to the digeſtive ſyſtem, and change of air. It is this chronic ſtate of hydrocephalus in which ſir G. Blane propoſed to bandage the cranium.

3. Hydrops ſpinæ, hydro-rachitis or ſpina bifida, is a diſeaſe moſtly congenital, though occaſionally met with in adults. It conſiſts of a "ſoft fluctuating extuberance on the ſpine, with gaping of the vertebræ." This gaping of the vertebræ is lateral to the tumour, and ariſes from the want of the ſpinous proceſſes of theſe bones. The preſſure of the tumour of courſe paralyſes thoſe parts which have their nerves ſupplied from the lower portion of the ſpinal marrow. The diſeaſe is, with a very few exceptions, incurable; the patient oftentimes dying in a few days after the tumour has begun to make rapid advances. In the few caſes which have been met with in adults, it would appear that the preſſure of the water cauſed *abſorption* of the bone; but this is merely ſpeculation. The little that can be done for Hydrops ſpinæ conſiſts in applying gentle preſſure on the tumour from its commencement. If this fails, we muſt puncture the tumour with a fine inſtrument, (as a needle,) evacuate the contents, and, cloſing it carefully to prevent the admiſſion of air and conſequent inflammation, re-apply the preſſure for the purpoſe of preventing the return of the fluid depoſit. It is to be remarked, that, when imperfect oſſification of the bones of the head, and hydrocephalus, exiſt, then the caſe is nearly hopeleſs; for the preſſure on the tumour moſtly cauſes the greater proportion of water to preſs on the brain. When preſſure on the tumour ſeems to do harm, we may prevent its further enlargement by a concave truſs.

9. Hydrops ſcroti, hydrocele, or dropſy of the ſcrotum: ſoft ſemi-tranſparent pyriform intumeſcence of the ſcrotum; progreſſively enlarging, without pain. Two varieties.

α. Vaginalis; the fluid contained in the tunica vaginalis, or ſurrounding ſheath of the teſtis.

β. Cellularis; the fluid contained in the cellular membrane of the ſcrotum.

Genus II. *Emphyſema*, [from φυσαω, to inflate, to diſtend with air.] Inflation; Wind-dropſy. Generic characters—Elaſtic and ſonorous diſtention of the body or its members, from air accumulated in natural cavities.

We have before ſpoken, under Borborygmus, of the ſuppoſition that air may be generated in the human body by ſecreting veſſels. As far as this relates to the preſent genus, it derives ſupport from thoſe caſes in which, upon the authority of John Hunter and other accurate obſervers, we are informed, that air has been found in cavities where neither its admiſſion from without nor its generation from the putrefactive proceſs could have been ſuſpected. We have three ſpecies of this kind of ſpontaneous generation of air to enumerate.

1. Emphyſema cellulare: tenſe, glabrous, diffuſive intumeſcence of the ſkin, crackling beneath the preſſure of the finger. Two varieties, as proceeding,

α. A vulnere; from a wound of the thorax.

Though the form of Emphyſema which affects the thorax commonly ariſes from a wound, inſtances are not wanting to ſhow, that this diſeaſe may ariſe from other cauſes. Thus violent fits of coughing, or other ſudden exertions, may rupture the air-cells of the lungs, and give the air free acceſs into the cellular membrane. This effect more certainly follows if inflammation exiſts in the ſtructure of the lungs at the time the exciting cauſe is applied. In addition to the ſymptoms above mentioned in the definition of cellular emphyſema in general, a ſenſe of ſuffocation, great dyſpnœa coming on in fits, and expectoration of blood, are met with in Emphyſema from wounds of the thorax. In the treatment of the diſeaſe, the practitioner is rather occupied with removing the inflammation of the lungs which the wound occaſions, than with the Emphyſema, which in fact, if not exceſſive in quantity, will generally ſubſide as the pulmonary phlogoſis goes off. It is to be recollected, however, that a large collection of air in the cellular membrane ſpreads very faſt, and threatens that ſtructure with mortification. Hence it is ſometimes neceſſary to evacuate the air by puncture, and to prevent as much as poſſible its reproduction by preſſure. For the mode of operation, ſee SURGERY.

β. E. cellulare a veneno, "from fiſh-poiſon, or other venom." It ſeems to us a mere popular error to ſuppoſe that the bodies of poiſoned perſons ſwell before death. That this happens afterwards we have no doubt in caſes

of fiſh-poiſon, and that it reſults from the ſudden putrefaction which follows death produced by cauſes of an intenſe and ſudden operation, and happening to perſons in full habit of body.

2. Emphyſema abdominis, tympany: tenſe, light, and equable, intumeſcence of the whole body; diſtinctly reſonant to a ſtroke of the hand.

So few are the caſes on record of this curious diſorder, that it may reaſonably be doubted whether it ever exiſted; that is to ſay, as a diſtinct and idiopathic diſeaſe; for that it follows a putrefactive ſtate of the abdomen after enteritis, or operation for hernia, does not admit of a doubt. Should a caſe of idiopathic tympanitis occur, it might be adviſable to tap the abdomen. When ariſing from putrefaction, it is almoſt unneceſſary to ſay, that nothing need be done.

The Tympanites *inteſtinalis* of authors, like the meteoriſmus of Sauvages, is a variety, ſometimes only a ſymptom, of dyſpepſy, worms, hyſteria, or ſome other diſeaſe affecting the inteſtinal canal.

3. Emphyſema uteri, tympany of the womb: light tenſe circumſcribed protuberance in the hypogaſtrium; obſcurely ſonorous; wind occaſionally diſcharged through the mouth of the uterus. This diſeaſe, about which as little is known as of the former ſpecies, is, according to Parr, to be cured by rendering the mouth of the womb pervious.

Genus III. *Paruria*, [from παρα, bad, and ουρεω, to make water.] Morbid ſecretion or diſcharge of urine. Four ſpecies.

1. Paruria inops, deſtitution of urine; without deſire to make water, or ſenſe of fulneſs in any part of the urinary track. Often the reſult of renal inflammation or paralyſis; but ſometimes a genuine idiopathic affection. Dr. Parr relates a caſe, that occurred in his own practice, in which no urine was apparently ſecreted for ſix weeks; at the end of which time the diſcharge returned ſpontaneouſly. A very curious caſe may be found in the Phil. Tranſ. by Mr. Richardſon, of a boy who never ſecreted urine.

2. Paruria retentionis, (Iſchuria, *Cullen*, &c. &c.) urine totally obſtructed in its flow; with a ſenſe of weight or uneaſineſs in ſome part of the urinary track. Four varieties.

α. Renalis; pain and ſenſe of weight in the region of the kidneys, without any ſwelling in the hypogaſtrium.

The retention of urine, when it has its ſeat in the kidneys, is generally cauſed by inflammation, either idiopathic, or ariſing from a ſtone lodged in the gland or ureter, or, on the other hand, from ſome morbid growth in contiguous parts. The two former caſes are of courſe to be relieved by bleeding, and ſedatives, as opium, &c. The latter are nearly hopeleſs caſes, and are only to be palliated by the ſame means, in ſlighter degrees of force. This gland, when it ſuppurates, or is accompanied by tuberculated accretions of the peritoneum, acquires, on ſome occaſions, an enormous ſize; on others, it is much diminiſhed.

β. Ureterica; with pain or ſenſe of weight in the region of the ureters.

γ. Veſicalis; with protuberance in the hypogaſtrium; frequent deſire to make water; pain at the neck of the bladder; ſometimes at the end of the penis.

δ. Urethralis; with protuberance in the hypogaſtrium; frequent deſire to make water; and a ſenſe of obſtruction in the urethra, reſiſting the introduction of a catheter.

The treatment of the firſt variety conſiſts merely in relieving pain by anodynes, and promoting relaxation by warm bathing. In the two latter varieties, we have to conſider the cauſe of the iſchuria, or ſtoppage of urine. This is chiefly in the bladder: atony of the fibres of the fundus, or ſpaſmodic action of the fibres of the neck of this cavity. This contraction is to be overcome by ſuch means as ſtimulate the contractile powers of the fundus, or diminiſh thoſe of the neck; ſo that, on many occaſions, diuretics, as turpentine and nitre, remove a ſlight degree of the diſorder. Again, the warm bath ſometimes relaxes the muſcular fibres of the neck, and thus allows the evolution of urine; but, ſince each of theſe agents muſt more or leſs operate upon the antagoniſt muſcles, it may ſo happen that they may do no good, as indeed is often ſufficiently evident. A compoſition of equal parts of tincture of opium and tincture of muriated iron added to ten times their quantity of water, and given every half-hour in doſes of a tea-ſpoonful, is perhaps the beſt remedy for iſchuria that is known; but it often fails. It then becomes an object to introduce an inſtrument. The bougie, the ſilver or the flexible catheter, may be introduced as occaſion ſerves; but their introduction can ſeldom be effected, unleſs ſome degree of relaxation is brought about; for this purpoſe free bleeding and the warm bath may be had recourſe to. If the patient faints, this favourable opportunity of introducing the inſtrument is not to be loſt. Much will depend, in the treatment of this complaint, on the *tact* of the ſurgeon; the introduction of the catheter being an operation only to be acquired by experience; and it is well known that ſome ſurgeons have introduced a catheter inſtantly, when others have failed after long and repeated trials.

If the introduction of this inſtrument is impoſſible, it then becomes a matter of conſultation how long it may be ſafe to defer a more ſerious and infallible operation, the puncture of the bladder. No exact time can be ſpecified at which the poſtponement of this operation will be fatal. Caſes are related in which the ſuppreſſion has continued for weeks; but of courſe no ſurgeon would rely on theſe caſes for practice. As a general rule it may be ſtated, that, when the bladder is felt diſtending the belly an inch or two above the umbilicus, if the accumulation has been rapid, and the pain is very excruciating, the bladder ſhould be punctured. See SURGERY.

3. Paruria ſtillatitia, ſtrangury. (Dyſuria, *Sauv. Cull.* &c.) Painful and ſtillatitious emiſſion of urine. Six varieties.

α. Spaſmodica; from ſpaſmodic conſtriction of the ſphincter, or ſome other part of the urinary canal, catenating with ſpaſmodic action in ſome adjoining part. The ſame means may be uſed as adviſed for the relaxation of the bladder in complete obſtruction.

β. Ardens; from ſpaſmodic conſtriction excited by the external or internal uſe of various ſtimulants, as acrid foods, or cantharides; accompanied with a ſenſe of ſcalding as the urine is diſcharged. Copious and mucilaginous drinks are all that are required to allay this irritation. Opium may be occaſionally requiſite.

γ. Calloſa; from a callous thickening of the membrane of the urethra: the ſtricture permanent. *Baillie*, Morb. Anat. Faſc. viii. pl. 5. See *Stricture*, p. 167.

δ. Mucoſa; the urine intermixed with a ſecretion of acrimonious mucus, of a whitiſh or greeniſh hue.

This diſeaſe may be conſidered as an inflammation of the mucous membrane of the bladder, ſimilar in its nature to phlogoſis of any other mucous membrane. In ſome caſes, general bleeding, but often local depletion by means of leeches, with copious diluents, having ſmall proportions of ſoda diſſolved in them, will generally effect a cure. When conſtriction of the bladder has been cauſed by the long ſtanding of this complaint, a ſtate which is marked by conſtant pain over the region of the bladder, with inability to retain the urine for a long ſpace of time, it has been propoſed by Mr. Jeſſe Foot to waſh out and diſtend the bladder with warm ſolution of uva urſi, introduced by means of a ſyringe.

The one or other of theſe varieties is found alſo occaſionally, or as a ſymptom, in inflammation of the urinary organs, ſeveral ſpecies of lithia, and compreſſion from

local tumours, retroverſion of the uterus in pregnancy, or deſcent of the child's head in labour.

1. Helminthica; accompanied with a diſcharge of worms of a peculiar kind. This variety is given by Dr. Good upon the authority of Mr. Lawrence's very ſingular caſe inſerted in the Medico Chirurg. Tranſ. vol. ii. p. 382. The patient was a female aged 24: had long laboured under a ſevere irritation of the bladder, which was aſcribed to a calculus. She at length diſcharged three or four worms of a non-deſcript kind, and continued to diſcharge more, eſpecially when the diſcharge was aided by injections, or the catheter remaining in the urethra for the night. The evacuation of theſe animals continued for at leaſt a twelvemonth. Twenty-two were once diſcharged at a time; and the whole number could not be leſs than from 800 to 1000. A ſmaller kind was alſo occaſionally evacuated. The larger were uſually from four to ſix inches in length; one of them meaſured eight; ſlender in the middle; filiform at the extremities; thicker in the inter-ſpaces: they were ſoft when firſt voided, and of a yellowiſh hue. For the moſt part they were diſcharged dead.

ζ. Polypoſa; the bladder or urethra, or both, obſtructed by the formation of a polypous excreſcence; ſometimes ſhooting to the external extremity.

4. Paruria mellita, diabetes.

The derangements which the kidneys are ſubject to, in regard to the quantity and quality of their ſecretions, are very numerous. In a ſtate of comparative health, the urine is liable to many ſlight changes in the relative proportions of its conſtituent parts, and ſometimes indeed acquires additional conſtituents. In fact, ſo much variation is obſerved in the quality of the urine, that we ſee every reaſon to concur in the ſtrongly-expreſſed opinion of a late phyſiologiſt, that the kidneys are the common ſewers of the conſtitution. Yet, notwithſtanding the various products derived by the kidneys from the blood, Berzelius has accurately remarked, that *acidification* is the chief employment of theſe glands. Thus the ſulphur and phoſphate of the blood is converted by the kidneys into phoſphoric and ſulphuric acids, and a new acid, the lithic, is formed. The analyſis of diſeaſed urine ſhows, that this acidifying proceſs is ſometimes carried to exceſs; and nitric, oxalic, and other acids, are produced; while, on the other hand, it is ſometimes diminiſhed, or totally ſuſpended, and neutral or alkaline ſubſtances, or even pure blood, are predominant in the urine. Some authors, keeping in view this diſtinction as to the products of the diſordered glands, and probably led alſo by the general principle, that inflammation is marked by exceſs of the functions of the affected ſtructure, have endeavoured to ſhow, that in moſt caſes "when acids are generated in exceſs, the urine is commonly ſmall in quantity, and high-coloured, and the diſeaſe inflammatory; when neutral or alkaline ſubſtances, the urine, on the contrary, is generally pale-coloured, and larger in quantity; and the diſeaſes are thoſe of irritation and debility." Prout on the Nature and Treatment of Gravel, p. 31.

It ſeems to us that this generalization is not borne out by experience; or that, at all events, the exceptions to the rule are very numerous. The matter is ſtill, however, ſub judice. Animal chemiſtry is now very uſefully employed in analyzing the compoſition of morbid urine; and, if the connexion between a particular ſtate of the ſecreted fluid and a particular ſtate of the ſecreting veſſel ſhould ever be pointed out, it will no doubt be very uſeful. We are much inclined to doubt, however, whether this happy conſummation will ever be attained. We find in other ſecretions great differences, yet all dependant on one cauſe, (viz. inflammation, and more or leſs energy in the nervous ſyſtem of the diſeaſed part;) and we find that the ordinary methods which relieve caſes ſecreting one kind of ſcab are equally uſeful in thoſe ſecreting a different one. We are not endeavouring to undervalue the uſe of chemiſtry as applied to the analyſis of diſeaſed urine; but we wiſh to ſhow, that, in the preſent ſtate of our knowledge, more ſucceſs will attend that practice which is directed to the action of diſeaſed veſſels, nerves, and ſecernents, than to the correction of chemical errors in the fluids ſecreted. Indeed we find as much contradictory evidence in the works of different authors as to the connexion between certain diſeaſes and their chemical analyſis, and we have ſo many recollections of oppoſite appearances of this fluid in common febrile and inflammatory diſorders, that we look with very little confidence to the mode of inveſtigation before alluded to.

Before any analyſis of urine is attempted, it ſeems to us, that the ſtate of the blood ſhould be firſt aſcertained; ſince, this known, we ſhould clearly ſee whether the diſeaſe had its origin in local diſeaſe of the ſecernents, or in actual depravation in the quality of the fluid when its ſecretion is to be made. Now it is pretty obvious that it muſt be in one or both of theſe two modes that alteration in the quality of the urine can be produced. And firſtly, that diſeaſed blood often produces diſeaſed urine no one can doubt, when they ſee the frequent, nay almoſt invariable, precurrence of dyſpeptic ailment to thoſe of the urinary organs, and eſpecially the cloſe relation that is traced between lithic diſpoſitions and peculiar regimen. That diſeaſed ſecretion may reſult from local diſeaſe of the kidneys, even when the blood is healthy, is not only ſufficiently probable, from its coinciding with the known laws of the ſecretory function all over the body, but is borne out by the facts. Simple nephritis, or a blow on the back, or even mental uneaſineſs, nervous maladies, eſpecially hyſteria, ſuddenly derange the ſecretion in queſtion.

To return, however, to the hiſtory of the preſent ſpecies. Diabetes is thus defined by Dr. Good: "Urine diſcharged freely, for the moſt part profuſely; of a ſweet ſmell and taſte; with great thirſt, and general debility." The ſymptom of profuſion of urine is one of ſome variation; but it is ſo generally met with, that it may juſtly be conſidered as one of the chief ſymptoms of the complaint. The ſaccharine taſte of the urine is however the grand pathognomonic ſign of the diſeaſe. This characteriſtic is always preſent, though it is ſometimes obſcured by the ſaline matters of the urine, and requires therefore that the urine be ſomewhat concentrated by evaporation before it is apparent. As to other changes in diabetic urine, it ſeems that the neutral ſalts of the urine bear the ſame relative proportion to each other as under ordinary circumſtances, but that the aggregate of them is diminiſhed. A like diminution, and ſometimes indeed total abſence, of the urea, is alſo met with. The ſpecific gravity of the urine is alſo increaſed in the complaint under conſideration. It increaſes on that of healthy urine, which ranges from 1010 to 1020, till it runs as high as 1038 or 1040, or in ſome rare inſtances as 1045.

Diabetes ſometimes comes on ſlowly and imperceptibly, without any previous diſorder; and it now and then ariſes to a conſiderable degree, and ſubſiſts long, without being accompanied with evident diſorder in any particular part of the ſyſtem, the great thirſt which always, and the voracious appetite which frequently, occur in it, being often the only remarkable ſymptoms; but it now and then happens, that a conſiderable affection of the ſtomach precedes the coming-on of the diſeaſe, and that in its progreſs, beſides the ſymptoms already mentioned, there is great dryneſs of the ſkin, with a ſenſe of weight in the kidneys, and a pain in the ureters, and the other urinary paſſages. The temperature of the body is uſually below the ſtandard of health. The ſpirits are depreſſed, the diſpoſition is equally indifferent to ſtudy or amuſement, and there is evidently a decline of mental energy, with a loſs of the power of virility. Ulceration of the tongue and gums are of frequent occurrence in diabetes, owing probably to the derangement of the digeſtive functions. Some morbid change in the alvine excretion

excretion always accompanies the diabetic habit, and coſtiveneſs is perhaps the moſt common of theſe; for, in ſome inſtances, the bowels have been ſo remarkably torpid, that even the moſt powerful medicines, in large doſes, produced but a trifling effect. Watt remarks that inflammation and ſwelling are very common about the external orifice of the urethra in diabetes.

This diſeaſe is often attended with ſome pulmonic diſorder; Dr. Bardſley ſays invariably, but this does not accord with general experience. It is to be remarked, however, that diabetes ſeldom terminates in death until a ſecondary cauſe of the fatal event has ariſen in the lungs. Under a long continuance of the diſeaſe, the patient becomes much emaciated, the feet œdematous; great debility ariſes, and an obſcure fever, with all the appearances of hectic, prevail. In point of number, the pulſe is very much diverſified: in moſt caſes, it is quicker than natural, but ſometimes it is below the common ſtandard. In ſome caſes viſion becomes very indiſtinct, and the patient is troubled with vertigo.

In ſome inſtances, the quantity of urine is much greater than that of the ingeſta. Caſes are recorded, in which from twenty-five to thirty pints were diſcharged in the ſpace of a natural day, for many ſucceſſive weeks, and even months; and in which the whole ingeſta, as was ſaid, did not amount to half the weight of the urine; and even the ſolid matter which this fluid contains often reaches an aſtoniſhing proportion. The ſurplus of the excrement over the increment in this caſe is explained by the want of cutaneous ſecretion, (the ſkin being generally dry and harſh,) and an extraordinary imbibition of water in the lungs. Diſſections of diabetes have ſhown the kidneys, in ſome inſtances, in a looſe flabby ſtate, much enlarged in ſize, and of a pale aſh-colour; in others, on the contrary, they have been found turgid and red, and containing in their infundibula, a quantity of pus, though without any ſign of ulceration. At the ſame time that theſe appearances have been obſerved in the interior, the ſuperficial veins on their ſurface were found to be much fuller of blood than uſual. In many caſes, the whole of the meſentery has been diſcovered to be much diſeaſed, and its glands remarkably enlarged; ſome of them being very large and of an irregular texture; others ſofter, and of an uniform ſpherical ſhape. Many of the lacteals have likewiſe been found conſiderably enlarged. The liver, pancreas, ſpleen, and ſtomach, are in general in a natural ſtate; when they are not ſo, the occurrence is to be conſidered as accidental. The bladder is now and then found to contain a quantity of muddy urine; in ſome caſes its coats are much thickened, and its ſize leſs than natural.

The hypotheſes which have been framed to account for diabetes reſolve themſelves into theſe. The firſt, for which we are indebted to the fanciful genius of Darwin, ſuppoſes a *retrograde motion of the abſorbents;* an idea of which the abſurdity has been pointed out in a previous diviſion of this work, p. 43. Secondly, that of Cullen and Rollo, which ſuppoſes diſeaſe of the aſſimilating agents, and eſſentially conſiſts in the ſuppoſition that *blood* is diſeaſed in diabetes, and that the kidneys are only deranged in their action in conſequence of the morbid ſtate of the blood ſupplied to them. The third hypotheſis ſuppoſes that diſeaſed action exiſts in the ſecernents of the *kidneys*, and that conſequently the ſaccharine matter is derivable from healthy blood.

The ſecond hypotheſis reſts moreover on the ſtrong fact, that, if ſugar be introduced into the veins of an animal, eſpecially if that animal be weak, ſugar is firſt found in the blood, and ſecondly in the urine. But, though this ſhows the poſſibility of diabetes ariſing from ſaccharine blood, it does not prove that this is the invariable cauſe of that diſeaſe; and in fact ſugar is not found in the *blood* in diabetic patients in general. The advocates of the doctrine of the cachectic origin of the diſeaſe get over this objection by aſſerting, that the *elements* of ſugar exiſt in the blood. Now this means nothing; for, according to this reaſoning, the elements of hydrophobic and ſyphilitic virus exiſt in the blood; for the ſupplies out of which theſe morbid matters are formed are drawn from the blood by the ſecernents, however incognizable the original fluid may be when it has undergone the action of theſe latter veſſels.

The connection between diabetes and dyſpepſia appears to us very evident; but we cannot ſee that this proves any thing in favour of the opinion that the blood is diſeaſed in diabetes, when we have ſo many inſtances of diſeaſes of the ſecernent ſyſtem ariſing from gaſtric diſorder. And, moreover, the general diſorder of the nervous ſyſtem and of the ſkin which has been obſerved to precede diabetes in ſo many inſtances ſufficiently accounts for the production of the diſeaſe without our having recourſe to more far-fetched modes of explanation.

As there is much of uncertainty in our ſpeculations concerning the nature of diabetes, it is impoſſible to attempt any philoſophical view of the modus operandi of thoſe medicines which have been found uſeful in its *treatment*. Our practice in this diſeaſe muſt therefore be ſtrictly empirical. In the firſt place, bleeding has been tried in many caſes of diabetes, and with much ſucceſs. Practical writers aſſert that this evacuation is particularly called for when the diſcharge of urine is *profuſe* as well as ſaccharine; but it ſeems to have been of much uſe in caſes which did not preſent this ſymptom in an eminent degree. The blood, when abſtracted, appears of a darker hue than ordinary, and the craſſamentum large and eaſily broken. After a few bleedings, however, the craſſamentum acquires firmneſs, and begins to exhibit the buffy coat. By ſome authors it is ſaid that this plan of depletion has completely cured the diſeaſe under conſideration; but more extended experience has not altogether affirmed this to be the truth; though it is almoſt univerſally agreed that bleeding does materially diminiſh the *quantity*, if it does not alter the *quality*, of diabetic urine. Animal diet has alſo been very generally reſorted to, and with occaſional ſucceſs. It has been chiefly recommended on the ſuppoſition, that, as ſugar was the principal conſtituent of chyle prepared from vegetables, therefore the adoption of diet of a different kind muſt effectually cure the diſeaſe by ſubtracting it: but, as we have before ſhown that ſugar does not actually exiſt, we ſhould rather incline to ſuppoſe that animal diet has cured diabetes rather by its ſalutary influence on certain gaſtric derangements ariſing from exceſs of vegetable food, than from any ſpecific change it induces in the blood; and hence, that caſes of diabetes might ariſe, in which animal food, by oppreſſing the digeſtive organs, would do harm. In no caſe ſhould we expect much from *diet* alone, unleſs thoſe important aſſiſtants to its healthy uſe, viz. pure air and regular exerciſe were alſo attended to. In all caſes the moſt cloſe attention muſt be paid to the alvine ſecretions and their regular excretion enforced by appropriate medicines, when not ſpontaneous; for, whether the diſeaſe be of cachectic origin, whether it ariſes from inflammation or from mucous irritation of the urinary veſſels, the beſt effects will naturally be expected from medicines which have the triple advantage over all others, that they reduce inflammation, calm nervous irritation, and eliminate morbid matters from the blood. As in the diſeaſes of the ſecernents in general, ſo in thoſe of the kidneys in particular, we often find that, though the cauſe of the diſeaſe be effectually removed, the *habitual* morbid actions of the veſſels remain. In diabetes eſpecially, we often find that, when the general plethora and the dyſpeptic diſorder are in a great meaſure removed, the urinary diſeaſe remains protracted and harraſſing. In theſe caſes, a ſpecific or peculiar ſtimulus may be made to exert an influence on the ſecernents ſufficiently powerful to induce their healthy action. Thus we have found much benefit, in a very ſevere caſe of diabetes, from the exhibition of full doſes

of

of the tincture of the muriate of iron. It is in these cases that the use of opium in small doses, of hepatized ammonia, and of the magnesia calcinata, (so strongly recommended by Dr. Trotter,) seem to be useful.

The common modes by which diabetes terminates when the patient dies, are by dropsy, pulmonic disease, and hectic fever, or suddenly, and apparently from nervous exhaustion.

5. Paruria incontinens: incontinence of urine: frequent or perpetual discharge of urine, with difficulty of retaining it. Four varieties.

α. Acris; from peculiar acrimony in the fluid secreted.

β. Irritata; from peculiar irritation in some part of the urinary channel.—Discharge of hairs. *Klatt.* de Trichias, Alton. 1703.

γ. Atonica; from atony of the sphincter of the bladder.

δ. Aquosa; from superabundant secretion; the fluid limpid and dilute. This variety, which was formerly considered of the same nature as diabetes, is now properly separated from the complaint, as having nothing in common with it but an increase in the quantity of the urine. The change which the urine undergoes in this malady seems to consist chiefly in the presence of a great deal of albuminous matter. The disease is rare; but, from what we can collect, seems to be clearly one of the *nervous* maladies. Attention to the gastric and cutaneous functions, and the relief of the urinal irritability by opium and sulphuric acid, or by hyoscianus, may be for the most part trusted to.

A peculiar and troublesome disease of the urinary passage in females is sometimes met with, which, from unwillingness on the part of the patient to consult medical men on the subject, often proves a source of great distress. It is an inflammatory affection of meatus urinarius. This is first discovered by a severe pain, which extends upwards during coition, the penis pressing on the tender part. As the disease advances, the pain is felt on making water; and, the passage suffering a partial dilatation, some part of the urine is retained in it, and excites a constant irritation and desire to make water. The disease proceeding, fulness of the parts is felt, aggravated by long continuance in the erect posture. If we are called in at either of these periods of the complaint, we shall afford much relief to the patient by applying leeches to the pudenda, and by directing the bowels to be kept open, and a solution of super-acetate of lead to be used as a wash. It is to the above inflammatory state of this structure that we have to refer the warty and fleshy excrescences occasionally found at the orifice of the meatus. These are to be removed by a ligature, and their reproduction prevented by causticication.

6. Paruria incocta: urine consisting of fluids taken into the stomach, and excreted without change.

7. Paruria erratica: urine discharged at some foreign outlet. Five varieties.

α. Salivaris; by the salivary glands. *Phil. Transf.* 1811.

β. Cutanea; by the skin. *Idem.*

γ. Umbilicalis; at the navel. *Act. Erudit.* 1760.

δ. Vaginalis; by a fistulous opening into the vagina. *Valisnerii. Oper.* iii.

ε. Perinætica; by a fistulous opening into the perinæum. *Ibid.*

Genus IV. *Lithia*, [from λιθος, a stone.] Morbid secretion or accumulation of calculous matter in internal cavities.

The formation of concretions in the urinary passages being occasioned by the precipitation and consolidation of particular ingredients in the urine, calculi must of course be liable to occur in any of the cavities to which the urine has access. In fact, experience proves that they are frequently met with in the kidneys, ureters, bladder, and urethra. It is commonly believed, that most of them are originally formed in the kidneys, from which organs they afterwards descend with the urine into the other mentioned parts. We must however regard as exceptions to this observation, the cases in which calculi are formed round foreign bodies introduced into the bladder through the urethra, the digestive organs, or some accidental wound. In the centre of urinary calculi, surgeons have often met with bullets, splinters of bone, bits of wood, pins, &c. Nor is it necessary for such foreign bodies to be large, in order to produce this effect: a clot of blood, or a little bit of chaff, if not very soon voided, will cause a precipitation of the urinary salts.

1. Lithia renalis: pain in the loins shooting down towards the testes or thighs, increased on exercise; urine often depositing a sabulous sediment.

These symptoms, and the fact that stones have been often found on dissection in the kidneys when these symptoms had preceded death, clearly convince us that it is in the kidney that the first nucleus of the calculi are commonly produced. There are two varieties.

α. Calculosa; pain severe and constant; sabulous discharge small and seldom, or never; calculus usually large, and obstructing the pelvis of an ureter.

β. Arenosa, gravel; pain intermitting; free discharge of a sabulous sediment.

Renal concretions vary considerably in their number, size, and shape. In some cases, a single small calculus has been found occupying one of the foregoing situations; while, in other instances, an innumerable collection of calculous substances are observed filling the whole of the cavity of the pelvis and infundibula of the kidney, distending its parietes, and even obstructing the passage of the urine out of this viscus, which is converted into a sort of membranous cyst. Lastly, a single stone in the kidney may acquire a very large size there; or a great number of small calculi, in the same situation, may become cemented together by the deposition of fresh concreting matter between them, so as to form one mass of enormous dimensions, and the shape of which invariably corresponds to the space in which it is, as it were, moulded. Hence it is, that renal calculi often present a variety of odd irregular figures, resembling those commonly observed in specimens of coral.

Urinary concretions of large size very often exist in the kidney, without their presence being indicated by any external circumstances, or attended with any symptoms, sufficiently unequivocal to constitute a ground for suspecting the importance of their cause. On the other hand, it is very usual for renal calculi of middling dimensions to excite serious and alarming complaints. The reason of this difference becomes obvious, when it is recollected that small concretions are readily carried with the urine into the ureter, and become fixed in the narrow portion of the tube; but very large calculi can be contained only in the upper part of this canal, where its parietes are more yielding, and the space in them more capacious. Calculi of middling size, in their passage through the ureter, cause at first a feeling of heaviness, or an indeterminate sense of uneasiness, and an obtuse pain in the region of the corresponding kidney. These complaints occur at intervals of greater or less duration. At length, the pain grows more urgent and annoying, attended with flatulence, heart-burn, frequent vomiting, painful retraction of the testicle, and sometimes acute fever. The patient makes water frequently, and in small quantities at a time; and the urine is high-coloured and bloody. The patient cannot sit upright, his body being bent forwards towards the affected side. These symptoms may have more or less duration, and then suddenly cease. They may also subside and recur several times successively, with intervals of some days. In the latter case, the pain is felt at each attack to be situated lower in the track of the ureter. Lastly, when the symptoms have entirely disappeared, the urine is more abundant, not so high coloured, and easily discharged, the stream sometimes bringing

ing out with it the urinary concretion, which has now entered the bladder.

Suppuration of the kidney, and an abſceſs in the lumbar region, in conſequence of renal calculi, are not very common events. This, however, is the only caſe of the kind, in which the interpoſition of ſurgery can be uſeful. By adverting to previous circumſtances, and the irregularity of the pain about the kidney, the practitioner may ſuſpect the nature of a phlegmonous tumour in the ſituation of this viſcus. Whatever may be his conjectures, however, he muſt carefully abſtain from the uſe of his lancet, until purulent matter is obviouſly under the integuments. He may then ſafely make an opening, from which urine and pus will be diſcharged, and through which the calculi themſelves may ſometimes be felt and extracted. But it is quite clear, that no operation for the extraction of calculi, by means of inciſion or other violent methods, can be ſafely attempted on ſo vaſcular a part as the kidney. It is only, therefore, when (on opening the abſceſs) calculi can be felt with a probe, that an attempt may be made for their extraction.

Calculi are ſometimes found in the ureters, eſpecially at their upper part; but it is not ſuppoſed that they are in general originally formed in that ſituation; an event not likely to happen, unleſs there be ſome cauſe obſtructing or retarding the deſcent of the urine through thoſe tubes. The common belief is, that all calculi found in the ureters are firſt produced in the kidneys, from which they afterwards deſcend in the courſe of the urine. The generality of calculi, however, which leave the kidney, are of ſmall ſize; and conſequently, after a time, and exciting ſome pain and inconvenience, they uſually get into the cavity of the bladder.

2. Lithia veſicalis, ſtone in the bladder: frequent deſire of making water, with difficulty of diſcharge: penis rigid, with acute pain at the glans; ſonorous reſiſtance to the ſound when ſearching the bladder.

The form of calculi is various. Commonly they are ſpheroidal, egg-ſhaped, or oval flattened at the ſides. They alſo receive ſome variety of form from the impreſſion of other calculi. In a few inſtances, they have been found of an angular or entire figure, or of a ſhape correſponding with the pear-ſhaped form of the bladder, a circular protruſion anſwering to the neck of that cavity. The number and ſize of calculi are alſo liable to ſome variation, as may be ſeen by referring to the following inſtances which we are indebted to Dr. Good for pointing out.—*Voided* of the weight of 2 oz. by a female; *Hanow*, Seltenheiten der Natur.—2½ oz. troy by a female; *Molineux*.—5 oz. by the penis; *Sammlung Med. Wahrn*, Band viii. p. 258.—*Extracted*, 12 oz. weight; *Cheſelden*, Anat. *Ephem. Nat. Cur.* Dec. II. ann. v.—22 oz. *Fabr. Hild.* de Lith. veſic. Cent. iv. obſ. 51: the patient died during the operation—*Found in the bladder*, 4¾lb. weight; *Breſl. Sammlung*, 1724, ii. 434. 11.—In the bladder of a dog 1½lb. *Eph. Nat. Cur.* II. Dec. III. ann. v. vi. p. 99.—Nearly 5lb. in the bladder of a horſe; *Gattenhof*, in Diſſ. de Cal. 1748.—2 to 3 oz. *Phil. Tr.* vol. xv. p. 1015.—The *number* of 120 of various ſizes voided in the courſe of three days. *Eph. Nat. Cur.* Dec. III. ann. v. vi.—300 large in two years. *Fabr. Hild.* cent. i. obſ. 69.—2000 within two years. *Gründlicher Bericht.* vom Blatterſtein.

The ſymptoms of ſtone in the bladder are very obſcure. They are often ſimulated by irritative maladies, and moſt eſpecially by the nervous excitement conſequent on indigeſtion. So marked and eſtabliſhed is the ſimilarity between dyſpeptic nervous affections and the particular ſenſations of the bladder, that on many occaſions not the ſlighteſt queſtion could be entertained by the inexperienced practitioner of the preſence of calculi, were it not that the *ſound* gives no indication of it. Scirrhus of the rectum, and diſeaſed proſtate, are diſeaſes which reſemble the complaint in queſtion in ſome reſpects.

The following is the hiſtory of the ordinary ſymptoms of Lithia veſicalis. The pain produced by the preſence of a calculus in the bladder, has the particularity of always affecting, in a very remarkable manner, the extremity of the penis. The glans becomes the ſeat of an itching ſenſation, which daily increaſes in violence; and patients, eſpecially children, often get into the habit of pulling forwards the prepuce, in order to obtain relief. Hence, this part is frequently elongated in an extraordinary degree. This ſympathetic ſort of pain is more acute the larger the ſtone is, and the greater the irregularity of its ſurface. When the bladder is full of urine, the pain is not inſupportable; but, juſt at the period when the diſcharge of that fluid is finiſhed, the ſuffering becomes intolerable, becauſe, at this inſtant the bladder contracts, and embraces the foreign body with conſiderable force. All rough exerciſe augments the pain; but walking over an uneven country, riding on horſeback, and the jolting of a carriage particularly, have ſuch an effect. When the patient is ſubjected to theſe exerciſes, he not unfrequently diſcharges a few drops of blood from the urethra. The deſire to make water comes on very often; and the urine, as it flows, is attended with a ſenſation of heat, which changes into a burning kind of pain at the extremity of the penis. The ſtream of water is ſometimes interrupted all on a ſudden. The patient vainly endeavours to continue the evacuation; he applies his hand to the perineum; he moves about, lies down, or, in ſome way or another, alters his poſture, and the urine then begins to run again. The moveableneſs of the ſtone makes it every now and then fall againſt the orifice of the neck of the bladder, and thus prevent, for a time, the exit of the urine. The inceſſant irritation, produced by the preſence of the calculus, extends to the rectum; the patient is continually teazed with an inclination to go to ſtool, and the efforts, which his imaginary want cauſes him to make, bring on, in many inſtances, hemorrhoidal complaints, or even a prolapſus ani. But, as we before remarked that all theſe ſymptoms are equivocal, the practitioner ſhould always introduce a *ſound* into the bladder before he gives an opinion on the nature of the caſe. For the mode of *ſounding*, ſee SURGERY.

Having thus detailed the ſymptoms which calculous depoſitions are accompanied with, and deſcribed the various ſituations they occupy, and the extreme magnitude or number they may acquire, we proceed to conſider their *compoſition*, with reference to their removal by medical ſkill. In this taſk we ſhall make no diſtinction as to the ſituation the calculi occupy, or their ſize; ſince, whether they exhibit the form of gravel or of ſtone, their compoſition is analogous.

We ſhall claſs urinary depoſitions in the following order. 1. The lithic or uric acid depoſition, being an exceſs of the natural free acid of the urine. 2. The depoſitions of which phoſphoric acid forms a part; viz. the phoſphate of lime or bone-earth calculus; the ammoniaco-magneſian phoſphate: and a mixture of the two latter, called the fuſible calculus. 3. The oxalate of lime. 4. The cyſtic oxyd. 5. Compound varieties.

As to the formation of all theſe various matters, ſome of which are proper to urine in its healthy ſtate, and ſome of which are peculiar to its morbid ſtate, little can with certainty be ſaid. Chemical philoſophers have endeavoured to ſhow, that a diet which contains a large portion of azote, as animal food, produces exceſs of alkali in the urine; and ſimilar ſpeculations have been founded on the effects of vegetable food. Further than the fact that an excluſive ſpecies of diet tends to derange the gaſtric functions, and that a change quite oppoſite muſt neceſſarily change many of the operations of the ſyſtem, we cannot admit the correctneſs of any obſervations of this kind. In fact, contrary to what we ſhould à priori expect, and contrary to theſe obſervations, we do not find that people who drink plentifully of waters ſtrongly impregnated with ſalts are more diſpoſed than others to calculous complaints. We are much pleaſed to find, that

the views we have entertained of calculous diſorders, (ſee *Diabetes*,) viz. that they all conſiſt in a peculiar change in the ſecernents of the kidneys, probably independent of the ſtate of the blood, and conſequently under the control of the nervous ſyſtem, has received much ſupport from the teſtimony of a recent diſtinguiſhed author, Dr. Prout, who (in his Inquiry into the Nature and Treatment of Gravel) in every page refers to the diſordered ſtate of the nervous ſyſtem as a cauſe of morbid depoſitions. We do not conceive that this opinion is at all impugned by the relief afforded in ſome caſes by the exhibition of remedies oppoſite in their chemical properties to thoſe of the calculi, becauſe ſuch medicines may act by cauſing a different action in the kidneys. The aſſumption of this idea explains how it happens, that it is only in ſome caſes that the above remedies do good; ſince, that ſuch failure ſhould occur in medicines which act on diſordered veſſels, no one can be ſurpriſed at; but, that the uniform and invariable operation of chemiſtry ſhould be ſo often diſturbed muſt be a matter of the greateſt wonder to thoſe who conceive that theſe operations are the cauſe of calculi. To return to our hiſtory of the ſpecies of calculi.

1. *Lithic Acid Depoſitions.*—Lithic acid is ſeparated from the urine in two forms, as ſediment or as calculus. In the firſt form it is in combination with ammonia; in the ſecond, pure. In the former ſtate it is precipitated ſlowly, and acquires a reddiſh hue; in the latter the lithic acid forms a hard inodorous concretion, of a yellowiſh or brown colour, ſimilar to that of wood, of various ſhades. According to profeſſor Murray, calculi of this kind are in fine cloſe layers, fibrous or radiated, and generally ſmooth on their ſurface, though ſometimes a little rough. They are rather brittle, and have a ſpecific gravity varying from 1·276 to 1·786, but uſually above 1·500. One part of lithic acid is ſaid to diſſolve in 1720 parts of cold water, and 1150 parts of boiling water; (Marcet, p. 65.) and this ſolution turns vegetable blues to a red colour. When it has been diſſolved in boiling water, ſmall yellowiſh cryſtals are depoſited as the fluid becomes cold. Lithic acid calculi blacken, but are not melted by the blow-pipe, emitting a peculiar animal ſmell, and gradually evaporating until a ſmall quantity of white aſh remains, which is alkaline. By diſtillation, they yield ammonia and pruſſic acid. They are ſoluble in the cold, in a ſolution of pure potaſſa, or ſoda; and from the ſolution, a precipitate of a fine white powder is thrown down by the acids. Lime-water likewiſe diſſolves them, but more ſparingly. In ſolutions of the alkaline carbonates, they remain, according to Scheele, unchanged: according to the experiments of Dr. Egan, however, they are diſſolved even by a weak ſolution, and alſo when the acid is ſuperſaturated by carbonic acid. (Tranſ. of Iriſh Acad. 1805.) They are not much acted upon by ammonia. They are not ſoluble either in the muriatic or ſulphuric acid; though they are ſo in the nitric, when aſſiſted by heat; and the reſidue of this ſolution, when evaporated to dryneſs, aſſumes a remarkably-bright pink colour, which diſappears on adding either an acid or an alkali. In many of theſe calculi, the lithic acid is nearly pure; in others, there is an intermixture of other ingredients, particularly of phoſphate of lime, and phoſphate of ammonia and magneſia; and, in almoſt all of them, there is a portion of animal matter, which occaſions the ſmell when they are burnt, and the loſs in their analyſis. The depoſition of lithic acid, either in the form of ſediment, gravel, or calculus, is almoſt always connected with indigeſtion. According to ſome, the dyſpepſia is the conſequence of an exceſs of acid being generated in the ſtomach, from the morbidity of that organ ſuffering chemical changes to take place in it. But, as the preſence of this free acid has not been detected in the blood in gravelly caſes, we muſt infer that the gaſtric irritation cauſed (by means of ſympathy) in the urinary ſecernents is the ſame action as is excited in thoſe of the ſtomach; an opinion which, though it aſſumes a ſympathy not in general very apparent, is nevertheleſs poſſible. Dr. Prout gives another very plauſible account of this matter; one which, while it aſſumes the exiſtence of diſeaſed blood in theſe caſes, clearly ſhows why we do not find any free acid in the blood, and conſequently that the diſeaſe depends on morbid action of the kidneys, induced by the morbidity of their ſanguineous ſupply. This important principle is, that, if *imperfectly aſſimilated* or *unnaturally albuminous* matter is brought to the kidney, it does, and muſt, in virtue of its natural action, convert ſuch imperfect albumen into lithate of ammonia.

The *treatment* of perſons labouring under the above form of diſeaſe will not be difficult, whichever of the above theories we adopt; except that, under the influence of the former, our exhibition of alkaline remedies will of courſe be more free. We are bound in juſtice to declare, however, that the ſucceſs which attends theſe remedies rather militates againſt than argues for, the theory in queſtion; for they are very often quite uſeleſs. The moſt ſucceſsful practice ſeems to be, to *alter* the diet in ſome eſſential points; but at the ſame time to attend rather to its quantity than to its quality; to excite the biliary and inteſtinal ſecretions by blue pill and gentle purges, and thoſe of the ſkin by means of antimonials.

In thoſe *yellow* depoſitions (conſiſting of lithate of ammonia), indicative of dyſpepſia, the ſame treatment is to be followed. Thoſe *pink* depoſitions from urine, which are compoſed, according to Prout, of the *purpurates* of ſoda and ammonia, and which are uſually met with in chronic phlogoſis and hectic fever, and almoſt always in acute inflammations, do not of courſe require that any change ſhould be made in the ordinary courſe of treatment on their account.

Thoſe ſudden acceſſions of pain and inflammation which are called *fits* of gravel are more eſpecially treated by low living, copious dilution, and full doſes of hyoſciamus.

2. *Depoſitions of which Phoſphoric Acid forms a part.*—Phoſphoric acid and lime, magneſia and ammonia, are all natural conſtituents of urine. A depoſition of one or more of theſe alkalies, in combination with phoſphoric acid, conſtitutes a very common form of diſeaſe. It is preſumed that the phoſphoric depoſition may occur independently of any morbid change in the kidney, as when foreign bodies get by chance into the bladder, and form a point of adheſion for theſe ſalts; a change we ſhould not be ſurpriſed at, when we obſerve the very common occurrence of urinary cryſtallizations in ſituations external to the body. It has been doubted, however, by ſome, whether even foreign bodies do not operate by exciting irritation, and conſequently morbid ſecretion of urine. At all events, the derangement of the action of the kidney is the commoneſt ſource of the phoſphatic depoſition. This latter ſeems to conſiſt in a ſuſpended or diminiſhed action of the uſual acidifying powers of the kidney, whereby, inſtead of lithic acid, a greater quantity of urea (equivalent to ammonia), lime, and magneſia, is generated. This condition of the urine is very commonly dependent upon a deranged ſtate of the chylopoïetic viſcera; frequently, too, it is connected with a great degree of *irritability* and *debility* of the ſyſtem. Hence it is that children are ſo liable to this form of depoſite, from their extreme irritability, and great tendency to diſorders of the ſtomach and bowels.

The depoſition of the phoſphates is attended with uneaſineſs about the loins, a ſallow haggard countenance, black, clay-coloured, or yeaſty, ſtools, and ſubſequently great languor and debility, as in diabetes. The urine too here, as in the diſeaſes already treated of, is pale, and ſecreted in larger quantity than natural; but it is commonly of very low ſpecific gravity, ſuch as 1·002. When the ſpecific gravity is greater than this, the phoſphatic ſediment is proportionally more copious. In this ſtate of diſeaſe the urine is very prone to decompoſition;

and ſpeedily emits a nauſeous ſmell from the evolution of ammonia.

Moſt authors have conſidered a long-continued uſe of alkalies as the cauſe of the phoſphatic calculi; but, when we conſider the unfrequency of this cauſe, we ſhould be inclined to put little ſtreſs on its coincidence. This alſo is the opinion of Dr. Prout. This author allows that in a few caſes it may occur, but, as a general principle in the pathology of earthy depoſitions from the urine, he conſiders it of no importance whatever. The real cauſes of this ſtate of diſeaſe are, he ſays, either local or general. A large proportion of the caſes are owing to ſome injury of the back. It is an old obſervation, that ſuch injuries produce alkaline urine. Exceſſive fatigue, ſevere and protracted debilitating paſſions, are among the other general cauſes of the affection. *Its principal local cauſes are irritations about the bladder or urethra, eſpecially when operating for a conſiderable length of time.* This appears to be the leading feature in Dr. Prout's views of the phoſphatic diatheſis. It is certainly deſerving of remark, that the ſame view of the ſubject had long ago been taken by Mr. Murray Forbes, who expreſsly ſtates, that, "when a foreign body gets into the bladder, *it would operate by irritation*, ſo as to occaſion a redundancy of the phoſphates."

The tranſition from the formation of lithic acid to the depoſition of the phoſphates is very curious. It takes place gradually through the lithate of ammonia, and is accompanied by the diſappearance of the uſual colouring principle from the urine. The tranſition from the mulberry-calculus to the phoſphates takes place through a mixture of oxalate and carbonate of lime. The next layers are found to conſiſt of the carbonate and phoſphate of lime; and, ſtill farther from the centre, the carbonate of lime diſappears. Dr. Prout believes that wherever the change takes place *ex abrupto*, it is preſumable that ſome time muſt have elapſed between the depoſition of the different matters. It is a curious and important feature in the pathology of the urinary ſyſtem, that a *decided* depoſition of the phoſphates is never followed by a different depoſite.

When the depoſition of the phoſphates arrives at the magnitude of calculi, we have the three following kinds, as deſcribed by chemical writers.

Bone-earth, or phoſphate of lime calculus.—This is of a pale brown colour, and ſo ſmooth as to appear poliſhed. When ſawn through, it is found very regularly laminated; and the laminæ, in general, adhere ſo ſlightly to each other, as to ſeparate with eaſe into concentric cruſts. It diſſolves entirely, though ſlowly, in muriatic or nitric acid. Expoſed to the flame of the blow-pipe, it is at firſt ſlightly charred, but ſoon becomes perfectly white, retaining its form, until urged with the utmoſt heat from a common blow-pipe, when it may be completely fuſed. It appears to be more fuſible than the phoſphate of lime, which forms the baſis of bone; a circumſtance aſcribed to the latter containing a larger quantity of lime. Calculi, altogether compoſed of phoſphate of lime, are rather uncommon.

Triple calculus, or ammoniaco-magneſian phoſphate.—Calculous maſſes, conſiſting ſolely of this ſubſtance, are perhaps never met with; but concretions often occur, in which it obviouſly prevails; and, as Dr. Marcet obſerves, "this triple ſalt frequently appears alſo in the form of minute ſparkling cryſtals, diffuſed over the ſurface, or between the interſtices of other calculous laminæ. Calculi, in which this triple ſalt prevails, are generally whiter and leſs compact than thoſe of the former claſs. When the blow-pipe is applied, an ammoniacal ſmell is perceived, the fragment diminiſhes in ſize; and, if the heat be ſtrongly urged, it ultimately undergoes an imperfect fuſion, being reduced to the ſtate of phoſphate of magneſia." Dr. Wollaſton deſcribes the form of the cryſtals of this ſalt, as being a ſhort trilateral priſm, having one angle a right angle, and the other two equal, terminated by a pyramid of three or ſix ſides. Theſe cryſtals are but ſparingly ſoluble in water, but very readily in moſt, if not all, the acids; and on precipitation, they reaſſume the cryſtalline form. From the ſolutions of theſe cryſtals in muriatic acid, ſal ammoniac may be obtained by ſublimation. Solutions of cauſtic alkalies diſengage ammonia from the triple ſalt, the alkali combining with a portion of the phoſphoric acid.

Fuſible calculus.—This is commonly whiter and more friable than any other ſpecies. It ſometimes reſembles a maſs of chalk, leaving a white duſt on the fingers; and ſeparates eaſily into layers or laminæ, the interſtices of which are often ſtudded with ſparkling cryſtals of the triple phoſphate. At other times, it appears in the form of a ſpongy and very-friable whitiſh maſs, in which the laminated ſtructure is not obvious. Calculi of this kind often acquire a very large ſize, and mould themſelves in the contracted cavity of the bladder, aſſuming that pear-ſhaped form before alluded to, which Dr. Marcet has never obſerved in any of the other ſpecies of calculi, and which conſiſts in the ſtone terminating, at its broader end, in a kind of peduncle, correſponding to the neck of the bladder. The chemical compoſition of the fuſible calculus is a mixture of the triple phoſphate and phoſphate of lime. Theſe two ſalts, which, when ſeparate, are infuſible, or nearly ſo, when mixed together and urged by the blow-pipe eaſily run into a vitreous globule. The compoſition of this ſubſtance, ſays Dr. Marcet, may be ſhown in various ways. Thus, if it be pulverized, and acetic acid poured upon it, the triple cryſtals will be readily diſſolved, while the phoſphate of lime will ſcarcely be acted upon; after which the muriatic acid will readily diſſolve the latter phoſphate, leaving a ſmall reſidue, conſiſting of lithic acid, a portion of which is always found mixed with the fuſible calculus.

The tendency to phoſphatic depoſition is cured with difficulty, eſpecially in advanced caſes, when the actual preſence of a ſtone in the bladder forms a mechanical cauſe of continued renal irritation. Even the French practitioners, ſo ſanguine in their hopes of curing the lithic-acid depoſitions by a vegetable diet and copious dilution, confeſs their deſpair in caſes of this kind. It may be remarked, however, that palliatives are particularly indicated. Large and frequent doſes of opium may be given; and it will be ſome conſolation to reflect, that theſe medicines have ſometimes proved more than palliative; for that under a ſtrict attention to the ſtate of the primæ viæ (and without this attention no medicine can do good), they have ſuſpended the depoſition, and have reſtored the patient, even though afflicted with actual ſtone, to a ſtate of good health, by preventing the further morbid ſecretion of the kidneys, and the conſequent increaſe of ſize in the gravel or calculus. Beſides this drug, Dr. Prout has preſcribed with good effect a combination of uva urſi, muriatic acid, and hyoſciamus, in the phoſphatic diatheſis.

3. *Mulberry Calculus, or Oxalate of Lime.*—This is moſtly of a dark-brown colour, and frequently its interior is grey. Its ſurface is uſually uneven, preſenting tubercles more or leſs prominent, frequently rounded, ſometimes pointed, and either rough or poliſhed. It is very hard, difficult to ſaw, and appears to conſiſt of ſucceſſive unequal layers. Excepting the few ſtones which contain a proportion of ſilica, it is the heavieſt of the urinary concretions. The pure alkaline ſolutions have no effect upon this calculus, and the acids diſſolve it with great difficulty. When it is reduced, however, to fine powder, both muriatic and nitric acids diſſolve it ſlowly. The ſolutions of the alkaline carbonates decompoſe it, as Fourcroy and Vauquelin have obſerved; and this affords us the eaſieſt method of analyſing it. The calculus in powder being digeſted in the ſolution, carbonate of lime is ſoon formed, which remains inſoluble, and is eaſily diſtinguiſhed by the efferveſcence produced by the addition of weak acetic acid, while there is obtained in ſolution the compound of oxalic acid with the alkali of the alkaline carbonate.

carbonate. From this, the oxalic acid may be precipitated by the acetate of lead, or of barytes; and this oxalate, thus formed, may be afterwards decompoſed by ſulphuric acid. Another method of analyſing this calculus is by expoſure to heat: its acid is decompoſed, and, by raiſing the heat ſufficiently, pure lime is obtained, amounting to about a third of the weight of the calculus. According to Fourcroy and Vauquelin, the oxalate of lime calculus contains more animal matter than any other. This animal matter appeared to them to be a mixture of albumen and urée. The compoſition of a calculus of this ſpecies, analyſed by Mr. Brande, was—Oxalate of lime 65 grains, uric acid 16 grains, phoſphate of lime 15 grains, animal matter 4 grains. We know nothing of the ſtate of the body which induces this calculus.

4. *The Cyſtic Oxyd.*—Dr. Majendie ſtates that it very rarely enters into the formation of gravel and urinary calculi; but, as the nature of this animal matter is not generally known, it may be proper to mention its general properties. Calculi formed of cyſtic oxyd, are ſemi-tranſparent, of a yellowiſh colour, and have a luſtre ſimilar to that of bodies of a denſity powerfully refractive. Expoſed to heat in a retort, they furniſh carbonate of ammonia of a fetid odour; there paſſes alſo an heavy fetid oil, ſuch as is obtained from animal matter, but in a much leſs proportion than that which reſults from a diſtillation of uric acid. Theſe properties ſhow that, like uric acid, it is principally compoſed of azote; it is therefore probable, that it is produced by the ſame cauſes which determine the formation of uric acid. This ſubſtance is but very ſlightly ſoluble in water, not at all in alcohol, or the acetic, tartaric, and citric, acids; it is, on the contrary, ſoluble in the muriatic, nitric, ſulphuric, phoſphoric, and oxalic, acids, as well as in potaſh, ſoda, lime-water, and the carbonates of potaſh and ſoda. The greater number of its properties approach to thoſe of uric acid.

5. *Of the Compound or Irregular Calculi*—the greater proportion are thoſe which diſplay alternate layers. Thus, lithic ſtrata frequently alternate with layers of oxalate of lime, or with the phoſphates. Sometimes alſo the mulberry alternates with the phoſphates; and, in a few inſtances, three or even four ſpecies of calculi occur in the ſame ſtone, diſpoſed in diſtinct concentric laminæ.

Some compound calculi have their ingredients intimately mixed. They have no characteriſtic feature; but may ſometimes be recognized by their more or leſs irregular figure, and their leſs determined colour, by their being leſs diſtinctly if at all ſtratified, and by their often poſſeſſing a conſiderable hardneſs. By chemical analyſis, confuſed reſults are obtained.

The remarks we have hitherto made on the treatment of calculous diſorders, relates ſolely to the *removal of that ſtate of the conſtitution which cauſes the depoſition or formation of ſtony matter; and conſequently applies only to the prevention of its further formation.* In another part of this work, (ſee LITHONTRIPTIC, vol. xii.) we have expreſſed our conviction of the perfect futility of exhibiting any medicine with the view of diſſolving ſtone in the bladder. It is the higheſt ſtretch of our preſent power in the treatment of calculi, to prevent their further progreſs; and if we can do this, and delay, for a certain ſpace of time, the irritability of the ſyſtem, the bladder will accommodate itſelf to the preſence of the ſtone (while it no longer grows), and much comfort may be enjoyed by the patient of this dreadful malady. When theſe meaſures are unſucceſsful, or when the youth or good conſtitution of the patient forbid us to fear the future regeneration of the ſtone, the removal of it will be adviſable; which is to be effected in two ways: in men by the uſual practice of lithotomy; but, with regard to women, the ſhortneſs and expanſibility of the female urethra not only admits an evacuation of large calculi with little inconvenience compared with that ſuffered by men, but has often ſuggeſted the expediency of introducing the ſtone-forceps into the bladder, ſo as to ſupply the place of lithotomy. Mr. Thomas, by gradually enlarging it by means of a ſponge-tent, was, in one caſe, able to introduce his finger into the bladder, and ſucceeded in bringing away an ivory ear-pick which had been incautiouſly uſed as a catheter, and had ſlipped into the cavity. In another ſingular caſe, the ſame ſkilful operator gradually expanded the ſphincter ani to a diameter large enough to admit his whole hand into the rectum, and hereby ſucceeded in extracting a large ſubſtance which had ſlipped into its channel. More recently, ſir A. Cooper has ſucceeded in removing ſmall ſtones from the bladder of an old patient, a clergyman, by means of a peculiar inſtrument of his own invention, which dilates the urethra, and draws the ſtones through the natural opening. For the common method (and the only one capable of application when the calculus is large) of removing ſtones in the bladder by the operation of *lithotomy*, and alſo for ſome further obſervations on the dilating ſyſtem above alluded to, ſee the article SURGERY.

Order III. ACROTICA, [ακρος, extreme; hence ακρολιθος, the top or higheſt point of any thing.] Diſorders affecting the Surface of the Skin. Pravity of the fluids or emunctories that open on the external ſurface: without fever, or other internal affection, as a neceſſary accompaniment. There are ten genera, which, as well as the ſpecies, are chiefly taken from Dr. Bateman's improved edition of Willan on Cutaneous Diſeaſes.

Genus I. *Ephidroſis*, [i. e. ſweat.] Preternatural ſecretion of cutaneous perſpiration. There are four ſpecies, beſides varieties.

1. Ephidroſis profuſa: cutaneous perſpiration ſecreted profuſely.

2. Ephidroſis cruenta: cutaneous perſpiration intermixed with blood.

3. Ephidroſis partialis: cutaneous perſpiration limited to a particular part or organ. Ephidroſis lateralis, *Sauv.* who quotes from Schmidt (Collect. Acad iii. 577) the caſe of a woman who was never capable (except when pregnant) of being thrown into a ſweat in any other part than the left ſide.

4. Ephidroſis tincta: cutaneous perſpiration poſſeſſing a depraved colour. Four varieties of colour.

α. E. viridis; of a green tinge. *Borelli.* cent. ii. 56.

β. E. nigra; of a black tinge. *Joel. Langelot. Collect. Acad.* iii. 255.

γ. E. cærulæ; of a blue tinge. *Wincler. Collect. Acad.* iii. 263.

δ. E. rubra; of the colour of port-wine. *Sauv.* and *Barthol.*

5. Ephidroſis olens: cutaneous perſpiration poſſeſſing a depraved ſmell. Four varieties of odour.

α. E. ſulphurea; of a ſulphureous ſcent. *Ephem. Nat. Cur.* cent. i. ii. obſ. 168.

β. E. acida; of a ſour ſcent.

γ. E. olida; of a rank or fetid ſcent. Often partial, or evacuated from particular organs, as the feet or axillæ: ſometimes from the ſurface generally, according to De Monteaux.

δ. E. moſchata; of a muſky ſcent. *Pecklin*, lib. ii. obſ. 49.

The majority of theſe rare diſeaſes are involved in much obſcurity, and many of them are probably connected with other maladies. This is the caſe eſpecially with profuſe and partial perſpiration, very common ſymptoms of dyſpepſia; and may very fairly be preſumed to be the caſe with ſtinking and bloody perſpiration. Metaſtaſis from the retention of milk, urine, the catamenial flux, and fæces, may alſo produce the ſame aberrations.

Genus II. *Exantheſis*, [from εξ, outward, and ανθω, to ſpring or flower; ſuperficial or cutaneous efflorescence; in contradiſtinction to *Enantheſis*, or efflorescence ſpringing

Ces Exanthemes [illegible] ...eral to
[illegible] ou vesiculeux, environnés d'une areole
...reunis in corymbe ou par groupes qui enflamme
ou prurit, de tension ou d'ustion. Bientôt ces boutons se rompent ou
crèvent un sentiment ^ & en font couler une matiere ichoreuse ou
quelle [illegible] ...ecrite ... croutes. Sa

The Squamous [illegible] ...ess with its scab. Thus
it is more correct about the cause [illegible] to the cancerous or
[illegible] appendage [illegible] nasal, [illegible] the

ſpringing from within. See p. 273.] Cutaneous bluſh. Generic characters—Simple cutaneous roſe-coloured efloreſcence, in circumſcribed plots, with little or no elevation.

On coming to the conſideration of cutaneous diſeaſes ſtrictly ſo called, it will be neceſſary to make a few preliminary remarks. It will be recollected, that in p. 141 of this article, we have expreſſed our concurrence in the opinion which attributes the majority of cutaneous defædations to gaſtric or inteſtinal irritation. In that place alſo ſufficient evidence of this frequent connexion has been adduced. An objection, however, is in force againſt this mode of conſidering the diſeaſes in queſtion; that, while gaſtric or inteſtinal irritations are but few in number, cutaneous maladies are extremely multiform; and hence it may be inquired, Can ſo many and ſuch oppoſite appearances reſult from one cauſe?

Let us examine the matter a little cloſely. Cutaneous diſeaſe is evidently a diſeaſe of the ſecernents of the ſkin; ſometimes this diſeaſe is accompanied, either as a cauſe or conſequence, with inflammation: i. e. turgeſcence and heat of the ſubjacent red veſſels; but ſometimes this is wholly abſent, and the diſeaſe of the ſecernents is the only malady. Now this diſeaſe of the ſecernents is ſuppoſed to vary according to the product which is ſecreted; and on this variation have the claſſifications of cutaneous diſeaſes by Willan and Bateman been ſolely founded. Thus, when inflammation of the ſubjacent red veſſels takes place, the *papula*, or pimple, ("a very ſmall and acuminated elevation of the cuticle, with an inflamed baſe, very ſeldom containing a fluid, or ſuppurating, and commonly terminating in ſcurf,") is found. When the inflammation goes on to ſuch a degree as to diſorganize the ſkin, *ſquamæ*, or ſcales, ("laminæ of morbid cuticle, hard, thickened, whitiſh, and opaque," and irregular layers of ſkin called *cruſts*, or over ulcers *ſcabs*,) are obſerved. The ſimpleſt diſeaſe of the ſkin is that in which the ſecernents admit red blood, and ſecretion is at once ſuſpended. This forms the *exanthema*, or raſh; ("ſuperficial red patches, variouſly figured, and diffuſed irregularly over the body, leaving interſtices of a natural colour, and terminating in cuticular exfoliations.") When the above veſſels ſecrete in ſmall quantities, water, which becomes opaque, and is ſucceeded by ſcurf or cruſts, they are named *veſicles;* when in large quantities like a bliſter, *bulla*, or bleb. Laſtly, when pus is ſecreted in the cutaneous elevation, it is called a *puſtula*, or puſtule. The puſtule has in all caſes an inflamed baſe. Dr. Bateman gives four varieties of it.

a. Phlyzacium; a puſtule commonly of a large ſize, raiſed on a hard circular baſe, of a vivid red colour, and ſucceeded by a thick, hard, dark-coloured ſcab.

b. Pſydracium; a ſmall puſtule, often irregularly circumſcribed, producing but a ſlight elevation of the cuticle, and terminating in a laminated ſcab. Many of the pſydracia uſually appear together, and become confluent; and, after the diſcharge of pus, they pour out a thin watery humour, which frequently forms an irregular incruſtation.

c. Achor; a ſmall acuminated puſtule, containing a ſtraw-coloured matter, which has the appearance and nearly the conſiſtence of ſtrained honey, and ſucceeded by a thin brown or yelloviſh ſcab.

d. Favus, is larger than the *achor*, flatter, and not acuminated, and contains a more viſcid matter; its baſe, which is often irregular, is ſlightly inflamed; and it is ſucceeded by a yellow, ſemitranſparent, and ſometimes cellular, ſcab, like a honey-comb; whence it has obtained its name.

To theſe we may add the *tubercle* and the *wheal*. The firſt is a ſmall hard ſuperficial tumour, circumſcribed and permanent, or ſuppurating partially; and the *wheal* is the ſame appearance as is produced by a ſmart ſtroke with a whip on the naked ſkin. It ſeems a ſudden accumulation of the fluids of the part, which goes off as the veſſels regain their natural powers.

To return to the ſubject we were reaſoning upon. We perceive, therefore, two agents concerned in cutaneous diſeaſes: the ſecernents of the ſkin, and the red blood-veſſels of the ſubjacent tiſſue. We obſerve, that, according to the peculiar irritation which affects them, both theſe veſſels put on different appearances. Now on the one hand, the circular form of one eruption is contraſted with the irregular form of another, and the morbid product of this is quite different from the diſeaſed ſecretion of another. The diſeaſes of the ſkin in which the ſanguineous ſtructure is implicated are few in number, and for the moſt part eaſily traced to the cauſe of morbid blood on the one hand, or atmoſpherical changes on the other. But the diſeaſes which have their ſeat moſt ſtrictly in the ſecernents of the ſkin, and which are by far the moſt numerous, cannot be ſuppoſed to ſuffer from atmoſpheric changes, ſince theſe could merely operate to reduce or increaſe the quantity of blood in the blood-veſſels of the ſkin; and in fact are not more frequent in hot or cold climates than in temperate ones, though we allow that they are more violent in hot ones when once formed, by reaſon of the conſequent inflammation which heat ſo naturally excites. And, even were theſe impreſſions allowed to have much force, we ſhould be ſurpriſed to find that ſo many kinds of diſeaſe follow the very ſimple cauſes of heat or cold.

It is to that portion of the cutaneous expanſion which lines the alimentary canal, which is expoſed to a thouſand different impreſſions from foreign bodies, from exceſs or alteration in its own ſecretions, or of thoſe ſecretions poured ſo plentifully into it, which moreover is ſo cloſely connected by nervous ſympathy with the external ſkin, that the moſt trifling ailments of the one alter the ſecretion and actions of the other, that we muſt look for the common cauſe of diſtention of the ſkin. Beſides the connexion between the gaſtric and cutaneous irritation by means of nervous ſympathy, the alteration which impaired digeſtion effects in the quality of the blood, may bring on cutaneous defædations; but it ſeems that the maladies produced by this cauſe as deeply implicate the ſubjacent tiſſue as the ſkin, and therefore are not properly to be claſſed with cutaneous diſorders. Thus, Porphyra is very properly ſeparated by Dr. Good from this claſs. A great number of cutaneous diſeaſes are infectious.

The *cure*, therefore, of all cutaneous maladies may be attempted with the following indications. The firſt is to reſtrain the action of the ſanguiferous ſyſtem, in thoſe maladies or in thoſe ſtages of maladies in which their action is exceſſive. This is chiefly effected by bleeding, by cooling and ſedative lotions. The ſecond is, to remove the morbid ſecretions which are applied to the alimentary canal, and which cauſe the diſeaſe. The correction of bile has been followed by the cure of troubleſome cutaneous diſorders; and there is ſcarcely a medicine capable of producing a powerful change in the ſecretions of the digeſtive organs but what has, on a few occaſions, performed ſurpriſing cures. But the moſt philoſophical and ſure method of proceeding is to reſtore the function of the alimentary canal by proper regulations as to diet and exerciſe, and the ſtate of the alvine ſecretions. In many caſes this is all that is neceſſary; but in ſome, notwithſtanding the digeſtive and ſanguineous organs are in a very tolerable ſtate of health, the diſeaſe of the ſkin will remain unabated. Under theſe circumſtances, it will be neceſſary to apply ſome medicine that will ſtimulate the ſecernents in a different mode to that ſtimulation imparted by their nerves. In different diſeaſes different ſtimuli will be neceſſary; but this can only be known by experiment. In ſome, the ſtimulating agent required is almoſt invariable in its ſucceſsful operation; as ſulphur for the cure of itch; in others, the greateſt uncertainty is met with, as in ſome forms of impetigo.

Another mode of curing cutaneous diſeaſes is by exciting a function vicarious to that of the ſkin, as the urine by means of diuretics. As an adjunct, the ſoothing of the irritable feelings of the affected ſtructure by anodynes and baths is on many occaſions required. This genus has only one ſpecies, namely

Exantheſis roſeola, roſe-raſh: efflorescence in bluſhing patches, gradually deepening to a roſe-colour, moſtly circular or oval; often alternately fading and reviving; ſometimes with a colourleſs nucleus: chiefly on the cheeks, neck, or arms.

This diſeaſe is merely ſymptomatic of a little feveriſhneſs of the ſyſtem; and goes off ſpontaneouſly, or at leaſt eaſily diſappears under the uſe of a few gentle purges. It is mentioned in this place, leſs on account of its importance, than becauſe it is liable, in ſome of its forms, to be confounded with ſome of the Exanthemata. Fig. 4, 5, and 6, on the Plate V. diſplay the varieties of this eruption. Fig. 4 is the *ſummer roſe-raſh*, a raſh attended with much itching and tingling, chiefly occupying the neck and ſhoulders, and of a roſeate hue: it goes off on the fifth day. Fig. 5. the *autumnal roſe-raſh*, occurs chiefly in autumn; is of damaſk-roſe-colour, appears chiefly on the arms, deſquamates in about a week, and is attended with little itching or general diſorder. Fig. 6 the Roſeola annulata of Bateman, ſo called from its ring-like form, and appearing occaſionally in every part of the body, is attended with fever when its duration is ſhort, but with none when it laſts a long time. In the chronic form, the redneſs is not very marked till the evening, when a good deal of itching and tingling come on.

Genus III. *Exormia*, [from ἐξορμαω, to break out.] Papulæ, or pimples. Generic characters—Small acuminated elevations of the cuticle; not containing a fluid, nor tending to ſuppuration; commonly terminating in ſcurf. There are four ſpecies.

1. Exormia ſtrophulus: eruption of red pimples in early infancy, chiefly about the face, neck, and arms; ſurrounded by a reddiſh halo; or interrupted by irregular plots of cutaneous bluſh. Five varieties.

α. Strophulus intinctus, red gum: pimples bright-red; diſtinct, intermixed with ſtigmata, and red patches; uſually on the cheeks, fore-arms, and backs of the hands, but ſometimes ſpreading over the body. The repulſion of this eruption is dangerous; but, ſhould this happen, it may be counteracted by warm bathing; a meaſure generally uſeful.

β. S. albidus, white gum: pimples minute, hard, whitiſh; ſurrounded by a reddiſh halo.

γ. S. confertus, tooth-raſh, or rank red gum: pimples red, of different ſizes; crowding or in cluſters; the larger ſurrounded by a red halo; occaſionally ſucceeded by a freſh crop.

δ. S. volaticus: pimples deep-red, in circular patches or cluſters; cluſters ſometimes ſolitary on each arm or cheek; more generally flying from part to part.

ε. S. candidus: pimples large, glabrous, ſhining; of a lighter hue than the ſkin: without halo or bluſh.

The three laſt varieties are ſhown on Plate VI. fig. 1. as they appear on the face, on the fore-arm, and on the arm. The ſpecies, indeed, like the preceding, is not conſidered of much conſequence in practice; but is deſcribed and delineated on account of its occaſional ſimilarity to ſome of the Exanthems.

2. Exormia lichen: eruption diffuſe; pimples red; troubleſome ſenſe of tingling or pricking. Seven varieties; of which α, γ, and ξ, are the ſubjects of the remaining figures of Plate VI.

α. Lichen ſimplex, (ſee fig. 2. Plate VI.) General irritation, ſometimes a few febrile ſymptoms at the commencement; tingling aggravated during the night; pimples beginning on the face and arms; afterwards ſcattered over the whole body; theſe fade and deſquamate in about a week, except in the flexures of the joints.

β. L. pilaris: pimples limited to the roots of the hair; deſquamate after ten days: often alternating with complaints of the head or ſtomach. Only a modification of the foregoing.

γ. L. circumſcriptus, (fig. 3.) pimples in cluſters or patches of irregular forms, appearing in ſucceſſion over the trunk and limbs; ſometimes coaleſcing; occaſionally reviving in ſucceſſive crops, the old ones decaying as the new ones ariſe; and perſevering for ſix or eight weeks.

Little medicinal treatment is neceſſary for theſe varieties of Lichen. It is ſufficient that patients avoid heating themſelves by much exerciſe or by ſtimulants, and take a light diet, with diluent drinks, and a gentle laxative occaſionally. The diluted ſulphuric acid is a grateful tonic to the ſtomach during the period of exfoliation; or a light chalybeate may be taken with advantage at the ſame period. All ſtrong external applications are improper, eſpecially preparations of mercury and of ſulphur, which produce ſevere irritation. The ancients recommended that the parts ſhould be ſmeared every morning with ſaliva; and ſome demulcent lotion, as a ſubſtitute for this uncleanly expedient, prepared with the white of egg, or emulſion of almonds, will relieve the painful ſenſations of the patient. Lotions of lime-water, or of liquor ammoniæ acetatis much diluted, occaſionally alſo afford relief.

δ. L. lividus: pimples dark-red or livid; chiefly ſcattered over the extremities; deſquammation at uncertain periods, ſucceeded by freſh crops, often perſevering for ſeveral months. Its affinity with the Purpura is evinced by the intermixture of petechiæ with the papulæ; and by the ſimilarity of the origin and requiſite treatment of the two diſeaſes.

ε. L. tropicus, prickly heat: pimples bright-red, ſize of a ſmall pin's head; heat, itching, and pricking as of needles; ſometimes ſuddenly diſappearing, and producing ſickneſs or other internal affection; relieved by the return of a freſh crop. It attacks new ſettlers in the Weſt Indies, and other warm regions, and leaves them in a few weeks when inured to the climate.

Many authors have cautioned us againſt the repulſion of the eruption by cold. The experienced Johnſon obſerves, however, that he never found it poſſible to repel it by even cold bathing; and ſeems to think that the idea is viſionary. The ſame author obſerves as to its treatment, that he found no benefit from external applications, though he uſed many kinds. "In ſhort, (ſays he,) the only means which I ever ſaw productive of any good effect in mitigating its violence, till the conſtitution got aſſimilated to the climate, were, light clothing, temperance in eating and drinking, avoiding all exerciſe in the heat of the day, open bowels, and laſt, not leaſt, a determined reſolution to reſiſt with ſtoical apathy its firſt attacks. To ſit quiet and unmoved under its preſſure is undoubtedly no eaſy taſk; but, if we can only muſter up fortitude enough to bear with patience the firſt few minutes of the aſſault, without being rouſed into motion, the enemy, like the foiled tiger, will generally ſneak off, and leave us victorious for the time."

ζ. L. ferus, (fig. 4.) pimples in cluſters or patches of a high red colour, and ſurrounded with a red halo; the cuticle growing gradually harſh, thickened and chappy; often preceded by general irritation and fever; coldneſs, ſhivering, and cephalalgia, being uſually the firſt ſymptoms obſervable. Tingling and itching are troubleſome ſymptoms in this complaint: they undergo daily remiſſions, and are much increaſed by exerciſe, waſhing, &c. This variety is apt to terminate in Impetigo.

The treatment of this lichen conſiſts in adminiſtering, at firſt, ſome moderate laxatives, mercurial or ſaline, and afterwards, for ſome time, the diluted ſulphuric acid, three times a-day, in the infuſion of roſes, or decoction

of cinchona. A ſimple cooling unguent, as the roſe pomatum, or litharge plaſter ſoftened with oil of almonds, allays the troubleſome heat or itching. All ſtimulating applications are both painful and injurious.

η. L. urticoſus, nettle-raſh: pimples very minute, ſlightly elevated, reddiſh; intolerable itching, eſpecially at night; irregularly ſubſiding, and re-appearing; chiefly ſpotting the limbs; occaſionally ſpreading over the body, with gnat-bite ſhaped wheals; from the violence of the irritation at times, accompanied with veſicles or bliſters, and ſucceeded by an extenſive exfoliation of the cuticle. It chiefly attacks children or young adult perſons. Frequent tepid bathing, light covering, eſpecially in bed, with the uſe of ſmall doſes of ſulphur, or the hydrargyrus ſulphuratus niger, internally, appear to relieve the ſymptoms. The ſkin will not bear ſtimulation, and is irritated even by a bath of too high temperature. When it has occurred in feeble and emaciated children, it may often be relieved by chalybeate medicines, as the vinum ferri. This combination of inflamed papulæ, with intenſe itching, ſeems to unite the characters of the lichen with thoſe of the next ſpecies.

3. Exormia prurigo: eruption diffuſe; pimples nearly of the colour of the cuticle; when abraded by ſcratching, oozing a fluid that concretes into minute black ſcabs; intolerable itching, increaſed by ſudden expoſure to heat. Three varieties.

α. P. mitis: pimples ſoft and ſmooth; itching, at times ſubſiding; chiefly common to the young, and in ſpring time. Eaſily yields to a courſe of warm ablutions, and the internal uſe of ſulphur.

β. P. formicans: pimples varying from larger to more obſcure than in the laſt; itching inceſſant, and accompanied with a ſenſe of pricking, or ſtinging, or of the creeping of ants over the body, (whence the name;) duration from two months to two or three years, with occaſional but ſhort intermiſſions; chiefly common to adults.

γ. P. ſenilis: pimples moſtly larger than in either of the above; ſometimes indiſtinct, giving the ſurface a ſhining and granulated appearance; itching inceſſant; common to advanced years, and nearly inveterate.

Plate VII. fig. 1. exhibits the varieties of this ſpecies. A points out the ſlighter eruption of the Prurigo mitis; B the deeper and more marked appearance of P. formicans and P. ſenilis. Each of theſe varieties is apparently the reſult of gaſtric and inteſtinal irritations, and the laſt of much nervous debility likewiſe. The firſt is more eaſily cured than the two latter; cold ſpirituous lotions, a ſtrict attention to diet, gentle laxatives (avoiding purges), and, according to the ſtate of the ſtomach, ſulphur and the carbonate of ſoda, or ſtomachic medicines, as ſarſaparilla, bark, &c. with mineral acids (eſpecially the oxygenated muriatic acid), are the meaſures chiefly to be depended on. In the Prurigo ſenilis, pediculi are commonly generated. Oil of turpentine much diluted with oil of almonds appears to exterminate theſe inſects very effectually.

4. Exormia milium: pimples very minute; tubercular; confined to the face; diſtinct; milk-white; hard; glabrous; reſembling millet-ſeeds.

Dr. Good ſeems to have inſerted this ſpecies on the authority of Plenck alone; for we find no mention of it in any other author.

Genus IV. *Lepidoſis*, [from λεπις, a ſcale.] Scale-ſkin. Efflorescence of ſcales over different parts of the body, often thickening into cruſts. (Squammæ, *Willan.*) There are four ſpecies, with numerous varieties.

1. Lepidoſis pityriaſis, dandriff: patches of fine branny ſcales, exfoliating without cuticular tenderneſs. The ſuperficial ſtate of the ſcales, and the abſence of all ulcerative proceſs, diſtinguiſhes the varieties of pityriaſis from other maladies. Without theſe diſtinctive marks we might miſtake dandriff for ſcalled-head (into which it muſt be confeſſed it degenerates if neglected), and P. verſicolor for ſecondary ſymptoms of ſiphilis. The following are the three varieties.

α. Pityriaſis capitis: ſcales minute and delicate; confined to the head; eaſily ſeparable. Chiefly common to infancy and advanced years. Cutting off the hair, and waſhing the head frequently with ſoap and water, are all the means neceſſary for the cure of dandriff on the head.

β. P. rubra: ſcalineſs common to the body generally; preceded by redneſs, roughneſs, and ſcurfineſs of the ſurface. To give gentle purges, and apply cooling lotions, in the ſtage of roughneſs and redneſs, and to uſe gentle diaphoretics and the warm ſalt-water bath when the ſcales appear, is all that is required in the treatment of this complaint.

γ. P. verſicolor: ſcalineſs in diffuſe maps of irregular outline and divers colours, chiefly brown and yellow: for the moſt part confined to the trunk, though occaſionally ſpreading over the limbs. This diſorder, from its ſlow progreſs, morbid colour, and uſual cauſes, (debauchery, bad food, and atmoſpherical viciſſitudes) ſeems to be much connected with a diſeaſed ſtate of the blood. Dr. Willan found internal medicine of little uſe; but Dr. Bateman recommends the oxygenated muriatic acid and ſtimulating lotions. He alſo recommends a trial to be made of pitch in large doſes.

2. Lepidoſis lepriaſis, leproſy: patches of ſmooth laminated ſcales of different ſizes, and a circular form. Four varieties.

α. Lepriaſis vulgaris, common leproſy: ſcales glabrous; whitiſh; ſize of a crown-piece; preceded by ſmaller, reddiſh, and gloſſy, elevations of the ſkin, encircled by a dry, red, and ſlightly-elevated, border; often confluent. Beneath the ſcales the ſkin is found red, and in early ſtages ſmooth. Sometimes covering the whole of the body except the face; but moſt commonly commencing on the extremities, where the bones lie neareſt to the ſurface; eſpecially below the elbow and the knee, and uſually on both arms, or both legs, at the ſame time. From theſe points it gradually extends, by the formation of new and diſtinct patches, along the arms or thighs, to the breaſt and ſhoulders, and to the loins and ſides of the abdomen. In ſeveral caſes, Dr. Bateman has obſerved the eruption moſt copious and moſt permanent round the whole lower belly. The hands alſo become affected, and in many caſes the hairy ſcalp. Though the face is not the ſeat of large patches, ſome ſcalineſs occaſionally appears about the outer angles of the eyes, and on the forehead and temples, extending from the roots of the hair. In the more ſevere caſes, the nails of the fingers and toes are often much thickened, and become opaque and of a dirty yellowiſh hue, and are incurvated at the extremities: their ſurface is alſo irregular, from deep longitudinal furrows, or elevated ridges.

When the eruption of Lepriaſis is moderate in degree and extent, it is not attended with any uneaſy ſenſations, except a ſlight degree of itching when the patient is heated by exerciſe, or becomes warm in bed; and a little occaſional tingling in certain ſtates of the atmoſphere. When it is generally diffuſed, however, and there is a conſiderable degree of inflammation in the ſkin, it is accompanied with extreme ſoreneſs, pain, and ſtiffneſs; ſometimes indeed ſo great, as to render the motions of the joints impracticable, and to confine the patient to bed. Yet even under theſe circumſtances, there is no conſtitutional diſturbance: and, if no medicine be employed, the diſeaſe of the ſkin may continue for months, or even years, without any material derangement of the ſyſtem.

Nothing is known of the immediate cauſe of this diſeaſe. It has been obſerved to follow the taking of certain improper articles of diet. It has been attributed to dirtineſs, to over-exertion, and to ſudden changes of temperature. It is ſaid to be hereditary, but not contagious. Dr. Bateman aſſerts that it is a very common diſeaſe in this metropolis; but we are inclined to think

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he is almoſt ſingular in his opinion. On Plate VII. fig. 2. we have given a delineation of this variety; the letters A, B, C, &c. ſhowing the progreſſive ſtages of the malady.

β. L. albida, white leproſy: ſcales whitiſh; ſize of a ſilver penny; depreſſed in the middle; chiefly confined to the extremities. See fig. 3 of the ſame Plate.

This diſeaſe is milder than the firſt variety, from which it is diſtinguiſhed by the indolence of the eruption, the ſmallneſs of the ſcales, and their little diſpoſition to become confluent. Both varieties of Lepriaſis are difficult of cure, and have acquired characters for being more obſtinate than they really are, in conſequence of the empirical practice which has been commonly applied to them.

The practice, to be effectual, muſt depend entirely on the ſtate of the vaſcular ſyſtem of the ſkin; for, as Dr. Bateman has clearly ſhown, if we give the ſame medicines to an inflammatory variety or ſtage of Lepriaſis that are found uſeful in one of tardy progreſs, we ſhall of courſe do miſchief. Therefore, whenever much redneſs ſurrounds the ſcale, when pain, ſoreneſs, or ſtiffneſs of the joints, is preſent, our firſt care ſhould be to mitigate the ſeverity of the cutaneous phlogoſis which accompanies the eruption. Ablution with tepid water, or with thin gruel, is the only application that it is allowable to uſe. Gentle purgatives, a ſomewhat low diet, with the occaſional exhibition of nitre, or ſmall doſes of ſulphur, a few drops of the liquor potaſſæ, in conjunction with equally ſparing quantities of tincture of hellebore, are meaſures generally ſufficient to remove the irritable ſtate of the ſkin. But, when this ſtate has degenerated into the indolent form ſo remarkable in the ſecond variety, and in the advanced ſtages of the firſt, ſtimulating medicines and applications may be tried. The warm ſalt-water bath, with a moderate degree of friction to looſen the ſcales, may be firſt uſed as the moſt proper local means; and, if not found ſucceſsful, may be ſucceeded by the uſe of more active ſtimuli, gradually increaſing their ſtrength. A variety of theſe will be ſucceſſively required. Spirituous lotions, or thoſe containing the cauſtic potaſs, the muriatic acid, or the oxymuriate of mercury, the unguentum picis, or the ung. hydrargyri nitratis, are the moſt approved local ſtimuli we know of. The internal ſtimuli which muſt be reſorted to when dietetic regulations do not operate on the malady, are the arſenical ſolution, pitch, and ſteel. Of theſe the firſt is the moſt powerful. They are all given in the uſual doſes. Dr. Bateman recommends alſo a decoction of the Solanum dulcamara in gradually-increaſing proportions, both as an internal and an external application.

γ. L. nigricans, or black leproſy, is a more rare variety of the diſeaſe, differing externally from the L. vulgaris chiefly in the dark and livid hue of its patches, which is moſt obvious in the margin, but even appears through the thin ſcales in the area of each patch. See fig. 4. The ſcales are more eaſily detached in this form of lepra, and the ſurface remains longer tender, and is often excoriated, diſcharging bloody ſerum, till a new incruſtation is formed. This variety of lepriaſis occurs in perſons whoſe occupations expoſe them to the viciſſitudes of the weather, and to a precarious diet, with fatigue and watching, and ſeems of a cachectic nature. It is cured by nutritive food, with moderate exerciſe, followed by the uſe of the bark, mineral acids, and ſea-bathing.

δ. L. caneſcens, the leproſy of the Jews: ſcales white; hairs on the patches white or hoary; central depreſſion deep, diſeaſe more inveterate. See LEPROSY, vol. xiv.

"Several of the varieties are found alſo occaſionally, as a ſymptom or ſequel, in lues; but diſtinguiſhed by a livid or chocolate hue." Good, 473.

3. Lepidoſis pſoriaſis, ſcaly tetter, or dry ſcale: patches of rough amorphous ſcales; continuous, or of indeterminate outline; ſkin often chappy.

This *irregularity of figure* diſtinguiſhes Pſoriaſis from the *round* ſcales of Lepriaſis; and the five different varieties of this irregularity are the ſubject of Plate VIII. Moreover it is without the elevated border, the inflamed margin, and the oval or circular outline, of the leprous patches; the ſurface under the ſcales is likewiſe much more tender and irritable in general than in lepriaſis; and the ſkin is often divided by *rhagades*, or deep fiſſures. It is commonly accompanied by ſome conſtitutional diſorder, and is liable to ceaſe and return at certain ſeaſons.

The cauſes of pſoriaſis are nearly as obſcure as thoſe of lepriaſis. It is not contagious; with the exception perhaps of the firſt variety; and this exception is doubtful. Of the following varieties, the firſt two are ſometimes the ſequel of lichen.

α. P. guttata, (ſee fig. 1. Plate VIII.) "is a ſort of connecting link between this ſpecies and lepra, the little patches being diſtinct, and ſmall, (ſeldom exceeding two or three lines in diameter,) but with an irregular circumference, and the other peculiar characters juſt deſcribed. They appear on almoſt every part of the body, and even on the face; but in the latter ſituation they exhibit only a redneſs and roughneſs, without ſcales. This eruption is moſt common in the ſpring, at which ſeaſon it is liable to recur for ſeveral years. It is preceded by general pains, and ſlight feveriſhneſs. In children it often ſpreads rapidly over the body in two or three days; but in adults its progreſs is gradual and ſlow." Bateman, 39.

β. P. gyrata, (fig. 5.) ſcaly patches in ſerpentine or tortuous ſtripes; found chiefly on the back, ſometimes on the face.

γ. P. diffuſa, (fig. 2 and 3.) patches diffuſe, with a rugged, chapped, irritable, ſurface; ſenſe of burning and intenſe itching, increaſed by warmth and mitigated by cold; ſkin gradually thickened and furrowed, with a powdery ſcurf in the fiſſures; moſt common over the face, ears, and ſcalp. Sometimes theſe extenſive eruptions appear at once; but, in other inſtances, they are the reſult of numerous minute elevations of the cuticle, upon which ſmall diſtinct ſcales, adhering by a central point, are ſoon formed, and which become gradually united by the inflammation of the intervening cuticle. In either caſe, as the diſorder proceeds, a powdery ſubſtance, or very minute ſcurf, is ſeen. The heat and painful ſenſations are much aggravated by the leaſt friction, which alſo produces excoriation, and multiplies the ſore and painful rhagades. This form of the diſeaſe is moſt frequent about the face and ears, and the back of the hands; the fingers are ſometimes nearly ſurrounded with a looſe ſcaly incruſtation, and the nails crack and exfoliate: but it occaſionally occurs in other parts of the body, either at the ſame time or in ſucceſſion. It commonly begins with ſome general indiſpoſition; and a degree of erethiſm, with occaſional ſharp pains in the ſtomach, is ſometimes kept up, during ſeveral weeks, by the conſtant irritation which it excites. Its duration is from one to four months, and ſometimes much longer; and it is liable to return, in ſucceſſive years, in the ſpring or autumn, and ſometimes in both ſeaſons.

When limited to the back of the hand, it forms what is vulgarly called the *baker's itch*. On the hands and arms, ſometimes on the face and neck, it is peculiarly troubleſome to waſherwomen; probably from the irritation of the ſoap they are continually making uſe of.

δ. P. inveterata, (fig. 4.) is the moſt ſevere modification of the complaint, beginning in ſeparate irregular patches, which extend and become confluent, until at length they cover the whole ſurface of the body, except a part of the face, or ſometimes the palms of the hands and ſoles of the feet, with an univerſal ſcalineſs, interſperſed with deep furrows, and a harſh, ſtiff, and thickened, ſtate of the ſkin. The production of ſcales is ſo rapid, that large quantities are found every morning in the patient's bed. The nails become convex, thickened, and opake, and are frequently renewed; and, at an advanced period, eſpecially in old people, extenſive excori-

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ations ſometimes occur, with a diſcharge of their lymph, followed by a hard dry cuticle, which ſeparates in large pieces. In this extreme degree, it approaches very cloſely to the inveterate degree of Lepriaſis vulgaris in all reſpects; the only difference being in the form of the patches before they coaleſce. It is ſometimes the ultimate ſtate of the Pſoriaſis diffuſa; and occaſionally a ſequel of the Prurigo ſenilis.

ε. P. localis: ſtationary; and limited to particular organs; as the lips, eye-lids, prepuce, ſcrotum, and inſide of the hands. In the laſt form it is peculiarly common to ſhoe-makers, and artificers in metallic trades, as braziers, tinmen, and ſilverſmiths: probably from filth, and the irritation of the ſubſtances they make uſe of.

"Several of the varieties are found alſo occaſionally as ſymptoms or ſequels of lues, particularly the firſt three; but are in every inſtance diſtinguiſhed by the livid or chocolate hue of the ſcales." Good, 475.

The ſame general plan of *treatment* is applicable to all the different modifications of Pſoriaſis, the period of its duration, and the degree of accompanying phlogoſis, being carefully attended to. In the commencement of the eruption, when it appears ſuddenly, and the conſtitution is obviouſly diſordered, a moderate antiphlogiſtic treatment muſt be purſued. A gentle purgative ſhould be adminiſtered, and the diet made light by abſtracting every thing ſtimulant. This regimen, indeed, is requiſite throughout the courſe of the diſeaſe, which is immediately aggravated in ſympathy with irritation of the ſtomach, whether by ſpices, fermented liquors, pickles, or vegetable acids; whence the diſuſe of theſe articles contributes materially to its cure. But, if the conſtitutional diſturbance has ſubſided, the uſe of the fixed alkali, combined with ſulphur lotum, or with an infuſion of cinchona, together with tepid waſhing with ſimple water, or milk and water, will gradually remove the complaint. If the ſcaly patches have extended over a conſiderable part of the body, and have aſſumed a more inert and chronic character, it muſt be viewed in a ſimilar light with the Lepriaſis, and the remedies recommended for the firſt and ſecond varieties of that diſeaſe muſt be reſorted to.

The ſhooting and burning pain and itching, in the early and more inflammatory ſtages of Pſoriaſis, induce the patient to ſeek anxiouſly for relief from local external applications; but he is mortified to find that even the mildeſt ſubſtances prove irritants, and aggravate his diſtreſs. A decoction of bran, a little cream, or oil of almonds, ſometimes produce eaſe; but any admixture, even of the oxyd of zinc, or preparations of lead, with theſe liniments, is commonly detrimental. But the more local, and leſs inflammatory, eruptions of Pſoriaſis are conſiderably alleviated by local expedients. The pſoriaſis affecting the hands, the ſcrotum, or the eye, are relieved by the ung. hydrargyri præcipitati albi, or ung. hyd. nitrat. diluted according to the irritability of the ſkin; but great care is requiſite to keep the parts clean by frequent ablution, and to prevent attrition. When the diſeaſe affects the lips, nothing acrid can be borne; and much of the cure depends upon ſecuring the parts from irritation, even from heat and cold, by a conſtant covering of ſome mild ointment or plaſter. In all theſe caſes, ſome of the internal remedies above mentioned muſt be at the ſame time employed, according to the period and other circumſtances of the diſeaſe.

4. Lepidoſis ichthyoſis, or fiſh-ſkin: thick indurated incruſtation, encaſing the ſkin to a greater or leſs extent. It has ſome tendency to ſcalineſs, but without the deciduous exfoliations, the diſtinct and partial patches, or the conſtitutional diſorder, which belong to lepra and pſoriaſis. There are three varieties.

α. I. ſimplex: in its commencement this diſeaſe exhibits merely a thickened, harſh, and diſcoloured, ſtate of the cuticle, which appears, at a little diſtance, as if it were ſoiled with mud. When further advanced, the thickneſs, hardneſs, and roughneſs, become much greater, and of a warty character, and the colour is nearly black. The roughneſs, which is ſo great as to give a ſenſation, to the finger paſſing over it, like the ſurface of a file, or the rougheſt ſhagreen, is occaſioned by innumerable rugged lines and points, into which the ſurface is divided. Theſe hard prominences, being apparently elevations of the common lozenges of the cuticle, neceſſarily differ in their form and arrangement in different parts of the body, according to the variations of the cuticular lines, as well as in different ſtages and caſes of the complaint. Some of them appear to be of uniform thickneſs from their roots upwards; while others have a ſhort narrow neck, and broad irregular tops. The former occur where the ſkin, when healthy, is ſoft and thin; the latter where it is coarſer, as about the olecranon and patella, and thence along the outſide of the arms and thighs. On ſome parts of the extremities, however, eſpecially about the ankles, and ſometimes on the trunk of the body, theſe excreſcences are ſcaly, flat, and large, and occaſionally imbricated like the ſcales of carp. In other caſes, they have appeared ſeparate, being interſected by whitiſh furrows." The above deſcription, and the delineation on Plate IX. fig. 1. are from Dr. Bateman's ſplendid work.

This unſightly diſeaſe appears in large continuous patches, which ſometimes cover the greater part of the body, except the flexures of the joints, the inner and upper part of the thighs, and the furrow along the ſpine. The face is ſeldom affected, but the whole ſkin is in an extremely dry and unperſpirable condition, and in the palms of the hands and ſoles of the feet it is much thickened and brittle. The diſeaſe often commences in childhood, and even in early infancy; and is in various inſtances hereditary. The only medicines which ſeem uſeful are pitch and arſenic: the former, however, muſt be taken in immoderate quantities. Dr. Bateman had a patient who took half an ounce daily, with much amendment. Sulphureous baths, and rubbing with a rough cloth afterwards, will often bring off the ſcales; and, as theſe are not ſoon reproduced, it is a very important palliative meaſure. Impreſſed with this fact, Dr. Willan recommends us to pick them off carefully with the nails from any part of the body, while it is immerſed in hot water. He ſays, "The layer of cuticle, which remains after this operation, is harſh and dry; and the ſkin did not, in the caſes I have noted, recover its uſual texture and ſoftneſs; but the formation of the ſcales was prevented by a frequent uſe of the warm bath, with moderate friction."

β. I. cornea. Several caſes of a rigid and horny ſtate of the integuments, ſometimes partial, but ſometimes extending nearly over the whole body, have been recorded by authors; ſee Phil. Tranſ. N° 176. N° 297. and vol. xlviii. pt. ii. p. 580. Alſo Zacut. Luſitan. Prax. Hiſt. obſ. 188. Ephem. Acad. Nat. Cur. dec. i. p. 89. and occaſionally ſuch a condition of the cuticle has been accompanied with the actual production of excreſcences of a horny texture. Theſe, however, are rare occurrences.

γ. I. cornigera: with horn-like incurvated ſproutings; ſometimes periodically ſhed and reproduced. This diſeaſe appears to have nothing to do with Ichthyoſis; the horn uſually grows from a wart or tumour; and, if cut off, is reproduced. Hence the only mode of cure is to extirpate it from its roots.

Genus V. *Ecphlyſis*, [from ἐκφλυζω, to boil or bubble up or over; importing veſicular eruption confined in its action to the ſurface.] Blains. Orbicular elevations of the cuticle containing a watery fluid. There are four ſpecies, and many varieties.

1. Ecphlyſis pompholyx, blebs: eruption of blebs containing a reddiſh, tranſparent, fluid; moſtly diſtinct; breaking and healing without ſcale or cruſt. They are diſtinguiſhed from Pemphigus by the abſence of fever,

and of inflammation round their baſes. There are three varieties.

α. P. benignus, water-blebs: blebs pea-ſized or filbert-ſized; appearing ſucceſſively on various parts of the body; burſting in three or four days, and healing readily.

β. P. diutinus, (fig. 2. Plate IX.) Blebs gradually growing from ſmall veſicles to the ſize of walnuts; yellowiſh; often ſpreading in ſucceſſion over the whole body, and interior of the mouth; occaſionally reproduced, and forming an excoriated ſurface with ulcerations. Often preceded by languor or other general indiſpoſition for ſeveral weeks. Duration from two to four or five months.

This diſeaſe chiefly affects perſons of debilitated habits; and is very ſevere in the aged. It ſeems to originate under different conditions of the body, but often after continued fatigue and anxiety, with low diet; ſometimes from intemperance; and not unfrequently it is connected with anaſarca, or general dropſy, with ſcurvy, and other ſtates of the conſtitution, in which the powers of the cutaneous circulation are impaired. It is moſt troubleſome and obſtinate in old perſons, in whom the tranſparent bullæ ſometimes equal the ſize of a turkey's egg, while others of a ſmaller ſize are intermixed with them, which appear dark and livid. When broken, they leave a black excoriated ſurface, which ſometimes ulcerates. The warm bath, uſed every ſecond day, was conſidered by Dr. Willan as the moſt active palliative, and the beſt remedy. Bateman has ſeen the decoction of cinchona, with cordials and diuretics, of conſiderable advantage in theſe caſes, eſpecially when the eruption was combined with anaſarca. In young perſons in whom the pompholyx is ſeldom ſevere, theſe remedies are affirmed by Dr. Willan to be ſucceſsful within two or three weeks; but the warm bath ſeems to increaſe both the tingling in the ſkin, and the numbers of the veſications, in theſe patients.

γ. P. quotidianus: blebs with a dark red baſe, appearing at night and diſappearing in the morning. Found chiefly in the hands and legs. Vandermonde relates a caſe in which the acceſſions were reverſed; the blebs appearing in the morning, and diſappearing at night.

δ. P. ſolitarius: ſolitary; but reproductive in an adjoining part; the bleb very large, and containing a teacup full of lymph. Preceded by tingling, often accompanied with languor. This is a rare form of the diſeaſe, and ſeems to affect only women. Cinchona internally, and linſeed poultices, followed by light dreſſings to the ſores externally, were employed with advantage in three caſes ſeen by Dr. Willan.

2. Ecphlyſis herpes, tetter: eruption of veſicles in ſmall diſtinct cluſters; with a red margin; at firſt pellucid; afterwards opake; accompanied with itching or tingling; concreting into ſcabs. Duration from fourteen to twenty-one days. Here we have ſix varieties.

α. H. miliaris, (Plate IX. fig. 3.) Veſicles millet-ſized: pellucid; cluſters commencing at an indeterminate part of the ſurface, and progreſſively ſtrewed over the body; ſucceeded by freſh crops. It is commonly preceded by a ſlight febrile attack for two or three days. The ſmall tranſparent veſicles then appear, in irregular cluſters, ſometimes containing colourleſs, and ſometimes a browniſh, lymph; and for two or three days more, other cluſters ſucceſſively ariſe near the former. When very minute, they ſpread extenſively; but, if at maturity they attain a conſiderable ſize and an oval form, we ſeldom ſee more than two or three cluſters together; and ſometimes there is only a ſingle cluſter. The included lymph ſometimes becomes milky or opake in the courſe of ten or twelve hours; and about the fourth day the inflammation round the veſicles aſſumes a duller red hue, while the veſicles themſelves break, and diſcharge their fluid, or begin to dry and flatten, and dark or yellowiſh ſcabs concrete upon them. Theſe fall off about the eighth or tenth day, leaving a reddened and irritable ſurface, which ſlowly regains its healthy appearance. As the ſucceſſive cluſters go through a ſimilar courſe, the termination of the whole is not complete before the thirteenth or fourteenth day.

β. H. exedens, nirles: veſicles hard; of the ſize and origin of the laſt; cluſters thronged; fluid denſe, yellow, or reddiſh; hot, acrid, corroding the ſubjacent ſkin, and ſpreading in ſerpentine trails.

This diſeaſe is rare; and we know not on what authority Dr. Good has ſtated that the *nirles* is the ſame diſeaſe as that deſcribed by Galen, from whom his definition is derived. We ſubjoin Dr. G.'s abſtract of Galen's opinion: "Herpes, according to Galen, is an eruption of minute and crowded veſicles, *of the ſize of millet-ſeeds*, excited on the ſurface of the ſkin, filled with an acrid bilious ſecretion; and conſiſts of two ſpecies; the one containing in its veſicles a milder and more aqueous fluid, called from the ſize of the veſicles *Herpes miliaris*, which merely *ſeems* to burn, or corrode; the other containing a *thicker* fluid of a *higher heat and colour*, and ſo acrid as actually to corrode the continuity of the ſubjacent ſkin, ſtill creeping along in a ſerpentine direction, as the term herpes imports, and hence denominated by Hippocrates *Herpes eſthiomenos*."

γ. H. zoſter: ſhingles: veſicles pearl-ſized; the cluſters ſpreading round the body like a girdle: at times confluent. Occaſionally with general irritation or other conſtitutional affection; being uſually preceded for two or three days by languor and loſs of appetite, rigors, head-ache, ſickneſs, and a frequent pulſe, together with a ſcalding heat and tingling in the ſkin, and ſhooting pains through the cheſt and epigaſtrium. Sometimes, however, the precurſory febrile ſymptoms are ſlight, and ſcarcely noticed; and the attention of the patient is firſt attracted by a ſenſe of heat, itching, and tingling, in ſome part of the trunk, where he finds ſeveral red patches of an irregular form, at a little diſtance from each other, upon each of which numerous ſmall elevations appear, cluſtered together. Theſe, if examined minutely, are found to be diſtinctly veſicular; and, in the courſe of twenty-four hours, they enlarge to the ſize of ſmall pearls, and are perfectly tranſparent, being filled with a limpid fluid. The cluſters are of various diameter, from one to two, or even three, inches, and are ſurrounded by a narrow red margin, in conſequence of the extenſion of the inflamed baſe a little beyond the congregated veſicles. During three or four days, other cluſters continue to ariſe in ſucceſſion, and with conſiderable regularity; that is, nearly in a line with the firſt, extending always towards the ſpine at one extremity, and towards the ſternum, or linea alba of the abdomen, at the other, moſt commonly round the waiſt like half a ſaſh, but ſometimes like a ſword-belt acroſs the ſhoulder.

While the new cluſters are appearing, the veſicles of the firſt begin to loſe their tranſparency, and on the fourth day acquire a milky or yellowiſh hue, which is ſoon followed by a bluiſh or livid colour of the baſes of the veſicles, and of the contained fluid. They now become ſomewhat confluent, and flatten or ſubſide, ſo that the outlines of many of them are nearly obliterated. About this time they are often broken, and for three or four days diſcharge a ſmall quantity of a ſerous fluid; which at length concretes into thin dark ſcabs, at firſt lying looſely over the contained matter, but ſoon becoming harder, and adhering more firmly, until they fall off about the twelfth or fourteenth day. The ſurface of the ſkin is left in a red and tender ſtate; and, where the ulceration and diſcharge have been conſiderable, numerous cicatrices or pits are left. As all the cluſters go through a ſimilar ſeries of changes, thoſe which appear lateſt arrive at their termination ſeveral days later than the firſt; whence the diſeaſe is ſometimes protracted to twenty or even twenty-four days, before the cruſts exfoliate. In one or two inſtances the veſicles have been known to terminate in numerous ſmall ulcers, or ſuppu-

rating

rating foramina, which continued to diſcharge for many days, and were not all healed before the end of the fourth week. The febrile ſymptoms commonly ſubſide when the eruption is completed; but ſometimes they continue during the whole courſe of the diſeaſe, probably from the inceſſant irritation of the itching and ſmarting connected with it. In many inſtances, the moſt diſtreſſing part of the complaint is an intenſe darting pain, not ſuperficial, but deep-ſeated in the cheſt, which continues to the latter ſtages of the diſeaſe, and is not eaſily allayed by anodynes: ſometimes this pain precedes the eruption.

Herpes zoſter is not contagious. Its cauſes are not very obvious: it is moſt frequently traced to pulmonic, gaſtric, or inteſtinal, irritation, and is commoneſt in ſpring and autumn. As it paſſes through its regular ſtages ſpontaneouſly and invariably, it never requires any thing to be done, except to adopt a cooling regimen.

δ. H. circinatus, ring-worm; (fig. 4.) veſicles with a reddiſh baſe, uniting in rings; the area of the rings ſlightly diſcoloured; often followed by freſh crops.

This is a very ſlight affection, being unaccompanied with any diſorder of the conſtitution. It appears in ſmall circular patches, in which the veſicles ariſe only round the circumference: theſe are ſmall, with moderately red baſes, and contain a tranſparent fluid, which is diſcharged in three or four days, when little prominent dark ſcabs form over them. The central area, in each veſicular ring, is at firſt free from any eruption; but the ſurface becomes ſomewhat rough, and of a dull red colour, and throws off an exfoliation, as the veſicular eruption declines, which terminates in about a week with the falling off of the ſcabs, leaving the cuticle red for a ſhort time. The whole diſeaſe, however, does not conclude ſo ſoon: for there is commonly a ſucceſſion of the veſicular circles, on the upper parts of the body, as the face and neck, and the arms and ſhoulders, which have occaſionally extended to the lower extremities, protracting the duration of the whole to the end of the ſecond or third week. No inconvenience, however, attends the eruption, except a diſagreeable itching and tingling in the patches.

The *herpetic* ringworm is moſt commonly ſeen in children, and is deemed contagious. Another form of H. circinatus ſometimes occurs, in which the area of the circles is covered with cloſe-ſet veſicles, and the whole is ſurrounded by a circular inflamed border. The veſicles are of a conſiderable ſize, and filled with tranſparent lymph. The pain, heat, and irritation, in the part, are very diſtreſſing; and there is often a conſiderable conſtitutional diſturbance accompanying the eruption. One cluſter forms after another in rapid ſucceſſion on the face, arms, and neck, and ſometimes on the day following on the trunk and lower limbs. The pain, feveriſhneſs, and inquietude, do not abate till the ſixth day of the eruption, when the veſicles flatten, and the inflammation ſubſides. On the ninth and tenth days a ſcabby cruſt begins to form on ſome, while others dry and exfoliate; the whole diſeaſe terminating about the fifteenth day.

ε. H. iris, (fig. 5.) occurs in ſmall circular patches, each of which is compoſed of concentric rings of different colours. Its uſual ſeat is on the back of the hands, or the palms and fingers, ſometimes on the inſtep. Its firſt appearance is like an efflorеſcence; but, when it is fully formed, not only the central umbo, but the ſurrounding rings, become diſtinctly veſicular. The patches are at firſt ſmall, and gradually attain their full ſize, which is nearly that of a ſixpence, in the courſe of a week or nine days, at the end of which time, the central part is prominent and diſtended, and the veſicular circles are alſo turgid with lymph; and, after remaining nearly ſtationary a couple of days, they gradually decline, and entirely diſappear in about a week more. The central veſicle is of a yelloviſh white colour; the firſt ring ſurrounding it is of a dark or brown'ſh red; the ſecond is nearly of the ſame colour as the centre; and the third, which is narrower than the reſt, is of a dark red colour; the fourth and outer ring, or areola, does not appear until the ſeventh, eighth, or ninth, day, and is of a light red hue, which is gradually loſt in the ordinary colour of the ſkin.

ζ. H. localis, (Herpes labialis, H. præputialis, &c. *Bateman.*) Seated on a particular organ, chiefly the lip and prepuce, and not migratory. Very little attendance is required in herpetic diſeaſes. They generally run their career without being either ſhortened or delayed by it. There is often, however, ſome conſtitutional diſturbance accompanying the various forms, which it may be of conſequence to attend to, according to the appearance of the eruption and the feelings of the patient. Aſtringents and anodyne lotions may be uſed; but they muſt be regulated by the general principles already laid down at the head of this order.

3. Ecphlyſis rhypia; (Rupia, *Bateman.*) Eruption of broad, flattiſh, diſtinct veſicles; baſe ſlightly inflamed; fluid ſanious; ſcabs thin, and ſuperficial; eaſily rubbed off and reproduced. Three varieties.

α. R. ſimplex; ſcab flat; livid or blackiſh: the ſubjacent ſkin of the ſame hue.

β. R. prominens; ſcab elevated and conical like a limpet's ſhell; rapid in its progreſs, and ſucceeded by an ulcer.

Theſe varieties of Rupia are to be combated by ſupporting the ſyſtem, by means of good, light, nutritious, diet, and by the uſe of alterative and tonic medicines; ſuch as Plummer's pill, cinchona, and ſarſaparilla. The firſt is repreſented by fig. 1. Plate X. the ſecond by fig. 2. of the ſame engraving.

γ. R. eſcharotica: ſanious diſcharge eroſive, producing gangrenous eſchars.

4. Ecphlyſis eczema, heat-eruption: eruption of minute acuminated veſicles, diſtinct, but cloſely crowding on each other, pellucid or milky; with troubleſome itching or tingling; terminating in thin ſcales or ſcabs; occaſionally ſurrounded by a bluſhing halo. Chiefly produced by the heat of the ſun; and moſtly attacks the hands and other parts that are principally expoſed to its rays.

The eruption is ſucceſſive, and has no regular period of duration or decline: it commonly continues for two or three weeks, without any particular internal diſorder. The included lymph becomes more milky, and is gradually abſorbed, or dried into browniſh ſcales, which exfoliate, or into browniſh yellow ſcabs, of the ſize of a ſmall pin's head, eſpecially when the veſicles are broken. But ſucceſſive eruptions of the veſicles are apt to appear, which terminate in a ſimilar manner by exfoliation or ſcabbing; and in thoſe perſons who, by the peculiar irritability of their ſkin, are much prediſpoſed to the diſorder, it is thus continued many weeks, to the end of autumn, or even prolonged to the winter. When this happens, the veſicles generally pour out an acrid ſerum, by which the ſurface is inflamed, rendered tender, and even ſlightly ulcerated, and the diſeaſe aſſumes the form of Impetigo.

The courſe of this diſorder does not appear to be materially ſhortened by the operation of medicine. The mineral acids, with a decoction of cinchona, or other vegetable tonic, and a light but nutritious diet, ſeem to be moſt effectual in diminiſhing the eruption. When it has occurred after long-continued travelling, or any other ſevere fatigue, and appears to be accompanied with ſome degree of exhauſtion of the powers of the conſtitution, a courſe of ſerpentaria, or ſarſaparilla, is exceedingly beneficial. Active and repeated purgation is adverſe to the complaint. Simple ablution with tepid water, contributes to relieve the ſmarting and tingling of the parts affected; but they do not bear unguents, or any ſtimulant application.

Genus

Genus VI. *Ecpyesis*, [εκπυω, to suppurate, of πυον, pus.] Running Tetter. Generic characters—Eruption of small pustules, distinct or confluent; hardening into crustular plates. There are four species, with numerous varieties.

1. Ecpyesis impetigo, the common running scald, or tetter: pustules clustering, yellow, itching; terminating in a yellow scaly crust, intersected with cracks.

Impetigenous eruptions are distinguished from those of an herpetic nature by their being preceded by small *pustules*, while the latter are always preceded by *vesicles*. The discharge, too, from the Impetigo is, generally speaking, more profuse than that from Herpes. Notwithstanding this distinction, it may be doubted whether the two species do not sometimes run into one another. It is no uncommon thing to see both vesicles and pustules on the same person. This combination, which is very painful and difficult of cure, appears chiefly on the hand, the vesicles of which seem to contain a very acrimonious fluid, since, whenever this runs, the skin is gradually denuded. The vesicles are slower in their progress than the pustules; and, when broken, have a morbid sore, secreting a thin ichor. There are six varieties.

α. I. sparsa, (see fig. 3, Plate X.) Clusters loose; irregularly scattered; chiefly over the extremities; often succeeded by fresh crops, and forming in old and debilitated persons troublesome ulcers.

β. I. herpetica, (fig. 4.) (Impetigo figurata, *Bateman*. Herpes, *Cullen*.) Clusters circular; crowded with pustules, intermixed with vesicles; often with exterior concentric rings surrounding the interior area as it heals; itching accompanied with heat and smarting. Chiefly on the hands and wrists.

This is the most common variety of the moist tetter. It appears in circumscribed patches, of various figure and magnitude, which are usually smaller and more circular on the upper, and larger, oval, and irregular, on the lower, extremities. The patches consist at first of clusters of the yellow pydracious pustules, set close together, and surrounded by a slight inflammatory border; the whole being somewhat raised, but the pustules not very prominent or acuminated. In a few days the pustules break, and discharge their fluid; the surface becomes red and excoriated, shining as if it were stretched, but exhibiting numerous minute pores, from which a considerable ichorous discharge is poured out, accompanied with much troublesome itching, heat, and smarting. The discharge soon concretes partially into thin yellowish or greenish scabs; but still continues to ooze from under the scab, which it forms. In the course of three or four weeks, as the quantity of the discharge diminishes, the scabs dry and fall off, leaving the surface of the cuticle red, rough, and somewhat thickened, and at the same time extremely brittle, and liable to crack and to be excoriated; so that the ichorous discharge and scabbing are easily reproduced, and the disease is often thus much prolonged in its duration. Occasionally fresh crops of the pydracious pustules re-appear, as at the commencement; and the whole course of the eruption is repeated.

When the Impetigo herpetica is beginning to heal, the patches undergo a process somewhat similar to that which takes place in the Lepriasis vulgare. The amendment commences at the centre of the patch, which first subsides, leaving the border elevated: at length this also disappears; but the cuticle, which was the seat of the patch, remains for some weeks red, shining, and tender.

The Impetigo herpetica and sparsa are sometimes confounded with two contagious diseases, of the pustular order, Porrigo and Scabies. The appellation of *ringworm*, which is popularly given to the oval or circular patch of the first, has partly contributed to occasion this mistake. They differ, however, from the contagious circles of Porrigo, inasmuch as the I. figurata seldom affects children, occurs principally on the extremities, and they do not continue to discharge a purulent and glutinous, but, after the first eruption, an ichorous humour; nor do they form the thick, soft, and copious, scabs of Porrigo: not to mention the absence of contagion.

The prevalence of transparent vesicles in the patches of Impetigo, may mislead an incautious or inexperienced observer into a suspicion that the disease is Scabies: but the distribution of the eruption in patches, the copious exudation of ichor, the rough, reddened, and fissured, cuticle, the magnitude and slow progress of the vesicles, and the heat and smarting, which accompany the itching, in Impetigo, will serve, in general, to determine the diagnosis. In the strictly purulent form of Scabies, the pustules about the hands arise to a much greater magnitude and elevation than the pydracia; they are filled with a thick yellow pus, and are more considerably inflamed round their base. The Impetigo, in its advanced stage is, however, more liable to be mistaken by common observers, and is in fact daily mistaken, for Psoriasis or Lepra; as a sufficient discrimination is not made between the laminated and scale-like concretions of the ichorous matter, and the exfoliations of morbid cuticle, which constitute the true *scab*. But the *scaly diseases emit no fluid*; and the very existence of a discharge, however slight, is sufficient to determine the diagnosis of the eruption.

In the incipient state of these two forms of Impetigo, it is useful to administer sulphur internally, in such quantities as not to induce purging; and, if there is much irritability or inflammation of the cuticle, a portion of soda, nitre, or crystals of tartar, may be advantageously combined with it. The Impetigo sparsa commonly yields to these medicines, if diligent ablution with tepid water be at the same time employed. But, when the disease is of long standing, it requires a treatment somewhat similar to that recommended for inveterate Psoriasis; namely, the diet-drinks, decoctions of sarsaparilla and cinchona, with the fixed alkalis, and antimonials. The mercurial alteratives, however, in this affection, are of essential assistance to this plan of cure; such as small doses of cinnabar, the hydrargyrus cum creta, or the pill of Dr. Plummer.

The external applications adapted to these forms of Impetigo, are the mild deficcative unguents; for, in the majority of cases, the irritable surface of the tetter will not bear stimulants with impunity. When the discharge is considerable, the ointments prepared with the oxyd of zinc, alone, or united with saturnine ointment, or with the white precipitated oxyd of mercury, are the most efficacious, in allaying the inflammatory condition of the excoriated surface, and in reducing the quantity of the discharge. When there is less of this irritability and exudation, the tar-ointment, or the ointment of the nitrate of mercury, much diluted, will be found beneficial. But the too active employment of this or any other stimulating unguent, often does harm.

In these irritable forms of Impetigo, in which vesicles abound, the zinc, and saturnine applications, and even simple lard, occasion an aggravation of the symptoms. In these cases it is particularly necessary to keep the parts covered, with a view to avoid the effects of friction from the clothes, as well as of heat and of cold; to wash the surface daily with some emollient fluid, such as milk and water, or an infusion of bran; to interdict the use of soap; and to besmear the parts with cream, or an emulsion of almonds. A lotion prepared by boiling mallow, digitalis, and poppy-heads, has been found serviceable, where the parts were very painful. In many cases, however, the stiffness, which ensues upon the speedy drying of these lotions, renders it impossible to use them, and it is necessary to cover the part lightly with dry lint only, or to interpose between it and the diseased surface a sprinkling of the oxyd of zinc: sometimes, however, the application of linen dipped in melted suet, affords relief, when no other greasy substance can be used.

In the drier and less irritable forms of the Impetigo, the use of the waters of Harrowgate is the most effectual remedy, and likewise the best preventive of its return:

under the same circumstances, the warm sea-water bath, followed by a course of bathing in the open sea, is productive of great benefit. But, during the existence of any actual inflammation, the irritation of salt water is decidedly injurious.

γ. I. erythematica: pustules scattered, preceded by erythematic blush and intumescence; often by febrile or other constitutional affection. Chiefly in the face, neck, and chest.

This variety should be treated in the same manner as erysipelas. As the erythema goes off, the skin may be gently stimulated by sulphureous or salt-water baths, and bark and the acids exhibited internally.

δ. I. laminosa: pustules confluent; chiefly in the extremities; the aggregate scabs forming a thick, rough, and rigid, casing round the affected limb, so as to impede its motion; a thin ichor exsuding from numerous cracks.

This variety requires the same internal medicines which have been recommended for the inveterate forms of the preceding varieties, especially the sulphureous waters. The chief peculiarity of its treatment consists in clearing the surface of its incrustation, and correcting the morbid action of the superficial vessels. The thick scab can only be softened, and gradually removed, by perseverance in the application of the steam of warm water to it, for a short time, daily. Those parts of the surface, which are thus cleared, must be covered with soft linen, after tepid ablution, twice a-day; and sometimes the unguentum zinci, or a much-diluted ointment of nitrate of mercury, may be used.

ε. I. exedens: the purulent discharge corroding the skin and cellular membrane. Chiefly on the side of the chest or trunk.

This rare and intractable disease is at present scarcely known. Dr. Bateman says he had never seen an instance of it. The few instances which have been recorded have terminated fatally.

ζ. I. localis: confined to a particular part, mostly the hands or fingers; and produced by external stimulants, as sugar or lime.

This variety includes those common forms of tetter excited by peculiar stimuli: hence it comprehends the baker's itch, grocer's itch, bricklayer's itch, and the the eruption arising from friction with tartarized antimony, &c.

2. Ecpyesis porrigo, pustules straw-coloured; fluid viscid; concreting into scales or yellow scabs.

There are six varieties of this species. Their classification is adopted from Bateman; but many circumstances seem to show that they are not naturally united. Mr. Plumbe especially objects to our considering the crusta-lactea (P. crustacea) as a variety of porrigo. Of the others it may be remarked, that the opinion of Willan, that each of these varieties might be produced by one another, is not consonant with the results of more extended observation, or of direct experiment. Small doses of mercury are highly useful in this disease: the hydrargyri cum creta is perhaps the best form for very young patients. The health of the person who suckles the child should likewise be attended to. As local applications in the beginning of the malady, tepid ablution or the saturnine ointment, and afterwards, for the purpose of slight stimulation, the Ung. hyd. nitrati, are all that are required.

α. P. crustacea, milky scall, or tetter; (Plate XI. fig. 1.) Pustules commencing on the cheeks or forehead in patches; scabs often confluent, covering the whole face with a continuous incrustation. Found chiefly in infants during the period of lactation.

It is liable to considerable variation in its course; the discharge being sometimes profuse, and the surface red and excoriated; and at other times scarcely perceptible, so that the surface remains covered with a dry and brown scab. When the scab ultimately falls off, and ceases to be renewed, a red, elevated, and tender, cuticle, marked with deep lines, and exfoliating several times, is left behind; differing from that which succeeds to Impetigo, inasmuch as it does not crack into deep fissures. Most commonly, however, the disease terminates favourably, though its duration is often long and uncertain. It sometimes suddenly puts on the appearance of cessation, and afterwards returns with severity. Sometimes it disappears spontaneously soon after weaning, or after the cutting of the first teeth; and sometimes it will continue from two or three months to a year and a half, or even longer. It is remarkable however, that, whatever excoriation may be produced, no permanent deformity ensues.

ε. P. galeata, scalled head: pustules commencing on the scalp, in distinct, often distant, patches; gradually spreading till the whole head is covered as with a helmet; cuticle, below the scabs, red, shining, dotted with papillous apertures, oozing fresh matter; roots of the hair destroyed: contagious. Found chiefly in children, especially during dentition. (Tinea, *Alibert*, *Sauv.* &c.)

Sometimes a narrow border of hair is left uninjured. It is then called *ringworm of the scalp*; but has no affinity with ringworm, properly so called.

The first symptoms of the scalled head are a falling of some of the hair, and an unpleasant itching of the scalp; then arise distinct and distant clusters of small yellow pustules, which soon break, or are broken by the child's scratching them, and form scabs, which become thick and hard by accumulation. If the scabs are removed, however, the surface of the patches is left red and shining, but studded with slight elevated points, or papulæ, in some of which minute globules of pus again appear in a few days. By these repetitions of the eruption of *achores*, the incrustations become thicker, and the areas of the patches extend, often becoming confluent, if the progress of the disease be unimpeded, so as to affect the whole head. As the patches extend, the hair covering them becomes lighter in its colour, and sometimes breaks off short; and, as the process of pustulation and scabbing is repeated, the roots of the hair are destroyed, and at length there remains uninjured only a narrow border of hair round the head.

Such is the description of scalled head as it occurs in this country. In France we see much more violent symptoms; as the following description, taken from Alibert, sufficiently indicates. "The individuals affected with tinea, generally feel, at first, a pruritus, more or less violent, on the head. The scalp, on certain points of its surface, next becomes red, chaps, or even becomes a little tumefied. A swelling of the cervical glands sometimes accompanies the complaint, more rarely a head-ache. The itching daily increases; and pustules or vesicles are seen surrounded by an inflamed areola. In some cases no trace of ulceration can be perceived, a reddish viscid humour appearing to exude from the dilated mouths of the glandular follicles. Presently the hair becomes agglutinated by this viscid humour, which issues, flow after flow, resembling melted rosin, forming crust upon crust of scabby or scaly layers, horrible and disgusting to behold! Meantime a putrid sanies beneath corrodes the hairs even to their bulbs, destroys the neighbouring cellular tissue, and threatens the cranium itself. Some of those afflicted fall a prey to violent nocturnal pains; others into a state of emaciation which entirely arrests their growth. It is more especially when tinea is congenital, or its treatment neglected, that it commits such dreadful ravages. It is then that we see abscesses form in the scalp; glandular swellings in the occiput, neck, shoulders, and armpits; immense enlargements of the ears; redness, lacrymation, irritation of the eye-lids; disgusting odour from the confluent pustules; falling of the hair; torpor and inaptitude of the intellects; defect of physical power; even of the generative process."

The disease seems to originate spontaneously in children of feeble and flabby habit, or in a state approaching to

maraſmus, who are ill-fed, uncleanly, and not ſufficiently exerciſed; but it is generally allowed, at leaſt in this country, to ariſe chiefly from infection. The phyſicians of the Hôpital St. Louis, a very well filled depot for cutaneous diſeaſes, aſſert that the contagious power of tinea have been much over-rated; and that it is often impoſſible to communicate by inoculation. The ſame authorities aſſert, that it is invariably hereditary. Porrigo galeata is confeſſedly a very difficult diſeaſe to cure.

With regard to the conſtitutional treatment, this is of the utmoſt conſequence. It has appeared to us, that to the neglect of this circumſtance in the treatment of the early ſtage of Porrigo moſt of thoſe old and inveterate caſes which are ſo often met with, are to be attributed. A recent author (Plumbe's Practical Treatiſe on Ringworm of the Scalp, 1821,) indeed, aſſerts the contrary; but we have had too many inſtances handed down to us of the moſt dangerous phlogoſes cauſed by the repulſion, and cured by the appearance, of this eruption, to entertain the leaſt concurrence in this opinion. The firſt ſtage of porrigo is evidently inflammation. It is, in moſt caſes, that irritative kind of inflammation almoſt always connected with a bad ſtate of general health. In the majority of caſes, a ſtrict attention to the diet and alvine diſcharges is all that is required. We have ſeen caſes, however, in which it was alſo neceſſary to remove general plethora by ſmall bleedings, a ſtate of body which naturally increaſes in a great degree all inflammatory ſores. The ſecretions of the kidneys ſhould be moſt eſpecially excited in P. galeata. The ſympathy between the ſecretion of urine and of ſweat is obvious enough: hence terebinthinates have been found uſeful in porrigo. In the ſame ſtage much will depend on the local meaſures which are uſed. Theſe ſhould be (in the inflammatory ſtage) confined to the following: 1. The head ſhould be frequently waſhed and well fomented with tepid water; the hair in ſome parts ſhaved; but, when ſores are plentiful, carefully cut the looſe hairs, and thoſe which are quite looſe may be taken out with a pair of pincers. 2. After the ablution, the head ſhould be well dried with a ſoft cloth. 3. A mild ointment of ſpermaceti and ſuet to be ſpread on lint, and applied over the ſore parts; a cap being placed over this, which muſt fit pretty tight; for preſſure will do ſome good in this complaint. Theſe little attentions, unimportant as they appear, are of the higheſt conſequence in the treatment of Porrigo. As to how long theſe meaſures are to be perſiſted in, muſt be a matter entirely at the diſcretion of the practitioner. Certain it is, that moſt men err by ſtimulating too ſoon; hence, if no very great amendment took place, we ſhould not depart from this plan too haſtily, and, at all events, not while redneſs and extreme tenderneſs remained, nor until a dry and indolent ſtate of the ſcab is ſufficiently apparent. It is in this ſtage that ſtimuli are requiſite: and of theſe the records of medicine furniſh a large number. Moſt of theſe have in ſome caſes cured Porrigo; but, like all medicines of this claſs, they are very uncertain in their operation. They muſt be uſed at firſt in ſmall proportions, and may be gradually augmented to ſuch an exceſs, that even a bliſter may ultimately be borne. The ſtimuli moſt in requeſt are the mercurial ointments, as the ung. hydrargyri præcipitati, hyd. nitrico-oxydi, and eſpecially of the hydrargyrus nitratus; thoſe prepared with ſulphur, tar, hellebore, and turpentine, and the unguentum elemi. To theſe may be added, on more dubious authority, preparations of muſtard, ſtaves-acre, black pepper, capſicum, galls, rue, and other acrid vegetable ſubſtances. Lotions containing the ſulphates of zinc and copper, or the oxymuriate of mercury, in ſolution, are occaſionally beneficial. The more cauſtic ſubſtances are often extremely ſucceſsful. A lotion containing from three to ſix grains of the nitrate of ſilver in an ounce of diſtilled water, has removed the diſeaſe. Touching the patches with the muriated tincture of iron, or with any of the mineral acids, ſlightly diluted, in ſome caſes removes the morbid cuticle, and the new one aſſumes a healthy action. The application of a bliſter, in like manner, ſometimes effectually accompliſhes the ſame end. Alibert recommends a mixture of equal parts of ſulphur and charcoal incorporated with various proportions of cerate.

γ. P. favoſa, honey-comb ſcall or tetter, (fig. 3.) Puſtules common to the head, trunk, and extremities; peaſized; flattened at the top; in cluſters, often uniting; diſcharge fetid; ſcabs honey-combed, the cells filled with the fluid.

This diſeaſe begins with an eruption of large ſoft ſtraw-coloured puſtules. Theſe are not in general globular, with a regularly-circular margin; but ſomewhat flattened, with an irregular edge, and ſurrounded by a ſlight inflammation. They occur on all parts of the body; ſometimes on the ſcalp alone, and ſometimes on the face, or on the trunk and extremities only; but moſt commonly, they ſpread from the ſcalp, eſpecially from behind the ears, to the face, or from the lips and chin to the ſcalp, and occaſionally from the extremities to the trunk and head. They are uſually accompanied with conſiderable itching. Children from ſix months to four years of age are moſt liable to this eruption; but adults are not unfrequently affected with it.

The puſtules, eſpecially on the ſcalp, appear at firſt diſtinct, though near together; but on the face and extremities they generally riſe in irregular cluſters, becoming confluent when broken, and diſcharging a viſcid matter, which gradually concretes into greeniſh or yellowiſh ſemi-tranſparent ſcabs. The diſeaſe extends, by the ſucceſſive formation of new blotches, which ſometimes cover the chin, or ſurround the mouth, and ſpread to the cheeks and noſe; and on the ſcalp the ulceration ultimately extends, in a ſimilar manner, over the whole head, with a conſtant diſcharge, by which the hair and moiſt ſcabs are matted together. Under the laſt-mentioned circumſtances, pediculi are often generated in great numbers, and aggravate the itching and irritation of the diſeaſe. On the face, too, a ſimilar aggravation of the ſymptoms is occaſioned, in children, by an inceſſant picking and ſcratching about the edges of the ſcabs, which the itching demands, and by which the ſkin is kept ſore, and the ulceration extended; while the ſcabs are thickened into irregular maſſes, not unlike a honey-comb, by the accumulating and concreting diſcharge. On the lower extremities conſiderable ulcerations ſometimes form, eſpecially about the heels, and roots of the toes; and the ends of the toes are ſometimes ulcerated, the puſtules ariſing at their ſides, and even under the nails.

The ulcerating blotches ſeldom continue long, or extend far, before the lymphatic ſyſtem exhibits marks of irritation, probably from the acrimony of the abſorbed matter. When the ſcalp or the face is the ſeat of the diſeaſe, the glands on the ſides of the neck enlarge and harden, being at firſt perceived like a chain of little tumours, lying looſe under the ſkin; and the ſubmaxillary and parotid glands are often affected in a ſimilar manner. At length ſome of them inflame, the ſkin becomes diſcoloured, and they ſuppurate ſlowly, and with much pain and irritation. The eruption, in theſe ſituations, is likewiſe often accompanied by a diſcharge from behind the ears, or from the ears themſelves, with a tumid upper lip, and inflammation of the eyes, or obſtinate ulcerations of the edges of the eyelids. When the eruption appears on the trunk, although the puſtules there are ſmaller and leſs confluent, and the ſcabs thinner and leſs permanent, the axillary glands are liable to be affected in the ſame way.

The diſcharge from the ulcerated ſurfaces, eſpecially on the ſcalp, when the cruſts and coverings are removed, exhales an offenſive rancid vapour, not only affecting the organs of ſmell and taſte, but the eyes, of thoſe who examine the diſeaſed parts. The acrimony of the diſcharge is alſo manifeſted by the appearance of inflamma-

tion,

tion, followed by puſtules, ulceration, and ſcabbing, on any portion of the ſound ſkin, which comes into frequent contact with the parts diſeaſed: thus, in young children, the breaſt is inoculated by the chin, and the hands and arms by contact with the face. The arms and breaſt of the nurſe are alſo liable to receive the eruption in the ſame manner; but it is not ſo readily communicated to adults as to children.

The P. favoſa requires the exhibition of the ſame alteratives, internally, as have been recommended for the cure of the P. cruſtacea, in doſes proportioned to the age and ſtrength of the patient. The diet and exerciſe ſhould alſo be regulated with care: all crude vegetables and fruits on the one hand, and ſtimulating ſubſtances, whether ſolid or fluid, on the other, ſhould be avoided; and milk, puddings, and a little plain animal food or broths, ſhould be alone recommended. If the patient be of a ſqualid habit, or ſuffers under any ſtrumous affection, the bark and chalybeates, or the ſolution of muriate of barytes united with the former, will contribute materially to the reſtoration of health. There is commonly ſome degree of inflammation preſent, which contra-indicates the uſe of active ſtimulants externally. The unguentum zinci, or the ung. hydrargyri præcipitati albi, mixed with the former, or with a ſaturnine ointment, will be preferred as external applications, eſpecially where the diſcharge is copious: and the ointment of the nitrate of mercury, diluted with about equal parts of ſimple cerate and of the ceratum plumbi ſuperacetatis, is generally beneficial; but the proportion of the unguentum ceræ muſt be varied according to the degree of inflammation. A poultice is often uſeful for the larger ulcerations.

A ſevere modification of this malady ſometimes attacks the face of adults, but is eaſily removed by a courſe of purges and by emollient poultices.

δ. P. lupinoſa, dry tetter: puſtules minute, in ſmall patches, moſtly commencing on the ſcalp; patches terminating in dry delving ſcabs, reſembling lupine-ſeeds; the interſtices often covered with a thin whitiſh exfoliating incruſtation. Found chiefly in early life.

This requires the ſame conſtitutional treatment as the preceding varieties. Its local treatment muſt alſo be the ſame, varying however the form of theſe to a due relation with the intenſity of the diſeaſe.

ε. P. furfuracea, ſcurfy tetter, (ſee fig. 2. Plate XI.) Puſtules very minute, with little fluid; ſeated on the ſcalp; terminating in ſcurfy ſcales. Chiefly found in adults.

This variety differs from the others in the greater dryneſs of its exfoliation. This aridity is often ſo great as to render the complaint likely to be miſtaken for Lepriaſis, or ſome other of the *ſcaly* cutaneous defædations. From them it may be diſtinguiſhed by this circumſtance; viz. that *ſcaly* diſeaſes are not *preceded* by moiſt or puſtular eruption; there is no moiſture except what ariſes from rupture of veſſels, produced by ſcratching; the hair is not detached; neither are they infectious.

The Porrigo furfuracea is often accompanied by enlargement of the glands of the throat. The treatment is the ſame as the other varieties of Porrigo; viz. to repreſs vaſcular action in the inflammatory ſtage, and excite the ſecernents in the latter; which latter plan may be ſooner put in force in this than in another variety of Porrigo. Dr. Good gives, as a laſt variety,

ζ. P. areata. This diſeaſe, which he ſuppoſes bears ſome affinity to the Area of Celſus, the Trichoſis area of this ſyſtem, or the Porrigo decalvans of Bateman, is inſerted becauſe "the author had ſeen numerous inſtances of it, and often ſimultaneouſly in the ſame family, as though contagious." It is thus defined: "Cluſters of very minute puſtules ſeated on the ſcalp, in circular plots of baldneſs, with a brown or reddiſh furfuraceous ſurface."

3. Ecpyeſis ecthyma: puſtules large; diſtinct; diſtant; ſparingly ſcattered; ſeated on a hard circular red baſe; terminating in thick, hard, dark-coloured, ſcabs. There are three varieties; all invariably connected with conſtitutional diſturbance.

α. E. vulgare (Plate XI. fig. 4.) is the ſlighteſt form of the diſorder, and conſiſts of a partial eruption of ſmall hard puſtules, on ſome part of the extremities, or on the neck and ſhoulders, which is completed in three or four days. In the courſe of a ſimilar period, the puſtules ſucceſſively enlarge, and inflame highly at the baſe, while pus is formed at the apex; and in a day or two more they break, pour out their pus, and afterwards a thinner fluid, which ſpeedily concretes into brown ſcabs. In a week more, the ſoreneſs and inflammation ſubſide, and the ſcabs ſoon afterwards fall off, leaving no mark behind.

β. E. infantile occurs in weakly infants, during the period of lactation, when an inſufficient nutriment is afforded them. The puſtules are, in appearance, the ſame as thoſe of the preceding variety, and go through ſimilar ſtages of progreſs in the ſame time. But the diſorder does not terminate here: freſh eruptions of phlyzacia continue to riſe in ſucceſſion, and to a much greater extent than in the E. vulgare, appearing not only over the extremities and trunk, but on the ſcalp, and even on the face. Hence the duration of the eruption is much greater than in the preceding variety, being ſometimes protracted for ſeveral months. Yet the patients uſually remain free from fever, and the pain and irritation ſeem to be inconſiderable, except when a few of the puſtules become very large and hard, with a livid baſe, and ulcerate to ſome depth: in this caſe, alſo, a ſlight whitiſh depreſſion is permanently left on the ſeat of the puſtule.

γ. E. luridum, (fig. 5.) This differs from the preceding varieties in the dark red colour of the baſe of the puſtules, and their hard and elevated condition. Theſe puſtules are moreover of a larger ſize. The eruptions, both in the growth of the puſtules and in the ſubſequent ulceration, ſcabbing, and healing, is very ſlow in its progreſs. This variety is chiefly confined to advanced age. All the varieties of Ecthyma are cured by conſtitutional treatment. In the two firſt varieties, improvement in the diet of the patient and gentle purges and alteratives, will in a ſhort time effect a cure. In the E. luridum, a more comprehenſive ſyſtem of practice muſt be embraced; and, viewing the diſeaſe as ſymptomatic of a broken-up conſtitution, our endeavours muſt be directed to the general ſtate of health, and the removal of the cachectic diatheſis. We have already ſufficiently treated of this under *Dyſpepſia*.

δ. E. cachecticum. Moſt authors deſcribe another variety of Ecthyma. It is omitted by Dr. Good, probably becauſe it may be doubted whether it be not a conſequence of ſiphilitic or other morbid poiſon. We are inclined to think it is; but, according to Dr. Bateman, this is not invariably the caſe. It is thus deſcribed by that author. "The diſorder uſually commences with a febrile paroxyſm, which is ſometimes conſiderable. In the courſe of two or three days, numerous ſcattered puſtules appear, with a hard inflamed baſe, ſometimes firſt on the breaſt, but moſt commonly on the extremities: and theſe are multiplied day after day by a ſucceſſion of ſimilar puſtules, which continue to riſe and decline for the ſpace of ſeveral weeks, until the ſkin is thickly ſtudded with the eruption, under various phaſes. For, as the ſucceſſive puſtules go through their ſtages of inflammation, ſuppuration, ſcabbing, and deſquamation, at ſimilar periods after their riſe, they are neceſſarily ſeen under all theſe conditions at the ſame time; the riſing puſtules exhibiting a bright red hue at the baſe, which changes to a purple or chocolate tinge, as the inflammation declines, and the little laminated ſcabs are formed upon their tops: when theſe fall off, a dark ſtain is left upon the ſite of the puſtules. In different caſes the eruption varies in its diſtribution: it is ſometimes confined to the extremities, where it is either generally diffuſed, or cluſtered in irregular patches; but it frequently extends alſo over the

trunk, face, and ſcalp. The puſtules which occupy the breaſt and abdomen are generally leſs prominent than thoſe on the face and arms, contain leſs matter, and terminate rather in ſcales than in ſcabs. The febrile ſymptoms are diminiſhed, but not removed, on the appearance of the eruption; for a conſtant erethiſm or hectic continues during the progreſs of the diſeaſe. It is accompanied by great languor, and by much depreſſion both of the ſpirits and muſcular ſtrength; by headach and pains of the limbs, which are deſcribed as rheumatic; and by reſtleſſneſs and impaired digeſtion, with irregularity of the bowels. There is commonly alſo ſome degree of ophthalmia, affecting both the conjunctiva and the tarſi; and the fauces are the ſeat of a ſlow inflammation, which is commonly accompanied by ſuperficial ulcerations." The only effectual treatment ſeems to be to ſupport the conſtitution by ſtrict dietetic regulations, exerciſe, &c. and by gentle ſtimulants; as bark, ſarſaparilla, and the mineral acids, &c. and ſo on till the diſeaſe is worn out. It ſometimes laſts for ſeveral months. We preſent our readers, in fig. 1. and 2. Plate XII. with a repreſentation of its moſt common forms.

4. Ecpyeſis ſcabies, the itch: eruption of minute pimples, puſtular, veſicular, and papular; intermixed or alternating; intolerable itching; terminating in ſcabs. Found chiefly between the fingers or in the flexures of the joints. (Scabies, *Cel. Sauv. Vog. Sag. Bateman.* Pſora, *Linn. Cull. Parr.*) There are five varieties of this diſeaſe.

α. Sc. papularis, the rank itch: eruption of miliary aggregate pimples; with a papular ſlightly-inflamed baſe, and veſicular apex; puſtules ſcantily interſperſed; tips, when abraded by ſcratching, covered with a minute, globular, brown ſcab.

This form of itch is liable to be confounded with Lichen or Prurigo. It may be diſtinguiſhed from the former by the eruption itſelf; for the unbroken elevations in Sc. papularis, when carefully examined, are found to be veſicular, and not papular; they are often intermixed, in particular ſituations, with puſtules; and, when they break, are ſucceeded by ſcabs; whereas in Lichen, the papulæ terminate ſpontaneouſly in ſcurfy exfoliations. In Scabies, the eruption is unconnected with any conſtitutional or internal diſorder, and the itching is ſevere: but in Lichen, there is commonly ſome conſtitutional affection, and a tingling ſenſation, as well as itching. The highly-contagious nature of Scabies will, in many caſes, have already manifeſted itſelf, and remove all doubt; for the Lichen is not thus communicable. In Prurigo, the papulæ, where no friction has been applied, retain the uſual colour of the ſkin, are commonly flatter, or leſs acuminated, and preſent no moiſture or ſcab, except when their tops have been forcibly abraded; they are not particularly numerous in the parts above mentioned; and they remain long diſtinctly papular, without ſhowing any contagious property.

β. Sc. veſicularis, (Sc. lymphatica, *Bateman.*) Watery itch: eruptions of larger and more perfect veſicles, filled with a tranſparent fluid, with an uninflamed baſe; intermixed with puſtules; at times coaleſcing and forming ſcabby blotches. The veſicles ariſe with intenſe itching, chiefly round the wriſts, between the fingers, on the back of the hands, and on the feet and toes: they often occur alſo about the axillæ, the hams, the bend of the elbows, and foſſa of the nates, where they are intermixed with puſtules; but they do not frequently appear, like the papular ſpecies, over the breaſt and epigaſtrium, nor on the thighs and upper parts of the arms. In a day or two the veſicles break; and ſome of them heal under the little ſcab that concretes upon them. But others inflame, and become puſtules, which diſcharge at length a yellow matter, and extend into ſmall ulcerated blotches, over which a dark ſcab is ultimately formed. So that, during the progreſs of the eruption, all theſe appearances are intermixed with each other: the veſicles, and puſtules, the excoriated blotches diſcharging pus, the minute dry ſcabs, and the larger ones ſucceeding the ulceration, may be obſerved at the ſame time. This circumſtance conſtitutes one of the points of diagnoſis between this and other veſicular diſeaſes. Of theſe, however, the Herpes and Eczema, eſpecially the latter, are alone liable to be confounded with Scabies veſicularis. The Herpes differs from Scabies in the irregularity of its courſe and termination, and in the arrangement of its veſicles in cluſters, which are commonly not numerous, and appear on thoſe parts which Scabies is not very apt to attack. The moſt difficult diagnoſis relates to ſome of the varieties of Eczema, which cloſely reſemble this, and ſometimes the former variety of Scabies; ſo that it is not ſo much from the mere appearances of the eruption, as from the conſideration of the collateral circumſtances, that a deciſion is to be obtained. The Eczema can often be traced to diſtinct ſources of irritation affecting the ſkin, ſuch as expoſure to the ſolar rays, or to great heat, and to the application of acrid ſubſtances, ſuch as lime, ſugar, mercury, cantharides, &c. It ſometimes becomes inflamed after the veſicles have diſcharged their lymph, but it does not produce the large phlyzacious puſtules; and, although the itching is ſometimes intenſe, yet there is commonly a tingling and ſmarting pain with Eczema, that does not belong to Scabies: nor is it ever, like the latter, communicated by contagion.

γ. Sc. purulenta, the pocky itch, (ſee fig. 3. Plate XII.) This eruption conſiſts of diſtinct prominent yellow puſtules, which have a moderate inflammation round their baſes, and which maturate and break in two or three days, and then ulcerate, with increaſing pain and inflammation. Theſe puſtules commonly appear firſt, and attain the largeſt ſize, on the hands and feet, eſpecially about the knuckles and roots of the toes, between the fingers, and particularly between the forefinger and thumb, and round the wriſts. In theſe ſituations, the puſtules often exceed two lines in diameter, and aſſume a prominent globular form. If the diſeaſe continue a few weeks, the puſtules begin to appear on the other parts of the body which Scabies uſually attacks, eſpecially about the axillæ, on the back and ſhoulders, and on the arms and thighs near the joints of the knee and elbow, in the foſſa of the nates, and ſometimes, though of a ſmaller ſize, even about the epigaſtrium. In ſeveral of theſe ſituations, where the puſtules are largeſt and numerous, they coaleſce, and form irregular blotches, which ulcerate to ſome extent, with hardneſs and elevation of the ſurface; but at length hard and dry ſcabs are formed, which adhere tenaciouſly for a conſiderable time.

The majority of the caſes of Scabies purulenta occur between the age of ſeven years and the period of puberty. It cannot be eaſily miſtaken for Impetigo, when it occurs in patches, in conſequence of the large ſize, the greater prominence, and comparatively ſmall number, of its puſtules; not to mention the abſence of the intenſe itching, and of contagion, in the former. From the Porrigo favoſa affecting the extremities, it will be diſtinguiſhed chiefly by its ſituations about the fingers, axillæ, foſſa natum, and flexures of the joints, and by the total abſence of the eruption from the face, ears, and ſcalp; by the nature of the diſcharge; and by the thin, hard, and more-permanent, ſcab, which ſucceeds, inſtead of the ſoft, elevated, ſemi-tranſparent, ſcab, formed by the viſcous humour of the favi. The only other diſeaſe, with which the Scabies purulenta has any affinity, is the Ecthyma: but the hard, elevated, vivid red or livid baſe, which ſurrounds the puſtules of Ecthyma, their ſlow progreſs both towards maturity and in the courſe of ſuppuration, the deep ulceration, with a hard raiſed border, and the rounded imbedded ſcab, which ſucceed, as well as the diſtinct and ſeparate diſtribution of them, will afford the means of diſcrimination; to which the inceſſant itching and the contagious property of Scabies, may be added.

δ. Sc.

β. Sc. complicata; (Sc. cachectica, *Bateman.*) Complicated itch: eruption complicated of pustular, vesicular, and papular, pimples co-existing; spreading widely over the body; occasionally invading the face; sometimes confluent and blotchy.

ε. Sc. exotica, mangy itch; (see fig. 4.) eruption chiefly of numerous rank pustules, with a hard inflamed base, rendering the skin rough and browniſh: itching extreme: abrasion unlimited from excessive scratching. This is produced by handling mangy animals. Several of the varieties found also, occasionally, as sequels upon severe small-pox, or other causes of constitutional debility.

It was formerly supposed that the presence of a minute insect under the skin was the cause of Scabies; it is now generally understood, that, though this insect is sometimes seen, it is so often wanting that it can merely be adventitious. We have given a description and figure of it under the article ACARUS, vol. i. p. 51.

Sulphur is a specific for the cure of itch. There is good reason to believe, however, that it is not the only specific. Be this as it may, it is the most effectual and innocent substance we know of. It is usually given in milk internally, and used externally as an ointment. The best mode of applying the sulphur appears to be, to make an ointment of three parts of lard to one of sulphur, which may be scented by any thing that is most agreeable. This is to be most diligently rubbed in before the fire at night; and the patient, having a linen dress prepared which must fit close to the skin, is to put it on, get into bed, and remain there till the following night, when the friction is to be resumed. Another night being spent in bed, the patient is said to arise, in most cases, perfectly free from the Scabies. If however the eruption is not much improved in its appearance, the same process must be repeated. The above plan is given on the authority of one of the first practitioners in this city.

In the severer and more complicated forms of itch, it may sometimes be necessary to premise constitutional treatment, and sedative applications to the sore surface, before the administration of sulphur is begun upon; and, even then, this precaution should be taken some time prior to its external use.

Genus VII. *Malis*, [Gr. from the Heb. מלט, to lay eggs.] Cutaneous Vermination; the cuticle, or skin, infested with animalcules. There are five species, and numerous varieties.

1. Malis pediculi, lousiness: cuticle infested with lice, depositing their nits or eggs at the roots of the hair: troublesome itching. Two varieties.

α. P. humani: infested with the common louse; chiefly inhabiting the head of uncleanly children, where it produces a greasy scurf, or other filth; and sometimes exulceration and porrigo: occasionally migrates over the body.

β. P. pubis. "Infested with the *morpio*, or crab-louse; found chiefly on the groins and eye-brows of uncleanly men: itching extreme, without ulceration." Destroyed by mercurial ointments.

2. Malis pulicis, flea-bites: cuticle infested with fleas; often penetrating the cutis with their bristly proboscis, and exciting pungent pain; eggs deposited on or under the cuticle. Two varieties.

α. P. irritantis; infested with the common flea, with a proboscis shorter than the body: eggs deposited on the roots of the hair and on flannel.

β. P. penetrantis, chiggers: infested with the *chigoe*, or West-Indian flea, with a proboscis as long as the body: often penetrating deeply into the skin, and lodging its eggs under the cuticle, particularly of the feet: producing malignant, occasionally fatal, ulcers. The chigoe requires careful extraction.

3. Malis acari: cuticle infested with the *tick*; itching harassing, often with smarting pain. Three varieties.

α. A. domestici. "Observed on the head in considerable numbers." *Young.*

β. A. scabiei. Infested with the itch-tick: burrowing under the cuticle, in or near the pustules or vesicles of the scabies, in those affected.

γ. A. autumnalis, harvest-bug-bite: infested with the harvest-bug; less in size than the common mite; inflicting its bite in the autumn, and firmly adhering to the skin: itching intolerable, succeeded by glossy wheals.

4. Malis filariæ: skin infested with the guinea-worm; winding and burrowing under the cuticle, for the most part, of the naked feet of West-Indian slaves; severe itching; often succeeded by inflammation and fever. See FILARIA, vol. vii.

5. Malis gordii: skin infested with the hair-worm; chiefly insinuating itself under the cuticle of the back or limbs of infants; producing pricking pains, emaciation, at times convulsions. See GORDIUS, vol. viii.

"Though described by writers of great credit, the nature of the disease is uncertain. By some authors the contained fibrils seem to be regarded as a preternatural production of hairs; but the greater number, and among the rest Ambrose Paré, decidedly ascribe to them a living principle. It appears therefore to be a species of the Gordius, or hair-worm; some of which infest other animals in a like manner; and especially the Cyprinus alburnus, or bleak, which, at the time, appears to be in great agony." Good's Nosology, p. 496.

Genus VIII. *Ecphyma*, [from ἐκφυω, to draw out; in contradistinction both to Phyma, an inflammatory tumour, and Emphyma, a tumour without inflammation, originating below the integuments.] Cutaneous excrescence; superficial, permanent, indolent, extuberance; mostly circumscribed. (Phymatosis, *Young.*) Four species.

1. Ecphyma caruncula, caruncle: soft, fleshy, often pendulous excrescence of the common integument. Found over the surface generally. Found also, occasionally, as a sequel of lues, about the arms and sexual organs. It derives, in many instances, a particular name from its shape, or position; as *ficus*, when fig or raisin shaped; *encanthis*, when seated on the canthus or angle of the eye.

2. Ecphyma verruca, wart: firm, harsh, arid, insensible extuberance of the common integuments. Found chiefly on the hands. Three varieties.

α. V. simplex; simple and distinct: sessile or pensile.

β. V. lobosa; full of lobes and fissures.

γ. V. confluens; in coalescing clusters.

Warts may, according as they are large or small, be destroyed by caustic, ligature, or the knife. When the latter is used, caustic must be applied for some time after, to destroy the roots of the morbid growth. Warts, as Dr. Good tells us, are destroyed in Sweden by the Gryllus verrucivorus, or wart-eating grasshopper, which has green wings spotted with brown. The common people catch it for this purpose; and it is said to operate by biting off the excrescence, and discharging a corrosive liquor on the wound.

3. Ecphyma clavus, corn: roundish, horny, cutaneous, extuberance; with a central nucleus sensible at its base. Found chiefly on the feet and toes from the pressure of ill-formed shoes.

The most efficient way to destroy a corn is to remove the exciting cause; viz. pressure. This, however, is no easy matter; because all shoes at present made are quite of an opposite form to the natural figure of the human foot; and, if large shoes be worn for a time, they only aggravate the distress that ensues when a tight one is put on. Frequent bathing with warm water affords great relief to the uneasy sensations of a corn; and, when well soaked, the top of the corn, which, from its projection, of course renders the pressure on it greater, may be cut

off. Moreover, when ſufficiently ſoftened by warm-bathing, corns may be removed by gently picking them round their circumference with a needle till they can be pulled out without giving pain. Sometimes a little diachylon plaſter laid on a corn keeps it ſoft, and promotes its diſſolution. Cutting, as commonly practiſed, does harm. Theſe growths are ſometimes connected with the perioſteum, and hence ariſe thoſe deep-ſeated pains in the bones which often attend them.

4. Ecphyma callus: callous extuberant thickening of the cuticle; inſenſible to the touch. Found chiefly on the palms of the hands and ſoles of the feet as the conſequence of hard labour.

Genus IX. *Trichoſis*, [from τριχες, the hair.] Morbid organization or deficiency of hair. Eight ſpecies.

1. Trichoſis ſetoſa: hairs of the body thick, rigid, and briſtly.—Thrown off and renewed every autumn: ſix lines long, two or three thick, erect: five ſons affected as the father; *Phil. Tranſ.* vol. v. No. 424. See alſo Journ. de Med. Mar. 1756. Paullini, Cent. I. Obſ. 31.

2. Trichoſis plica, matted or plaited-hair: hairs vaſcularly thickened; inextricably harled, and matted, by the ſecretion of a glutinous fluid from their roots; contagious. Uſually, but not always, appearing in, or confined to, the hairs of the ſcalp.—In the beard, *Eph. Nat. Cur.* Dec. II. ann. viii. 94.—Hairs of the cuticle, *Id.* Obſ. 71.—Of the pudendum, *Id.* Dec. I. ann. iii. 220. *Paullini*, Cent. I. Obſ. 77.

Sometimes preceded by hemicrania, or other conſtitutional affection; and occaſionally a ſequel of pſoriaſis. In Poland it appears to be endemic; but it is not peculiar to that country. Notwithſtanding the popular error by which this practice is oppoſed, the beſt way of getting rid of this dirty diſeaſe, is to ſhave off the hair, and waſh the head regularly and repeatedly. The ſame means may be uſed for the cure of the local ulceration which ſcratching is apt to induce in this diſeaſe, as thoſe recommended for Porrigo.

3. Trichoſis hirſuties: growth of hairs in extraneous parts, or ſuperfluous growth in parts common. The moſt frequent variety is that of bearded women.

4. Trichoſis diſtrix: hairs of the ſcalp weak, ſlender, and ſplitting at their extremities.

5. Trichoſis polioſis: hairs prematurely grey, or hoary.

6. Trichoſis athrix, baldneſs: decay and fall of the hair. Three varieties.

α. A. ſimplex: hairs of the ſcalp of a natural hue; but gradually dying at the bulbs, or looſened by relaxation of the integument.

β. A. calvities; hair gray or hoary; baldneſs chiefly on the crown of the head and confined to it. Moſtly common to advanced age.

γ. A. barbæ; decay and fall of the beard.

7. Trichoſis area; (Porrigo decalvans, *Bateman.*) Patches of baldneſs without decay or change of colour in the ſurrounding hair; expoſed plots of the ſcalp glabrous, white, and ſhining; ſometimes ſpreading and coaleſcing, rendering the baldneſs extenſive. The hair will often be reproduced under the regular and continued uſe of ſtimulating embrocations. Dr. Good gives two varieties, taken from Celſus.

α. Diffluens; bald plots of an indeterminate figure; exiſting in the beard as well as in the ſcalp: obſtinate of cure. Common to all ages.

β. Serpens; baldneſs commencing at the occiput, and winding in a line, not exceeding two fingers breadth, to each ear, ſometimes to the forehead: often terminating ſpontaneouſly. Chiefly limited to children.

8. Trichoſis decolor: hair of the head of a preternatural hue.

α. Cærulea; of a blue colour. *Ephem. Nat. Cur.* Dec. II. an. iv. App. p. 203. An. vi. obſ. 226.

β. Denigrata; changed from another hue to a black. *Paullini*, Cent. III. Obſ. 59: the ſequel of a fever. *Borelli*, Cent. III. Obſ. 2; from exſiccation.—*Schenk.* Obſerv. Med. i. 4; from terror.—*Schurig. Spermatol.*: from white to black; the colour of the beard changed alſo.

γ. Viridis. Of a green colour. *Paullini*, Cent. I. Obſ. 93. *Bartholin.* Hiſt. Anat.

δ. Variegata. Spotted, like the hair of the leopard. *Paullini*, Cent. IV. obſ. 67. *Ephem. Nat. Cur.* Dec. III. ann. iii. Obſ. 184.

The hair occaſionally grows, and has ſometimes changed its hue, after death. *Eph. Nat. Cur.* paſſim.

Genus X. *Epichroſis*, [i. e. a ſpotted or coloured ſurface.] Simple diſcoloration of the ſurface. (Piloſis, *Young.*) Six ſpecies.

1. Epichroſis leucaſmus, (Vitiligo, *Bateman.*) White, glabrous, ſhining, permanent ſpots, preceded by white tranſitory elevations or tubercles of the ſame ſize; often coaleſcing, and creeping in a ſerpentine direction; the ſuperincumbent hairs falling off, and never re-ſprouting. Common to the ſurface; but chiefly found about the face, neck, and ears.

There is no conſiderable conſtitutional diſorder combined with this affection; but it has proved exceedingly unmanageable under the uſe of both internal and external medicines. The mineral acids internally, and the application of diluted cauſtic and ſpirituous ſubſtances externally, have been chiefly employed, but with little obvious effect.

2. Epichroſis ſpilus, mole: brown permanent circular patch; ſolitary; ſometimes ſlightly elevated, and creſted with a tuft of hair.

3. Epichroſis lenticula, freckles: cuticle ſtigmatized with yellowiſh-brown dots, reſembling minute lentil-ſeeds; gregarious; often tranſitory. Found chiefly on the face, neck, and hands, of perſons poſſeſſing delicate conſtitutions, and red hair. When of a larger ſize, the Greeks called them phaciæ (φακιαι). *Celſ.* VI. 5.

4. Epichroſis ephelis, ſun-burn: cuticle tawny by expoſure to the ſun; often ſpotted with dark freckles, confluent or corymboſe; diſappearing in the winter.

5. Epichroſis aurigo: cuticle ſaffron-coloured, without apparent affection of the liver or its appendages; colour diffuſed over the entire ſurface; tranſient: chiefly in new-born infants.

6. Epichroſis pœcilia: cuticle marbled generally, with alternate plots or patches of black and white. Blumenbach gives examples from a Tartar tribe, whoſe ſkin was naturally ſpotted like the leopard's. *De Generis Humani varietate nativa.*

Chiefly found among Negroes, from an irregular ſecretion or diſtribution of the pigment which gives the black hue to their rete mucoſum. In Albinos, whether among blacks or whites, the ſecretion appears to be entirely ſuppreſſed from conſtitutional debility or other defect. The ſubjects of this diſeaſe are commonly called *ſpotted or pye-balled negroes.*

The different hues of black, copper-coloured, olive, and red, by which different nations are diſtinguiſhed in different parts of the world, cannot be regarded as diſeaſes. They are as natural to them as a fair complexion to an European, and only conſtitute diſtinct features in the different varieties of the human race. They are, however, regarded as diſeaſes by Plenck, who has entered them in his claſs MACULÆ, under the generic terms of rubedo cutis, nigredo cutis, and albor cutis; by the laſt intending, not the inhabitants of Europe or Aſia Minor, but Albinos, or thoſe included under the genus Alphoſis of the preſent ſyſtem.

Some of theſe natural, and many morbid, diſcolourations have often been found relieved by coſmetics; as that of Homberg, which is a dilute ſolution of oxymuriate of mercury, with a mixture of ox-gall. Hartmann's coſmetic was a ſimple diſtillation of arum-root in water. If the hands be deeply diſcoloured, they may be whitened by being expoſed to the fumes of ſulphur. In the American

rican ſtates, a black has occaſionally been known to have the whole of the colouring pigment abſorbed and carried off during a fever, and to riſe from his bed transformed into a white man. See the ſame ſubject treated by M. Boſe, Pr. de Mutato per Morbum colore corporis humani, Lipſ. 1785. Büchner relates the caſe of a man who, on the contrary, on recovery from a ſevere fever had his face tinged with a black hue; probably from a morbid ſecretion and depoſit of a black pigment along with the rete mucoſum of the face. Plenck aſſerts that he once ſaw a man with a green face, the right ſide of the body black, and the left yellow, produced by previous diſeaſe.

CLASS VII. TYCHICA, [i. e. accidental; from τυχη, a fortuitous event, a caſe that rarely happens.]

FORTUITOUS LESIONS or DEFORMITIES.

The whole of this Claſs is contained under the articles MONSTER and SURGERY; fortuitous leſions under the latter, and deformities under the former. We have only therefore, in this place, in order to render our Claſſification complete, to give Dr. Good's enumeration of the orders, genera, and ſpecies.

Order I. APALOTICA, [from απαλοτης, ſoftneſs.] Diſorders affecting the Soft Parts. The organization of the ſoft parts injured or interrupted by violence or by over-exertion. This order contains five genera.

Genus I. *Treſis*, [i. e. a wound, or perforation.] Forcible ſolution of continuity in a ſoft part, commencing externally. There are four ſpecies.

1. Treſis vulnus, a wound. Of this there are four varieties; as the wound may be either a ſimple cut, or lacerated, or deep, or contuſed, as a gunſhot or ſplintery wound.

2. Treſis punctura, a puncture. Three varieties.

α. P. ſimplex; ſimple diſunion by a ſharp piercing inſtrument.

β. P. incuſpidata; the point of the inſtrument broken off, and remaining in the courſe of the puncture.

γ. P. venenata; the pointed inſtrument loaded with an acrid or poiſonous material; as the arrows of barbarians with the lama or ticunas; the fang of the tarantula and ſeveral other ſpiders; the ſting of the waſp, hornet, or ſcorpion.

3. Treſis excoriatio: the ſubſtance of a ſoft part abraded at its ſurface. Two varieties.

α. E. ſimplex; confined to the ſkin; chiefly produced by friction.

β. E. complicata; deeper than the integument, with contuſion, or loſs of ſubjacent ſubſtance.

4. Treſis cauſis, a burn.

Genus II. *Thlaſma*, [from θλαω, to bruiſe.] Forcible derangement in the ſtructure of a ſoft part, without diſunion of the external integument. Three ſpecies.

1. Thlaſma concuſſio, concuſſion, without extravaſation of blood.

2. Thlaſma contuſio; external compreſſion; with extravaſation of blood, and diſcolouration of ſurface.

3. Thlaſma ſtremma, a ſtrain, or wrench.

Genus III. *Rhegma*, [from ῥηγνυμι, to break.] Laceration. Four ſpecies.

1. Rhegma ligamentare; laceration of a ligament.
2. Rhegma muſculare; of a muſcle or its tendon.
3. Rhegma vaſculare; of a blood-veſſel.
4. Rhegma viſcerale; of a viſcus.

Genus IV. *Hernia*, [from ἑρνος, a branch.] Rupture. Seven ſpecies.

1. Hernia inguinalis, rupture from the groin. Four varieties. α. Inteſtinalis; β. Omentalis; γ. Duplicata; and δ. Congenita.

2. Hernia femoralis, femoral or crural rupture. This admits of an inteſtinal, omental, or duplicate, variety, as in the preceding ſpecies.

3. Hernia umbilicalis, umbilical rupture. Admits of three varieties, as the protruſion may be of the ſtomach, liver, or ſpleen.

4. Hernia ventralis, ventral rupture. Varied as in the preceding ſpecies, and the varieties diſtinguiſhed by the ſame names.

5. Hernia iſchiatica, hernia of the foramen ovale.

6. Hernia veſicalis, rupture of the urinary bladder. Two varieties.

α. Simplex; the naked bladder alone protruding.

β. Complicata; accompanied with a portion of inteſtine or omentum.

7. Hernia diaphragmatica, protruſion of a portion of inteſtine into the cheſt through an aperture in the diaphragm.

Genus V. *Entheſis*, [from ενθημι, to put in.] Irritation or obſtruction of a natural paſſage by the introduction of an improper material. Five ſpecies.

1. Entheſis œſophagea: improper material obtruded into the œſophagus.

The more common ſubſtances are hairs, ſmall feathers, fiſh-bones, fruit-ſtones, and various pieces of money. Theſe have often remained fixed for a very long time; and have occaſionally been found to migrate to very remote parts. A needle has continued in the œſophagus for nine years before it was looſened and diſcharged; *Kehring*, Specil. Anat. obſ. 42. A fiſh-bone, after long obſtruction, worked its way through the ſubſtance of the œſophagus, and was at length thrown out at the cutis; *Arculari*, *Practica*, cap. 57. The point of a ſword, for thirty years buried in the eye, was at laſt ejected by the palate; *Hoechſtetter*, Dec. VI. caſ. 9. The œſophagus has ſometimes been large enough to allow a half-crown to paſs without injury, which has been evacuated by the rectum. A half-crown piece of this kind is in Dr. Hunter's muſeum. See alſo Baillie's Morb. Anat. for ſeveral other curious examples.

2. Entheſis ventricularis; improper material ſwallowed into the ſtomach. Two varieties.

α. Mechanica; hard and indigeſtible ſubſtances; as a knife, a nail, pieces of money, a multitude of fruit-ſtones.

β. Venenata; poiſonous ſubſtances, vegetable, mineral, or chemical. See POISON.

3. Entheſis inteſtinalis; improper material lodged in the inteſtinal canal. Occaſionally diſcharged by an abſceſs at a diſtance; ſometimes, when pointed and ſlender, as pins or needles, migrating to a remote organ. See Phil. Tranſ. 1768-9. Lond. Med. Journ. iv. 77. vi. 36, 401. and xlviii. 389.

4. Entheſis trachealis: improper material lapſed or inhaled into the trachea. Two varieties.

α. Mechanica; impeding the paſſage.

β. Mephitica; noxious to the reſpiration.

5. Entheſis urethralis: foreign ſubſtance broken in the urethra, or dropped from it into the bladder. Chiefly fragments of bougies, improperly manufactured, or continued to be employed by the patient after being worn out.

Order II. STEREOTICA, [from στιρεος, hard, firm.] Diſorders affecting the Hard Parts. The continuity or connexion of the hard parts impaired or interrupted by violence or over-exertion. This order has four genera.

Genus I. *Catagma*, [i. e. a fracture.] Forcible diviſion of a bone into two or more parts. (Claſis, *Parr.*) Two ſpecies.

1. Catagma fractura, a broken bone. The varieties are four, as the fracture may be ſimple, ſplintery, compound, or complicated with other injury.

2. Catagma fiſſura: bone cracked; the divided edges ſtill in contact. Chiefly affecting the cranium, though the

the long bones are occaſionally ſubject to it, and eſpecially the ribs. Three varieties.

α. F. ſubjacens; fiſſure immediately below the external injury.

β. F. contra-jacens, counter-fiſſure; fiſſure and ſevereſt ſymptoms on the oppoſite ſide of the ſkull to the external injury.

γ. F. complicata; combined with a counter-ſtroke producing concuſſion or extravaſation. See a ſingular caſe of Le Dran's, in which the outer table of the head was fiſſured; the inner had a ſmall bony ſcale thrown off from it; and concuſſion with extravaſation took place on the oppoſite ſide of the ſkull. *Obſ.* xvii.

Genus II. *Campſis*, [from καμπτω, to bend.] A bone or cartilage forcibly bent from its proper ſhape without breaking.

Campſis depreſſio, a ſingle ſpecies. The bone or cartilage flattened or bent inwards. Found chiefly in young ſubjects; and principally on the cranium and enſiform cartilage of the cheſt; the bone often recovering its proper figure with the gradual growth of the frame.

Genus III. *Exarthrema*, [from ἐξαρθρω, to put out of joint.] Diſlocation; extruſion of a bone from its ſeat of orticulation. Three ſpecies.

1. Exarthrema luxatio, a luxation: the bone, eaſily and extenſibly moveable, forced completely from its articulating cavity.

2. Exarthrema ſubluxatio, ſubluxation: the bone forced partially from its cavity, and reſting on the edge of the ſocket.

3. Exarthrema loxarthrus, twiſted, or oblique joint: the bone, ſlightly and narrowly moveable, forcibly looſened in its articulation, and diſtorted in its relative poſition. Chiefly occurring in the bones of the cheſt, with ſubſequent gibboſity, eſpecially in young perſons; and in the bones of the carpus and tarſus, producing crooked wriſts and ſplay-feet.

Genus IV. *Diaſtaſis*, [from διαϊστημι, to ſeparate.] Separation of bones. Three ſpecies.

1. Diaſtaſis epiphyſica: ſeparation of a bone from its epiphyſis. Confined to the ſtages of infancy and feeble adoleſcence; for the epiphyſes of bones in a healthy conſtitution become gradually apophyſes, or conſtituent parts of the bones themſelves. Often miſtaken by the unſkilful for a luxation; and aggravated by vain and painful attempts to effect a reduction.

2. Diaſtaſis cartilaginea: ſeparation of bones connected by an intervening cartilage. Exemplified moſt commonly in the ſeparation of the ſymphyſis pubis in caſes of preternatural labour; though other inſtances are not unfrequent.

3. Diaſtaſis ſutoria: ſeparation of connecting ſutures. A ſeparation of the ſutures of the ſkull is uſually fatal. Mr. B. Bell mentions one inſtance of an injury of this kind that terminated favourably. *Surg.* vol. vi.

Order III. Morphica, [from μορφη, form.] Monſtroſities of Birth. Six genera.

Genus I. *Metrocelis*, [from μητηρ, mother, and κηλις, a ſpot.] Mother's marks. Congenital diſcolourations on the ſurface. (Nævus, *Sauv.* &c.) Five ſpecies.

1. Metrocelis ſpiloſa: ſimple, ſuperficial, circumſcribed ſtain; for the moſt part yellow, brown, or red. Three varieties.

α. Circularis; with a circular or orbicular outline.

β. Foliacea; leaf-ſhaped.

γ. Arachnoides; with ſlender claw-ſhaped or ſpider-legged ramifications.

2. Metrocelis fructiformis; dark-coloured, in the form of fruit. The fruits chiefly repreſented are the cherry, currant, and grape, with a ſmooth ſurface; and the mulberry, raſpberry, and ſtrawberry, with a papulous ſurface. Two varieties.

α. Pediculata; poſſeſſing a footſtalk.

β. Seſſilis; fixed to the ſurface by a broad baſe.

3. Metrocelis turgeſcens: large, looſe, ſanguine, irregular-ſhaped tumour; ſenſibly compoſed of a congeries of bloated and diſtorted veſſels. (Nævus cavernoſus, *Plenck.*

4. Metrocelis diffuſa: diſcoloration ſpreading indeterminately over a limb, or a large part of the body. Riedlin deſcribes a caſe of univerſal diſcoloration from a fright of the mother, making an approach to Epichroſis pœcilia.

5. Metrocelis cana: hair of the ſcalp hoary at birth.

Genus II. *Olophonia*, [from ολλυμι, I loſe, and φωνη, voice.] Congenital miſconſtruction of the vocal organs. Four ſpecies.

1. Olophonia narium; miſconſtruction of the noſtrils. Two varieties.

α. Obſtruens; impeding the utterance, from imperforation or other cauſe.

β. Defectiva; the organization incomplete.

2. Olophonia linguæ: miſconſtruction of the tongue or its appendages. Three varieties.

α. L. adheſiva; adheſion of the tongue to the ſurrounding parts.

β. L. frænata; tongue tied beneath by contraction of the frænum, or its extending too near the tip.

γ. L. deglutatoria, frænum looſe or abſent, and the tip of the tongue doubling back upon the fauces.

3. Olophonia palati: miſconſtruction of the palate.

4. Olophonia labii: miſconſtruction of the lips. Three varieties.

α. L. lobata, hare-lip; lobed or divided in the middle; edges ſeparated and convex.

β. L. bilobata; lip bilobed, or doubly divided.

γ. L. prolapſa; one or both lips ſtrikingly broad and projecting.

Genus III. *Paraſthеſis*, [i. e. imperfect ſenſe.] Congenital miſconſtruction of the external organs of ſenſe. Here we have only three ſpecies noted.

1. Paræſtheſis auditus: misformed organ of hearing. Three varieties.

α. A. flacca, flap-ear: lobe of the ear broad, looſe, and pendent. Said to be a common deformity among the natives of Siam. The ſource of the ſurname of *Flaccus* in ancient Rome.—A beetle-headed *flap-ear'd* knave. *Shakeſpeare.*

β. A. obſtruens, imperforate ear.

γ. A. defectiva, congenital deafneſs.

2. Paræſtheſis olfactus: misformed organ of ſmell. Two varieties.

α. O. obſtruens; impeding the entrance of ſcents from imperforation or other cauſe.

β. O. defectiva; the organization incomplete.

3. Paræſtheſis viſus: misformed organ of ſight. Two varieties.

α. V. unoculata; poſſeſſing only one eye.

β. V. pupillaris; pupil incomplete in its power of viſion.

Genus IV. *Peroſplanchnia*, [from πηρος, defective, and σπλαγχνον, viſcus.] Congenital miſconſtruction of the viſcera. Six ſpecies.

1. Peroſplanchnia cranii: miſconſtruction of the head. Three varieties.

α. C. capitoſa, jolt-head: head enormouſly bulky; contents ſolid.

β. C. hydropica; head enormouſly bulky, from dropſical affection; hydrocephalus.

γ. C. cerebralis; brain incomplete in quantity or organization. Some have been born without a cranium, and a fleſhy

a fleshy mass instead of brain. *Vallisneri*, 330. *Soemmering*.—Without brain or medulla oblongata; *Dufour*. Journ. de Med. xxxv.—Acephalous; lived eleven hours. *Act. Med. Berol.* Dec. I. viii.—Lived five days; another case six days. *Plouquet*.

2. Perosplanchnia cordis: the heart misconstructed or misplaced. Four varieties.

α. C. perforata; the two ventricles communicating.

β. C. translativa; heart transposed to the right side.

γ. C. expers; heart totally wanting.—See Hewson on the Lymph. Syst. Part. II. p. 15. There were other defects besides the total absence of the heart. "The circulation had been carried on merely by an artery and a vein, whose coats therefore probably were muscular."

δ. C. multiplicata; heart duplicate, or more than duplicate.—Double; see d'Abouville, Amer. Phil. Trans. vol. i.—In a partridge; *Tode*, Annalen v.—In a dog; *Paullini*, p. 43.—In a hen; *Eph. Nat. Cur.* Cent. VIII. Obs. 8.—Triple: found several times in geese. *Eph. Nat. Cur.* passim.

3. Perosplanchnia alvei: the intestinal canal or its involucres misconstructed or perverted. Three varieties.

α. A. perforans; the intestines perforating the involucres. See Calder Ed. Med. Ess. I. art xiv. Intestines appeared externally, having fallen through a perforation above the navel: child in health when born, but died four days afterwards.

β. A. defectiva; some of the parts wanting. See Dinmore, Lond. Med. Journ. XI. 339. Parietes deficient. *Act. Soc. Med. Hafn.*

γ. A. obstruens; obstruction in the alvine passage, from imperforation or other cause.

4. Perosplanchnia hepatis: misconstruction of the liver.

5. Perosplanchnia vesicæ: misconstruction of the bladder or urinary channel.—Bladder deficient. *Duncan*, Edin. Med. Journ. iv. 403. Urethra imperfect and imperforate: urine discharged from a papilla near the navel: child otherwise in health: age not mentioned. *Mowath*. Edin. Med. Ess. vol. iii. art. xiv.

6. Perosplanchnia genituræ: misconstruction of the genital organs, or their appendages. Three varieties.

α. G. superflua; organization superfluous or anomalously multiplied. Double uterus and vagina. *Phil. Trans.* 1774, p. 472.—Double penis. *Schenck*. *Plouquet*.—Penis of enormous size. *Memoires* concernant les Arts. 1672. p. 27. *Wolff*, Lect. Memorab. I. 434.

β. G. defectiva; organization incomplete. One or both testicles defective; generally from emasculation. Prepuce or clitoris imperfect or wanting. Vesiculæ seminales confusedly united, and wanting their excretory ducts. The necessary result of this defect in an adult must be dyspermia, and consequently agnesia. See *Baillie*, Morb. Anat. Fasc. viii. Pl. I. fig. 2.

γ. G. obstruens; obstruction in the male or female passage from imperforation or other cause.

Genus V. *Peromelia*, [from πηρος, defective, and μελος, a member.] Congenital misconstruction or mutilation of the limbs. Four species.

1. Peromelia decurtata: limbs curtailed of their proper length; as the arms or legs preternaturally abridged.

2. Peromelia truncata: limbs or parts of a limb totally wanting. Six varieties.

α. Capitis; head totally wanting.

β. Brachii; γ. Cruris; destitute of one or both arms or legs.

δ. Manus; ε. Pedis; destitute of one or both hands or feet.

η. Complicata; destitute of various limbs. Miss Bevan, thus preternaturally mutilated, exhibited herself a few years ago in this metropolis: a mere head and trunk, with the rudiments only of shoulders and lower limbs. She was about thirty years of age, of agreeable face, form of body, and manners; well educated; worked with her needle by means of the tongue; and painted miniature portraits with great delicacy and close resemblance, by holding her pencil between the right cheek and shoulder; by the same contrivance she wrote a neat running hand.

3. Peromelia contorta: limbs incurvated or confused in their organization. Five varieties.

α. Colli; wry-necked.

β. Gibbosa; hump-backed or hump-shouldered.

γ. Valga; bow-legged or bandy-legged.

δ. Plauta; splay-footed or splay-handed; having the foot or hand turned inwards. Hence the name of *Plautus*, the Roman dramatic poet.

ε. Loriformis; club-footed or club-handed.

4. Peromelia superflua: limbs or parts of a limb superfluous. Two varieties.

α. Digitorum; supernumerary fingers or toes. This peculiarity is often propagated to succeeding generations. See the account of the six-fingered family mentioned by Maupertuis; and Mr. Carlisle's account of the family of the Colburns of America, one of whom was lately exhibited in this metropolis as a boy of extraordinary powers in arithmetical calculations. Phil. Trans. 1814, p. 94. and our article LONDON, vol. xiii. p. 314. Some of the families of the ancient Philistines appear to have possessed the same peculiarity; (2 Sam. xxi. 20.) As also several among the Romans; for which see Pliny, lib. xi. cap. 43.

β. Crurum; lower extremities superfluous.

Genus VI. *Polyperia*. [from πολυς, many, and πηρος, defective.] Congenital misconstruction of various parts or organs. Three species.

1. Polyperia promiscua: the parts or organs of one cavity confused with those of another. Two varieties.

α. Translativa; transposition of organs from their proper seat; as the abdominal viscera in the thorax. *Macaulay*, Med. Obs. i. 25.—Total transposition of the abdominal and thoracic viscera; *Phil. Trans.* 1674.

β. Vascularis; inverted distribution of the arteries. *Baillie*, Pl. 21.

2. Polyperia superflua: superfluous organization general, or extending to various organs. Four varieties.

α. Biceps; head double.

β. Bicorpor; body double.

γ. Convolvens; one individual enclosed within another. *G. W. Young*, Medico-chir. Trans. i. 234.

A similar monstrosity in the vegetable world is to be found in the Transactions of the Stockholm Academy, vol. i. p. 414, under the title of *Pomerantz med et innestulit foster*. It consists of one orange growing within another. The fruit was exhibited to the Society by Count Tessin.

δ. Hermaphroditus; genital organs of both sexes in one individual. See ANATOMY, vol. i. p. 623. and Plate VI.

3. Polyperia defectiva: defective organization general, or extending to various organs. Two varieties.

α. Nanus, dwarf; the organization of the whole form distinctly developed, but inordinately diminutive.

β. Mola, mole; general organization imperfectly and indistinctly developed. A twin-mole without a heart, is mentioned by Le Cat in Phil. Trans. 167. 1.

To the general principles of therapeutics laid down at pages 96 & seq. and to the practical details of the same science so largely dwelt upon under every species of our numerous catalogue of diseases, we have nothing further to add. Dismissing, therefore, the subject of the action of material agents on the human frame, we come to the consideration of the mode in which these agents are to be prepared, combined, and modified, to ensure their most efficient operation. This embraces that branch of the healing art called *Pharmacy* or more properly *Pharmacopology*. Materia Medica is the term which is now used in the Pharmacopœia to designate the raw materials. In a more extended series, it might be made to comprehend all the

the ſubſtances, however prepared, ready for the uſe of the phyſician. The Materia Medica conſiſts of three kinds of ſubſtances; thoſe derived from animals, thoſe derived from vegetables, and thoſe taken from the mineral kingdom. Theſe diviſions, as far as regards the ſubſtances themſelves, when ſubjected to the operation of chemiſtry, run into each other. From the animal kingdom, however, very few medicines are derived: the moſt important that occurs to us is the Lytta, or bliſtering-fly. The vegetable kingdom furniſhes a vaſt number; and from every part of plants, trees, and ſhrubs, peculiar ſubſtances are occaſionally derivable. Our pharmacopœias abound with many vegetable ſubſtances which are never uſed by practitioners in general. This ſuperabundance of materials was owing, in the firſt inſtance, to an abſurd notion, that every individual plant in exiſtence was endowed with curative powers over ſome particular malady; and, in the ſecond, to that want of diſcrimination which leads men to miſtake partial coincidence for invariable or general law. The chief thing which the pharmaceutiſt has to attend to in the preparation of vegetables, is their preſervation. The manner of *drying*, therefore, whether in regard to its ſuddenneſs or tardineſs, the time of gathering, the mixing with other, herbs, &c. are all points to be intimately attended to: for ſome plants, as the colchicum and ſquill eſpecially, loſe their effects entirely if not pulled at a particular ſeaſon, or if dried in an improper manner.

For the convenience of exhibition, the virtues of plants are extracted (for immediate uſe) by *infuſion*; i. e. the power of cold or boiling water on a plant for a certain length of time; and by *decoction*, or the actual boiling of the ſubſtance. More permanently, the virtues of plants are preſerved in *tinctures*, i. e. fluids containing a large proportion of ſpirits of wine; and by *extracts*, procured by means of ſolution and evaporation. By the laſt proceſs the *eſſential oil* is ſeparated from the more unſtable conſtituents of the plant. The common oils are ſeparated by expreſſion. The ſubſtances derived from the mineral kingdom are prepared by the common operations of chemiſtry, as precipitation, cryſtallization, &c. Hence the neceſſity that the pharmacopoliſt ſhould be well verſed in the *details* of practical chemiſtry. The magnificent progreſs of this art has purged our Pharmacopœia of many of its uſeleſs or incongruous ſubſtances, and likewiſe corrected that evil habit of preſcribing which cauſed the practitioner to combine ſalts which decompoſed each other. At the ſame time chemiſtry cauſed vegetable ſubſtances to go very much out of uſe, at leaſt among thoſe at all influenced by the faſhion of the day. For, preſuming on their accurate knowledge of our ſcience to interfere with the practitioner of the more difficult one of medicine, ſome chemiſts endeavoured to ridicule theſe auguſt bodies who had compiled the modern Pharmacopœia, becauſe they had not paid ſufficient attention to chemical laws. In this impertinent attempt, they were entirely unſucceſsful, becauſe all ſcientific practitioners knew how much depended on thoſe minute operations of mineral or vegetable ſubſtances which elude the preſent knowledge of the chemiſt; and they ſaw the folly of truſting to theory, and diſcarding a medicine which experience ſhowed could cure a diſeaſe, merely becauſe it was unſcientifically compounded.

But, from whatever ſource medicines are derived, much of their effect depends on their judicious combination. In the firſt place, the practitioner muſt be careful not to combine any minerals in a preſcription which are capable of decompoſing each other; for, though we have defended the occaſional inattention to this rule in learned bodies and on general experience of its utility, it nevertheleſs ought to be rigorouſly attended to in forming a preſcription. The peculiar affinities of the various ſalts are eaſily learnt and remembered. Of the effect of minerals on vegetables we do not know much. We may remark that, generally ſpeaking, alkalies extract more efficiently the properties of vegetables; on ſome occaſions, acids ſeem to have a ſimilar effect; but this is uncertain. In the caſe of opium and ſome other narcotics, the mineral acids ſeem to reſtrain the deleterious effect of the drug. The analyſis of vegetables, as purſued by the French chemiſts, promiſes to furniſh us at ſome future period with more certain information in regard to the operation of minerals over vegetables; but at preſent we do not know enough to form any important general information on this head. In the combination of various vegetable products in the ſame preſcription, we have only to look to the medical operation of theſe ſubſtances, becauſe they have rarely any chemical effect on each other. Generally ſpeaking, it is wrong to combine in the ſame formula medicines which do not operate on the ſame organs: thus we ſhould not combine diuretics and purges, nor emmenagogues and ſudorifics. On the other hand, medicines which do act on the ſame ſtructure may be combined with the utmoſt advantage: Thus a ſmall doſe of epſom ſalts, of ſenna, and buckthorn-juice, in combination, operates much more actively and certainly then a large doſe of any one of theſe drugs. Again; two or three diuretics mixed together will often operate when they have ſeparately failed to produce any effect. But this combination of drugs, ſo uſeful to the practitioner, does not ſucceed effectually if puſhed beyond the extent of three or four articles; and it ſhould alſo be recollected, that, if a ſimple drug does perform its office, it is wrong to mix it with others, becauſe we thereby fail to improve that part of medicine we know ſo little of; viz. the particular effect of particular drugs.

Beſides combining medicines for the ſake of increaſing their force, we ſometimes combine them to reſtrain any *contingent* operation of a drug, which operation is not eſſential to the cure, and is injurious to the ſyſtem; as when we combine ſulphuric acid with opium, a combination which does not hinder the narcotic effect of the opium, but prevents its ſtimulating effect, which may do hurt; or when we give opium with calomel, and thus enſure ſalivation while we reſtrain diarrhœa. A medicine added to another in the above manner, for the prevention of any unpleaſant effect, is called a *corrective*. A medicine which increaſes the operation of another is called an *adjunct*.

A leſs important point of conſideration in preſcribing is to render a medicine more pleaſant to the palate of the patient, by ſyrups, by acids, &c. but, in doing this, we muſt be careful not to interfere with the operation of the active ingredients, and thus ſacrifice an important to a trifling matter. At the ſame time, ſo numerous are the formula in common uſe, that we ſhall ſeldom find it neceſſary to preſcribe medicines which cannot abſolutely be taken; and at all events we muſt avoid preſcribing medicines which cannot be mechanically united, as acids with oleaginous ſubſtances; and ſo on.

Preſcriptions are generally written in the Latin language, which of all others is the moſt proper, becauſe it is more or leſs known to the whole world, and becauſe, being leſs familiar with it than with our own, we both read and write it with peculiar care. The quantities of medicine are not written in Latin, however, but are expreſſed by ſigns. Some have ſtrongly urged the propriety of writing the quantities as well as the names of the drugs at full length; but we cannot ſee that this would be attended with fewer miſtakes than the preſent mode; ſince the tedium of writing a long word might induce careleſſneſs, and the ſigns in uſe are ſufficiently clear, and may be rapidly written in the moſt correct manner. We muſt except, however, the too cloſe reſemblance of the drachm and ounce ſigns, which cannot be defended. The firſt ſign uſed in medicine is the ℞, which is commonly ſuppoſed to be an abbreviation of *Recipe*, Take, (which word it is now underſtood to mean in all preſcriptions;) but by others is ſtated to have deſcended to us from thoſe of the ancients who believed much in ſidereal influence,

and

and who uſed it as a ſign of ſome planet, probably Jupiter. The next mark is for the ounce, ℥; for the drachm, ʒ; for the ſcruple, ℈; but, having no mark for grains, we uſe *gr.* To theſe we append the number of ounces, drachms, &c. required, (ſtill adhering to old forms,) not in figures, but in Roman numerals; as ℥i, one ounce; ʒij, two drachms; ℈iij, three ſcruples, &c. We have alſo this mark, ſʒ, or *ſs*, for half; and, more recently, ♏ for minim, or drop. ℔ is the mark for pound, though ſeldom uſed; O for a pint; and ā, or ana, for equal quantities of two or more articles previouſly mentioned.

Into the mode of preparing drugs we ſhall not enter, as being generally known to the medical profeſſion through the medium of the firſt elementary works, and as being of no uſe to the general reader. The London Pharmacopœia of 1809 contains all that is neceſſary to be known with regard to the preparation of the drugs therein mentioned; and the mode of preparing thoſe of more recent introduction may be found in *Thompſon's Conſpectus*, or in *Gray's Supplement*. To thoſe who wiſh to ſtudy the ſcience of pharmacy in a more ſcientific manner, we ſtrongly recommend the work of *Dr. Paris*, entitled "Pharmacologia."

Alphabetical List of the Materia Medica, With the uſual Doſes.

The doſes given by different practitioners vary ſo much, that any general table of them muſt neceſſarily be imperfect, and can only be expected to guard the young practitioner from error. The quantities are meant for adults; and either of the two quantities here ſet down, or any intermediate one, may be uſed as a doſe, except when the word *to* is inſerted between them, which means, "that the quantity ſhould be gradually raiſed from the former to the latter," and ſometimes it may be carried much beyond it. Some articles, as far as their effects are concerned, may be given at once in much larger quantities, and their doſe is rather therefore eſtimated by convenience, on account of bulk: ſuch, however, it does not appear neceſſary to diſtinguiſh particularly. The ſame article is often uſed in different quantities, to produce different effects: ſuch ſecond effects, when they are *emetic* or *cathartic*, are in marked inſtances accordingly given under the former, with E or C prefixed, as may be inſtanced in the article Antimonium tartarizatum.

Abietis Reſina	gr. x	ʒſs
Abſinthium	℈j	ʒj
Acaciæ Gummi	ʒſs	ʒij
Acetum Colchici	ʒſs	ʒiſs
——— Scillæ	ʒſs	ʒiſs
Acidum aceticum	ʒj	℥ſs
——— benzoicum	gr. x	ʒſs
——— citricum	gr. x	ʒſs
——— muriaticum	♏x	♏xl
——— nitricum dilutum	♏x to	♏xl
——— ſulphuricum dilutum	♏x to	♏xl
Aconiti Folia	gr. j to	gr. v
Æther rectificatus	ʒſs	ʒij
Ærugo	gr. ⅛ to	gr. j
Allii Radicis Succus	ʒj	ʒſs
Aloes ſpicatæ Extractum	gr. v	gr. xv
—— vulgaris Extractum	gr. v	gr. xv
Alumen	gr. x	ʒſs
Ammoniacum	gr. x	ʒſs
Ammoniæ Murias	gr. x	ʒſs
——— Carbonas	gr. v	℈j
Anethi Semina	gr. x	ʒj
Aniſi Semina	gr. x	ʒj
Anthemidis Flores	gr. x	ʒj
Antimonii Oxydum	gr. j	gr. x
——— Sulphuretum	gr. x	ʒſs
——— Sulphuretum præcipitatum	gr. j	gr. v
Antimonium tartarizatum	gr. ½	gr. ſs
——— E	gr. j	gr. iij
Aqua Anethi —— Carui —— Cinnamomi —— Fœniculi —— Menthæ piperitæ —— viridis —— Pimentæ —— Pulegii	ʒij	ʒiv.
Argenti Nitras	gr. ſs to	gr. v
Armoraciæ Radix	℈j	ʒj
Arſenici Oxydum præparatum	gr. 1/10 to	gr. ½
Aſari Folia	gr. x	℈j
Aſſafœtidæ Gummi-reſina	gr. x	ʒſs
Balſamum Peruvianum	gr. x	ʒſs
——— Tolutanum	gr. x	ʒſs
Belladonnæ Folia	gr. ſs to	gr. v
Benzoinum	gr. x	ʒſs
Biſtortæ Radix	gr. x	ʒj
Cajuputi Oleum	♏j	♏v
Calami Radix	gr. x	ʒj
Calamina præparata	gr. x	ʒj
Calumbæ Radix	gr. x	℈j
Cambogia	gr. ij	gr. xij
Camphora	gr. iij	℈j
Canellæ Cortex	gr. x	ʒſs
Capſici Baccæ	gr. v	gr. x
Cardamines Flores	℈j	ʒj
Cardamomi Semina	gr. v	ʒſs
Carui Semina	gr. x	ʒj
Caryophylli	gr. v	ʒſs
——— Oleum	♏ij	♏v
Caſcarillæ Cortex	gr. x	ʒj
Caſſiæ Pulpa	ʒſs	℥j
Caſtoreum	gr. v	℈j
Catechu Extractum	gr. x	℈ij
Centaurii Cacumina	gr. xv	ʒj
Cetaceum	℈j	ʒjſs
Cinchonæ cordifoliæ Cortex	gr. x	ʒjſs
——— lancifoliæ Cortex	gr. x	ʒjſs
——— oblongifoliæ Cortex	gr. x	ʒjſs
Cinnamomi Cortex	gr. v	℈j
——— Oleum	♏j	♏iij
Coccus	gr. v	℈j
Colchici Radix	gr. j	gr. v
Colocynthidis Pulpa	gr. j	gr. v
Confectio Amygdalæ	ʒj	℥j
——— Aromatica	gr. x	℥j
——— Aurantii	ʒj	℥j
——— Caſſiæ	ʒj	℥j
Confectio Opii	gr. x	ʒſs
——— Roſæ caninæ	ʒj	℥j
——— Gallicæ	ʒj	℥j
——— Scammoneæ	℈j	ʒj
——— Sennæ	ʒſs	℥ſs
Conii Folia	gr. ij to	℈j
Contrajervæ Radix	gr. x	ʒſs
Copaiba	℈j	ʒj
Coriandri Semina	℈j	ʒj
Cornu uſtum	ʒſs	ʒij
Creta præparata	ʒſs	ʒij
Croci Stigmata	gr. x	ʒj
Cumini Semina	℈j	ʒj
Cupri Sulphas	gr. j to	gr. v
Cuprum ammoniatum	gr. ſs to	gr. v
Cuſpariæ Cortex	gr. x	ʒj
Dauci Semina	℈j	ʒj
Decoctum Aloes compoſitum	ʒſs	℥ij
——— Cinchonæ	ʒj	℥iv
——— Cydoniæ	ʒj	℥iv
——— Dulcamaræ	ʒſs	℥ij
——— Hordei	℥iv	O. ſs
——— compoſitum	℥iv	O. ſs
——— Lichenis	ʒj	℥iv
——— Sarſaparillæ	℥iv	O. ſs
——— compoſitum	℥iv	O. ſs

Decoctum

Decoctum Senegæ	℥ſs	℥ij
—— Ulmi	℥iv	O. ſs
Digitalis Folia	gr. ſs	to gr. iij
Dolichi Pubes	gr. v	gr. x
Dulcamaræ Caulis	℈j	ʒi
Elemi E	gr. x	ʒſs
Extractum Aconiti	gr. j	to gr. v
—— Aloes	gr. v	gr. xv
—— Anthemidis	gr. x	℈j
—— Belladonnæ	gr. j	to gr. v
—— Cinchonæ	gr. x	ʒſs
—— refinoſum	gr. x	ʒſs
—— Colocynthidis	gr. v	ʒſs
—— compoſitum	gr. v	ʒſs
—— Conii	gr. v	℈j
—— Elaterii	gr. ſs	gr. iij
—— Gentianæ	gr. x	ʒſs
—— Glycyrrhizæ	ʒj	℥ſs
—— Hæmatoxyli	gr. x	ʒſs
—— Humuli	gr. v	℈j
—— Hyoſcyami	gr. v	to ℈j
—— Jalapæ	gr. x	℈j
—— Opii	gr. ſs	to gr. v
—— Papaveris	gr. ij	to ℈j
—— Rhei	gr. x	ʒſs
—— Sarſaparillæ	gr. x	ʒj
—— Taraxaci	gr. x	ʒj
Ferri Sulphas	gr. j	to gr. v
—— Carbonas	gr. ij	to gr. x
Ferrum ammoniatum	gr. iij	gr. xv
—— tartarizatum	gr. x	ʒſs
Filicis Radix	ʒj	℥ſs
Fœniculi Semina	℈j	ʒj
Galbani Gummi-reſina	gr. x	ʒſs
Gentianæ Radix	gr. x	ʒj
Glycyrrhizæ Radix	ʒſs	ʒj
Granati Cortex	℈j	ʒj
Guaiaci Reſina	gr. x	ʒſs
Hæmatoxyli Lignum	℈j	ʒj
Hellebori fœtidi Folia	gr. x	ʒj
—— nigri Radix	gr. x	ʒj
Humuli Strobili	gr. x	℈j
Hydrargyri Nitrico-oxydum	gr. ſs	gr. ij
—— Oxydum cinereum	gr. ij	gr. x
—— rubrum	gr. ſs	gr. ij
—— Oxymurias	gr. ½	to gr. ſs
—— Submurias	gr. ſs	gr. ij
—— Submurias C	gr. v	gr. xv
—— Sulphuretum rubrum	gr. x	ʒſs
Hydrargyrus cum Creta	gr. x	ʒſs
—— præcipitatus albus	gr. v	gr. x
—— purificatus	ʒſs	℥iv
Hyoſcyami Folia	gr. v	gr. xv
Jalapæ Radix	gr. x	ʒſs
Infuſum Anthemidis	℥iſs	℥iv
—— Armoraciæ compoſitum	℥iſs	℥iv
—— Aurantii compoſitum	℥iſs	℥iv
—— Calumbæ	℥iſs	℥iv
—— Caryophyllorum	℥iſs	℥iv
—— Caſcarillæ	℥iſs	℥iv
—— Catechu	℥iſs	℥iv
—— Cinchonæ	℥iſs	℥iv
—— Cuſpariæ	℥iſs	℥iv
—— Digitalis	℥i	℥ij
—— Gentianæ compoſitum	℥iſs	℥iv
—— Lini	℥iſs	O. ſs
—— Quaſſiæ	℥iſs	℥iv
—— Rhei	℥iſs	℥iv
—— Roſæ	℥iſs	O. ſs
—— Sennæ	℥iſs	℥iv
—— Simaroubæ	℥iſs	℥iv
Ipecacuanhæ Radix	gr. ſs	gr. ij
—— E	gr. v	ʒſs
Juniperi Baccæ	ʒſs	ʒj
Kino	gr. x	ʒſs
Lavandulæ Flores	℈j	ʒj
Lauri Baccæ et Folia	gr. x	ʒſs
Lichen	℈j	ʒj
Linum catharticum	ʒſs	ʒj
Liquor Ammoniæ	♏x	♏
—— Ammoniæ Acetatis	ʒij	ʒvi
—— Ammoniæ Carbonatis	ʒſs	ʒiſs
—— Antimonii tartarizati	♏x	♏xx
—— E	ʒj	ʒij
—— Arſenicalis	♏v	♏xij
—— Calcis	℥ij	O. ſs
—— Ferri alkalini	ʒſs	ʒj
—— Hydrargyri oxymuriatis	ʒj	℥ſs
—— Potaſſæ	♏x	ʒſs
—— Potaſſæ Subcarbonatis	ʒſs	ʒiſs
Lytta	gr. ſs	to gr. iij
Magneſia	ʒſs	ʒj
—— Carbonas	ʒſs	ʒij
—— Sulphas	ʒj	℥i
Malva	℈j	ʒj
Manna	℥ſs	℥ij
Maſtiche	gr. x	ʒſs
Marrubium	℈j	ʒj
Mel Boracis	ʒj	ʒij
—— deſpumatum	ʒj	℥j
—— Roſæ	ʒj	℥ſs
Mentha piperita	gr. x	ʒj
—— viridis	gr. x	ʒj
Menyanthes	ʒſs	ʒj
Mezerei Cortex	gr. j	gr. x
Miſtura Ammoniaci	ʒſs	ʒj
—— Amygdalæ	ʒj	O. ſs
—— Aſſafœtidæ	ʒſs	ʒi
—— Camphoræ	ʒſs	ʒij
—— Cornu uſti	℥iv	O. ſs
—— Cretæ	ʒj	ʒij
—— Ferri Compoſita	ʒj	to ʒij
—— Guaiaci	ʒj	ʒij
—— Moſchi	ʒſs	ʒij
Moſchus	gr. ij	℈j
Mucilago Acaciæ	ʒj	℥j
—— Amyli	ʒj	℥j
Myriſticæ Nuclei	gr. v	gr. x
Myrrha	gr. x	ʒj
Oleum Amygdalæ	℥ſs	℥j
—— Aniſi	♏v	♏x
—— Anthemidis	♏v	♏x
—— Carui	♏j	♏v
—— Caryophylli	♏iij	♏vj
—— Cinnamoni	♏j	♏iij
—— Juniperi	♏ij	♏x
—— Lavandulæ	♏j	♏v
—— Lini uſitatiſſimi	℥ſs	℥j
—— Menthæ piperitæ	♏j	♏iij
—— viridis	♏ij	♏v
—— Origani	♏j	♏iij
—— Pimentæ	♏ij	♏v
—— Pulegii	♏j	♏v
—— Ricini	ʒij	℥j
—— Roſmarini	♏ij	♏v
—— Succini	♏x	ʒſs
—— ſulphuratum	♏x	ʒſs
—— Terebinthinæ rectificatum	♏x	ʒſs
Olibanum	gr. x	ʒſs
Olivæ Oleum	℥ſs	℥j
Opium	gr. ſs	gr. v
Opoponax	gr. x	ʒſs
Origanum	gr. v.	℈j
Oxymel	ʒj	℥j
—— Scillæ	ʒſs	ʒij
Petroleum	♏x	ʒſs
Pilulæ Aloes compoſitæ	gr. x	gr. xxv
—— cum Myrrha	gr. x	℈j
—— Cambogiæ compoſitæ	gr. x	℈j
—— Ferri cum Myrrha	gr. x	℈j

Pilulæ

Pilulæ Galbani compositæ	gr. x	ʒſs
——Hydrargyri	gr. v	℈j
——Submuriatis	gr. v	gr. x
——Saponis cum Opio	gr. iij	gr. x
——Scillæ compositæ	gr. x	℈j
Pimentæ Baccæ	gr. v.	℈j
Piperis longi Fructus	gr. v.	℈j
——nigri Baccæ	gr. v	℈j
Plumbi acetas	gr. ſs to	gr. ij
Porri Radicis Succus	ʒj	ʒſs
Potaſſæ Acetas	℈j	ʒſs
—— Carbonas	gr. x	ʒſs
—— Nitras	gr. x	ʒſs
—— Subcarbonas	gr. x	ʒſs
—— Sulphas	ʒj	ʒſs
—— Sulphuretum	gr. v	gr.xv
—— Superſulphas	℈j	ʒij
—— Supertartras	ʒj	ʒj
—— Tartras	ʒj	ʒj
Pulegium	gr. x	ʒj
Pulvis Aloes compoſitus	gr. x	℈j
——Antimonialis	gr. v	gr. x
——Cinnamomi compoſitus	gr. v	gr. x
——Contrajervæ compoſitus	gr. xv	ʒſs
——Cornu uſti cum Opio	gr. xv	ʒſs
——Cretæ compoſitus	ʒſs	ʒj
——Cretæ compoſitus cum Opio	℈j	℈ij
——Ipecacuanhæ compoſitus	gr. v	℈j
——Kino compoſitus	gr. v	℈j
——Scammoneæ compoſitus	gr. x	℈j
——Sennæ compoſitus	℈j	ʒj
——Tragacanthæ compoſitus	gr. x	ʒj
——Pyrethri Radix	gr. iij	gr. x
Quaſſiæ Lignum	gr. v	ʒſs
Quercus Cortex	gr. x	ʒſs
Rhamni Baccæ	ʒj	ʒij
Rhei Radix	gr. x	ʒſs
Roſæ caninæ Pulpa	ʒj	℥j
—— centifoliæ Petala	℈j	ʒj
—— Gallicæ Petala	℈j	ʒj
Roſmarini Cacumina	gr. x	ʒſs
Rubiæ Radix	ʒſs	ʒj
Rutæ Folia	gr. xv	℈ij
Sabinæ Folia	gr. x	ʒſs
Sagapenum	gr. x	ʒſs
Salicis Cortex	gr. x	ʒſs
Sapo durus	gr. v	ʒſs
Sarſaparillæ Radix	℈j	ʒj
Saſſafras Lignum	℈j	ʒj
Scammoniæ Gummi-reſina	gr. v	℈j
Scillæ Radix recens	gr. v	gr.xv
——exſiccata	gr. j	gr. iij
Senegæ Radix	℈j	℈ij
Sennæ Folia	℈j	ʒj
Serpentariæ Radix	gr. x	ʒſs
Simaroubæ Cortex	gr. x	ʒſs
Sinapis Semina	ʒj	ʒſs
Soda tartarizata	ʒj	℥j
—— Carbonas	gr. x	ʒſs
Sodæ Boras	gr. x	ʒſs
—— Subcarbonas	gr. x	ʒſs
—— exſiccata	gr. v	gr.xv
—— Sulphas	ʒj	℥j
Spartii Cacumina	℈j	ʒj
Spigeliæ Radix	gr. x	℈ſs
Spiritus Ætheris aromaticus	ʒſs	ʒj
—— compoſitus	ʒſs	ʒj
—— nitrici	ʒſs	ʒj
—— ſulphurici	ʒſs	ʒj
—— Ammoniæ	ʒſs	ʒj
—— compoſitus	ʒſs	ʒj
—— fœtidus	ʒſs	ʒj
—— ſuccinatus	ℳx	ʒſs
——Aniſi	ʒſs	℥ſs
——Armoraciæ compoſitus	ʒſs	℥ſs

Spiritus Carui	ʒj	℥ſs
——Cinnamomi	ʒj	℥ſs
——Juniperi compoſitus	ʒj	℥ſs
——Lavandulæ	ʒj	℥ſs
—— compoſitus	ʒj	℥ſs
—— Menthæ piperitæ	ʒj	℥ſs
—— viridis	ʒj	℥ſs
——Myriſticæ	ʒj	℥ſs
——Pimentæ	ʒj	℥ſs
——Pulegii	ʒj	℥ſs
——Roſmarini	ʒj	℥ſs
Spongia uſta	ʒj	℥ſs
Stannum	ʒj	℥ſs
Staphiſagriæ Semina	gr. iij	gr. x
Styracis Balſamum	gr. x	ʒſs
Succinum	ʒſs	ʒj
Sulphur lotum	ʒſs	ʒij
—— præcipitatum	ʒſs	ʒiij
Syrupi	ʒj	ʒij
Tabaci Folia	gr. ſs	gr. v
Tamarindi Pulpa	ʒſs	ʒij
Taraxaci Radix	ʒſs	ʒj
Terebinthina Canadenſis	℈j	ʒj
——Chia	℈j	ʒj
——vulgaris	℈j	ʒj
——Oleum	ℳx	ʒſs
Teſtæ præparatæ	ʒſs	ʒij
Tinctura Aloes	ʒſs	℥j
——compoſita	ʒſs	ʒij
——Aſſafœtida	ʒſs	ʒij
——Aurantii	ʒſs	ʒij
——Benzoini compoſita	ʒſs	ʒij
——Calumbæ	ʒſs	ʒij
——Camphoræ compoſita	ʒſs	℥ſs
—— Capſici	℥ſs	℥ſs
——Cardamomi	ʒj	℥ſs
——compoſita	ʒſs	℥ſs
——Caſcarillæ	ʒſs	ʒij
——Caſtorei	ʒſs	ʒij
——Catechu	ʒſs	ʒij
——Cinchonæ	ʒj	℥ſs
—— compoſita	ʒj	℥ſs
——Cinnamomi	ʒj	ʒiij
——compoſita	ʒſs	ʒij
——Digitalis	ℳx ad	ℳxl
——Ferri ammoniacalis	ʒſs	ʒij
—— Muriatis	ℳx	ʒſs
——Gentianæ compoſita	ʒj	ʒij
——Guaiaci	ʒj	ʒij
—— ammoniata	ʒj	ʒij
——Hellebori nigri	ʒſs	ʒj
——Humuli	ʒſs	ʒj
——Hyoſcyami	ℳx to	ʒj
——Jalapæ	ʒj	℥ſs
——Kino	ʒſs	ʒij
——Lyttæ	ʒſs	ʒij
——Myrrhæ	ʒſs	ʒj
——Opii	ℳx	ʒſs
——Rhei	℥ſs	℥iſs
—— compoſitæ	℥ſs	℥iſs
——Scillæ	ℳx	ʒj
——Sennæ	ʒij	℥j
——Serpentariæ	ʒſs	ʒij
——Valerianæ	ʒſs	ʒij
—— ammoniatæ	ʒſs	ʒij
——Zingiberis	ʒj	ʒiij
Tormentillæ Radix	gr. x	ʒſs
Toxicodendri Folia	gr. ij	gr.xv
Tragacantha	gr. x	ʒj
Tuſſilago	ʒſs	ʒj
Valerianæ Radix	℈j	ʒij
Veratri Radix	gr. ij	gr. v
Vinum Aloes	℥ſs	℥j
——Ferri	ʒj	℥ſs
——Ipecacuanhæ	ℳxx	ℳxl

Vinum Ipecacuanhæ	E	℥ij	ʒſs
——Opii . . .		♏x	℥ſs
Ulmi Cortex . . .		℈j	ʒj
Uva Urſi . . .		gr. x	ʒj
Zinci Oxydum . .		gr. iij	gr. x
—— Sulphas . .		gr. j	gr. v
——————— E		gr. xv	ʒſs
Zingiberis Radix . .		gr. v	ʒſs.

As the foregoing doſes are intended for the adult patient, we ſhall here ſubjoin Gaubius's Table of the proportionate doſes for children; though it will immediately occur to the judicious practitioner, that the quantities muſt vary, not with age only, but with ſex, conſtitution, and ſtill more with the intenſity of the diſeaſe.

For an Adult	—	—	1	e. g. ʒj
From 21 Years to	14	—	⅔	℈ij
14	7	—	½	ʒſs
7	4	—	⅓	℈j
4		—	¼	gr. xv
3		—	⅕	℈ſs
2		—	⅛	gr. viij
1		—	1/12	gr. v.

In making our acknowledgments to the authors from whoſe works we have derived the large body of information compreſſed into this article, we muſt be excuſed for omitting the names of a multitude of writers who have merely furniſhed a few inſulated facts or curſory obſervations. We muſt be excuſed alſo from inſerting the names of ſome whoſe labours have afforded us information, leſt we ſhould attribute to any one opinions which he does not hold, but which our own error may have cauſed us to attribute to him. Laſtly, we hope to ſtand excuſed for ſome whom we have inadvertently forgotten.

The hiſtorical part of this Treatiſe has been chiefly compiled from the works of Sprengel, Freind, Haller, Miller, Le Clerc, Blumenbach, Schultze, &c. and from Good's Hiſtory of Medicine.

In the hiſtory of the preſent ſtate of medicine, we have employed Sir Charles Morgan's Appendix to Lady Morgan's "Italy." Broughton's Letters from Portugal. Clarke's Notes on the Hoſpitals of Italy, France, &c. The Revue Medicale. Journal des Débats; and ſeveral excellent treatiſes and extracts in the Quarterly Journal of Foreign Medicine, 1820, 21. M. Eſquirol's Memoire préſenté au Miniſtre de l'Interieur. Clarke on the Climate and Diſeaſes of the South of France and Italy. Bianchi's tranſlation of Chani Zadek Mehemmed Ata-Oullah, a work lately publiſhed in Turkey on Surgery and Anatomy.

For the hiſtory of Noſology we are entirely indebted to Dr. Good, as well as for the Claſſification itſelf. And we here again beg leave to tender to this gentleman our admiration of his philological knowledge. It cannot be ſuppoſed, from the general tenor of our views, but that we look forward to a ſyſtem of medicine which ſhould be very much releaſed from the trammels of a never-ending liſt of names; but, at the ſame time, as far as grand diviſions and an accurately-conſtructed nomenclature are regarded, we humbly offer our opinion, that Dr. Good has left little to be wiſhed. As a piece of medical information, we cannot avoid mentioning that when nine-tenths of this article were publiſhed, Dr. Good gave to the world a large work, entitled the Study of Medicine, which is intended to render complete his labours in this ſcience. We have not yet ſeen it; but report ſpeaks very favourably of its merits.

The general principles of Diagnoſis have been for the moſt part taken from Dr. Marſhall Hall's work "On Diagnoſis."

The ſhort ſketch of General Pathology is drawn from the well-known works of Parry, Nicholl, and Brouſſais.

The Pathological Anatomy interſperſed over a large portion of the article, we have taken from the ſyſtematic works of Baillie, Farre, Laennec, and Brouſſais; or from practical monographs.

The authors whom we have conſulted in the claſs Cœliaca, or diſeaſes of the digeſtive function, are—Daubenton, Abernethy, Philip, Hall, Brouſſais, Parry, Hunter, Hamilton, and J. Johnſon; Baillie, White, Coley, Sherwin, and Arnott, on changes of ſtructure in the inteſtinal tube; J. Johnſon, Bayle, Farre, and Heberden, on hepatic and dyſenteric maladies; Brera, Baillie, Hooper, and Chamberlaine, on worms.

In the claſs Pneumatica, or diſeaſes of the reſpiratory function, we have borrowed much from Badham, Haſtings, Bree, and Alcock.

For the order Pyrectica, we are indebted to Cullen, Darwin, Bateman, Clutterbuck, Armſtrong, Jackſon, Frank, Nicholls, Park, Fordyce, J. Johnſon, and Bancroft.

The nature and treatment of Empreſma, or internal inflammations, have been diſcuſſed at full, but from too many ſources to admit of enumeration. With regard to inflammation of the ſerous membrane, we cannot avoid directing the reader's attention to the extracts from Brouſſais, Pemberton, Baron, and Laennec. And, as to the numerous diſeaſes of the heart, the labours of Corviſart, Laennec, and Portal, have mainly aſſiſted our deſcriptions.

Among Dyſthetica, or diſeaſes from general mordid habit of body, the diſeaſe Phthiſis, or conſumption, is enriched by the obſervations of Scot, Beddoes, Southey, Mansford, and Duncan, among practical writers; and the ſtill-more valuable ones of Baillie, Bayle, and Laennec, in relation to necrotomy.

The claſs Genetica is compoſed of a very compreſſed analyſis of the whole of Dr. Mansfield Clarke's excellent work "On the Diſeaſes of Females;" and by various remarks from Rowley and others of the old ſchool, in which theſe diſeaſes were ſo much conſidered.

The genus Hydrops, or dropſy, is deduced from the writings of Cullen, Parry, Blackall, Laennec, and Scarpa. This diſeaſe, as it affects the head under the form of Hydrops capitis, is treated of conformably with the opinions and obſervations of Yeats, Cheyne, and Gölis.

Our account of Calculous Diſeaſes is taken from Marcet, Henry, Wollaſton, Majendie, and Prout.

The whole deſcription of Cutaneous Diſeaſes is taken almoſt literally from the works of Willan and Bateman, with the exception of the therapeutical part, which has received ſome ſmall improvements ſince the writings of thoſe accurate and judicious writers.

Among the more compendious ſyſtems from which we have derived aſſiſtance, we have to mention the contemporary Cyclopædia of Dr. Rees, and the Encyclopædia Britannica; the French "Dict. des Sciences Médicales;" the Medical Dictionary of James, and the more recent and excellent one of Dr. Parr.

Laſtly, we muſt not forget to mention our obligations to the Medico-chirurgical Review, to the Quarterly Journal of Foreign Medicine, the Edinburgh Medical Review, and the London Medical and Phyſical Journal, for ſeveral excellent analyſes, and for ſome recent and curious caſes.

J. and C. Adlard, Printers,
23, Bartholomew Close.