

**The present practice of surgery : containing the description, causes, and treatment of each complaint; together with the most approved methods of operating / by Robert White, M.D. and practitioner in surgery.**

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White, Robert, active 1786-1792.  
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### **Publication/Creation**

Bury St. Edmund's : Printed by P. Gedge, for J. Johnson, No 72, St. Paul's Church-Yard, London, 1786.

### **Persistent URL**

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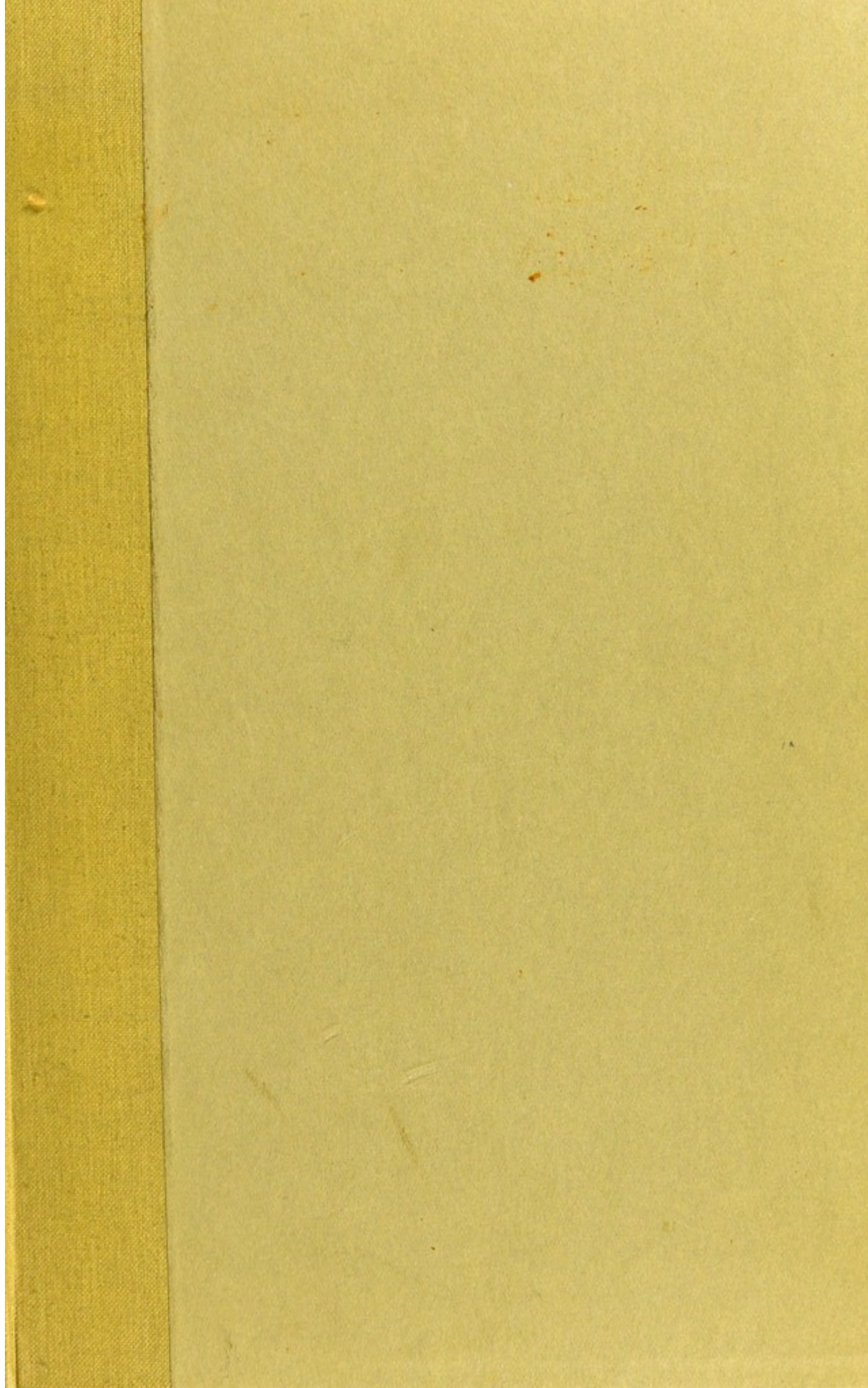
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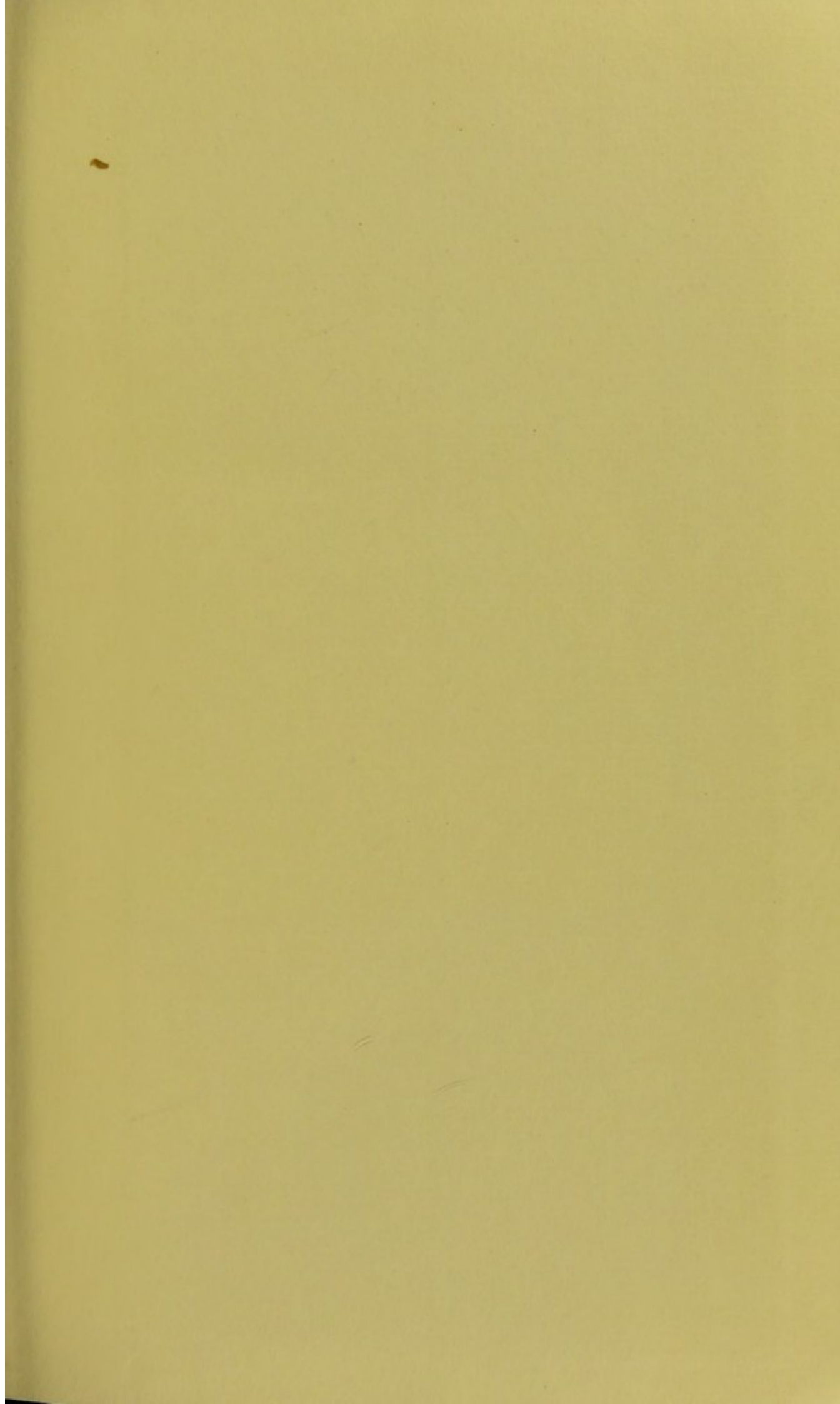
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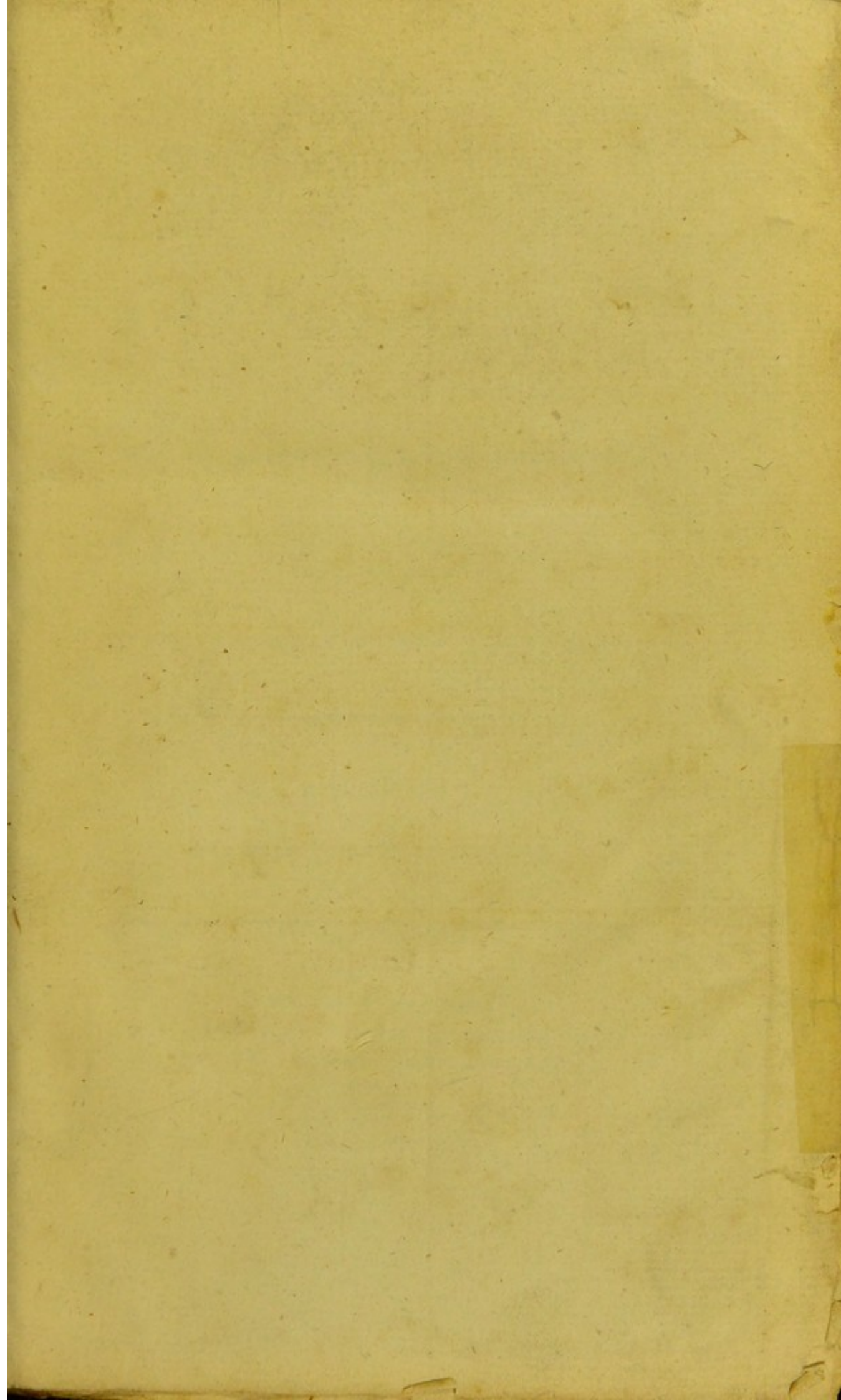
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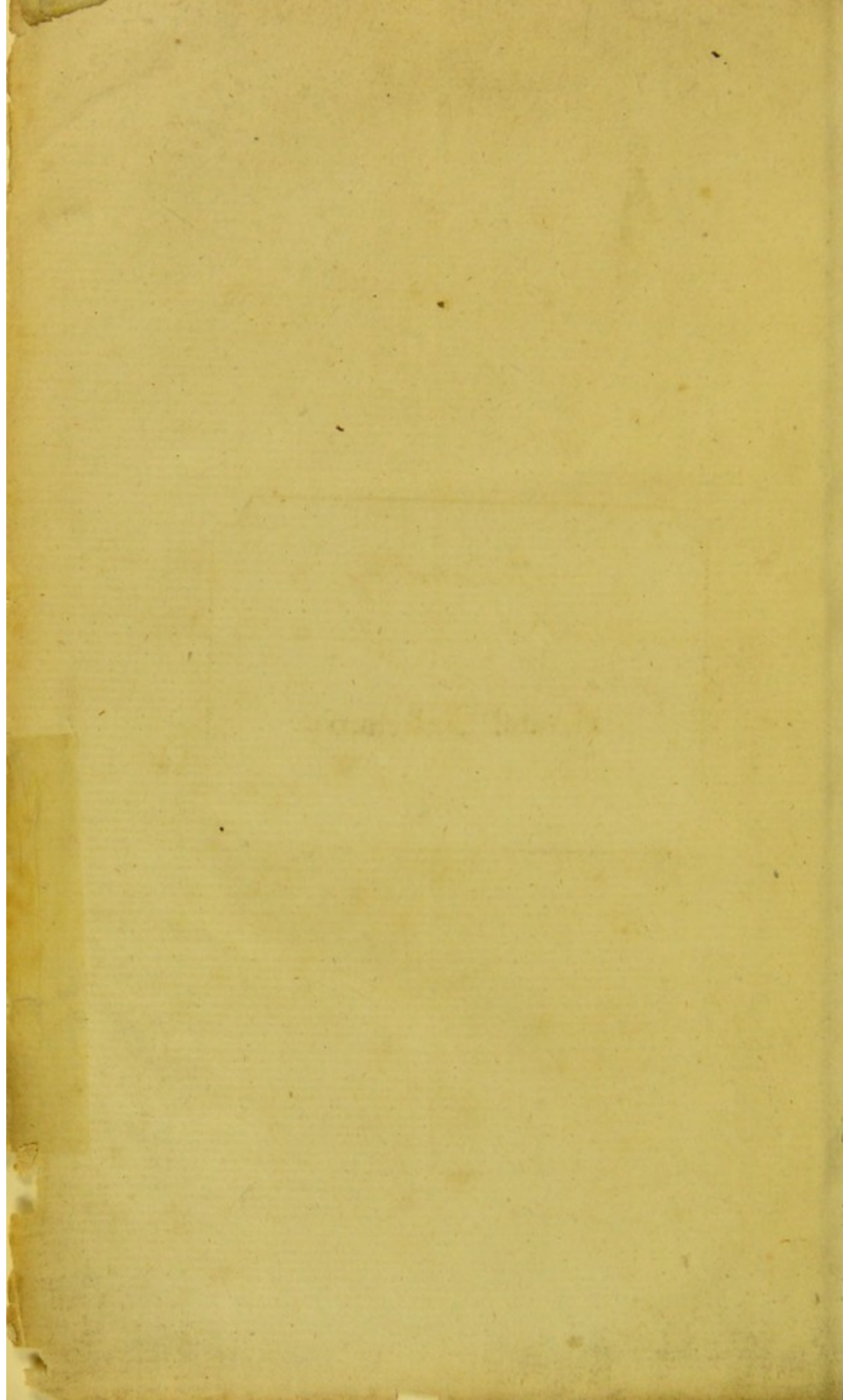












BRISTOL THE INFIRMARY.  
PRESENT PRACTICE  
OF  
SURGERY.

CONTAINING  
THE DESCRIPTION, CAUSES, AND TREATMENT  
OF EACH COMPLAINT;  
TOGETHER WITH  
THE MOST APPROVED METHODS OF OPERATING.


---

By ROBERT WHITE, M.D.  
AND PRACTITIONER IN SURGERY.

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BURY ST. EDMUND'S:  
PRINTED BY P. GEDGE, FOR J. JOHNSON, NO 72,  
ST. PAUL'S CHURCH-YARD, LONDON.

M.DCC.LXXXVI.







T O T H E  
R E A D E R.

**T**HOUGH the many valuable works, which have at various times been published, relating to the Practice of Surgery, may be thought fully sufficient to communicate every necessary information upon the subject, still it must be acknowledged, that the great improvement made in the art within the last thirty or forty years, have rendered the practical part so widely different from what it is handed down in the writings of former practitioners, as to give ample room for further explanations and remarks.

Much, it is confessed, has been published upon the subject within that term; but some of those publications are too voluminous and expensive, some treat only on particular subjects; and others are rather confined to the improvement of operations, and to hypothetical invention, than made subservient to general practice. Experience, however, and observation, together with a competent knowledge of anatomy, are the leading principles upon which this noble art is founded, and upon which it ought to be supported.



In this refined age, theory has too much the ascendancy. New systems are daily creating; no sooner is one become fashionable and admired, than another springs up, and industriously controverts it, if it does not overturn it. Education is in fact wrought up beyond the limits of useful knowledge; and the most ingenious men are too often diverted by fanciful schemes, founded upon false principles: hence the student is unwarily led into vain pursuits, and is too apt to neglect sound practical knowledge. But allowing such attempts to be ingenious, at the same time there is little need of argument to prove their fallibility; and although they may be laudable, and even useful, yet it is likely they would be much more so, were they entered upon with greater caution, and managed with more temperate zeal. The surgical art has very little need of such aids,

Non tali auxilio——

——eget——

The *modus operandi* is of little signification, provided success attends the means employed towards relief. Human reason is evidently too weak to investigate the mysterious course of nature with any degree of certainty; and in surgery, as in every other branch of the medical art, those applications which will most assist, and least interrupt her efforts, are best entitled to preference. Common sense will in general be found equal to the task of suggesting the means, and observation and practice will readily ascertain the propriety of using them.

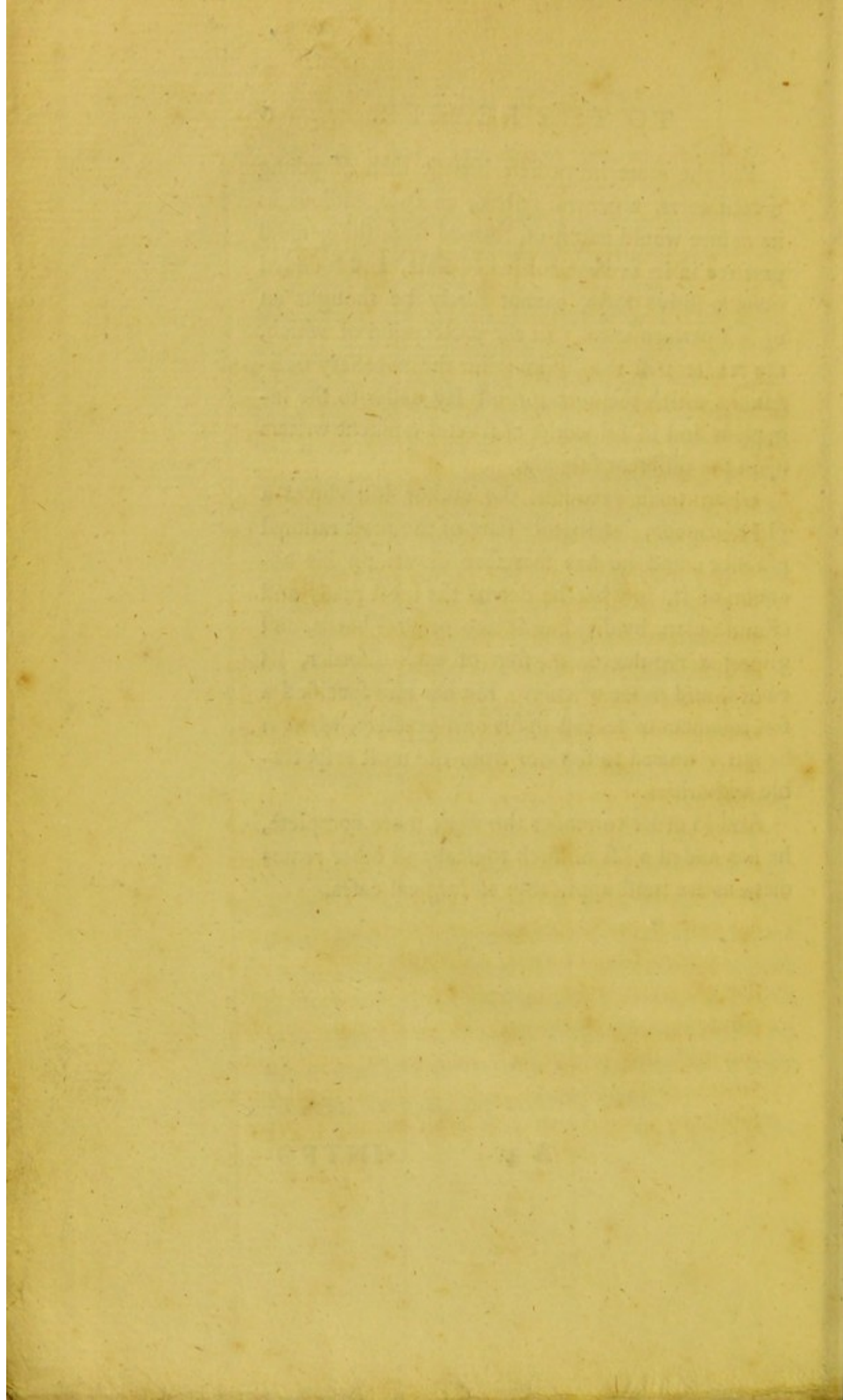
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For the more immediate benefit then of young practitioners, a general system, as compendious as its nature would admit of, formed from the general practice in its present cultivated state, and founded upon positive facts, cannot surely be thought an useless performance. In the prosecution of which, the reader will readily imagine the necessary obligations which the author must lay under to the ingenious and useful works of several eminent writers upon the different subjects.

Upon these premises, the author introduces a plain, concise, intelligible state of the most rational practice; and he has therefore drawn up his account of it, in what he deems the most ready and eligible plan, by dividing it into general heads, and giving a regular description of each disorder, its causes, and mode of cure. He has also specified a few instances of success in his own practice, wherein he has ventured to deviate from the most respectable authorities.

And in order to render the work more complete, he has added a list of such topical and other remedies, as are most applicable to surgical cases.





## INTRODUCTION.

**S**URGERY is that branch of the healing art which produces cures by means of topical applications, and manual or mechanical operations: and it consists of such certain rules and precepts, as are altogether founded in reason and experience. Hence every one who is desirous of exercising the office of a surgeon with propriety, ought at the same time to be well versed in anatomy and medicine; and to have some knowledge in mechanics. How prejudicial then to the art of surgery must the mode of practice have been in former ages, when physicians chiefly studied the scientific part, and the operative was entrusted to the meanest quacks, and the most ignorant pretenders. However, the surgeons of the last and present centuries have happily rescued it from such ignominious hands, and through their industry and improved knowledge in anatomy, it has been brought to its present excellence.

The practice of surgery is strongly connected with that of physic, insomuch, that it is impossible to separate them; wherefore no just cause can be assigned, why they should ever be considered as distinct provinces. Fashion and prejudice in this, as in all other sublunary matters, may bear an extensive power;



still (such unworthy influence apart) it becomes an indisputable fact, that good natural parts, a liberal education, and a well-grounded knowledge in anatomy and medicine, are all necessary towards forming a complete surgeon; and also that no physician can be perfect in surgery, unless he has acquired practical skill. The lectures on *Anatomy*, *Chymistry*, *Natural Philosophy*, the *Materia Medica*, *Practice of Physic*, *Surgery*, and *Midwifery*, are arrived at the greatest perfection in these kingdoms; and the ardent zeal with which the student is instructed in all these important subjects, gives him every opportunity of being well informed in the scientific part, whilst at the same time, nothing can be imagined more convenient, or more adapted to make him skilful in the practical, than the many charitable institutions for which this nation is so justly famed.— Under such great advantages, with adequate parts and application, one cannot conceive it by any means beyond the reach of a single mind, to acquire every branch of medical knowledge. Proofs of such skill and ability are to be met with in many parts of the kingdom; and it is not unlikely, that the different parts of the profession, will in time be more generally blended together in the capital.

Systematic writers have divided and subdivided the art of surgery into several parts, according to the different operations: but if there is any real necessity for such divisions, they may be all comprised under the following heads:—*Synthesis*, by which divided



vided or distant parts are re-united; as in wounds, fractures, dislocations, &c. *Diæresis*, or the division of parts by incision, cautery, perforation, &c. and *Exæresis*, which comprehends the removal of morbid parts, or foreign bodies.

It has been generally thought proper in the introductory part of a work of this kind, to acquaint the reader with the order in which its contents are digested; in addition therefore to what he is already apprised of in the address, it will be necessary to observe, that it first treats of the most general complaints; such as *Inflammation, and its consequent Tumours, Wounds, Ulcers, Fractures, Dislocations, &c.* afterwards, of those which affect *particular parts*, together with the most approved methods of *operating* in each; and that he will find the prognostics and diagnostics either interwoven with the description of the disorder, or particularly specified, according to the nature and importance of the subject.

It is here also customary to notice such instruments as are commonly necessary; but as to those which are required upon particular occasions, reference may be had to the lists of the different makers: and it ought to be understood, that the inspection of a real instrument (which every young surgeon has an opportunity of viewing, with all its various alterations and improvements, or supplying himself with, at the shops of the most noted makers, previous to his leaving the hospitals) will give him a much more perfect idea, and more striking impression of its  
size,



size, form, and use, than he will be able to collect from the imitative powers of the most correct engraving.

Those which are necessary upon common occasions are, a small case of lancets, which ought not to be too broad, or too narrow shouldered, or too thin upon the blade; a pair of strait, and crooked or probe scissars, a spatula, forceps, pliers, and hook; a strait and crooked scalpel, a strait double-edged scalpel, the eye and tent probe, a grooved director, small cautery, and caustic quill; strait and crooked needles of different sizes, ready threaded: a salvatory, lint, and plaisters, are also necessary portables. The surgeon thus equipped, is prepared for any sudden exigency; he ought moreover to carry about him, a small phial with thebaic tincture, and another with essence or wine of antimony; the use of which medicines upon certain occasions, will be gaining time to the surgeon, and more immediate relief to the patient. The common necessities for dressings are, lint, plaister, compress, and bandage.

*Lint* in form of what is called a pledget, is generally the first dressing to wounds, ulcers, &c. either dry, or moistened with some vulnerary balsam, or lightly spread with cerate, or emollient ointment. It was formerly in great use as a tent, but those applications are now properly considered as obstacles to the art of healing, and are confined to the preserving an opening for the discharge of matter from  
some



some large cavity, which on such occasions are made of a flat form with a piece of fine rag, so as not to block up the whole of the aperture, and in such cases as require dilatation, or in opening some obstructed passage; both which last are commonly brought about by means of prepared sponge or gentian root, bougie, and the like. Clean, soft, brown flax, or tow as it is called, is sometimes a very good substitute for lint, particularly in those sores that discharge profusely.

*Plaisters* (adhesive) are spread upon linen cloth, or soft leather, and are useful to confine dressings with, to ripen indolent tumours, and to form the dry future. If the part on which the plaister is to be laid is hairy, it must be shaved, and in some habits, it may be remarked, that the most simple plaister will irritate and inflame the skin; in lieu of which, a mild cerate with slight compress and bandage may serve as retentives.

*Compresses* are most commonly made of soft linen rag, free from knots, seams, and loose threads, and shaped agreeable to the part, or purpose to which they are to be applied; they are used either dry, or moistened with some liquid application, in order to render bandage or splints more easy and effectual, where tightness or pressure is required, and to retain dressings. Tow, in cases where the discharge is great, is a good assistant, or substitute.

*Bandage.* This is the last though not the least important part of each dressing. Writers upon this subject



subject are more than ordinarily full in their explanations; and the numerous divisions on this head are extremely perplexing; even when an illustration has the aid of the best engraving, the mode of application is often of too complicated a nature to be understood by the man of experience, and more especially by those who have not had the opportunity of observing, or practising it. It is only meant therefore slightly to notice the names, distinctions, and mode of applying some of the most common bandages; and to recommend the attainment of such part of the rest as is necessary, by observation and practice; which after all, must be guided by the surgeon's dexterity and discretion.

Bandages should be made of linen cloth that has been in use, yet strong and clean; they ought to be free from seam, knot, roughness, or loose threads, and should be cut in length, breadth, and shape, agreeable to the part or occasion, to which they are to be applied.

Bandages are commonly divided into simple or compound. The simple are either rolled up at one, or both ends, which are called single or double-headed rollers; and may be applied in a circular, spiral, or reinversed manner, that is, half twisted, to make them fit even. Compound bandages have flits or apertures in them, or are made up of several pieces stitched together. The bandage with four heads, tails, or loose ends, with a hole in its middle for the insertion of the chin in the fractured jaw,  
and



and the eighteen-tailed bandage used in fractured limbs, are of this sort. Some again have their names from a part of the body to which they are applied, as in the bandage of the head, thorax, &c. and from their resemblance to some figure, as the spica, scapha, stellated, or T bandage; others from their particular uses, as retentive, uniting, dividing, &c.

The neatest and most secure way of forming the simple single-headed bandage to the arm is, by first making two or three annular turns round the wrist, and then proceeding to the part where the bandage is required, spirally, that is, where each subsequent turn ascends or descends upon the former, like the gradual windings of a screw; if it is to be made upon the lower part of the leg, begin round the foot and ankle, then proceed as before; and as the tapering of the leg, especially near the calf, will make the windings fall uneven and bagging out, it will be necessary at every second round, to reinverse the bandage, or give it a half fold backward, which maxim must be observed on all occasions, where the shape of the part requires it. In the double-headed roller the middle is to be first applied, and each part is to be carried, according to the particular case to which it is to be adapted.

Care should be taken not to make the bandage too tight, or too loose; since the one state may occasion pain, tumour, inflammation, and gangrene, and the other must render it of no effect.

C O N-





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*Particular Disorders, with Operations, &c.*

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T H E  
PRESENT PRACTICE  
O F  
S U R G E R Y.

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INFLAMMATION *and* TUMOUR.

SYMPTOMS. **E**VERY organized part is subject to Inflammation ; which disease generally begins with a sense of cold and shivering, thirst, and watching ; the part affected becomes red, tense, and painful ; during the rigour, the pulse is small, quick, and unequal ; afterwards it is full and throbbing. The secretions are lessened, the skin grows dry and stiff, the urine is high-coloured and turbid, and the blood that is drawn when cold, is covered with a tough buff coloured fuziness.

*Pblegmon.* The tumour known by this appellation, is inflamed and circumscribed ; and is accompanied with heat, redness, tension, and throbbing



## 2 INFLAMMATION *and* TUMOUR.

bing pain: when slight, it has but little effect upon the general system, but if considerable, it is attended with the foregoing febrile symptoms.

CAUSES. Externally, are whatever tends to stimulate, or produce pain and irritation; such as, wounds of every kind, burns, scalds, bruises, stimulating applications, ligatures, violent exercise, and cold. Internally, a critical termination of febrile matter, or a vitiated state of the fluids.

The proximate cause of inflammation is not positively known; the increased action of the vessels of any part, and spasmodic stricture of the arterial system is the most received opinion.

*Termination.* Inflammatory complaints terminate either by dispersion, maturation, or gangrene.

*Dispersion, or Resolution,* is the most eligible mode of termination, except in swellings that form from fevers and internal disorders; incipient venereal tumours, and erysipelatous inflammations may be dispersed; inflammatory swellings in the vitiated habit should not.

To effect the cure by dispersion, all exciting causes must be removed; hot fomentations and emollient cataplasms are to be avoided; instead thereof, it is better to use saturnine applications, and cold discutients, such as, goulard water, a solution of sugar of lead in vinegar and water, or of crude sal ammoniac in vinegar, or Mindererus's spirit properly neutralized; and to keep the part moist with poultices prepared with any of these mixtures,  
and



and the crumb of bread. But if the part inflamed is too tender to bear the weight of a poultice upon it, soft linen cloths, moistened with any of the foregoing remedies, cold, should be frequently applied.

In case of extreme heat, tension, or irritability, a small portion of bland olive oil, or oil of roses, by themselves, or mixed with about a fourth part of vinegar, may be gently rubbed into the part. If it is extremely tender, let a piece of fine rag dipped in milk just warmed, or spread lightly with the white liniment, be occasionally applied. In some deep-seated inflammations, vinegar mixed with the crumb of white bread has proved highly efficacious.

Bleeding should be repeated, according to the exigency of the case, and the strength of the patient; cupping and scarifying, and the application of leeches as near to the part affected as possible, are sometimes useful.—It ought however to be observed, that such evacuations, in critical tumours particularly, are no further necessary than to regulate the feverish symptoms.

Gentle laxatives and a low diet, have much better effect in most constitutions than brisk purges: such are Glauber's salts in a large portion of water, or a solution of soluble tartar and manna in barley water, common emulsion, or infusion of senna.—A great deal also depends upon plentiful dilution; drinking a little at a time, and often, of toast and water, barley water with orange juice, thin gruel, and the like. Fruits in season, and their juices, are



#### 4 INFLAMMATION *and* TUMOUR.

beneficial, as they tend to allay thirst, and correct heated bile. Nitrous and neutral mixtures may also be administered.

*Maturation, or Abscess.* When the tumour grows larger and softer, the throbbing pain increases, the febrile symptoms are not at all decreased, and a rigour attends, the means for dispersion may be laid aside, and the following treatment pursued, in order to assist nature in the business of maturation.

If the patient is much weakened, a more full diet should be allowed, and such applications ought to be made, as may tend to preserve a just degree of heat in the part. Warm emollient fomentations, cataplasms with bread and milk, to which a little pure oil or fresh butter may be added, should be applied, at least every six hours. Roasted onions, or a small portion of any of the warm gums dissolved with the yolk of an egg, and added to the poultice, are proper stimulants when the inflammation is deficient; on which occasion, cupping without scarifying is said to be of use. In cold indolent tumours, no remedy answers better than a plaister of diachylon with the gums.

When the throbbing pain abates, a thinness and rising appear in some part of the swelling, a fluctuation is perceived, and the fever gives way, the abscess should be opened; otherwise absorption may take place, and greater mischief ensue. It is not necessary to wait for full maturation in abscesses on the joints, in such as are formed near the bones,

or



or over the thorax and abdomen, or in those which are critical.

The methods of discharging the matter are, by simple incision, caustic, or incision with seton.

Simple incision is performed with the lancet, scalpel or bistoury, and director. It is a useful mode of opening in fistulæ, small abscesses, and to prevent the deformity of a scar; always remembering to make the incision, if possible, in the most depending part, and according to the course of the fibres.

Caustic is seldom necessary—this mode is principally of use, where the malignity of the complaint is likely to prevent quick incarnation, and the lips after incision are apt to grow callous, of which kind are venereal buboes; to expose a carious bone, and to make large fontanelles.

The caustic is to be applied after the following manner; cut a proper sized orifice in a piece of sticking plaister, fix it close to the part, and lay a few slips of plaister one over the other round the edges of the opening, then apply a small pledgit of lint, spread with the stronger common caustic and soft soap, of each equal parts, into the orifice of the plaister down to the skin, and a large piece of sticking plaister over all. Care should be taken to cut the opening of the plaister somewhat less than the intended opening of the teguments, as it is hardly possible to confine the caustic within its limits.

To lay a bone bare or make an issue, it may be continued on about four or five hours; to open an



## 6 INFLAMMATION *and* TUMOUR.

abscess, two or three hours ; according to the thickness of the skin, and nature of the part. And when the eschar is perfectly formed, it is better to scarify down to the sore, and remove such part of it as can be cut out without pain.

The incision with seton is of all others the most eligible method of discharging the contents of an abscess. It empties the swelling gradually, by which means, the sides contract and adhere much sooner than they can do after being opened by caustic or incision ; it prevents a free admission of air to the internal surface of the sore, and further, it is not attended with so great pain and inflammation as the other means ; this method is particularly useful in large abscesses, and is to be performed as follows.

Make a proper opening with a stout lancet in the superior part of the sore, into which orifice introduce a curved director, or eye probe, armed with cotton-wick, or soft silk, proportioned to the size of the tumour, gently thrust the point of the director down to the most depending part of the swelling till it is felt externally ; then cut upon it with a knife, or the edge of a stout lancet, so as to make the inferior opening rather the largest ; through which draw the director with so much of the cord, as to leave two or three inches of it hanging out of the lower orifice. The cord or seton must be moved downwards every day, and all such part of it as was used the day before is to be cut off. As the discharge diminishes, let the size of the cord be lessened



lessened by withdrawing a thread or two every second day, and when it is wholly withdrawn, confirm the union by a gentle bandage.

This practice is universally approved of, and its advantages are more particularly described by Mr. Bell, in his ingenious publication on the Treatment of Ulcers.

The general mode of dressing an abscess opened by simple incision, is, first with lint lightly pressed between the edges of the opening, afterwards with mild digestives; the white or yellow cerate made with the purest materials, and spread thin upon lint, are the mildest and perhaps the best applications.—Should the edges grow callous, it will be proper slightly to scarify, and to touch them with lunar caustic. Tents and vulnerary injections are properly discarded. Fungous flesh is to be prevented by keeping down the edges with lunar caustic, and dressing with dry lint, and now and then with lint, or rag spread very thin with the white cerate, and gentle bandage. When inflammation is gone off, and the matter is discharged, a slight compress and bandage will hasten the cure.

In the cure by incision and seton, little more is required to be done, than smearing over that part of the cord which is to be drawn down into the fore with a soft liniment.—In this, as well as every other method, the part should be cleansed, and the dressings be repeated according to the quantity and quality of the discharge.



## 8 INFLAMMATION *and* TUMOUR.

*Gangrene, or Mortification.* This is the worst consequence of an inflammation. An incipient mortification in the fleshy parts, is called a gangrene; when the disease is complete, and extends even to the bone, it is termed a sphacelus.

DESCRIPTION. In the *Gangrene*, the bright redness changes to a dusky livid colour, the pain and sensation are diminished, the tension goes off, vesications appear, filled with various-coloured ichor, and the pulse is weak.

In the *Sphacelus*, which is the last stage of a mortification, the part is quite black, has no pain or sensation, and emits a considerable stench; the pulse quickens and sinks, and without support, oppressive languors succeed, profuse sweats come on, the patient grows cold, and life soon passes away.

CAUSES. A gangrene may proceed from too high a state of inflammation, from obstructed circulation, by ligature, pressure, or extreme cold; from a vitiated state of the bile and juices, from old age, or constitutional weakness.

*Internal Remedies.* Should the general symptoms of inflammation run so high as to indicate a gangrene, which is not unlikely to be the case in a young subject, where no previous evacuation has been made, a slight bleeding and gentle evacuations may be proper; but in the more general and confirmed kind of gangrene, attended with langour, and an acrid state of juices, the system should be regularly and carefully kept up, by nutritive diet,  
wine



wine and other cordials, and tonic medicines. To which end, from half a dram to a dram of bark taken every hour or two, in a small glass of red wine, or brandy and water, will greatly contribute. In case of stricture, heat, and dryness in the skin, which sometimes greatly incommode the patient after first taking the bark, a spoonful or two of the following julep will relieve, by promoting a gentle perspiration.

Take of camphor julep, six ounces; and Mindererus's spirit two ounces, mix.

Sometimes, it will be useful to add to this julep a dram or two of the cordial confection. In many cases where the stomach has rejected the bark given in the manner just now directed, the following elegant formula, prescribed by Mr. Bell, has answered every purpose.

Take of simple alexeterial water and strong cinnamon water, each three ounces; aromatic water two ounces, and half an ounce of bark finely powdered: two spoonfuls of this mixture are to be taken every half hour or hour.

Sweats are weakening, and should be studiously corrected; towards which, nothing is so likely to be serviceable as the addition of a few drops of elixir of vitriol to the bark, so long as that symptom requires, and as often as the stomach can bear; the best mode of giving it is in the patient's drink. A decoction of snake-root has proved singularly useful



ful to two persons greatly advanced in years, and of a cold constitution, where the stomach wholly rejected the bark; it is a powerful addition to a strong decoction of that valuable drug.

When the mortification is fixed on the lower extremities, and is attended with a burning obtuse pain, opium, taken with a strong decoction of bark, may prove very efficacious.—In which case, the best way of exhibiting it is, to begin with a grain every three or four hours, and gradually increase the dose if requisite.

In mortifications, more especially those which arise from internal causes, the principal dependance is upon internal remedies. Generous wine is the best cordial, and the bark is allowed to be the most useful remedy. A proper stool must be occasionally procured, agreeable to the strength and natural habit of the patient. Domestic glysters, or rhubarb in small quantity, alone, or joined with a few grains of soluble tartar, and repeatedly given with the bark, are most likely to answer the desired effect.

*External Remedies.* The most general applications are, the cummin seed poultice of the London Dispensatory, and poultices made with the flour of oatmeal, or grated crumbs of white bread, and a sufficient quantity of the grounds of strong beer.—The fermenting poultice recommended in the mortification of the foot and toes, is of general use in cachectic habits.

Many



Many principal practitioners are at least doubtful, whether spirituous fomentations and strong digestives deserve the repute which they have long possessed. The relaxing heat with which the former is frequently applied, and the strong stimulus of the latter in incipient mortifications, perhaps do as much harm as good; the chief use they seem to be of, is most probably derived from their warm antiseptic qualities, which the poultices are equally possessed of. The good effect of scarifying to the quick is also disputed; such incisions, so far as they serve towards removing the dead parts from the living, without giving the least pain, are undoubtedly useful; further is not to be proved, as we know not what degree of stimulus is necessary to assist the *vis naturæ*. The application most likely to be of use is, an embrocation used in the northern part of the kingdom, which stimulates in a moderate degree, and is prepared as under:

Take of crude sal ammoniac, one dram; best wine vinegar, two ounces; pure water, six ounces. Mix.

When a line of inflammation appears between the diseased and the sound parts, there is reason to expect a perfect separation, and the slightest and most easy dressings answer best.

Mortified parts, in the extremities, where the bones are thoroughly diseased, will require amputation; but that operation should not be performed till a thorough separation of the dead muscular parts has taken place.

ERY-



ERYSIPELAS, *or* ST. ANTHONY'S FIRE.

**DESCRIPTION.** Is a species of phlegmon, with no evident tumour, which is principally seated on the exterior part of the cutis; it spreads irregularly, and sometimes to great extent. It is attended with a diffused redness, which disappears on pressure, with a burning heat, more or less fever, sickness, and vomiting; and is of a brighter or duller red, according to the vigour of the constitution, or the degree of acrimony in the fluids. It seldom inclines to suppuration, unless improperly treated, or when it extends to the cellular membrane, but generally throws forth small pustules, or vesicles, containing an acrid watery humour. It is commonly attended, for two or three days before and after its appearance, with the symptoms of an inflammatory fever and fizy blood, and gradually disappears; the skin turning yellowish, and the cuticle scaling off.

The urine is at first, for the most part, high coloured and turbid, afterwards, lets fall a copious lateritious sediment.

When it seizes the face, head, or neck, the skin grows tense, and is often inflated like a bladder; in which case there comes on much head-ach, coma, and sometimes delirium; if fixed in the limbs, the febrile symptoms are less violent. The alimentary canal sometimes suffers from erysipelatous inflammation.



mation. If the patient's constitution has been broken down by age, disease, or any other cause, it often terminates in a gangrene; especially if it affects the extremities, or is combined with a putrid or pestilential fever. The fever and erysipelas frequently go off without any sensible crisis.

CAUSES. The general causes of this disorder are, constitutional disposition, plethora, great heat, irregular living, sudden cold after heat and sweat, drinking too much of fermented or spirituous liquors, bilious or scorbutic acrimony, and violent passions.

CURE. When the erysipelas is of the true inflammatory kind, the antiphlogistic regimen and remedies are proper; bleeding and evacuations are to be regulated by the quantity of fever, and strength of the pulse, and are generally necessary during the first symptoms; yet care should be taken not to reduce the patient too low.

In the common milder kind, lenient purges, and diluting plentifully with small milk and water, barley water, cream of tartar, or thin cheese whey, will prove sufficient. The most proper lenitives are, half an ounce of Glauber's salts dissolved in half a pint or more water, of which a cupfull is to be repeatedly taken till it answers. Soluble tartar and manna dissolved in the common emulsion, or a slight decoction of senna with prunes. Glysters are to be occasionally administered, and in the interim, nitre with camphor, neutral juleps with the fixed or volatile



volatile alkali. In scorbutic habits no one preparation succeeds better than the infusion of malt. If the humour has been imprudently repelled, and affects the head and chest, bleeding, blisters on the back or legs, Mindererus's spirit with the compound powder of contrayerva, and gentle evacuation by stool, are necessary. Great evacuations are utterly improper when the eruption is critical; and spirituous, acid, astringent, or cold applications, as repellents, are bad. If this disorder is attended with a putrescent state of the juices, or a languid state of the vis vitæ, cordials and antiseptics, particularly the bark, the julep with camphor and Mindererus's spirit, cordial confection, and the like, should be directed.—Red wine is also useful, by itself, in negus, or otherwise.

*External Treatment.* Sponge the part with an infusion of camomile flowers and milk, or use cloths wrung out of a decoction of elder flowers, with the addition of a little opodeldoc; or, with rags dipped in Mindererus's spirit. In constitutions that will bear repellents, cloths moistened with Goulard's vegeto-mineral water may be applied.—When blisters or pustules appear, and begin to discharge their acrid contents, the best and safest method is, to sprinkle lightly over the part fœnugreek, or some farinaceous powder, and to apply a piece of fine rag doubled and spread thin, with the purest white cerate. Cabbage and vine leaves have sometimes good effect. Houseleek and cream is also a  
common



common application; but in some cases, the three last mentioned remedies should be cautiously applied. Emollient fomentations ought also to be used with caution, as they tend to promote suppuration.

ANTHRAX, *or* CARBUNCLE.

DESCRIPTION. The anthrax in the plague, appears suddenly in the form of a blister, which is followed by a large burnt-like black spot, and is attended with very little tumour. Sometimes it comes on with much itching, and is surrounded with a red fiery circle, forming small tubercles of corrupt flesh, and mortifies in a very few hours.

There is a tumour of a milder nature, which from its frequent dusky appearance, and tendency to gangrene, comes under the same denomination. It is somewhat hard and round, and in aged persons, and vitiated habits, inflames to a considerable extent. The part forms into a loose corrupt substance, with ill conditioned matter; it is frequently a fatal preface to those who are far advanced in life.

CAUSE. Carbuncles generally spring from a putrid, or putrescent state of the juices.

CURE. As this species of inflammation is commonly disposed to gangrene, the most proper treatment is that which is directed under that article. In the strong plethoric habit, early in the disease, a moderate bleeding, and a gentle dose or two of cooling



cooling phyfic, may tend to regulate the habit, and prevent its progrefs. In languid constitutions, the bark, ferpentary, and vitriolic acid, are of the greateft use.

It has been the practice, to cut out at different times, as much of the sloughs and diseased parts as could be removed with ease and safety : but this ought to be principally confined to the central part of the tumour. The surgeon who is conversant in such cases, knows well the necessity and usefulness of preserving the teguments around as much as possible, notwithstanding their flaccidity and gangrenous appearance ; for when the subjacent parts are too freely exposed to the air, they are apt to form eschars, instead of helping to confirm suppuration ; besides, although the appearances are threatening to a great extent, yet with the use of the cortex, proper regimen, and the suppurative or mixed cataplasim, the sore is sometimes to be brought within tolerable bounds ; after which, should the teguments remain loose around the sore, a soft compress and gentle bandage will mostly assist its union.

Strong stimulating applications are here also to be avoided ; the poultices with white bread and milk, and strong beer lees with oatmeal, by themselves, or mixed in due proportion, according to the aspect of the sore, are most proper, together with the mildest dressings next the sore.

BOIL.



## B O I L.

**DESCRIPTION.** It is a small circumscribed tumour, situated in the skin and cellular membrane, it rises to a point, and is attended with inflammation and pain. It shews itself in all parts of the body, and at all ages; commonly matures in a few days, and sometimes casts out a slough, and heals without much trouble.

Boils are said to be wholesome; in a moderate degree they may prove so, but when the habit tends greatly to them, they become oppressive, and the efforts of nature alone are too weak to disperse them. Children are much afflicted with this disease, from the acid acrimony which prevails in their constitutions.

**CAUSE.** It proceeds from an acrid lymph, or vitiated bile, produced from error and irregularity of diet. Tumours of this kind are apt to break out in various parts of the body, when the digestive faculties have been impaired by sickness, and where the appetite is too much indulged.

**CURE.** The emollient cataplasm, or a plaister of diachylon with the gums, are the most proper applications to render suppuration compleat; afterwards, dress with white cerate spread lightly on lint. A gentle dose of purging physic is now and then proper; and when the habit is greatly affected,

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the



the bark and elixir of vitriol are absolutely necessary.

There is a species of furuncle which seamen and fishermen are particularly subject to; it is by them called a water-boil. This tumour rises with much hardness; the inflammation is of a deeper red than common, and spreads wide around it during suppuration; the surface grows spongy, and a brownish bloody matter, which forms underneath, may be pressed out at various openings. In this state it is often necessary to remove the surface, which may be generally affected by a dressing or two of red præcipitate powder, alone, or mixed with white cerate, laying a pledgit or rag spread with the cerate over all; afterwards apply cerate, or lint, guarding well with lunar caustic, or blue vitriol stone, against fungus.

### W H I T L O W.

DESCRIPTION. It is an inflamed and painful tumour, at or near the extremity of the fingers, and may be distinguished into two kinds. The one generally penetrates no further than the common integuments round the nail; the other fixes upon the periosteum, and root of the nail. Sometimes the inflammation extends to the ligamentous covering of the joints of the fingers; and the capsule of the tendon, and the whole hand and arm are sometimes greatly swelled and painful. Both kinds



kinds are attended with fever, restlessness, and throbbing; in the deep-seated whitlow, the inflammatory symptoms sometimes run so high, as to occasion delirium and convulsions, and the bone very soon proves carious.

CAUSES. This complaint may be produced by an acrid state of the fluids stimulating the nervous parts, by contusion, wound, or puncture; and is more or less dangerous and severe, in proportion to its depth, and the sensibility of the parts affected.

CURE. Poultices, and drawing plaisters, as they are called, are generally applied as soon as possible to the part affected; but in the early part of the disease, bleeding, and the antiphlogistic regimen, with a dose or two of cooling physic, and constant application of compresses, moistened with Goulard, or the saturnine solution cold, or with the sharpest vinegar, with a due proportion of crude sal ammoniac dissolved in it, have often put a stop to the disease, when it has threatened much mischief.

If the pain should increase, notwithstanding the use of the foregoing applications, it will be proper to apply the emollient poultice, spread thick and warmed, every three or four hours, soaking the part well before-hand in a warm decoction of mallow leaves, or camomile flowers, with milk. In both kinds it will be improper to wait for a perfect maturation, before an incision is made into the part where the matter appears to be forming. In the



deep-seated whitlow, when the pain continues exquisite, and little or no relief is obtained from either of the foregoing means, an incision should be made through the periosteum, or ligamentous expansion, on one, or both sides of the finger, or upon the most strictured part of it. Dress with lint, dry, or spread thin with cerate, and gently pressed, for the first dressing or two, between the lips of the incision, and continue the poultice. Opiates are occasionally necessary.

In the first sort of paronychia, a troublesome and tender fungus frequently sprouts up along the side, and under the corner of the nail; which is mostly remedied by pressing a small piece of dry lint under the edge of the nail, a slight compress, and bandage. Sometimes it is necessary to use escharotics, of which class, lunar caustic and vitriol stone are generally most efficacious, in order to destroy the fungus; but they have little effect, unless lint be first crammed under the edge or corner of the nail, which part should be afterwards cut away, as close as possible without injuring the quick.

### BUBO *and* PAROTIS.

DESCRIPTION. A bubo is an inflammatory tumour, which has its seat in the glands of the groin and arm-pit; it is commonly of an oval or round shape, is red, painful, and throbbing, tending either



ther to maturation or schirrous. When it forms under the ears, it is called parotis.

The venereal bubo is generally of an oblong shape, has an unequal surface, and a broad extended base; either resists pressure, as in the inflammatory and schirrous kind; or retains impression, as in the œdematous and suppurative bubo; which symptoms only are sufficient to distinguish it from the intestinal hernia. For further distinctions, see Hernia in general.

These tumours may be distinguished into two kinds, the simple and malignant.

CAUSES. The simple or milder sort is critical, and frequently happens after a fever, when the morbid fomes has not been totally discharged from the habit. The malignant bubo and parotis are the accompaniments of venereal and pestilential diseases.

CURE. In tumours of this kind, which are not attended with any other disease, the cure may be first attempted by dispersion; the treatment for which is particularly directed under the article Inflammation; to that end, a dose or two of calomel with camphor, succeeded by a gentle cathartic, has been found of great use. If the inflammation and pain should still increase, apply suppuratives, and open by incision.

In pestilential buboes, maturation must be hastened by the most probable means, and the matter should be discharged by incision, as soon as possible.



With regard to those of the venereal kind, when they are not too far advanced, dispersion is the most eligible method of cure; which may at first be brought about by bleeding, gentle cathartics, a cool regimen, and friction with mercurial ointment. If dispersion takes place, it will not be amiss to pursue a slight alterative course, with this unction and a decoction of sarsaparilla with saffrafras, for a few weeks. Should they not yield to this treatment, use suppurative plaisters or poultices, and order a more generous diet till maturation is well forwarded; then open by caustic, and compleat the cure by the alterative mode already prescribed; since, after all this troublesome process of maturation, it will be still necessary to pursue the same alterative course. In the cure of a venereal bubo, then, it is necessary to treat it according to the state of infection from which it proceeds; if local, it may be either dispersed, or brought to suppuration; if of the latter stage, every means should be tried to produce maturation; this kind always advances slowly to that state, and is apt to form a phagedenic ulcer, with callous edges, and a part of the tumour commonly remains in an indurated state.

#### KIBES, *or* CHILBLAINS.

DESCRIPTION. Is an inflammatory tumour, which arises from the part being exposed to severe cold, or, when very cold, being too suddenly heated:



heated: it is attended with redness, heat, shooting pain, and violent itching. This disorder most commonly affects the hands and feet; the ears, nose, and lips are also subject to it, and in some habits the arms and legs are much swelled, and crack: it chiefly attacks children of a delicate complexion, or scrophulous habit.

The parts affected frequently turn of a leaden colour, are rather inflated, and break out with vesicles, like what are seen after burns and scalds; which form deep ulcers, that discharge an ill-conditioned matter, and by neglect or mismanagement have sometimes degenerated into a gangrene.

CAUSES. Cold and a languid circulation are the real causes of chilblains. This disorder is in greater or less degree, according to the state of the constitution, or the intenseness of the cause. It often takes its rise in children, from the part being wet and cold, and too hastily dried by the fire; also, from sitting upon a hard seat too long together.

CURE. Bathing with camphorated spirits, or applying cloths dipped in saturnine embrocations and Mindererus's spirit, have often dispersed these complaints, even when vesicles had made their appearance. The best applications, when ulcerated, are, the yellow cerate, saturnine ointment, and cream inspissated with Goulard's extract.

When a part is benumbed with cold, avoid the fire, or immediate warmth; instead thereof, plunge



it into cold water, apply cloths dipped therein, or chafe it with snow, till a proper glow is returned; after that, use frictions, cordials, and diluting drinks, In such a case, a sudden transition to heat, a warmed bed, or a warm room, may be attended with great danger to the part affected.

### BURNS *and* SCALDS.

DESCRIPTION. These are attended with nearly the same events as inflammation, and may be properly divided into four different degrees or stages:—When the part aggrieved is affected with heat and inflammation, without vesication; when it is immediately afflicted with intense pain and vesication; when the integuments are so injured, as to produce a deep eschar; and when the parts are destroyed to the bone.

CAUSES. Are, fire itself, or any heated body, whether in its solid or fluid state.

CURE. Burns and scalds differ in their degrees of inflammation, and are to be treated accordingly. The first and second degrees require resolvent applications; the third, emollients and suppuratives; the fourth and last degree should be treated much after the same manner as is directed for gangrene and sphacelus.

Bleeding and cooling purges, with nitre and plentiful dilution, are the first things to be attended to in burns and scalds of importance: it is also particularly



ticularly necessary to observe a regular and cooling diet. Such means, properly pursued, in the first stage of the complaint, have an excellent effect in the prosecution of the cure. Opiates ought to be administered, according to the degree of pain.

Spirits of wine and camphor, applied quickly to a burn or scald, is said to prevent the part from blistering; but the best applications for that purpose are, cataplasms with crumb of bread and Goulard's vegeto-mineral water, fine rag dipped in pure oil, fine linseed oil, or warm milk, the saturnine ointment, and white linament spread on rag, are used to disperse the inflammation; but cloths dipped in Goulard's mineral water, and his saturnine cerate, are preferable to all.

Some practitioners are for, and others against, discharging the acrid lymph from the vesications. In the smaller kind it is not unlikely to be absorbed; but in the larger, it will be better to let it out by a slight puncture made at its edge in the most depending part, by which means the vesicle, when emptied, will act as a defensive against the external air.

When the part is so much burnt as to form a deep eschar, emollients are the best applications; of which class, the common poultice mixed with a proper quantity of oil, is generally to be preferred; and if the circulation to the inferior parts is entirely destroyed, amputation must be performed:  
but



but that is an operation seldom required in a principal part, from accidents of this nature.

Great care must be taken to keep down fungus, and prevent contractions and agglutination, which these disorders are particularly subject to; all this may generally be done by the application of lint medicated with vitriol water, or by dressing with dry lint only, and keeping the edges down with vitriol stone, or lunar caustic, and paste-board with proper bandage, also to keep the parts extended, and separate from each other; heal with cerate, &c. as advised in ulcers.

In burns or scalds of considerable extent, the consequent discharge is often so great, as to require a liberal use of the bark and elixir of vitriol; milk, mixed with lime-water, is an excellent absorbent in such cases.

### HERPES, or CREEPING ULCER IN THE SKIN.

**DESCRIPTION.** This is a cutaneous affection attended with inflammation, and is generally divided into four classes.

The first is termed *Farinosus*, and is commonly called a *Tetter*. It breaks out about the face, neck, arms and wrists, in small red pimples, and in the form of a broad spot, it itches very much, and in a short time changes to a branny powder, leaving the skin smooth.

The



The second is named *Miliaris*, and generally breaks out in clusters, or rings of very small pustules. These contain a clear corroding lymph, which is gradually discharged, and afterwards form into small scales; they smart and itch much, and are attended with inflammation; they sometimes eat through the skin, and spread considerably, but the latter symptom seldom happens, unless in a vitiated habit. This disorder is commonly called the *Ring-Worm*.

The third is the *Pustulosus*; it appears in pustules containing a thin ferous matter, which turns yellow: they commonly run together, exude, and dry into a scab, which falls off, and leaves the skin entire. Sometimes the matter is so acrid, as to excoriate the parts about the scab, and spread the complaint. Children are most subject to this kind of eruption, particularly in the face, head, neck, and behind the ears.

There is an obstinate eruption of this kind, that shews itself on the sides and palms of the hands, and soles of the feet, also between the fingers and toes; this has been often taken for the itch, and sometimes cured with similar treatment.

The fourth class is called *Exedens*; it appears in spots of several little ulcerations, discharging a sharp ichorous matter, and is attended with an erysipelatous inflammation: they sometimes corrode the cellular membrane, and even the muscles themselves. This kind generally spreads about the neck, chest, and waist, in form of a zone or girdle, and when it  
appears



appears about the loins, it is called the *Shingles*; they are accompanied with pain and some fever, particularly just before their appearance.

CAUSES. As these complaints frequently yield to external applications alone, they may for the most part be considered as local; and be supposed to arise from a partial obstruction, and acrid state of the perspirable matter. In some obstinate cases, it is most probable that a pre-existent acrimony is combined with the disease.

CURE. The first species generally submits to warm bathing, and friction; the second, and third, are most frequently conquered by saturnine preparations, camphorated vitriolic water, white precipitate ointment, warm bathing, and gentle perspiratives; such as essence of antimony with paregoric elixir, and decoction of sarsaparilla and saffrafras. If the parts inflame much, give nitre, cream of tartar, &c. In the pustulosus that carries the appearance of an obstinate itch, the following liniment has proved efficacious.

Take of white precipitate ointment one part, and of sulphur ointment three parts; mix them together, and gently smear the parts affected therewith, night and morning.

Some recommend a weak aqueous solution of corrosive sublimate, in the proportion of from five to ten grains of the sublimate to a pint of water, as an effectual wash in most of these complaints; but this should



should not be applied when there is much inflammation on the parts.

In all these complaints, except in the corroding stage of the exedens, the most simple and useful remedy is fænugreek-powder, which may be applied with or without the white cerate spread upon rag.

If the fourth species of this disease should resist the before-mentioned remedies, it is most probably contaminated with a morbid lymph. Mercury, bark, and antimony will then be necessary, according to the particular state of the constitution.

Scarborough-water is sometimes of great use in these disorders. Sea-bathing is also prescribed, and drinking sea-water: the use of the latter is beneficial in the dry state of the disorder, and when free from fever and inflammation.

Provided the last species of eruption is attended with much fever, pain, or inflammation, sickness and languor, which symptoms often occur in erysipelatous habits, cold repellents should be cautiously applied; in such case, fænugreek-seed finely powdered is the best external remedy; for the rest, vide Erysipelas.

### ULCERS IN GENERAL.

DESCRIPTION. An ulcer is a sore in the softer parts, attended with a loss of substance; from which issues a purulent, sanious, or vitiated matter.

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It may be divided into three classes; viz. the simple, the compound, and the complicated.

The *Simple Ulcer* is that which discharges a whitish pus of a moderate consistence, and is commonly in that state of purity, to which all others must be reduced, before they can be properly cicatrized. It is a local affection, not being connected with any constitutional disease, and is seldom attended with any remarkable incident during the progress of its cure.

The *Compound Ulcer* is also local; it is attended with a variety of circumstances, and has received various appellations from the different conditions of the surrounding and subjacent parts; also, from the nature and quality of the discharge: but the principal distinctions necessary to be observed in this class, will appear under the following description.

1st. The *Fungous Ulcer*, which throws out a spongy high-growing flesh, in appearance like a prominent cancer. The exorbitant flesh rises flabby and soft, but by length of time acquires a considerable degree of hardness.

2d. The *Sinuuous or Fistulous Ulcer* has one or more openings laying between the integuments and muscles, that discharge themselves into the common fore; these in the recent state are called sinusses; but when they are of long standing, and the surface of the cavities are grown hard or callous, they become what are called fistulæ.

3d. The



3d. The *Callous or Phagedenic Ulcer*. This is also commonly called *scorbutic*; paupers are particularly subject to this kind of ulcer; it's nasty, ichorous, corrosive discharge occasions the edges of the sore to turn in as it were, to skin over, and grow hard.

Ulcers that arrive at this pitch are often accompanied with varicose veins, on which account they were formerly called *Varicose Ulcers*; upon a supposition, that the tumid vessels were the cause, instead of the effect of those hard edges.

4th. The *Carious Ulcer*. It receives this appellation, when the bone of an ulcerated part is diseased, which may be known by its sponginess and inequality, and by a thin, oily, and stinking discharge. A roughness is also to be perceived in the surface of the bone, upon passing the probe through the loose flesh, which generally covers it. In ulcers of long standing, where the bone is thinly covered, the matter often erodes the periosteum, after which, the surface of the bone soon becomes injured.— Sometimes the disease forms in the bone itself, when it is termed a *Spina Ventosa*; this is known by the enlargement of the bony substance; and an irregular thickness in the integuments, and cellular membrane. When an ulcer of this kind first breaks out, it commonly appears with a pap-like fungus. Bones are sometimes enlarged without being carious, or tending thereto, and a thickness of the periosteum has been often mistaken for an enlargement of the bone.

The



The *Complicated Ulcer*, by which term is meant, that class of ulcers, which is understood to be connected with some prevalent disease in the constitution, and is liable to the various incidents of the second class: of this kind the principal are, the venereal, scorbutic, scrophulous, and the cancerous; which last is considered by some as local.

These ulcers, with their principal characteristics, are separately treated of in the sequel.

CAUSES. The causes of ulcers in general, are, wounds, contusions, &c.; in short whatever produces an inflammation, provided it ends in abscess, loss of substance, or gangrene. The third class is particularly circumstanced by some predisposing cause in the habit, which may have flowed to or produced it.

CURE. The *Simple Ulcer* commonly heals without trouble; the first thing necessary is to permit the granulations to rise even with the surface of the skin, which is generally the work of nature alone; during this process, there can be no better dressing applied, than a pledgit of dry lint, or lint spread very thin with white cerate; for in this, as in most other stages of the complaint, the mildest dressing has generally the best effect. Should it be rather thin or acrid, and occasion a foul appearance on the surface of the sore, it may be proper to add a little red precipitate to the cerate, and should this not be effectual the emollient poultice with bread and milk applied immediately to the sore for a day or two, will answer the intention.

When



When all is clean and even, dress with pure white cerate, or saturnine ointment spread thin on lint, or rag, and a piece of soft double rag over all; a tolerable compression is also necessary by means of bandage. If a fungus should sprout, the edges are to be kept down with mild escharotics, the best of which are, blue vitriol, and lunar caustic.

In ulcers of the leg, attended with an œdematous swelling, varicose veins, or inclining to fungus, the bandage should be applied in a spiral manner; each edge not exceeding the distance of three quarters of an inch, beginning with a turn or two round the foot and ankle, and gradually rolling up to the extent of the swelling, or parts affected above the fore, by which means only, the ulcerated part is often brought to cicatrize in a very short time, even when the fore has not been disposed to fill up. In short, experience tells us, that many ill-conditioned and extensive ulcers have been cured, by the repeated application of an astringent solution and strict bandage, without confinement, or paying attention to the antient maxims, and regular gradations of cure. This truth can be attested by many a poor labourer, who had lost his employ by confinement to his bed, in order to pass through a salivation, and a tedious course of strong digestives, escharotics, greasy balsams, &c. &c. to very little effect, except just to say, that it was skinned over, and very soon broke out again.

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The *Compound Ulcer* is attended with many circumstances that require peculiar attention and treatment; it will therefore be proper to notice them according to the order in which they are described.

The *Fungous Ulcer*. Inveterate fungusses seldom appear on ulcers: in lesser cases, mild escharotics, and lunar caustic, with dry lint and proper bandage, may be applied every other day; also lint moistened with a solution of blue vitriol, and dried. If the excrescence is considerable, with a narrow base, it may be extirpated by ligature drawn rather tight, and occasionally straitened; if broad at the base, let a straight needle with an eye near the point, and armed with two strong ligatures, be pushed through the bottom part, so that the threads may be brought to hang out at each side of the swelling; a tight ligature is then to be made round one half of the fungus with one of the ligatures, and the other half is to be tied with the other; these being occasionally tightened, both parts of the tumour will soon be separated. When the fungus is removed, the sore is to be managed as directed under the first class.

Extirpation by ligature is generally preferred to that by the knife, on account of the flux of blood, which generally follows the use of the latter.

If the fungus happens in a leucophlegmatic habit, or in an ulcer with caries, it will be to no purpose wasting it, till the constitution is repaired, or the disease in the bone is removed. The fungus is frequently attendant upon scrophulous ulcers, but is generally



generally to be remedied, by escharotics, compress, and strict bandage.

The *Sinuous Ulcer* and *Fistula*. Sinusses mostly arise in abscesses and ulcers for want of a free discharge; where the application is admissible, an union of the parts is frequently to be brought about by compress and bandage. If the discharge is confined, and the skin on the opposite part shews an inclination to break, a counter-opening will be necessary.

It was a maxim formerly to use vulnerary and escharotic injections; but such applications are not at all adviseable, since they make the sides hard, and tend to enlarge the sinusses. When they run so deep, that the knife cannot be safely used, for fear of injuring the nerves, tendons, or blood-vessels, it is best to pass the seton through the principal sinus, at least, in the manner directed under the article Maturation: indeed, where the seton is admissible, it is generally to be preferred. It does not answer well in fistulæ with callous sides.

The treatment of a fistula is much more simple now than formerly, when it used to be the practice of most surgeons, in every case. A simple incision mostly proves sufficient, except when the parts are greatly diseased, or evidently in a schirrotis state.

The *Callous*, or *Phagedenic Ulcer*. It is the acrid discharge and foul state of the sore which occasions this troublesome incident. In the recent state of this disorder, emollient poultices duly repeated have



had the desired effect. When the edges have acquired an extraordinary degree of hardness, the knife and caustic are recommended; but both these painful methods have been rendered unnecessary, by using narrow slips of rag spread thin with cerate alone, or mixed with red precipitate round the edges, a doubled rag dipped in camphorated vitriolic water, and squeezed moderately dry, laid over the sore, a piece of a double rag over all, and the spiral bandage as before directed. It is often proper to repeat these dressings twice a day, on account of the quantity and quality of the discharge; or, on the contrary, because they may grow dry, and hang to the middle of the ulcer. It is also sometimes proper, especially in irritable habits, to dilute the solution with at least one third water.

If this ulcer is inflamed and very foul, a few applications of the common poultice will be necessary. When the sore is clean and dry, it will not be amiss to vary the dressing for a few times, with white cerate, saturnine ointment, and the like.

If, notwithstanding, the caustic or knife should prove necessary, the former should be tried first, being the easiest method to the patient. The hardest edges have been removed, by lightly rubbing them over with lunar caustic once in two or three days, and dressing the ulcer during the time it is used, with lint thinly spread with cerate, or with saturnine ointment, if there is much discharge. This kind of ulcer has been sometimes cured by repeatedly



peatedly touching its whole surface with the lunar caustic: provided the ulcer has discharged copiously before, it will be right, at the first attempt to cure it, to open an issue in the thigh, give a dram of bark three times a day, a pill with calomel and sulphur, of each three grains for two or three nights successively, and a purge with salts the morning after the last pill; the process of the pills and purge should be repeated weekly, if the constitution is able to bear it. Varicose veins are to be remedied by a long continued application of the spiral bandage, or laced stocking.

*The Carious Ulcer.* The cure of this fore depends upon removing the diseased parts of the bone; to promote which, it will either be necessary to make a crucial incision over the part which covers the bone, or to lay the bone bare with the knife or caustic, nearly the size of the diseased part; taking care to prevent the teguments or flesh from spreading over the exposed part, by dressing with lint, lunar caustic, and slight bandage, till the decayed part of the bone is separated, then healing according to the nature of the ulcer.

The most proper and likely means to hasten exfoliation are, gentle perforations made with the perforator of the trepan on the diseased surface of the bone, or with the small head of the trepan, when the disease reaches deep into the substance of it. The actual cautery was once thought the most probable resource; but it evidently tends to destroy



the granulations, which generate between the dead and living parts of the bone, and are necessary agents towards their separation. If the caries is in the heads of the bones, and is attended with continued pain and discharge, the chief, and, perhaps, only remedy is, Amputation.

#### GENERAL REMARKS.

The attempt to cure even ulcers of the first and second class, is sometimes vain, unless assisted by regular diet, and internal remedies; especially when the discharge is great, and the constitution is relaxed and weak: in such instances, the bark and a generous diet are of infinite use.

In foul ulcers of the phagedenic kind, when the discharge is ichorous and foetid, the bark, sublimate solution, with decoction of the woods, or infusion of sassafras shavings, are absolutely necessary. If the sore wears a putrescent aspect, all preparations of mercury should be laid aside, and the same remedies and diet should be prescribed, as are ordered for the scorbutic ulcer.

Ulcers of long standing are difficult to cure, and in aged persons the consequence even of such cure is said to be dangerous; but with the interposition of an issue or two, proper medicines, and diet, many a one has been restored to the use of their limbs, and a better constitution, by being cured; for it is past a doubt, that a sore with a large  
surface



surface and great discharge can be little conducive to the health of any one; on the contrary, much foulness is constantly absorbed into the habit, and the strength is much impaired.

People of all ages have been cured of such ulcers by empirics, without the least attention to evil consequences, and in the healed state have enjoyed many happier years; which alone clearly proves, that it is not so dangerous to heal an obstinate ulcer as it is imagined, and that the caution observed in doing it is not always requisite: still, in most cases of long standing, wherein the discharge has been great, the wary practitioner is much to be commended for endeavouring to insure success upon the safest and surest grounds, by putting his patient under a slight course of alteratives, bark, and proper regimen.

The following method of cure is recommended from long experience, and has had almost immediate good effect in every kind of compound ulcer, except the carious. If, from the acrid quality of the discharge, the parts are much inflamed and painful, it will be necessary, for a day or two, to sponge them with a slight infusion of camomile flowers and milk, made just warm, and to apply the poultice with white bread and milk, or Goulard's vegeto-mineral water, which is less relaxing; also, to administer an opiate at night, and a gentle laxative in the morning, if occasion requires.



As soon as the painful symptoms are relieved, let an issue be cut in one or both thighs, if the quantity of discharge seems to require it; then apply a piece of soft rag, doubled, the size of the sore and parts affected, moistened with the camphorated vitriolic water, over which lay a thin compress of rag, in case the discharge is much, then roll the part up in a spiral manner, as directed in the cure of the compound ulcer, which bandage may be made of soft linen or flannel. It will be now and then necessary to guard the edges with very narrow slips of fine rag, spread thin with white cerate; otherwise, the medicated cloth will adhere to them, and retard the cure: and sometimes it will be proper, on account of the quantity and bad quality of the discharge, to dress twice at least, in the twenty-four hours. Lenient and cooling applications, such as, Goulard's vegeto-mineral water, the saturnine solution, the emollient and saturnine poultice, and white cerate, may be occasionally interposed.

In some cases, where the ulcer is obstinately foul, a piece of soft rag, once doubled, or a slice of the crumb of stale white bread, gently moistened with a slight solution of corrosive sublimate in water, has in one night's time rendered it clean, and in a fit state to prosecute the cure. If the sore is of the loose, putrescent kind, the mercurial solution will give a blackish tinge to the discharge, and ought by no means to be repeated; instead thereof, use the remedies recommended for the true scorbutic ulcer,



ulcer. The diet ought to be low or generous, according to the immediate symptoms, and the constitution of the patient.

How easy and simple a process is this, in comparison with what is laid down by former writers upon the subject, who have directed us invariably to digest, incarn, and cicatrize; to open sinusses, and remove callous edges; and have recommended rest, as the *sine qua non* in every case; whereas, by the foregoing method, many a one has gradually recovered, without submitting to either of these injunctions: the general requisites being an artificial discharge, the simplest dressings, and strict bandage, whenever the state or situation of the ulcer will admit.

### VENEREAL ULCER.

DESCRIPTION. This ulcer is of two kinds; the first includes chancres, and tumours in the lymphatic glands, called buboes, which occur soon after the venereal intercourse: the second, takes in all such ulcers as are the consequences of a general taint. The chancres of the first description makes its appearance in a small spot, or a red, pointed, itching pimple, which turns to a vesicle that discharges a viscid pus, or an erosive watery fluid; its edges are inflamed and painful, or surrounded with callosity, and it spreads and produces ulcers in the neighbouring parts.

Ulcers



Ulcers arising from a venereal taint are seldom very painful; they commonly attack those parts that are thinly covered with flesh, in form of a diffused copper-coloured efflorescence, which rises into pustules, and breaks into a jagged or circular hollow ulcer, with thin reddish edges; at first discharging a watery, and afterwards, a filthy jelly-like, greenish-coloured matter.

The principal seats of venereal ulcers are in the groin after the suppuration of a bubo, in the glans penis, frœnum, and preputium, the vagina, and labia pudendi, which are generally called chancres; these are to be met with in both stages of the infection: also, on the nose, palate, fauces, uvula, and tongue, and on the parts covering the bones of the head and legs; all which are the consequents of the second infection only.

Whenever an ill-conditioned ulcer fixes on any of the parts here particularised, except the legs, which are the chief seats of ulcers in general, there is the strongest reason to conclude that the cause is venereal, unless obvious reasons appear to the contrary. Those who are accustomed to the cure of this virulent complaint, can, at first sight, judge positively of its source, from the peculiar aspect of the sore, and the nature of the discharge, even in contradiction to the most earnest declaration of the distressed sufferer.

CAUSES. A late familiar intercourse with an infected person, or a general venereal affection.

CURE.



CURE. Chancres from the first infection should be now and then touched with lunar caustic, to prevent absorption of the matter that issues from them, and may be healed with cerate alone, or mixed with red precipitate, and spread upon a thin soft rag.—Dr. Saunders's liniment is an excellent application; it is made with calomel one part, and simple ointment two parts. The army surgeons sprinkle calomel alone upon the sore with good effect. When these complaints are obstinate, fumigations with cinabar are most efficacious.

Buboes arising from the first infection, after being opened by caustic, should be dressed like the common abscess. If the edges should grow callous and uneven, dress with mercurial ointment, or red precipitate ointment, now and then interposing the emollient poultice, particularly if the sore and circumjacent parts are inflamed and tender.

Although the most learned theorists have pronounced these sores, in what is termed the first stage of this disorder, to be local, yet a gentle mercurial course is always adviseable. The method of introducing mercury into the habit most to be recommended, as being least noxious, and equally efficacious with any other, is, by rubbing from half a scruple to two scruples of the strong mercurial ointment, composed of equal parts of lard and quicksilver, with a little goose-grease to kill the latter, into the legs or thighs every night, or at least every other night, and giving a gentle purge occasionally. This  
method



method joined with the decoction of *sarsaparilla* and *sassafras*, or of the woods, by regular perseverance therein, has been known to cure the most inveterate pox without confinement.

Various are the nostrums compounded of this useful remedy, Mercury, and unaccountable the attachments to them; but in spite of all mysterious pretensions, it may be found extremely difficult to prove, that every preparation of this kind has not equal effect in the end, provided the process is regularly pursued. A decoction of *sarsaparilla* and *mezeoreon* root greatly assists the mercurial course. The bark has been known to accomplish a cure after the use of mercury, particularly in scorbutic and scrophulous habits.

#### SCORBUTIC ULCER.

DESCRIPTION. The term scorbutic has been commonly applied to various eruptive ulcerations, which are now more properly distinguished under the different species of Herpes. Many inveterate ulcers in the legs are also improperly called scorbutic, since they have little or no tendency to the regular symptoms of the true scurvy.

The real scorbutic ulcer yields a foetid, sanious, and bloody discharge, a loose spongy flesh rises from the surface and edges of the sore, which are of a livid colour. With seamen, this kind of fungus has



has been known to shoot out repeatedly, and to a great size; at land, the symptoms seldom run so high.

Several of the ulcers in the legs with which the poor are particularly afflicted, arise from, or are accompanied with a scorbutic state of the juices; of which a bloody corruption lodging on their surface, loose spongy gums, and livid spots on the skin, are true characteristic marks.

CAUSES. The causes are numerous; living too long together on salt provisions, being exposed to a moist cold atmosphere, obstructed perspiration, foul air, &c. It depends upon a relaxed state of the solids, and a certain degree of putrescency or putridity in the fluids. The common scorbutic ulcer is frequently occasioned by a real want of nutritious food.

CURE. In ulcers proceeding from a putrescent or putrid state of the juices, abstinence from salt provisions, or animal food, is highly proper. The cure chiefly depends on vegetable and the antiscorbutic juices of lemons, oranges, scurvy-grass, water-cresses, celery, &c. Malt infusion, in the proportion of one of malt, and two or three of boiling water, with or without the addition of a few drops of elixir or small spirits of vitriol, or spirit of salt, is a powerful remedy: panada boiled with such wort, tamarind water, water mixed with vinegar, cyder, or acidulated with acid or acescent juices; whey, butter-milk, and vegetables, fagoe, rice, and oatmeal, constitute the most useful and wholesome diet.

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The bark, with spirits of salt, or elixir of vitriol, is universally proper. In the cold scurvy, the warm fallad herbs, mustard, and horse-radish infusion, and an infusion or decoction of bark, with tincture of steel in spirits of salt, are most serviceable.

The most effectual external remedies are, a solution of myrrh in barley-water, or decoction of bark lightly acidulated with spirit of salt, camphorated vitriolic water, dry lint, or pledgits of it dipped in tincture of myrrh and honey of roses, with gentle compression. If the ulcers are large and painful, a poultice with oatmeal boiled in vinegar and water, or the infusion of malt, with a little oil mixed therein, should be sometimes applied over the dressings. The carrot poultice, or fermenting poultice, made up with a decoction of the bark, have occasionally proved very beneficial; afterwards dress as in the compound and simple ulcer.

The use of mercury in the truly scorbutic ulcer, is highly injurious; joined with the bark, it is frequently useful in what is commonly called scorbutic, when unattended with symptoms of putrefcency.

### SCROPHULOUS ULCER.

DESCRIPTION. Scrophula most commonly shews itself at first, by indolent knots or swellings in the glands about the ears and neck, afterwards, by indurated swellings in the cellular membrane, about the  
the



the joints, and in the bones themselves. The eyes, eye-lids, lips, and nose, are also often afflicted with inflammation, soreness, and tumour.

The tumour from which this kind of ulcer generally springs, is soft, moveable, and seldom very painful; it proceeds slowly to maturation, and is apt sometimes to disappear on a sudden, and form on some other part. A delicate complexion, soft skin, and thick lips, are the general characteristics of this disease.

The discharge from the scrophulous ulcer is, at first viscid and glairy, or whitish and curdled, afterwards turns to a watery sanies, and the edges are frequently much swelled. In this disease, collections of matter have remained in the different tumours for months, and even years, without much injury or pain.

CAUSES. Bad water, crude aliment, and living in low damp situations, are said to produce scrophula. It is certainly an hereditary and endemic disease, and is connected with a weakness in the constitution, particularly in the lymphatic system.

CURE. The attempt to cure scrophulous ulcers is vain and unsafe, unless the habit has been sufficiently corrected by one or other of the following methods.

Bleeding, under proper restrictions, may be necessary. Mercurial and antimonial preparations, with the bark, and sea-water, are chiefly administered in this complaint. Dr. Fothergill pre-  
scribed



scribed a grain or two of calomel every night, and from thirty grains to a dram of the bark, powdered, or two ounces of the decoction of the bark, three times a day; to be continued according to their effects. A gentle alterative course by mercurial friction, joined with the bark, and now and then a purge, is equally effectual: Plomer's pill, or golden sulphur of antimony and calomel, also the bark and crude antimony prepared with millepedes, have been successfully administered.

Drinking sea-water, and sea-bathing, particularly in recent cases, have been effectual; for which an ounce of purging salts, dissolved in a quart of water, and given daily in such quantities as will keep the body gently open, and cold bathing, are excellent substitutes; but the remedy most to be preferred, and least injurious to a weak constitution, is that composed of bark and cinnabar, as prescribed by Dr. Mead.

Take of bark, finely powdered, one ounce;  
cinnabar of antimony, finely levigated, two  
drams. Mix well into a powder, and divide  
into twelve doses; one of which is to  
be taken twice or thrice a day.

In case the body proves lax, two or three grains of cinnamon may be added to each powder. A pint of the decoction of sarsaparilla with saffrafras should be taken daily, and a purge with rhubarb or jalap in powder, to which a few grains of nutmeg or ginger are to be added, must be given once a week.

Cicuta



*Cicuta* has been strongly recommended in this and cancerous complaints; but in this kingdom it has not proved so efficacious, as the accounts from Vienna gave reason to expect. In young people, the aged, and infirm, it has been known to injure the nervous influence, and produce bad effects; yet when joined with mercurial alteratives, it proves more efficacious, and less noxious, in particular habits. It is always right to begin with small doses, and cautiously to increase them.

The following formulæ have been successfully directed in a strumous affection of the maxillary and bronchial glands, attended with an obstinate cough, and purulent discharge from the latter, after a long alterative course and a journey to Bristol had proved ineffectual.

Take of the dried leaves of hemlock, from three to eight grains; syrup of tolu, a sufficient quantity to make a mass; which is to be formed into small pills, and taken twice a day, with three large spoonfuls of the decoction of bark.

Take of prepared calomel, a grain, or a grain and a half; storax pills, three grains. Make into a pill, to be taken at bed-time.

After the second week, the decoction was changed for two scruples of the bark in powder, with the addition of a few drops of acid elixir of vitriol, and now and then a few grains of rhubarb.

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The best external applications to this kind of ulcer are, the various saturnine preparations; they may be applied both before and after the fores break, particularly if they wear an inflammatory aspect. Dry lint is an excellent absorbent. If the edges, or parts adjacent, are thick and inflamed, dress with saturnine ointment. Nothing contributes more towards healing scrophulous sores, than issues, and gentle compression. Mercurial ointment has been successfully used in indurated tumours of this kind, which sometimes turn schirrous, and incline to cancer; such swellings ought to be extirpated in due time. Dr. Gregory, in his practical lectures, prescribes the oil of tartar, per deliquium, or the ley of tartar externally as a solvent. Electricity is also esteemed an useful remedy, by drawing sparks, or giving slight shocks. Persevering twice a day with a scruple or half a dram of burnt sponge, made into a bolus with honey, and a purge with jalap and ginger once in six or seven days, have been known to succeed in indurated lymphatic glands of the neck. The bark also, and chalybeates, such as tincture of steel, with spirits of salt, tincture of martial flowers, or Boerhaave's chalybeate wine, taken in infusion of camomile flowers, have proved efficacious. The following remedy is highly extolled by De Haen:

Take of nihil album, two ounces; egg shell  
and scuttle shell, of each one ounce; scarlet  
cloth,



cloth, six drams: burn them together in a crucible, and reduce to a powder. Half an ounce of this powder is to be divided into twelve equal parts, one of which is to be taken morning and evening, those days that the purge is not.

The following purge is also ordered to be given every sixth day:

Take of jalap in powder, from a scruple to half a dram; and root of ginger, powdered, from three to five grains. Mix.

Much has been said both for and against giving vent to this species of abscess; in general, it is thought most adviseable to leave Nature to herself; especially when there is no great pain or inflammation; and even then, to prevent a free admission of air, a moderate opening is thought best. Opening with seton, in large deep-seated sores of this kind, has its peculiar advantages.

If the ulcers are difficult to cure, swelled, and painful, and discharge an acrid, corroding, foetid matter, the neighbouring bone is to be suspected. Carious bones, in strumous habits, are not so easily assisted as in most other cases. When the discharge and pain do not tend too much to destroy the strength and animal functions of the patient, simple absorbent applications, with proper diet, and sea-bathing, have proved the best palliatives; and Nature has sometimes brought forward the cure.



The diet ought to be of the dry kind, and easy of digestion; animal food and generous wine are proper; eggs have been found particularly useful in this disorder; lime-water and milk, in the proportion of two or three of the latter to one of the former, are of service towards lessening the quantity of discharge, and drying up the sore, particularly if joined with the bark. Moderate exercise and dry air are also necessary.

Pork, butter, cheese, smoaked meats, fish, and high fauces, ought strictly to be avoided.

The obstruction and thickness of the gullet, or what is commonly called the narrow swallow, sometimes arises from scrophula. This calamitous disease, if taken in time, may be remedied by a slight course of mercurial unction and occasional purges. If it is of long standing, a gentle spitting, continued for five or six weeks, may answer.

### SCHIRRUS *and* CANCER.

DESCRIPTION. Glandular parts being less susceptible of inflammation and suppuration than membranous parts, are most subject to these complaints. The parts chiefly affected with schirrus are, internally, the liver, spleen, mesentery, pancreas, and uterus; externally, the eye and eye-lid, nose, lips, tongue, fauces, neck, breasts, arm-pits, groin, penis, and testes: the lips and breasts are frequently attacked with these disorders.

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The schirrus which forms of itself, generally begins with a smooth, roundish, slipping knot, seldom bigger than a hazel nut; it gradually grows larger and harder, with little or no sense of pain; and sometimes stops in its growth, and continues in an indolent state for many years. That which is occasioned by external injury, or some inflammatory cause, is commonly of larger size at first, and at times painful. Should the constitution become infirm and injured, which is frequently the case with women about the cessation of the menstrual discharge, the tumour, especially that which is fixed in the breast, begins to increase, grows harder, painful, and of an irregular form; the veins, nerves, and neighbouring glands being compressed, their functions are also impeded. This may be called the second schirrous stage.

The third, or occult cancerous stage, is known by a frequent sense of heat and itching, a pricking and darting pain, at intervals, in and about the tumour, and the skin over the part affected loses its natural complexion. The tumour increasing, tension comes on, and the teguments begin to appear of a shining, reddish colour; in a short time afterwards, the part is constantly afflicted with throbbing and lancinating pains, together with a sense of burning, biting heat; the colour of the part changes to a livid dark red, and the veins grow varicose and winding.



#### §4 SCHIRRUS *and* CANCER.

Now follows the fourth stage, or open ulcerated cancer. The skin being eroded, a thin, blackish, corrosive matter is discharged from the sore, which spreads around; the edges swell, grow inverted, and appear like a compressed, indurated fungus; the burning, cutting pain destroys the patient's appetite and rest; absorption takes place, and contaminates the general system; the disease seizes other parts, the body wastes, hectic symptoms daily increase; delirium, a quick intermitting pulse, cold partial sweats, and purging, in a short time, bring on a much-wished-for dissolution.

Sometimes the matter excavates the indurated parts, forming a deep, irregular, and foul sore, with jagged edges; a profuse hæmorrhage often happens in this dreadful state of the disease; at other times, the texture of the flesh is of so loose and spongy a nature, as to produce a considerable fungus, that bleeds repeatedly and profusely.

There is also another kind of cancer, which makes its attack under the form of a scale or crusty scab: this being repeatedly cast off and renewed, at length leaves an oozing moisture on the skin, and forms a flat, cancerous, eroding ulcer.

Venereal, scorbutic, and scrophulous ulcers, wens also, and indurated tumours on the membranous parts, will sometimes prove cancerous.

The danger and symptoms vary according to the state of the constitution, the particular stage of the complaint,



complaint, and the nature and importance of its situation.

**CAUSES.** Want of proper food and nourishment, external injury, suppression of the menses or hæmorrhoids, celibacy, sudden cold, irregularity in the non-naturals, also a reception of the cancerous virus into the habit.

Schirrus in the liver and abdominal viscera is produced by heat of climate, immoderate use of spirituous liquors, and obstruction in the biliary ducts: schirrus in the womb, from difficult labour, neglected prolapsus, and constipated fœces, and generally makes its appearance after the entire cessation of the menses.

**CURE.** The most favourable opportunity for dissolving the tumour, is at the beginning of the schirrous state: an alterative course, with mercury, and now and then a purge, will often prove effectual; but when the tumour is inorganic, it is not likely to be of service.

Cicuta has been highly extolled, but has not answered the general expectation; the leaves, dried by a gentle heat, and powdered, are preferable to the extract. Poultices made with the expressed juice, or powdered leaves, with white bread, or linseed meal, are also recommended as solvents; but when the state of the tumour is, as it were, impenetrably hard, extirpation is the most likely remedy. This operation, performed with the knife, has succeeded in every stage of the complaint, even



where the ribs were carious, and the cancerous tumour adhered greatly. But how much more easy, safe, and certain in its effect would the operation be, were it submitted to in due time: to ascertain and enforce which, the following hints are here given from a paper, containing "Some Remarks  
" on the Nature and Treatment of Cancers," as published in the London Medical Journal, vol. v. p. 73.

"Pity it is, that in this disease, the opportunity  
" of procuring relief is so little minded, and often  
" lost! in the simple, detached, indurated state,  
" excision is attended with little pain, no danger,  
" and perfect success. Terror and false hope are,  
" in cases of this sort, too often suffered to get the  
" better of reason and resolution. Even men of  
" great judgment in the profession have sometimes  
" flattered themselves and their patients with the  
" hopes of avoiding an operation, which, in the  
" early stage of the disease, produces so much comfort and security. To obviate such mischief, I  
" beg leave to present the following hints; if duly  
" attended to, they may serve to shorten the progress of an evil, which, if neglected, must be  
" productive of the worst consequences.

" 1. In its infant state, when the tumour is  
" round, smooth, and not hard to the touch, the  
" disease *often* yields to an alterative course.

" 2. When the tumour is become large, round,  
" smooth, and in some degree indurated, it *seldom*  
" gives way to such mode of treatment.

" 3. When



“ 3. When the tumour is hard and unequal, and  
 “ attended with pricking pain, it *scarcely ever* ad-  
 “ mits of relief from such means; and I believe  
 “ *never*, when it has attained what may be confi-  
 “ dered as a fourth stage; that is, when the tumour  
 “ is of a stony hardness, and very unequal, at-  
 “ tended with acute shooting pains. In this latter  
 “ stage of the disorder, when the breast begins to  
 “ lose its natural colour, and the nipple is drawn  
 “ in, the knife should be submitted to without he-  
 “ sitation; and indeed, from duly considering the  
 “ progress of the disease, as specified in the above  
 “ hints, I am convinced that the easiest, safest, and  
 “ most proper periods for extirpation, are in the se-  
 “ cond and third stages.”

A Schirrus in consequence of inflammation has been greatly relieved by electricity, particularly in the breast of a woman, and on the testis and epididymis of a soldier, after a hernia humoralis. Both cases had resisted every other means, studiously applied, under the direction of an able surgeon, for near a twelvemonth. Extirpation had been earnestly recommended, in both cases, but firmly objected to by the patients. Several strokes were given through the parts affected every morning, and were gradually increased to a smart degree. The testicle was reduced in about three months full two thirds, and has remained free from pain and inconvenience for these three years. The knot in the breast is reduced to the size of a French walnut, from being  
 near



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near half as big as a man's fist; and is free from pain, or any other inconvenience, except a tightness and thickness of the integuments. During the process, a gentle laxative was now and then given to the woman, and a dose of jalap to the man.

The open, or ulcerated cancer, has been more than once treated with success after the following manner; but it should be observed, that due attention and skill in its management are absolutely necessary:

Take of crumb of white bread, or linseed meal, three parts; hemlock leaves powdered, one part. Make them into a poultice with camomile infusion, which is to be applied to the whole of the ulcerated, indurated, and inflamed part, every six or eight hours. A little pure oil may be added. In the summer time, the fresh leaves may be used in rather less proportion; and in the winter time, the root of hemlock may be scraped in, and beat up with the bread, as above.

The following pills are to be given every night at bed-time; or ten or twelve of the sublimate drops may be given in full half a pint of the sarsaparilla decoction, once or twice a day. A dram of bark also should be taken two or three times a day, in a cup of the decoction with milk.

Take of calomel prepared, one grain; camphor powdered, with a drop of rectified spirits of wine, three grains; and of the following



lowing opiate pill, one or two grains; syrup, a sufficient quantity to make into two pills. These are to be taken every night at bedtime.

Take of strained opium and fine white soap, each equal parts. Make into a mass for pills of one or two grains each.

Take of corrosive mercury sublimate, twelve grains; crude sal ammoniac, thirty grains; and distilled water, an ounce. Make a solution, of which from eight to twelve drops, with about five drops of laudanum, are to be taken in full half a pint of sarsaparilla decoction, mixed with a little milk, twice a day.

If the discharge is great, and the surface irregular and spongy, the sore may be fumigated once a day with the following powder:

Take of the gums olibanum, mastich, and benjamin, each equal parts; rub them to a powder; some of which is to be repeatedly thrown upon a heated iron, and the fumes are to be conveyed, by means of a proper tube, to the ulcerated part. A fourth part of cinnabar has been sometimes added to advantage.

In the method here laid down, the mercurial course is not meant to occasion the least degree of spitting; it will be therefore necessary to relax in its use occasionally, and now and then to give a gentle laxative.



laxative. The bark is a powerful assistant to the scorbutic or relaxed habit; in short, the course is not perfect without it, although in one particular case the cataplasin alone produced a cure. Each dose of the mercurial solution with the laudanum drops ought to be taken in half a pint of the decoction, barley-water, or gruel; otherwise it is apt to affect the stomach and bowels, particularly in irritable habits. Let it be understood, that only one of the mercurial preparations is meant to be administered; and that rubbing in ten or twenty grains of the strong mercurial ointment every, or every other night, is a more eligible mode of prescribing mercury, in most cases, than giving it internally.

It is a received opinion, that this disease is originally local; from the favourable change which has immediately followed the foregoing remedies, and from extirpation having been attended with perfect success, in the worst stage of the disease, it may even be thought so in the confirmed ulcerated state. When the habit is generally contaminated, is not that effect produced by a pre-existent acrid state of the juices, and frequent absorption of the foetid sanious matter which lodges from time to time upon the surface of the sore? If so, the true curative intentions are, to correct the habit, and to prevent absorption; which end, the means here recommended bid fair to accomplish, viz. the poultice and fumigation to correct the discharge, and prevent absorption; the mercurials and bark to improve



prove the habit; and the opiate to alleviate the pain.

The bark in large quantities is generally esteemed the best palliative internally, and a poultice with the garden carrot externally; but the above method has been efficacious in three instances.

The bark in general is administered in too small doses; many an obstinate intermittent, for which several ounces of it have been taken ineffectually, has been cured, by giving six or eight drams of it only, in doses of two drams, at proper intervals, within the first ten or twelve hours of intermission. In the West-Indies, many a Negro has taken half an ounce at a dose.

Chimney-sweepers are subject to cancerous complaints about the privities, particularly the penis and scrotum: it begins with a reddish pimple upon the glans or prepuce, the dry head of which rubs off, and the discharge corrodes the subsequent and neighbouring parts. The cataplasim with the root of hemlock frequently applied, the sublimate drops taken twice a day, and one pint and an half of the sarsaparilla decoction with saffrafas daily, have proved beneficial in two cases of this kind; in one, the glans penis sloughed entirely away; the other began with a small bulbous swelling behind the glans, the superior part of which was soon destroyed, together with a portion of the corpus cavernosum. The latter person held well for about three years, when the disorder broke out afresh near to the part affected,  
and



and soon reached the groin and the membranous parts in the region of the ossa pubis, forming an extensive tumour; a remarkable constipation of the bowels ensued, which in a short time put an end to his existence.

In this disease, the diet should be particularly attended to; milk, broths, rice, panada, new-laid eggs, sago, and millet, are the most proper kinds of nutriment. Salop is also a grateful and excellent restorative. Tea or chocolate diluted with milk, beef-tea, and ass's or goat's milk; turnips and carrots in season, with every day a moderate meal of beef or mutton, have in their turns been the subsistence of a person afflicted with an occult cancer, for ten years past.

The chief points to be attended to in extirpating schirrous or cancerous tumours, are, to preserve all such skin as is not diseased or firmly attached to the subjacent parts, to separate the whole of the diseased part from that which is sound, to remove every indurated gland in the neighbourhood of the tumour, and, if possible, to heal by the first intention. The particulars of the operation, as it is generally practised, are as follow:

The patient and operator being both conveniently seated, provided the skin which covers the tumour is perfectly sound, one incision is made the full extent of the tumour in the longest direction, taking care, if in the breast, to keep at a proper distance from the nipple; the dissection is then warily pursued



fixed round the diseased part, and every induration removed: the vessels are then secured with the tenaculum and ligature, the part is filled with lint, and the integuments are brought towards each other by one or more futures. Lint spread with digestive, a soft compress, and a proper retentive bandage, are regularly applied. When the tumour is large, part of the teguments are taken off in a semilunar direction on both sides, and sometimes in a circular direction, cutting away the skin together with the tumour.

It is lately proved beyond dispute, that where the skin is sound, it ought to be preserved: one strait incision therefore of proper extent will generally answer all the purpose for extirpating the whole of the diseased part by a regular dissection: if it should not, a transverse section may be made from the middle part of one or both sides of the incision; and that, instead of pressing lint into the wound, it is commonly worth while to attempt healing by the first intention.

Such arteries as require it, should be secured by ligature, with the assistance of the tenaculum; and the ends of the ligature must be left an inch or two out of the wound, in order that it may be withdrawn in time. For a further account of the operative part, vide Disorders of the Breast.



## SPINA VENTOSA.

DESCRIPTION. This disorder is generally understood to be a tumour, which takes its rise in the internal parts of the bone, and gradually enlarges its substance. It is frequently hard, and without much pain; sometimes it appears as if it were puffed up with air, and is attended with shooting pricking pains, from which indications it has its name.

A spina ventosa differs from a common caries, by being formed from an abscess, or decay in the internal substance of the bone, accompanied with an external tumour thereof. This disease gradually extends itself to the periosteum and integuments which cover or lie near the part affected, and, in the end, produces an ulcer of the most stubborn kind. It is easily to be distinguished from the rickets, since that disorder more generally affects the habit, and is attended with various irregular tumours, particularly in the epiphyses of the joints, which continue without pain.

There are also some other swellings in the bones, which remain free from pain and erosion throughout life.

The spina ventosa is not confined to the cylindrical bones; it affects also those of the head, face, neck, back, and chest, though the former are the most frequent seats of the complaint. It is most mischievous when fixed on the heads and processes of bones.

CAUSES.



CAUSES. It may be occasioned by a scorbutic, scrophulous, or venereal acrimony, affecting the lamellæ, or medullary substance of the bone; or by injury done to the corresponding vessels between the periosteum, lamellæ, and medulla, from external violence.

CURE. In the milder species of this complaint, when it proceeds from external injury, cold applications with Goulard, Mindererus's spirit, and the like, in its early stage, have been of great service. When it arises from acrimony in a moderate degree, an alterative course, with mercurial ointment, decoction of sarsaparilla, or of the woods, together with an acescent and milk diet, have been known to restrain its progress. Accidents are generally confined to the external lamellæ, and seldom produce diseases of great depth in the cylindrical bones, unless there is some pre-disposing cause in the habit, which it is the business of the surgeon to attend to.

When the superincumbent parts begin to be discoloured, and are troubled with pricking pain and burning heat, an ulcer is certainly forming without-side the bone: at that time, an opening should be made sufficient to lay bare the diseased part: if it is of moderate extent, a caustic may be applied; otherwise, the knife will answer better. Perforation, as directed in the carious ulcer, then becomes a necessary expedient; and such dressings are to be applied, as will tend to absorb the discharge, and

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restrain



restrain the flesh from growing over the denuded bone, until the diseased part is separated, or the discharge is dried up.

When the whole of the substance is diseased, particularly in or near a joint, amputation is the only remedy; but it is justly observed by *Monf. Le Dran*, that the operation should not be performed upon the bone which is diseased.

### WHITE SWELLING.

**DESCRIPTION.** Scarce any disease is more painful, obstinate, and dangerous in its nature, than this. It seldom attacks any other part but the knees and ankles. The joint has been always considered as the seat of this complaint, but it is most commonly without the capsular ligament; it may therefore be properly divided into two kinds, the exterior and the interior.

The first is of the milder kind, and comes on with an acute pain over the joint, and a swelling that seems to extend itself to the tendinous expansions which surround it. The part where the pain is most violent, rises with a puffy elastic tumour, the cellular membrane gradually thickens, and the swelling grows uniform, which is sometimes the case from the beginning. Tension without discolouration, stiffness in the joint, and contraction in the flexor tendons, ensue: the ligamentous parts and lymphatic glands, together with the sacculi  
mucosi



mucosi near the diseased part, become enlarged; abscesses form repeatedly, which at first discharge a purulent matter, afterwards a thin foetid sanies; the patient's strength is worn down by the continued pain and discharge; absorption takes place; a quick weak pulse, colliquative sweats, and stools, are the consequents; and, unless the limb is timely removed, the patient falls a victim.

In complaints of this kind of long continuance, the capsular ligament may be eroded; but that seldom happens, except when the disease originates in the joint itself, or in the epiphysis.

The interior kind is more inveterate: in this, the pain is more acute and confined than the former; and though the swelling is not so extensive at first, yet in its progress both that and the pain increase considerably, the joint is sensibly enlarged, the tumour grows elastic to the touch, varicose veins appear on its surface, and abscesses form, which commonly discharge a thin foetid matter; the bones are found to be thoroughly carious, sweats and purgings come on successively, and the patient becomes a miserable object.

CAUSES. In the exterior species, the tendinous and ligamentous expansions are first affected. Bruises, sprains, and other external injuries, producing inflammation on the parts covering the joints, may be reckoned as causes. Rheumatic, or any other inflammatory affection on those parts, are also causes of this species. The second kind de-



rives its origin most commonly from a strumous habit, alone, or in concurrence with some external injury.

CURE. In the first stage of the exterior species, it will be proper to bleed once or twice, and use antiphlogistic remedies and diet. Cupping and scarification on the diseased part is preferred by some: a pill with calomel and camphor for two or three nights successively, followed by a cooling purge, and occasionally repeated, is also necessary; and cloths dipped in Mindererus's spirit, or vinegar, with crude sal ammoniac, may be frequently applied. Should these means prove ineffectual, blisters, or Barbadoes tar, may be repeatedly applied to the part.

When the inflammation appears to be removed, mercurial friction, with intervening purges, assisted with a laced kneeband, or convenient bandage, have proved effectual. Should the disorder be so far advanced as to form abscesses, the matter ought to be discharged as soon as possible by the incision with seton. The bark in full doses is then absolutely necessary.

The stiffness of the joint and rigidity of the tendons will most commonly yield to the repeated use of the vapour bath, succeeded by neat's-foot oil. The omentum or caul of a new-flain sheep or calf, applied for three or four hours every day, or plunging the part affected into the paunch of a new-flain ox, sheep, or calf, and retaining it there  
till



till the vital heat is exhausted, have been of great use.

If, notwithstanding the application of these means, the disease should still increase, and the constitution, from pain, discharge, and fever, is sinking to the extreme, especially when the disorder lies near the larger joints, the only resource is amputation. The electric shock is said to have been of use in the early stage of this complaint.

In the worst kind of this disorder, the habit must be corrected; mercurial unction, antimonials, and bark, are the most likely remedies to succeed, after the inflammation and pain have been relieved by the means before directed. In the smaller joints, the diseased bone has been known to separate, and a cure has followed; but in the larger joints, amputation is the most probable means of relief. Some young subjects, too timid to submit to the operation, with the assistance of opiates, lime-water and milk, the bark, and proper diet, have been able to struggle through the very worst stage of the disorder.

### TINEA CAPITIS.

DESCRIPTION. This disorder more particularly infects the hairy scalp. Some writers consider it as a species of the herpes exedens; but from the slowness of its progress, and its external appearances, one would rather suppose it to partake of the lepra. Sauvage says, that the lepra ich-



thyosis frequently accompanies this disease; there seems to be little difference between that and the tinea, except that the scales of the latter become thickened in a greater degree; which particular may arise from the excretory juice near the bulbous roots of the hairs on the head being naturally of a more viscid kind than that which issues from other parts of the body; it frequently begins with an increased quantity of white scurf upon the head.

This disorder may be divided into two kinds, the dry and the moist. The first forms into a white thick crust, or scab, which sometimes extends over the forehead, down even to the eye-brows: the last is of a more thin acrid nature, and does not so readily produce the thick scab, but eats deeper into, and spreads further about the scalp; forming, as it were, a kind of quagmire under the integuments. Both kinds are attended with great itching, and a very disagreeable stench. It is more or less obstinate in its nature, according as it is entangled with the hair; and when the roots of the hair, which seem to be the seats of the complaint, are greatly swelled, it becomes extremely difficult to cure.

This species of acrimony may be communicated by contagion; wearing the same cap, sleeping on the same pillow, or even using the same comb, will convey it from the head of one person to that of another. Children are much more subject to this complaint than adults; and when greatly afflicted with it, the complexion grows wan, and the constitution



tution suffers, both from absorption and a partial obstruction of the perspirable matter, which is likely to be contaminated with the morbid matter lodged under the scabs.

The *crusta lactea*, which are dry, white, crusty scabs, formed on different parts of the head, face, and neck of children; also, the moist ulcerations of the scalp, called *achores*, are most probably of the same tribe.

CAUSES. It may arise from external communication, from a morbid state of the excretory juice at the roots of the hair, which may or may not be contaminated with a general acrimony in the habit, want of cleanliness, and an impoverished state of the blood.

CURE. Former practitioners, supposing this complaint to arise from a vitiated state of the juices, reprobated the use of repellents, and never attempted to cure the slightest degree of the disease, without strong evacuants, and a strict alterative course; some of modern date consider this, with most other diseases producing ulceration in the skin, as merely local, and often venture upon their use without any precaution at all: either of which extremes must be bad; the former, by administering active remedies without an adequate cause; the latter, from not duly considering the mischiefs which sometimes affect the general system, when an acrid matter is suddenly absorbed. Surely it is most consistent with reason and sound practice, to be go-



verned, in all such matters, by the nature of the habit, and the quantity or quality of the discharge.

In the early stage of the disease, the hair should be kept close cut or shaved, and the head washed with sea-water twice a day; if that cannot be conveniently obtained, a moderate solution of common salt, or Epsom salts, in water, may be substituted; now and then administering a purge with rhubarb, or jalap and cream of tartar.

In the more advanced stage, the parts should be repeatedly smeared over with tar ointment, made with equal parts of the best Stockholm tar and mutton suet melted slowly together, gently rubbing off the scab with a soft piece of flannel, and when the sores are sufficiently cleansed, applying rags wetted with camphorated vitriolic water, or dabbing them with a weak solution of corrosive sublimate in water, in the proportion of eight grains to a pint. Cleansing the ulcerations with tar ointment, and dressing them with the mercury precipitate ointment of the London Dispensatory, have, by a moderate perseverance, proved efficacious in many cases.

When the complaint is so far advanced, that the roots of the hairs are much thickened, and the scalp is deeply affected, no remedy is likely to prove effectual without removing the hairs by the roots, which may be done at different times, and with less pain than usual, by suffering the hair to grow for a few days, then applying a portion of pitch plaister  
to



to the part meant to be depilated, and afterwards drawing the hairs off according to the course that they naturally lay in. At each removal the part should be spunged clean with warm water, and first touched with a liniment made of one part ointment of mercury precipitate, and two of white cerate, and afterwards dabbed with the camphorated vitriolic water, or if foul, with the weak solution of sublimate just mentioned.

Upon the first attempt to cure in the latter stages, it will be proper to form some artificial outlet, and to give a purge with rhubarb and calomel, or a dose of salts, according to the state of the constitution and discharge, which should be occasionally repeated; and on the intervening days, to order a powder with crude antimony, and a few grains of gum guaiacum, or a proper dose of the following alterative powders, twice a day, with a proportionate draught of sarsaparilla and saffra decoction, or the infusion of saffra shavings :

Take of the pale bark, powdered, half an ounce; cinnabar of antimony, one dram. Make them into a powder, the dose of which may be from twenty to forty grains. Or,

Take of crude antimony, prepared, and the best pale bark in powder, each half an ounce; and the bark of saffra, powdered, one dram and a half. Rub them well together. From twenty grains to one dram for a dose, which may be taken two or three times a day,

It



It may not be amiss to observe, that in young children the calomel will be unnecessary, when the mercurials are applied externally; also, that the remedies ought to be particularly adapted to the age and constitution of the patient. When either of the above courses are ordered, a purge should be given once in six or seven days.

Lime-water and milk, duly proportioned, is a good absorbent, both externally and internally, in the moist kind of scald; as is also an infusion of bark in lime-water. A blister, issue, or seton, should be opened in the nape of the neck, at the very first of the process, in order to prevent any injury arising from drying up the discharge.

#### O E D E M A.

**DESCRIPTION.** This is a kind of tumour which affects different parts of the body, particularly the legs and feet; it is sometimes circumscribed or confined, at other times more generally diffused; is cold and pallid, attended with little or no pain; retains the print of the finger when pressed upon it, and occasions no great alteration in the skin, except tension and a shining smoothness. This is called by some, the *œdema frigidum*, to distinguish it from another kind, called *calidum*, which is commonly mixed with erysipelas, and yields a glowing heat, sometimes free from redness, but attended with pain and a girding tightness.

**CAUSES.**



CAUSES. Weakness and obstruction of the lymphatic system, irregularity in diet, intermittents, hæmorrhage, asthma, phthisis, a sedentary life, menstrual obstruction, induration of the mesenteric glands, and compression of the abdominal vessels.

CURE. It is sometimes dangerous to use repellents in the dispersion of these tumours; the habit ought to be altered and strengthened by internal remedies, and proper regimen. The curative intention is also to be adapted to the nature of the cause, and the prevalent disease in the constitution. In the relaxed and aged habit, proper nutriment, warm gentle laxatives, plenty of bark in red wine, and chalybeates, are most likely to relieve: dry frictions and the spiral bandage, or laced stocking, are necessary assistants. The diet should in general be stimulating and generous, and the air dry and warm.

The hot acrimonious kind, which generally attends bilious erysipelatous habits, is to be treated agreeable to the directions given under the article Erysipelas.

## ENCYSTED TUMOURS.

DESCRIPTION. These tumours appear in different parts of the body, and are contained in membranous bags formed by the cellular membrane being pressed and condensed; they contain fluids of various consistencies, from the particular state of which they are nominally distinguished.

When



When the matter is of a pappy consistence, resembling paste or a poultice, the tumour is called *Atheroma*; if it bears a resemblance to honey, it is termed *Meliceris*; and if suet-like, *Steatoma*. These tumours are commonly very small at first, and increase slowly in size till they sometimes arrive at an enormous bulk. Mons. Petit mentions one which he extirpated, that weighed upwards of twenty pounds. They form without redness, heat, or pain; but should they grow large and schirrous, much pain and danger will ensue.

The *Atheroma* is soft, regular, and most frequent, and is chiefly attendant on scrophulous habits; the *Meliceris* is also not unfrequent; and the *Steatoma* commonly attacks the most healthy. The two first are not easily distinguished from each other; the latter is more firm to the touch, and does not admit of fluctuation.

These tumours are generally termed wens; but such only as are formed of the membranous parts alone, or of a fleshy substance, are more regularly entitled to that appellation. A small portion of lymph is commonly found in the center of those swellings.

The Ganglion is a species of encysted tumour of the meliceris kind, which is formed within the tendinous theca; its contents mostly resemble the white of an egg.

CAUSE. Encysted tumours may be reasonably supposed to originate from injury done to the cellular



lar and adipose membrane, together with a partial impediment in the absorbent system. Ganglions are commonly produced from external injuries.

CURE. These tumours, like those of the schirrous kind, ought to be more attended to in the infant state: rubbing them with mercurial ointment will at that time frequently disperse them. Some have been brought to inflame and maturate by means of the drawing plaister, or such like applications; but the quickest and most eligible method of getting rid of them is by excision, taking care to remove the whole of the cyst, if practicable with safety. Those which are small, and have a slender base, may be easily extirpated by ligature.

If in the operation by excision it should so happen that the cyst is wounded, which is often done when it runs deep within the interstices of the muscles, the contents should be pressed out, and with the assistance of the hook, as much of the cyst ought to be dissected away as can be done with conveniency and safety; the remaining part may be destroyed with mild escharotics, or left to suppurate and discharge away.

In every case where the tumour is not pendulous or large, a strait incision, in its full extent, will give sufficient room to dissect away the cyst or wen, and the wound may be afterwards managed according to the treatment laid down in schirrous cases: if large, a cruciform incision, or transverse section on one side, will afford convenient room for its removal.

Incision



Incision with seton has answered in the softer kind of encysted tumour.

*Ganglions* have been frequently removed by pressure with thin sheet lead and proper bandage, or by sudden blows. Many large ones, which greatly impeded the use of the fingers and wrist, have been dispersed by gently and repeatedly beating them with a small thick ferula, so as not to bruise the part, or occasion much pain. If they should resist the above means, extirpation will be necessary. For a singular operation on the wrist in a tumour of this kind, vide Mr. Warner's Cases in Surgery; wherein he gives a particular instance of the necessity for making the external wound of full extent with the tumour.

#### E M P H Y S E M A.

**DESCRIPTION.** Is a soft, flatulent tumour, formed under the skin, which is sometimes of great thickness, and spreads throughout the body; the face being so distended, as not to leave the least trace of a feature. Upon pressing the tumour with the fingers, the air withdraws itself with a crackling noise, but the part compressed immediately returns to its former state. It is attendant upon wounds that penetrate the cavity of the thorax, on injuries of the lungs by the points of a broken rib, or on wounds in the larynx, particularly when the teguments are too closely stitched up. This complaint is also partially produced in contused wounds about the  
the



the head, face, eye-lids, scrotum, &c. If the air escapes from the lungs into the thorax, the patient is in danger of suffocation, unless relief is speedily obtained.

CAUSES. It is occasioned from confined rarified air forcing itself into the cellular membrane, or finding its way into the cells by the lips of a wound: putridity is also a cause.

CURE. The natural indication of cure is, to expel the confined air as early as possible, which is most likely to be effected by pressing the included fluid out at the orifice of the wound, and applying thick compresses wetted with camphorated spirits, and a strict bandage.

Slight incisions also, or punctures, should be made into the cellular membrane in different parts of the body, through which the air may be excluded by pressure; after which, compresses dipped in Mindererus's spirit or sharp vinegar, and a tight bandage, should be applied to the different parts where the scarifications were made. When it arises from a wound, it may be useful to enlarge the opening. If respiration is difficult, blood should be drawn from the arm, and repeated as in the pleurisy. Nitre and antiphlogistics are also necessary, particularly when the rib is so fractured as to produce this untoward complaint.

When a quantity of air is confined in the cavity of the breast, and the vital functions are greatly obstructed,



structed, the paracentesis is the only remedy: vide the manner of performing the operation under that head.

### W A R T S.

**DESCRIPTION.** These are excrescences of the cutis connected with the cuticle, which infest most parts of the external surface of the body, but more particularly the hands and face; they are of different size and figure, broad and flat, slender, or pendulous; some break through the cuticle and become irregular in their surfaces, and are from their appearance termed feeded.

Warts sometimes grow to a large size, and are extremely troublesome and tender, particularly those upon the eye-lids; if let alone, they will frequently suppurate and dissolve away; but when irritated, are apt to grow hard, dry, and fungous. They are easy to be removed by abscission, or ligature with a single hair regularly and repeatedly tightened. When the aspect of those which are seated on the face, lips, or eye-lids, is of a livid cast, and the adjacent parts are hard, tender, and inflamed, they are very apt to prove cancerous.

**CURE.** Warts are to be removed by a single hair ligature, or fine silken thread waxed, particularly if the basis is more slender than any other part. They may be also extirpated with a pair of sharp-pointed scissars, or a small scalpel, observing to touch



touch the wound lightly with lunar caustic or vitriol stone.

Caustic applications are also used to destroy them; but care must be taken to limit their action, by touching the part gently and often, for fear of injuring a subjacent ligament or tendon. Oil of vitriol, aqua fortis, or butter of antimony, are the principal remedies of that sort, but require great caution in their use. Juice of celandine and the milk of spurge are often efficacious in the softer and smaller kind. Some have been removed by rubbing them with crude sal ammoniac, using a slight solution thereof in oxycrate, or dabbing them with the leys of tartar.

*Corns* are a sort of horny excrescence, growing on the feet and toes, and on the hands of labouring people. These callosities resemble an inverted wart, and are seated in the cutis and cuticle, arising chiefly from pressure and attrition, and are excessively painful when rooted near a tendon.

The easiest and best way of getting rid of these troublesome companions is, to take off all uneasy pressure, and apply a piece of plaister, little more than the size of the corn, spread with soap or simple diachylon plaister, which may be kept close on the part for four or five days together, to render its surface soft; the plaister is then to be removed, and that part which appears sodden pared away, but by no means so low as to touch the quick; after which the plaister is to be renewed, and the whole may be

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repeated



repeated once in five or six days, till the corn appears likely to turn out at the root, or waste away; soaking the part in bran and warm water is very useful, previous to each cutting. Hog's gall dried in the bladder, spread thin upon rag, and applied to the corn only, has often proved efficacious: it is apt to inflame the part a little, but the corn generally withers after a few applications of this kind, and turns out at the roots.

*Tumours called Onions* are larger and more extensively seated than corns, and are extremely difficult to get rid of; they sometimes inflame and suppurate, and require some art to heal. The suppurative cataplasin, and light easy dressings, such as soft lint spread with cerate, and the same on rag over all, provided the inflammation is abated, are the best applications. There are instances of persons submitting to have a toe amputated, in order to be rid of this painful guest.

### WOUNDS IN GENERAL.

DESCRIPTION. A wound is a recent separation of the soft parts of the body, from an external cause.

A wound is more or less important, according to the size of it, the sharpness of the instrument with which it is made, the part of the body in which it is received, the parts immediately injured, and the state of the habit.

The



The numerous distinctions which authors generally make with respect to this subject, rather tend to perplex than explain it. The whole may be fairly comprehended under the following heads, viz. The Simple Incised Wound, the Lacerated, and the Complicated.

The Simple Incised Wound is a mere separation of parts, and, in a healthy subject, generally admits of that union, which is termed the first intention.

The Lacerated Wound is when the separation is irregular; it may be produced by violent distension, stab, or puncture; by thorns, splinters, jagged instruments, &c. and is of a much worse nature than the former.

The Complicated Wound is accompanied with one or more of the following circumstances, viz. contusion, loss of substance, or some violent symptom. Wounds, where a large blood-vessel, a nerve, tendon, or the bone is injured, are of this kind; gun-shot and venomous wounds may be also ranked in this class, together with those that are produced by thorns, splinters, glass, &c. particularly when the extraneous body is lodged in the part.

An incised wound generally bleeds freely, a contused wound seldom does. The pain, inflammation, &c. are more violent in the latter, especially in a tendinous or nervous part. In wounds with contusion, attended with much inflammation, the adjacent parts are greatly inclined to gangrene.



If an artery is wounded, the blood rushes out by starts, and is of a florid colour; if a vein only, the blood is of a darker red, and flows in a moderate and equal stream.

A sharp shooting pain, attended with inflammation, spasmodic contraction, and rigidity, together with an insensibility and loss of motion in the parts, indicates a nerve or tendon to be injured; rigour, fever, delirium, and other alarming symptoms, generally follow.

If nothing more than a fleshy part is wounded, the pain is generally obtuse, and the symptoms are moderate.

Tumour, heat, redness, inflammation, and pulsation in the part, are the common consequences of wounds. Provided no tumour or inflammation arises about the wound, it proves that the vital parts are defective, and threatens ill; and should the above symptoms be excessive, gangrene is likely to be the consequence. Wounds in the joints, lungs, belly, and spinal marrow, are exceedingly dangerous; the latter always produces a palsy in the nether parts.

*Wounds of the Internal Parts.* The seat and extent of such wounds are to be ascertained by their direction, the nature of the discharge, and the difficulty attending the action or function of particular parts.

In wounds of the *Trachea*, or *Windpipe*, the breath passes out at the orifice, blood is coughed up, and the patient finds it difficult to speak.

If



If the *Æsophagus* or *Gullet* is wounded, the aliment finds its way through the opening, deglutition is painful and obstructed; hiccup, vomiting, swooning, and cold sweats commonly attend such an injury.

Wounds of the *Lungs* are known by frothy florid blood being coughed up, or flowing through the opening, pain and difficulty of breathing, deliquium, &c. and from the air in inspiration passing through the wound.

When the *Diaphragm* is injured, difficulty of breathing, hoarseness, hæmoptoe, and pain under the false ribs, ensue.

In wounds of the *Spinal Marrow*, the parts receiving nerves from thence below the wound, become paralytic.

Wounds of the *Receptacle of the Chyle*, or *Thoracic Duct*, discharge a light greyish fluid, and the patient shrinks and grows weak.

The *Liver* or *Spleen* may be supposed to be wounded, when a blackish-coloured blood issues from the right or left hypochondrium, attended with difficulty of breathing. If the liver is wounded, or schirrous, a pain is frequently felt in the right arm or shoulder.

Wounds of the *Stomach* are attended with the same symptoms as those of the gullet.

When the chyle and indigested aliments are discharged through the wound, the *Small Intestines* are hurt; if the excrements pass through the opening, the *Larger Intestines* are wounded.



The *Gall-bladder* or *Duodenum* are most probably injured, when the direction of the wound lies towards the liver, and a quantity of serous and bilious liquor is discharged.

In wounds of the *Kidnies*, the urine appears bloody, and much pain is felt between the groin and testicles; if the urine is discharged by the wound, the *Ureter* or *Bladder* is hurt.

In wounds of the *Uterus*, great pain is felt in the groins and hips, and blood flows from the pudendum.

Wounds in the *Abdominal Viscera* are generally attended with vomiting, hiccuping, syncope, diminution of sight, cold sweats, &c.

Wounds in the *Head*, which reach the pericranium only, are sometimes attended with violent symptoms; but when the skull is injured, great stupor generally ensues; and if the brain or its membranes are injured, the symptoms are more violent. Vomitings, stupor, loss of speech, paralysis, and convulsions frequently succeed, which symptoms portend the most imminent danger.

Contused wounds on the head, which have appeared to be slight, have many times been attended with fatal consequences. Surgeons ought therefore in all such cases, to enquire minutely into the state of the parts injured, the nature of the blow or fall by which the wound was occasioned, and the state of the patient's senses immediately after receiving it, in order that proper evacuations and regimen may be in due time pursued, to avert or prevent inflammation



mation of the brain, and other fatal symptoms, which have unexpectedly come on about the twelfth day from the accident.

If upon passing the probe beyond the wounded integuments, a puffiness should be felt in the pericranium, that membrane is most probably detached, which is a presumptive proof that the blow was given with greater force than the external appearance of the wound indicates, and that the concussion which the brain has suffered, ought to be duly attended to, particularly when the senses are rather disordered.

CAUSES. Instruments either blunt or sharp, which by violent application externally are capable of producing a solution of continuity in the different parts of the body; they may also be occasioned by extraordinary distension.

CURE. Before the general method of cure is explained, it may not be amiss to notice the vague notions of the nature and treatment of wounds, entertained by surgeons not many years back, when the process of cure was supposed to be chiefly affected by art.

The progress of its cure was then divided into four different stages: the first was called its crude state, in which the discharge was thin and sanious; to correct which, greasy and warm dressings were applied every day towards bringing forward the state of digestion, which was distinguished by an uniform laudable pus, as it was called; when the



wound appeared clean and red, then began the business of incarnation, which was supposed to be carried on by means of farcotic medicines, or medicines that had the power of generating or promoting the growth of flesh; and last of all, when the surface of the fore was filled up, they proceeded to cicatrization.

Modern practitioners are convinced that Nature is the principal agent in healing wounds, and physiologists have clearly demonstrated three different processes by which it is accomplished.

The first and most ready is that which is commonly called healing by the first intention: this is generally perfected in a fresh-bleeding incised wound, without inflammation or suppuration, provided the parts have not been long forced asunder, or no constitutional disease prevents, by placing the edges of the wound or incision as apposite and close together as possible, and retaining them so by slips of adhesive plaister, and the interrupted suture, if requisite.

The second process is brought about by what is termed inflammatory exudation, or adhesive inflammation. If the advantage of the first process is unfortunately lost, by taking up so much time in securing the blood-vessels, that the mouths of the small vessels are collapsed or retracted, or by some other cause of delay, the parts being properly closed, although they are in some degree inflamed, may yet be united without suppuration.

The



The third and most dilatory natural process is that by suppuration, granulation, &c. It is indisputably true, that this tedious method would be frequently unnecessary, were the two former more carefully attended to and assisted.

In the first and second process, it will be proper to remove the slips of plaister about the third or fourth day, and to cut out the stitches of the interrupted suture, and also during the inflammatory stage, to place the edges near together, and keep them so, by applying a few slips of adhesive plaister; the ligatures of the blood-vessels are to be gently moved at every dressing.

Where then no extraneous body interrupts, no principal blood-vessel, nerve, or tendon is wounded, and the regularity of the divided parts will admit of it, the best method is, to place the edges of the wound as apposite and close as possible; to retain them so by slips of plaister, and the interrupted suture, if necessary; to apply lint moistened with traumatic balsam, or, in an irritable habit, lightly spread with yellow or white cerate; and to use proper bandage; taking care studiously to avoid exposing the part to the air by frequent dressing; instead thereof, about the third or fourth day, the former dressings and slips of plaister may be renewed. If much inflammation attends, it will be proper repeatedly to apply cloths wetted with saturnine lotions, observing not to increase the symptoms by pressure or bandage during that irritable

ble



ble period, and to order gentle evacuants and proper regimen.

By such means, the cure of a common flesh wound may be compleated in one fifth part of the time which it used to be, unless some constitutional ill should prevent.

The Lacerated Wound, when deep, angular, and large, or where a part is nearly torn off, sometimes requires future; but if there is much loss of substance, some extraneous body is perceived therein, or the contusion is great, both future and bandage should be avoided, and it is to be treated like a wound of the complicated kind.

The Complicated Wound seldom admits either of future or bandage: in this class it is also necessary to remove all foreign bodies, to put a stop to the hæmorrhage, and, after having sponged the parts with warm water, to apply lint, dry, or armed with traumatic balsam; still remembering, that mild dressings are best adapted to irritable habits, and that the wound should not be exposed too soon, or too often. Thick pledgits of soft lint, moistened with solutions of the gummy or balsamic kind, seem best to answer the intention in wounds of this order, as they form a sticky crust, which prevents all entrance to the air. A pledgit of tow, or doubled rag, spread thin with yellow or white cerate, is better to be laid over such dressings than sticking-plaister, which some are too fond of using upon such occasions, since the former can be removed without



without the least irritation. In case of inflammation, the best external applications are, the saturnine water, or common poultice.

If the constitution is in too languid a state, it will be proper to apply warm poultices repeatedly, with the bread and cummin poultice, or strong beer grounds and flour of oatmeal. The bark ought also to be administered plentifully, with decoction of serpentary, &c. Rest and sleep should be indulged; and opiates, with laxatives, should be given occasionally.

If a nerve or tendon be divided in part only, the pain, inflammation, and fever, are much more violent than when a total division has taken place; it is therefore sometimes necessary to cut them through: the limb ought in all such cases to be laid in the most relaxed state, and large thick poultices with bread and milk, or Goulard's mineral water, should be applied every four or six hours. Membranous and tendinous expansions also, when wounded and on the stretch, are sometimes only to be relieved by a greater division of the strictured parts. A locked jaw has been known to proceed from a wound at the end of the finger, which nothing but amputation at the joint could relieve.

If an artery is wounded, the hæmorrhage may for the most part be stopped by compression, tenaculum, or needle and ligature; for which last, vide Amputation. When the vessel is inaccessible to either of these means, compresses and bandages are sometimes



sometimes applied to the limbs in the course of the vessels, in order to retard the general circulation, with effect; to assist which, the patient must be kept cool and quiet, and upon a low regimen. The actual cautery may be sometimes profitably applied, when other means cannot succeed; particularly in arteries retracted within the foramina or cavities of some bony parts: dry lint, forcibly retained against a divided or ruptured vessel, has also proved effectual; as has a hard pledgit, or button, armed with butter of antimony, or some potential cautery.

Instances can be proved, where wounds of the brachial and femoral artery have been treated after the manner of aneurisins with success: amputations therefore, in cases of that kind, ought not to be implicitly put in practice. Suitable pressure, by compress and bandage, along the course of the main artery, so as to check the impetus of the circulation through the limb, and impede the efflux of the blood, has succeeded in the brachial artery, when punctured in the operation of bleeding, and when it was accidentally divided about an inch below the elbow. In all such cases, much council is necessary to the most skilful. Vide Accidents from Bleeding.

Contused wounds are to be treated according to the degree of injury which the surrounding parts have received, and the edges should be brought as near together as they will easily admit of. Traumatic



matic balsam on lint, Goulard's saturnine water mixed with crumb of bread, or rags wetted therewith, are the most proper applications. In wounds with loss of substance, there is greater likelihood of inflammation, and much subsequent discharging; it will therefore be proper to attend strictly to the aspect of the wound, and nature of the constitution. If a good matter appears, and granulations form freely, care must be taken to check the fungus, &c. Vide Ulcers.

Should the edges be pale, flat, or flabby, and the discharge prove thin and sanious, pledgits dipped in decoction of bark, traumatic balsam, or tincture of myrrh with honey of roses, with invigorating poultices, should be exhibited externally, and the bark, &c. internally. Vide Ulcers and Gangrene.

If such wounds are attended with great inflammation, use the antiphlogistic remedies, let the part be laid in the most relaxed and easy posture, and give opiates occasionally.

Wounds of the lymphatics will frequently yield much limpid discharge, and are difficult to heal; if the salivary glands are injured, the stream must be diverted by passing a seton, or making an opening into the mouth. Lint dipped into a solution of alum, camphorated vitriolic water, or Goulard, with proper compress and bandage, are most useful. Great trouble has been experienced from wounding a lymphatic, on opening the cephalic vein in the arm,



arm, which was principally remedied by hard compress and bandage.

*Wounds of the Head*, made by a sharp instrument, if recent and simple, may be sewed up and dressed accordingly; which treatment will frequently succeed where even the skull is cut, if no bad habit prevents. In wounds of the scalp, where the skull has been laid bare, securing the flap by future and a gentle retentive bandage, have proved effectual. In some constitutions, inflammation has followed, with fever, stupor, and other violent symptoms, which, when bleeding and antiphlogistic remedies have proved ineffectual, have yielded to an incision made through the middle of the detached scalp.

When the pericranium has been wounded by puncture, the same inflammatory symptoms will sometimes ensue, and require the same treatment.

*Wounds in the Face* are commonly cured with the assistance of the dry future; when deep and irregular, the interrupted kind becomes necessary.

*Wounds of the Eye-brows and Eye-lids*. When they are large, and in a transverse direction with respect to the muscular fibres, it will be necessary to place the edges in as regular a manner as possible, and retain them so by means of the interrupted future; in a contrary direction, the dry future will generally be sufficient. Goulard's saturnine water, and a mild cerate with the slightest bandage, are the best applications.

*Wounds*



*Wounds of the Eye.* The eye-ball admits not of future; the only means that can be employed on such occasions, are, bleeding, and every kind of treatment to remove inflammation, and to obviate suppuration, if possible; which last is sometimes the unhappy consequence. Vide Ophthalmia and Cataract.—A wound through the orbit produces an inflammation in the brain, which generally proves fatal.

*Wounds of the Ear.* If the cartilage is divided, or any part is irregularly torn, the common future is required, so as to reduce the ear as near as possible to its original shape. Apply the balsam, Goulard, &c. compress, and proper bandage.

*Wounds in the Tongue* may be sewed up, and the stitches ought to be made deep, on account of the softness of the part. A solution of myrrh in barley water, with the addition of honey of roses, makes an useful gargle in such a case.

*Wounds of the Neck* are more or less dangerous, according to the nature of the parts that are wounded.

If the carotid artery or internal jugular is injured, the surgeon's art is of little or no effect. When the windpipe is wounded, provided it is not quite divided through, the twisted future is preferable to the interrupted; for closing the wounds of this part, the external applications should be of the mildest kind.

Wounds



Wounds penetrating the *Æsophagus* are generally fatal in the end; as are also those in which the par vagum, and nerves which supply the internal parts, are divided. The diet should be liquid, such as thin milk gruel, sago, jellies, &c. Nutritious glysters may be injected to advantage.

*Wounds of the Thorax.* In those that penetrate this part, an enlargement is sometimes necessary to facilitate the discharge from within. If the intercostal artery is wounded, it may be secured with the curved needle. Bleeding, rest, and a strict cool regimen, with gentle laxatives and refrigerants, have proved successful where the lungs have been wounded through and through: the principal business then is, by such means to restrain hæmorrhage, and prevent inflammation. In most wounds, superficial dressings are to be preferred; but if there is a discharge from the cavity, it will be necessary to keep open the external wound, after the manner prescribed under the article Empyema.

Perforation at the inferior part of the thorax, to give exit to the extravasated blood, is advised, but not much practised; and judicious surgeons have recommended such remote business to be left to the efforts of Nature, giving her aid when she particularly points out the necessity of it. Concerning this process, vide Paracentesis.

Should a troublesome cough attend, give an opiate, or a solution of the storax pill with Minde-  
rerus's spirit.

*Wounds*



*Wounds of the Abdomen*, which penetrate the cavity without injury to the intestines, or other viscera, depend principally upon bleeding, rest, and cool remedies: they are to be united by the dry suture alone, or, when irregular, assisted with the interrupted or quilled suture; a recumbent posture, and a gentle supporting bandage, are always useful. The quilled suture is to be preferred in wounds of great extent.

If the *Intestines* protrude, and are not wounded, they should be returned as soon as possible; and in case the orifice is not sufficiently open to admit of it, it must be enlarged: on such occasions, the bowels are extremely apt to be puffed up with wind, which some authors have advised to be let out, by slightly pricking them; but an expedient of this kind is too dangerous to be trifled with.

When the intestines are wounded to such a degree as to require the suture, (since it will not be necessary in slight wounds of them, or punctures) the glover's stitch is generally recommended. For the method of doing it, vide Sutures.

If any part of the *Omentum* appears to be gangrenous or cold, it will be proper to separate the same just below the sound part, and return the rest.

When a portion of the intestine is detached, either by incision or mortification, the sound parts may be stitched to the edges of the wound, and left to form an artificial anus.

*Wounds of the Receptacle of the Chyle, Thoracic Duct, Pancreas, Mesentery, Liver, Spleen, Kidnies,*  
H Ec.



&c. are to be treated in the general method prescribed against Inflammation, &c. Vulnerary injections and tents were formerly in great use; the first are pretty generally exploded, the latter are still in use when matter is formed in either of the great cavities.

*Wounds in the Joints* are subject to violent pain and inflammation, and sometimes attended with delirium and convulsions. If they penetrate the capsular ligament, the synovia, which is a slippery fluid, secreted within the joint in order to facilitate its motion, will pass off by the opening. Surgeons are liable to be deceived as to this discharge, since a fluid of a similar nature also proceeds from a like injury done to the *sacculi mucosi*, which are small membranous bags that lie under, and serve to lubricate the tendons of the muscles in their action near the joints. The chief marks of distinction in the two cases are, that the symptoms are more violent and dangerous in the former, and that the synovial discharge is generally more copious.

In all such wounds, plentiful bleeding, according to the nature of the constitution, laxatives both by glyster and otherwise, opium, nitre, and cooling regimen, are the principal means for relief. Externally, apply saturnine preparations. As soon as the inflammatory symptoms are removed, compresses moistened with aluminous or vitriolic solutions, astringent decoctions, &c. with moderate bandage, together with a plentiful use of the bark  
and



and elixir of vitriol, will be of the greatest service towards restraining either of the discharges.

*Gun-shot Wounds* are more alarming than any other, owing to the violence of the contusion, and laceration of the parts, and frequently to the extraneous bodies which are forced into them. Those which affect the bones, joints, or viscera, are of the worst kind, and are subject to great inflammation, gangrene, caries, &c. Still there have been numerous instances of cures, in the most desperate cases.

*Cure of Gun-shot Wounds.* The first things to be attempted towards the cure of these wounds are, if possible, to extract all extraneous bodies, and to secure the blood-vessels; to which purpose, should the opening be confined, it will be necessary to enlarge the same, provided it can be done with safety: where probing is necessary, the finger is to be preferred.

If the extraneous body cannot be removed by cutting upon it (which ought for the most part to be done, unless its situation is near a blood-vessel, a joint, a membranous or nervous part) it will be proper to leave the work to Nature, and dress superficially.

When a ball, or any other foreign body, is sunk deep, and lies out of the reach of the finger, long forceps are of little use, and may do much mischief. Numberless instances have occurred, where bullets have been many years lodged in various



parts of the body, some of which have at length made their way towards the teguments, and been easily extracted.

If the wound has not bled much, bleeding will be adviseable, and in plethoric habits ought to be repeated, as circumstances require. For the first fortnight, it will be generally necessary to keep the patient upon a cool regimen; and a stool should be procured every day, by common glysters, or some gentle aperient.

The most useful applications are light, easy dressings, saturnine lotions or poultices, also that with bread and milk; spirituous applications do not answer so well, on these occasions, as many others. If the sore should wear a gangrenous aspect, dressings and medicines should be applied accordingly. If the patient is of a relaxed habit, evacuants should be sparingly administered; and the bark, with elixir of vitriol, will be of sovereign use.

Gun-shot wounds seldom bleed much, unless a large blood-vessel is injured: the ball forms an eschar, which generally separates in a few days, and is followed by a copious discharge; it is necessary to wait patiently for the perfect separation of the eschar, particularly if it borders upon any material artery.

Should the patient complain of much fulness and throbbing in the wound, a sudden gush of blood may follow, which has sometimes been attended with



with fatal consequences, especially if preceded by a long continued discharge of sanious and ichorous matter; in such a case, timely bleeding and the bark are proper remedies.

Opium in this, as in all other painful complaints, proves an useful remedy, both as an antispasmodic and astringent. In cachectic and scorbutic habits, when the discharge is glairy or gleety, or the wound is pale and flabby, no one medicine tends to correct the juices more than an infusion of the bark in lime-water, or lime-water and milk. When these wounds are desperate in their nature and situation, particularly if some important joint is injured, amputation is not to be delayed.

*Venomous Wounds.* The most formidable wound of this kind which we have to guard against, in this climate, is caused by the bite of *Mad Animals*; *Dogs* particularly. Its description and symptoms are as follows:

No sudden effect upon the constitution is observed from the bite of a mad dog, and the wound itself is not more difficult to heal than lacerated wounds in general of the same magnitude. The patient has also no particular affliction, except dejection of spirits from a dread of the consequences, till about a month or six weeks from the accident, sooner or later, according to various circumstances; when a redness, heat, and tension generally attend the edges of the wound, and at the same time wandering pains and spasmodic affections diverge from



the part; which symptoms are accompanied with nausea, difficult respiration, anxiety about the præcordia, vertigo, and loss of muscular strength; great depression of spirits and the love of solitude ensue, sleep is disturbed by twitchings, horrid dreams, and restlessness; and the pulse is all this time quick, weak, and irregular.

On the first or second day, the foregoing symptoms gradually increasing, comes on a peculiar affection of the pharynx and gullet, which, upon an attempt to drink, occasions a sense of suffocation, and a convulsive affection of those parts and the organs of respiration: these symptoms even the common air in inspiration will produce, particularly if the weather is moist. This anxiety, and not being able to drink without the greatest difficulty, gives the disease the appellation of Hydrophobia.

As the general symptoms increase, the saliva is swallowed in less degree; great quantities of it are spit off in a viscid and frothy state, with powerful and repeated efforts, attended with a singular kind of noise, different from common hawking, which persons prepossessed with the opinion may conclude to be like the barking of a dog: the light now begins to grow intolerable, and the urine flows involuntarily. Thus ends the second stage of this terrible complaint.

At this awful period follow heat and flushing, with a strangulated appearance in the face and neck, together with a quicker pulse, in some weaker,



weaker, in others stronger; also a tentigo penis, and an involuntary emission of semen. Convulsive spasms affect most parts of the body; some are afflicted with a fierce delirium, or outrageous madness; and others shew a fixed melancholy, with a most pitiable countenance, having a perfect sense of their miserable state: at length the lower limbs become paralytic, convulsions increase, the pulse grows languid, cold sweats ensue, and death puts an end to the general distress, which commonly happens on the third or fourth day from the attack. Such were nearly the progressive symptoms of a poor husbandman, who, within an hour of his death, called for several of his acquaintances, and sealed his last farewell by shaking hands with them, telling them, at the same time, that they need not be afraid of him, for he would do them no harm.

This poor man had been for some hours deprived of the use of his lower limbs, which, in his restless state, he dragged after him round the room, hawking up and scattering about the saliva; at the same time he expressed as great horror at the mention of a bed, as this pitiable class of patients are said to do at the sight of water; both which equally influenced his mind with a dread of suffocation.

Whilst he was performing the before-mentioned act of friendship with his fellow-servant, his mind being particularly agitated, a general convulsion seized him, and curled him up as it were in a heap,



which was succeeded by as sudden a stretch, that closed the melancholy scene.

*The Bite of a Viper* is also attended with violent symptoms, and is in this country next in force to the preceding. The part is seized with a pungent pain, inflammation succeeds, which gradually changes to a bruise-like appearance, that sometimes diffuses all over the body, accompanied with retchings, bilious vomitings, weak pulse, languor, and deliquium; even death itself has been the consequence in some weak constitutions.

*The Rattle-Snake Bite* is much more formidable in its nature, and soon pervades the whole system.

The most remarkable wound of the venomous kind, if it may be really called so, is that produced by the *Guinea-Worm*. This kind of creature is hatched from ova that float in the rivers and waters in hot climates, but principally upon the coast of Guinea, and in the West Indies. It has a blackish head, is of a tape-like appearance, and about eighteen inches in length. It generally fixes itself in the leg or thigh, and is preceded in its appearance by an irksome boil. The head of this invioluted animal is to be discovered in a day or two after the sore has burst; and the ulcer can never be perfectly healed, till the whole of the worm is discharged from the part; the method for doing which, as practised by the Negroes, and in the hospitals, is as singular as its production. They fix the head of the worm to a small round bit of wood, lead,



lead, twisted filk, or quill, and roll the worm gradually every day as far as it will admit without breaking, until the whole is extracted, then heal as in common.

The Stings of Hornets, Wasps, Bees, &c. are often extremely painful, but do not immediately affect the constitution.

CAUSES. Hydrophobia, or canine madness, is occasioned by a certain portion of virus, *sui generis*, which being introduced through the wound, and absorbed gradually, diffuses its effect throughout the whole system. The poison from the bite of a viper is most probably absorbed, though a late ingenious writer has conjectured the contrary. The stings of hornets, wasps, &c. have a local effect.

CURE. The cure for the bite of a *Dog*, or any other quadruped that is mad, may be divided into two parts, the preventive and the curative; the former of which, if taken in due time, is most likely to succeed.

Extirpation or excision, cauterization, cupping the part, or blowing it up with gunpowder, and washing it well with salt and water, as soon as possible after the accident, are the most efficacious means to prevent absorption taking place. Sucking the wound, and applying a blister, are also strongly recommended by an eminent physician.

After either of the aforementioned processes, from half a dram to a dram of the strong mercurial ointment is to be rubbed daily into the legs, and applied



plied on and about the wound, dressing now and then with an ointment composed of equal parts of blistering plaister and mercurial ointment gently melted together, in order to keep up a proper discharge. When the nature and situation of the part prohibits the use of the knife, it will be right to cup and scarify, if possible.

The great professor, in his first lines, gives it as his opinion, " that the efficacy of mercury, given very largely, and persisted in for a long time, both as a means of preventing the disease, and of curing it when it has actually come on, is better vouched by experience, than that of any other remedy now proposed, or commonly applied.

The Ormskirk, Calthorpe, and Oriental remedies, have lost their general reputation; and even Dr. Mead's infallible medicine is now totally disregarded. The forementioned process is established upon the most rational foundation. The mercurial course should be adapted to the nature and strength of the constitution, and be continued in certain quantity till the mouth is slightly affected. Drinking plentifully of sarsaparilla decoction, barley-water, or such like diluting liquors, and occasionally interposing a gentle cathartic.

No curative method is yet laid down as absolutely effectual in this disease after the symptoms have come on. Great authorities give mercury the reputation of curing it at that period. Some have prescribed repeated bleedings, according to the strength



strength of the pulse, and the violence of the raging symptoms. Bleeding, the warm bath, and opium in large doses, have been prescribed together to little effect. Repeated doses of ether, and blisters to the head and throat, have been suggested; but the most probable remedies are frequent doses of opium, from one to three or more grains every three or four hours, until it has produced some sensible effect, and rubbing in a sufficient quantity of mercurial ointment to excite a gentle spitting, which ought to be continued for some weeks.

The best prophylactics against the bite of a *Viper* are, sweet oil, and viper's fat; the men who make it their business to catch those reptiles, look upon these simples as effectual defensatives against the severest bite. Irritable and bilious habits suffer greatly from this kind of wound, and on such occasions an emetic and oily purge should be taken at first, after having well rubbed the wound and adjacent parts with pure salad oil, made warm: in some instances, the inflammation and fever run so high as to require bleeding and poulticing. Camphor, and opium joined with ipecacuanha, are considered as excellent remedies when properly combined.

The bite of the *Rattle-Snake* is exceedingly destructive; it is very soon attended with purple spots, and difficult respiration. Some bleed once at first, and administer alexipharmics, particularly a decoction of the rattle-snake root, and apply that mashed, or fresh tobacco leaves, repeatedly to the wound.

The



The following is the grand recipe amongst the Indians:—Give a large spoonful of the expressed juice of the leaves or roots of horehound and plantain. If the patient is much swelled, it must be forced down the throat; if the first should not suffice, give another spoonful about an hour after: they also apply tobacco leaf, steeped in rum, repeatedly to the wound.

To the bites and stings of hornets, &c. apply spirits of hartshorn, laudanum, vinegar and oil, honey and milk, goulard, emollient poultice, or the like, according to the severity of the symptoms.

#### S U T U R E S.

Recent wounds that are free from extraneous bodies, loss of substance, and inflammation, that are not much contused or lacerated, and whose lips can be brought into some degree of apposition, also, that happen to parts which are subject to contract, may be greatly assisted by Suture, of which there are five different kinds.

*The dry Suture.* A plaister made of diachylon six parts, and one part yellow rosin, is thinly spread on a close rag, which is cut into slips of proper length, and in a shape that will best suit the nature and form of the part; these slips are to be placed across the wound at moderate distances, in immediate contact with that and the skin, so as to retain the edges of the wound as close together as possible.



possible. The uniting bandage is a great assistant in this kind of future.

The dry future is most useful in superficial and longitudinal wounds, or to avoid deformity.

*The Interrupted Suture* is performed as follows:— Having cleansed the wound of dirt and grumous blood, its lips are brought as apposite as possible, the needle armed with a waxed ligature of proper size is generally passed about two or three fifths of an inch from the edge, and tied with a double knot. The thread is sometimes tied with a single knot, over which a small round linen compress is applied, that is fastened round with a second single knot and a slip-knot; to the end that the stitches may be more conveniently loosened, if required. This mode was much practised sometime ago, but in common wounds, the precaution is now considered as seldom or scarce ever necessary. When the lips are firmly united, the threads should be drawn out. The number of the stitches must be proportioned to the extent of the wound and its angular points, and their depth to the degree of retraction in the divided parts. The dry future in the interval spaces, and the uniting or a gentle supporting bandage, are great helps to this kind of future.

The interrupted future is commonly used in wounds that are deep, large, or angular, and sometimes to keep forward the integuments after an operation; which circumstance may be much more easily effected by compress and bandage; since in  
the



the latter case, great inflammation frequently follows, and the future chiefly tends to retard the cure, and occasion an unseemly cicatrix; for even in common wounds, more particularly when they happen in gross habits, inflammation will sometimes proceed to so great a degree, as to require the stitches to be withdrawn.

*The Twisted Suture* is performed by bringing the lips of the wound in a fresh bleeding state exactly together, and thrusting one or more pins, according to its size, through the middle at least of both edges, then twisting a piece of waxed thread several times across the middle and round the ends of the pins, in form of a  $\infty$ . The best pins for this purpose are made of silver or gold, the former must be tipped with steel points, the latter may be made to do without: the ends are to be snipped off, particularly the steel points, observing afterwards to place a small piece of fine rag or lint under each end of the pins, in order to prevent their injuring the subjacent parts.

This suture is principally used in the operation for the hare-lip: it has been advantageously used in uniting the urethra, as may be seen in Mr. Warner's instructive and useful Cases in Surgery.

*The Glover's Suture* is made with a fine straight needle armed with small thread or silk, by passing it through the lips of wounds of the intestines in the manner that a glove is usually sewed; observing to make the stitches about a tenth of an inch distant from



from each other, and to leave thread enough at each end to hang out at some distance from the external wound; which threads are to be passed with the straight needle through the internal and lower edges of the wound in the belly; by which means the intestine may be readily brought in contact with the peritonæum, and adhere thereto. This thread should be drawn away as soon as it can be done without force, generally in a week or ten days.

This future is used in such wounds of the intestine, as are sufficiently large to require it.

*The Quilled Suture* was much in use with the Antients, and is still better adapted to large gaping wounds than the interrupted. To perform which, a large crooked needle with a strong double ligature well waxed and looped at the end, is to be passed through each side of the wound at about an inch from its edges, then fixing a roll of plaister spread on rag or silk through the bow of the ligature on one side, and another roll of the same size on the other side, between the ends of the ligature, tied over the latter, with a single and slip-knot. When the wound is long enough to require three ligatures, the roll or quill should also be of sufficient length to pass through each loop or bow, and the middle ligature should be tied first.

This future is preferable to the interrupted in large wounds, being less apt to tear out. It was lately used in closing up the abdomen after the Cæsean operation; wherein the incision was six inches  
in



in length, which was sewed up with four stitches at equal distances from each other, and an inch and a half from each edge.

### DIVIDED *and* RUPTURED TENDON.

The practice of uniting divided tendons by suture is not so general as formerly, that operation being principally confined to the Tendo Achillis; the union of which is thought extremely difficult to effect, on account of the forcible contraction of the Gastrocnemii Muscles. Notwithstanding which, the future is proved to be of no great use, if not totally unnecessary; since increase of pain, inflammation, and floughs, from the ends of the tendon, through which the needle is passed, are the necessary consequences of such an operation.

Some surgeons, who are averse to sewing the tendon, think it indispensably requisite to retain the integuments by future, especially if the parts recede greatly from one another.

It was thought reasonable by former practitioners, in case a part only of the tendon was divided, to cut it quite through, on account of the increase of pain arising from the irregular action of the muscle upon the undivided part, and to stitch up the whole; but that practice is also considered as unnecessary, particularly as the muscle can be so relaxed as to bring the divided parts into contact with each other.

There



There are three different methods of treating the divided tendon; namely, by future of the tendon, future of the integuments only, and without future.

*Suture of the Tendon.* When the ends of the tendon are separated from each other, they are to be brought together by bending the knee, extending the foot, and gently compressing the leg downwards from the calf; then a thin crooked needle, that cuts on its convex and concave sides only, is to be passed through each divided part of the tendon, about three tenths of an inch from the extremities in a small tendon, and half an inch in the Tendo Achillis. If the tendon is retracted under the skin, the needle may be passed through that part also; some endeavour to allow for the contractile power of the muscle, by placing one extremity somewhat over the other.

*Suture of the Integuments.* This method has been known to answer in one instance, with little trouble or inflammation; the wound was about two inches in length, rather oblique in its direction, and nearly in a line with the ankle joint; the Tendo Achillis quite divided. The ends being brought together by the foregoing means, two deep stitches were made in the integuments on each side of the tendon, which were assisted with slips of plaister on the intermediate part, and towards each end of the wound; then treated according to the general directions.

*Without Suture.* The same method is to be followed in bringing the ends of the tendon close to each other, as in the means by future; and in order



to retain them so, a bandage is to be applied from the ham down to the upper edge of the wound.

It should be observed, that in each mode of treatment the leg is to be laid as easy as possible in the flexed position, and the foot to be kept extended by means of pasteboard and bandage properly adapted thereto, till the ends of the tendon are united, or at least adhere to the neighbouring parts, and the wound is healed.

The latter method is recommended by Mr. Warner, in preference to every other. From the same practitioner we are favoured with the following account of a rupture of the Tendo Achillis, which was occasioned by jumping, and in which the divided parts were at least an inch and a half asunder.

*Ruptured Tendo Achillis.* The reduction was effected with some difficulty by extending the foot, bending the knee, and compressing the muscles downwards. A compress was placed from the ham to the uppermost division of the tendon, and a roller was applied sufficiently tight to prevent contraction of the muscles. A linen compress was also placed on the upper part of the foot, and over it a piece of pasteboard and a proper bandage, to secure it in an extended posture; the whole leg was then confined in a pillow: all which dressings were occasionally renewed.

The patient complained of considerable pain before reduction, but grew tolerably easy soon after,  
and



and continued so till the cure was compleat, which was in about five weeks. The extremities remained together, yet a lameness and weakness continued in the part for some time, but it afterwards recovered its full use and strength.

### A N E U R I S M.

DESCRIPTION. This is a soft, and usually a throbbing tumour of blood, formed either by the dilatation or division of an artery. It may be divided into four different classes, The True, Mixed, Spurious, and Varicose.

*The True Aneurism* is a circumscribed tumour, arising from a weakness of the coats of an artery. This swelling is at first small and confined, attended with pulsation, and disappearing upon pressure: it afterwards gradually increases, the skin retaining its natural colour and appearance; after a time, the blood cannot be compressed; the pulsation grows weaker, or is not to be felt; the skin begins to turn pale, becomes soft and œdematous, then grows livid and gangrenous, or cracks; whence oozes a serous matter, and in a short time the blood bursts forth. If the vessel is large, and the effusion is not quickly checked, death follows almost immediately.

The increase and pulsation in the aneurismal tumours of the larger vessels, which are chiefly subject to this species of the disease, have been known



to affect the adjacent bones in such a manner, as even to displace, elevate, and dissolve them.

*The Mixed Aneurism* may be produced by injury done to the external coat of an artery, occasioning partial weakness, and a protrusion of the internal coat, or the contrary; which may happen from various causes. This kind also begins with a small circumscribed pulsating tumour, which gradually increases, disappears upon pressure, and in process of time is attended with all the symptoms of the former.

*The Spurious or False Aneurism* is produced by a wound or rupture penetrating through both the coats. It begins with a very small tumour, which is soft, and pulsates strongly; it sometimes has continued pretty nearly of the same size, for days, months, and even years; then gradually increasing, diffuses and extends itself more or less within the cellular membrane, according to the firmness or laxity of the surrounding parts. At other times the blood spreads itself greatly, which brings on a considerable tightness in the limb in a few hours; and a part of the extravasated blood passing superficially, occasions great discolouration of the skin.

The diffused contents, which are deep-seated, soon coagulate, and acquire great firmness; and the pulsation lessens in proportion, till it is entirely lost. The tumour increasing, becomes more and more afflicted with pain, stiffness, and a defect of motion in the limb; and provided the operation is  
too



too long postponed or neglected, caries of the adjacent bones, and even gangrene, will follow.

*The Varicose Aneurism* was first discriminated by Dr. Hunter, who, at that time, expressed a doubt whether it ought to be called an aneurism or varix, or both, or neither; but afterwards gave it the denomination of a Varicose Aneurism. It may be considered as a species of the Spurious Aneurism, since it originates from a wound made through the vein into the adjacent artery. It differs from the Spurious Aneurism in the following particulars: The vein lying in contact with the artery, the orifices of each are so exactly opposite at the under part of the vein, as to remain open to each other when the teguments and upper orifice of the vein are healed up; by which means the blood is found to pass immediately from the opening of the artery into that of the vein, with a pulsatile jarring force, and a strange hissing noise, like what is produced by continuing the sound of the letter R in a whisper, as the Doctor has most accurately described it. This tremulous motion stops and returns by making and ceasing compression, and is even visible in thin habits. The blood transfused is generally in motion, consequently in its fluid state; the vein is much enlarged at and about the opening, but is found to return to its natural size at a small distance above and below the elbow. The artery is larger in the arm, and smaller than natural at the wrist. In one instance the Doctor has observed, that when the



arm was held up, the vein totally subsided; in another, a kind of pouch was to be felt just at the punctured part; if this bag is large and irregular in its form, and the cellular membrane is more yielding at one place than another, or if the fascia of the biceps muscle is unequally tight, a sort of canal may be formed between the two vessels, and coagulations may be produced, as in the common Spurious Aneurism.

This enumeration of symptoms, if properly attended to, will be sufficient to distinguish it from any other tumour. For a more enlarged account of this complaint and discovery, vide *Med. Observ.* vol. ii. p. 390.

Aneurisms have been mistaken for collections of matter. Mr. Warner ingenuously mentions an instance of this kind; wherein the whole of the thigh was greatly tumefied, the patient hectic and much emaciated, and not the least pulsation could be felt. The injury was occasioned by falling off a man's back about four months before the opening was made, and the knee and parts adjacent were at first principally affected. Vide his Cases.

Strong pulsation is generally to be felt in the beginning of aneurisms, whence the nature of the disease is at that time easily to be ascertained: but when the tumour is large, and the coagulum so firm as to render pulsation imperceptible, the best means of ascertaining the matter will be, to enquire into the rise and progress of the complaint, and to examine



amine whether the most prominent part of the tumour lies in the course of a large artery. Pulsation and disappearance upon compression are the true marks of an aneurismal tumour; but are seldom to be perceived, or produced, in the firm state of its contents. The distinction then being rather too uncertain, it will be better not to meddle with such kind of swellings, when they are so situated as not to admit of applying the tourniquet. Still, when the swelling is deep-seated, a proper enquiry into the previous symptoms, and the feel of fluctuation, without being able so to compress the contents as to lessen the tumour, will throw some light upon the nature of the case.

Sometimes even mere abscesses, which lay near to some principal artery, will partake so much of its pulsation as to render the matter extremely doubtful; which was the case with the lad who had his breast-bone fractured, as mentioned by the same accurate observer, where the broken bones were forced asunder, and a considerable tumour occupied the intermediate space; which tumour receded upon pressure, and resumed its former size as soon as the compression was removed. It had also a strong pulsation, and the integuments bore their natural colour. The situation of the swelling and symptoms were judged sufficient reasons for letting it take its own course; the tumour in consequence burst about three weeks after, discharged a large quantity of matter, and did well with superficial dressings.



To distinguish tumours of this kind from aneurisms, it ought also to be observed, that the latter, in their early stage, are seldom painful.

CAUSES. The True Aneurism arises from a diseased or weakened state of the artery, which may be produced by violent exertions, or a debilitated habit. The Mixed and Spurious may proceed from contiguous sores, the splinters of a fractured bone, blows or wounds made with sharp instruments, punctures with the lancet, or any other sharp-pointed instrument. The Varicose Aneurism is caused by wounding the artery through the vein where the vessels are in contact with each other.

CURE. In the early stage of the *True Aneurism*, the most proper treatment is, to compress the tumour in a moderate degree, so as gently to support the weak part, and resist the propelling force, and to keep the body cool and temperate. Occasional bleeding and gentle laxatives will be necessary. Violent exercise, and every kind of passion or thing that will increase the momentum of the blood, is to be avoided. Opiates are excellent palliatives in the latter stage of the complaint. The operation has but a little good effect.

*The Mixed Aneurism*, if it arises from a partial weakness or injury, may be relieved by the foregoing means; otherwise the operation should be called to its aid in proper time, particularly in such parts as will admit of the use of the tourniquet, or the necessary check being given to the circulation through them,

*The*



*The Spurious or False Aneurism.* For reasons more fully given under the article of Accidents from Bleeding, it appears to be wrong to make great pressure upon this tumour, since the return of the blood through the vein must be impeded, and the effusion from the artery is likely to be increased by it: instead thereof, it is recommended to let the blood flow from the orifice in large quantity, or to reduce the impetus by opening some other vein; to enjoin rest, keep the body cool and lax, and observe a spare diet; to close the external orifice with strips of plaister, and use no bandage. Others use compresses in the course of the artery above and below the orifice, and immediately upon the injured part, with a tightish spiral bandage. Some few instances may have done well by following either of these methods, but they generally require the operation at last.

*The Varicose Aneurism.* Moderate pressure may be of service in this disorder, as a support to the coats of the vein; but instances are given, under the best authority, which prove their continuance in nearly the same state as at first for many years, without any application at all. The discovery of this distinct kind of aneurism, as it is called, is of great importance, since it will prevent an unnecessary attempt to cure, by means of a dangerous, though, on other occasions, a necessary operation.

The operation for the aneurism may be performed after the following manner:

The tourniquet and ligature being fixed upon the superior part of the limb, and the circulation  
fully



fully restrained, supposing it to be in the humeral artery, the arm should be placed upon a table, in such a position as will best expose the whole of the tumour to view; an incision is then to be made with the scalpel, from the upper extremity of the swelling to its most inferior part, in the course of the artery, through the skin and cellular membrane, when the coagulum appears in form of a membranous substance; an opening must then be made with a lancet into the middle of the tumour, large enough to admit the end of the left fore finger, upon which the blunt-pointed bistoury is to be passed upwards and downwards to the full extent of the cavity. The coagulated blood being removed with the fingers, and the whole sponged clean, the tourniquet may be slackened a little, in order the more readily to discover the injured part of the artery. A crooked needle, sharp at its sides only, and armed with a broad waxed ligature, is then to be passed round the artery, just above the orifice, and another at the same distance below it; which ligatures are to be tied tight, passing them, as is usual, twice through the first noose, and then making the single knot over it, and taking care to leave the ends sufficiently long to reach beyond the edges of the wound.

The tourniquet may then be loosened; and if no blood is discharged from the artery, the whole is to be lightly dressed with lint, a pledgit of white cerate, a soft linen compress, and slight retentive bandage. The patient should be immediately removed



moved to bed, and the limb placed upon a proper pillow, in the most easy posture; an opiate is also to be occasionally given.

In making the ligatures round the vessel, it will be proper to avoid taking in the nerve, which may be readily done by bending the arm a little, and raising the artery, either with the probe introduced into its orifice, or with the hook, or by pinching it up with the finger and thumb. The needle should also have no edge at its convex part, and it is judged adviseable to use one with a blunt end.

The limb is generally for a few hours without pulsation, and for some time affected with numbness, and a sense of cold. It will be prudent to have the amputating instruments in readiness, in case it should be impracticable to secure the vessel by ligature.

The patient's diet is to be managed agreeable to the nature and strength of the constitution, and particular symptoms; the wound is also to be treated accordingly.

A new and ingenious method of curing the aneurism from bleeding, without rendering the artery impervious, has been suggested by Mr. Lambert, of Newcastle, and was practised with success in the year 1759. It was done by passing a small steel pin, rather more than a quarter of an inch long, through the two lips of the wound in the artery, which was secured by twisting a thread round it, as in the hare-lip; by which means the vessel

was



was perfectly closed, and afterwards healed. Previous to passing the pin, the incision was made according to the usual mode and extent, in order to lay the artery bare; and two ligatures were provisionally passed under the vessel, one above, and the other below the orifice.

It was first dressed on the fourth day from the operation, when the whole had a good appearance: the pin came away on the fourteenth day, and every part was healed by the twenty-second, except where the ligatures remained, which were never used; they were then removed, and the wound was perfectly healed in a few days after. Mr. Lambert takes notice, in his account of this operation, *Med. Obs.* vol. ii. that the pulse was very little weaker.

There are but few opportunities for performing an operation of this kind, and as few surgeons who care to venture upon it in private practice, without further proofs of its good effects; it is perhaps for these reasons that we have not heard of a second trial. Rational conjectures are formed against its being generally practicable; but if it should once more prove efficacious, there will then be great reason to believe, that it may turn out a very valuable, as well as ingenious improvement.

The late Mr. Sharp observes, that aneurisms which follow bleeding in the basilic vein, generally happen above the division of the humeral artery; to render which impervious appears a desperate remedy, and likely to produce mortification; but  
proofs



proofs are not wanting of its success in aneurisms, both of that and the femoral artery.

## V A R I X.

DESCRIPTION. The varix is an unequal dilatation or swelling of the vein, which sometimes grows large and painful, and is apt to burst, causing a plentiful hæmorrhage, or an ulcer. Varices may be formed in all parts of the body, but chiefly in the legs and ankles: when small, they are not much noticed. Women with child and costive habits are most subject to them.

CAUSES. The most frequent causes are, pressure of the iliac vessels, during pregnancy particularly, obstructed mesentery and liver, strains, and violent exertions of the muscles. It may be also occasioned by a general relaxation.

CURE. The laced stocking, tightened at discretion, is the best palliative. Those which are large and painful sometimes require to be opened, and even cut out. Heister gives us the following, as the readiest method of managing them:—A crooked needle, with a double waxed thread, is to be passed under the lower part of the distended vein, and tied tight around it; the tumour is then to be opened, and the grumous blood let out, which is to be healed after the manner of other wounds.

It



It is also recommended to tie the vessel above and below the varix, as in the aneurism; but there seems to be little occasion for a second ligature, unless by way of extirpation, which may be more readily done with the knife.

Those who are subject to varices should be rather abstemious in their diet, use proper exercise, and friction.

### FRACTURES IN GENERAL.

**DESCRIPTION.** Fractures are commonly divided into two denominations; *The Simple*, when the bone alone is injured; and *The Compound*, when it is attended with a wound. Subordinate distinctions are also made, by the terms Transverse, Oblique, &c.

*The Simple Fracture* is known by the irregular shape of that part of the limb where the bone is injured, want of power to move it, considerable pain, and a jarring noise or feel upon pressure or moving the limb: the fractured limb is generally shorter than its fellow. Sometimes a space is to be felt between the broken ends of the bone; at other times, a prominence, denoting that one end rides the other, and that the separation is irregular, or oblique. These indications are pretty evident soon after the accident; but if the limb is much tumefied or inflamed, and the patient is timorous and fretful,



fretful, it will be difficult to ascertain the exact injury, until the tumour and tension are abated.

*The Compound Fracture* is evident to the sight and touch. These fractures, when accompanied with dislocation, great contusion, hæmorrhage, or caries, are extremely difficult of cure, and most so if they happen near the heads of the bones, and when the ligaments, tendons, and joints suffer much. If, in consequence of the fracture, violent pain and convulsions come on, some principal nerve is most probably much injured; if it is much compressed, loss of sense and motion, together with a wasting of the limb, are likely to ensue. If the larger vessels suffer pressure, or great injury, gangrene will most probably take place. Hæmorrhage ought to be attended to, previous to any other concern. When the ends of a fractured bone are forced through the muscles and common integuments, and the wound closely encircles the bone, enlargement is immediately necessary; and sometimes it may be proper to saw part of the bone off, particularly if the fracture is oblique, and the end is much shattered. When they are attended with violent contusion, inflammation, suppuration, or gangrene may be the consequence, according to the degree of injury done to the adjacent vessels, nerves, tendons, ligaments, muscles, and common integuments.

If a fracture happens on a part that is carious, its union will be retarded, according as the caries has penetrated the bony substance. Should the  
fracture



fracture proceed from a caries, relief is more to be wished for than expected.

The late improvements with regard to the management and cure of *Simple Fractures*, have almost entirely subverted the mode of treatment handed down by former practitioners. Violent extension, tight bandage, and plaisters, are generally exploded; instead thereof, putting the muscles into a relaxed state, keeping the joint bent, and laying it in the most natural and easy posture, on a soft pillow, are the first principles generally observed towards replacing the bones, and preventing or abating inflammation or tension. Notwithstanding the evident proofs of usefulness and comfort, which both patient and surgeon daily experience from following these means in particular states and stages of fractures, is it not extraordinary, that at this time gentlemen of the highest rank in the profession should differ so widely in their opinions respecting this practice? In all such cases, there is but one given rule to steer by, which generally proves consistent and proper; namely, to take the middle course.

Contradictory disputes between men of great credit and character in the profession are often of very bad tendency, and can have no great effect in the schools, because they most frequently discover more ingenuity than sound sense, more prejudice of opinion than absolute truth; and when opposite opinions are thus too warmly supported, and become once reduced to practice, prejudice and error will manifestly



manifestly appear; perhaps not without injury to the disputants, and their profession.

Objections may be made to laying the fractured limb invariably and constantly in a curved position. In fractures of the olecranon and patella, every one knows the absolute necessity of placing the limb in a strait position. In oblique fractures, the flexed position continued after the tension and inflammation are off, more especially when the bones are apt to ride, gives too much way to the contractile power of the flexor muscles and tendinous expansions, and is apt to produce an irregular union.

It is observed, that no greater inconvenience can arise from keeping the limb in the curved position throughout the cure, than in the extended state; yet in two cases of Simple Fractures in the thigh, additional trouble has occurred, from the limb laying constantly on its side; insomuch that the foot and knee could never after be brought to the direct position, but always turned too much outwards, notwithstanding the union of the bone was uniform and regular.

No great difficulty can arise from reducing the bone by extension of the whole limb, and keeping it in a strait posture, with the toe and knee in a direct line, provided there is not much tension on the part; but when the fracture is occasioned by a great weight falling upon or passing over the limb, or a violent blow from some hard body, although no external wound should appear, the muscular parts

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must



must be greatly injured, and much inflammation and tension will most probably follow. Under such circumstances, the precaution of placing the limb in the most easy and relaxed posture is highly necessary, at least until those symptoms are removed.

The middle practice then here recommended, from many years experience, is as follows:—To lay the limb strait or bent, according to the state of tension present, or rationally to be expected, from the violence of the injury, and nature of the habit; and when the symptoms abate, gradually to reduce it from the curved to the extended posture, so as not to excite pain sufficient to produce contraction of the muscles: this, in fractures that cannot be perfectly reduced at first, will obviate some difficulties attendant upon following the extreme of both methods.

There is a circumstance attending fractures, which has been greatly misunderstood; namely, that when one end of the fractured bone lies below the level of the other, the upper part was generally supposed to be the rising end: this the great improver of his art has thrown into a different light, shewing that the superior end retains its place, and that it is the weight of the inferior part of the limb, together with the action of the muscles, which draw down the lower end of the bone; also, that this evil is solely to be remedied by raising the inferior extremity. But, with submission to so great authority, the muscles attached to the superior part of the bone may contribute



bute, in some degree, to destroy the level, and render it sometimes necessary to compress the upper, as well as support the lower end of the fracture.

Bandage and splints have undergone necessary improvement: the eighteen-tailed bandage is evidently preferable to the circular roller, in Simple as well as Compound Fractures, since every part of the business can be transacted without disturbing the limb; still, when the callus begins to form, it may be as well, in general, to use the circular bandage.

Short splints do not preserve steadiness in the whole limb; they act only as partial compresses, and those of the most uneasy kind: whereas those that reach from joint to joint have full power over, and consequently guard, every part of the limb. Those invented by Mr. Sharp and Mr. Martin, have every possible advantage in fractures of the leg.

The principal applications to Simple Fractures are, cloths dipped in oxycrate, saturnine solutions, mixed or not with Mindererus's spirit, a solution of crude sal ammoniac in vinegar, and the like; and when the inflammation and tension are likely to be great, it is best to keep the limb constantly moist therewith: at the same time, bleeding, and other evacuations, should be repeated, according to the nature of the constitution, and the exigency of the case: during such a state, short splints and bandage can be of no use; if of a proper length and shape, they may serve to keep the limb steady; but the pillow is most easy at such a time, both as a support



and lodgement. Refrigerants have not always so good an effect as discutients, in leucophlegmatic habits; Mindererus's spirit, mixed with about a fourth part brandy, or camphorated spirits, is sometimes the most preferable application. Plaisters, cerates, and the like, are sticky and daubing, without any particular use.

In *Compound Fractures*, that is to say, those that are accompanied with a wound, the first point to be considered is, the probability of saving the limb. When the fracture happens near the joint, the bone is greatly crushed, the ligaments are much torn, the joint is exposed, and the blood-vessels are so much injured, that there is no probability of the circulation being restored, amputation should be immediately performed.

If the business of amputation has been deferred till the limb is generally inflamed and tumefied, there will be little prospect of success attending it, till those symptoms are removed; but if gangrene is seen to approach, it will be absolutely necessary to postpone the operation till the gangrene is perfectly separated. In the mean time, it will be proper to support the patient with cordial nourishment, and a liberal portion of the bark. Should he be able to recover from this stage, the future operations are to be governed by circumstances.

There are three different states or stages in fractures of this kind, which are particularly ordered to be attended to; namely, Inflammation, Suppuration,  
tion,



tion, and Gangrene: these have been already separately treated of; it may therefore be only necessary to particularize the treatment to be observed with them, when they are the consequents of fractures.

If the bone protrudes, and is girt by the wound, it cannot well be reduced without further opening; and it is sometimes thought necessary, particularly when the end of the bone is pointed, to saw that part off: if the bone be greatly crushed, such pieces as are detached, and not likely to unite, are ordered to be removed, without violence or laceration. A gentle extension will be sometimes necessary towards reducing this kind of fracture, and the limb should be placed in as easy and relaxed a state as the nature of the case will admit.

The curative intentions regularly prescribed are, to prevent or remove inflammation by proper evacuations, antiphlogistics, and cold applications; to moderate suppuration, which in some cases proves inevitable, by discutients; and in certain weak habits to promote it, if found necessary, by using emollient poultices, and a nutritious diet; and to obviate gangrene, or bring forward a perfect separation, by warm antiseptic poultices, bark in as large doses and quantity as the stomach can be made able to bear, and cordial nourishment. Vide Inflammation, &c. Wounds, and Ulcers.—Soft lint is recommended as the best dressing to the wound whilst the discharge is copious, since it helps to absorb the matter, covered with a thick pledgit



of fine tow, spread thinly with white cerate, and the eighteen-tailed bandage. Such splints as reach from joint to joint are used to keep the limb steady, when they can be bor'n without pain or irritation, otherwise the pillow may be made a sufficient support for a time.

But after all this regular method of reasoning and proceeding, several instances, and of the worst kind, can be produced, that have done well in a much shorter time than usual, by the simple applications of thick pledgits of lint repeatedly wetted with the traumatic balsam, and a large thin compress, kept constantly moist with Goulard's vegeto-mineral water alone, or mixed with Mindererus's spirit, without exposing the wound to the air; and after the inflammatory symptoms are subsided, dressing with the balsam alone, or mollified with a little honey of roses, where the irritability of the habit requires it, a pledgit of soft tow, and a compress nipped out of oxycrate, with or without the tailed bandage; a long splint or two, in order to steady the limb from violent spasms, which frequently occur during sleep, and a pillow or two; observing to keep the limb in the curved relaxed position, during the state of inflammation.

There is no doubt that this method will be more universally practised, as soon as some leading men in the profession, and their adherents, will deign to give it their sanction, or forsake their prejudices. It is clear that Nature is often the best surgeon, in  
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the most desperate cases; and that her operations are sometimes wrought too secretly to be thoroughly understood, or even to receive much assistance from art.

Notwithstanding the ingenious arguments which have been lately started, in contradiction to the long-received opinion that the common air is extremely noxious to wounds and ulcers; it is most probable that the wounds in fractures being dressed after the foregoing manner, and remaining as it were sealed up and unexposed till the eighth, tenth, and twelfth day after the accident, is one principal cause of the cure being completed in a much shorter time than usual.

The agreeable aspect of the sores after being concealed for ten days at least, and the happy consequences which followed a continuance of this simple process, in three instances, where the bone had protruded greatly, in one of which a large suppuration happened, and much matter was pressed away daily, and discharged from under the dressings, are convincing proofs that this method ought generally to be preferred. Should the parts be so injured, or the constitution so bad, as inevitably to produce gangrene, poultices ought to be repeatedly applied, but even in that case the injured parts ought to be exposed as little as possible.

If the reader is desirous of consulting further authorities respecting this mode of practice, he may consult Mr. Mudge's ingenious account of the Vis



Vitæ, in which instances are given wherein this summary practice proved successful even in the most complicated cases; Mr. Wilmer's Cases, or Mr. Clare's Essay on the Cure of Abscesses, where he will find Dr. Hunter's account of the maniacal patient, whose leg was desperately fractured, yet did well in a much shorter time than usual, with nothing more than a bundle of feathers sticking to it.

With regard to the frequent attempt to save limbs that are desperately fractured, much may be said against it in hospitals; some insuperable obstacles there contribute to render such practice abortive, notwithstanding it is supported with the best skill and care. In the country it is a business that seldom fails, unless in cases of the worst kind, conjoined with a bad constitution. The free circulation of pure fresh air, perhaps, is the principal cause of this difference; whereas in hospitals, in spite of every effort, the air will be close, and contaminate with depraved animal heat, particularly in the night-time: and upon the same principle success is not so likely to attend the endeavour in a close-built city, or large town, as in the country.

#### FRACTURES IN PARTICULAR.

It may not be thought improper in this place to give a short description of each fracture and its treatment; at the same time it ought to be generally understood, that bleeding, evacuates, diaphoretics,



retics, antiphlogistics, opiates, &c. are to be occasionally repeated, and the general dressings applied; also that regimen and diet are to be regularly pursued.

*Fractured Skull.* Vide Wounds and Injuries of the Head.

*Fractured Nose.* Both the bone and cartilage are liable to be broken. If the injury is violent, it will be difficult to effect a cure without deformity, and there is sometimes considerable danger from the nearness of the brain; a caries is also not unlikely to ensue. When the nose inclines to one side, the cartilage is most probably displaced. The depressed parts may be raised with the assistance of a director, quill, or some such convenient instrument, and replaced with the finger and thumb; after which the part may be supported with a tent made of lint, and a retentive plaister. If it is accompanied with a wound, and inflammation comes on, canulas and tents are hurtful; it will then be proper to dress with the balsam, and Goulard's saturnine water.

*Fractured Jaw.* Fractures of the jaw are to be discovered by the sight, touch, and irregular position of the teeth. The divided parts are to be replaced by opposite pressure, introducing the fore finger of one hand into the mouth, and applying the fingers of the other externally. The most proper applications are saturnine preparations and a double-headed narrow roller to suspend and pass over the jaw. When any of the teeth are very loose,



loose, they are to be fastened by means of gold or silver wire, or fine silk waxed. Pasteboard splints cut in the shape of the jaw-bone, and lined with soft linen cloth, and liquid diet, are also recommended.

If complicated with a wound, any thing of bandage more than will tend to suspend the part and keep on the dressings, will prove hurtful until the inflammatory symptoms are removed. A lotion with barley-water and a little honey of roses is proper to syringe the mouth with frequently, otherwise the increased secretion of the salivary glands is apt to grow very acrid and foetid.

Bleeding and evacuations, as in all other injuries of this kind, which are subject to inflame and tumefy, are also necessary; and broth, gruel, sago, milk-gruel, &c. are the sort of aliment best adapted to this complaint.

*Fractured Clavicle.* The Collar-bone, from its weakness and transverse position, is extremely liable to be broken; it is easily discovered by the sight, touch, and from the arm dropping and inclining to the breast: when fractured obliquely, it is difficult to keep the bones from riding. The principal means to be employed in reducing it and retaining it in its proper place are, to raise the elbow, support the whole arm, and keep the shoulders back; which may be most effectually done by suspending the elbow in a sling or handkerchief, long enough to tie behind the neck, and as it were pinioning the patient. The method generally directed



rected for reducing this bone is, to have an assistant draw back the shoulders against his knee, or a narrow-backed chair, whilst the surgeon endeavours by pressure to replace the broken ends of the bone; but such violence is seldom, if ever, necessary; since a due elevation of the whole arm, the weight of which draws down that part which is connected with the shoulder-blade below the part which is fixed to the sternum, will generally suffice.

A compress wetted with oxycrate, &c. or a plaister with a double-headed roller reversed over the fracture, are also ordered to be applied; but all this process is of little use, without suspending the arm in such a manner, as to raise the end nearest the shoulder even with that which is fixed to the sternum.

*Fra $\acute$ tured Sternum.* A fracture of this part is to be known by pressure, and some inequality therein; the patient feels much pain, and a grating of the bones when partially pressed by the fingers. The principal danger in this case, arises from the injury done to the subjacent parts. If the bone is much shattered, and the pieces are driven in, it will be proper to raise or remove them with the assistance of the elevator and forceps; and in some cases the trephine may be necessary; but to perforate upon the plan of discharging extravasated blood lodged between the duplicature of the mediastinum, is at least a vain attempt. The principal intentions to be observed in this accident are, to remove the loose pointed



pointed pieces of bone, and to obviate inflammation by every possible means.

*Fractured Scapula.* The Shoulder-blade is very seldom fractured; the part most subject to such an accident is the process Acromion; whenever this is broken the arm sinks greatly; it may be distinguished from a luxated shoulder, by the grating of the bones, and from the patient being able to place the elbow and arm close to the side.

The chief point to be observed towards its cure is, keeping the arm sufficiently raised and supported in a sling; towards which a compress placed in the armpit, and a spica bandage are necessary aids. Fractures in the Coracoid process, and the neck of the Scapula, are to be treated in the same manner: the latter is exceeding difficult to manage, and is attended with great danger to the nerves, blood-vessels, &c. near that part. Should any other part of this bone be broken, the principal means to be applied for cure are, keeping the muscles quiet, convenient bandage, and duly suspending the arm.

*Fractured Rib.* This accident is known by the crackling feel beneath the fingers, and extreme tenderness upon pressure; also, by a puffiness around the spot where the injury is received, and a painful catching of the breath in inspiration.

The chief business to be observed in this fracture is, to restrain the dilatation of the chest, by applying a long thin flannel roller moderately tight round that part; due attention ought also to be paid to the  
state



state of the bone, and the concomitant symptoms; for if the ends of the bone press inward, they will create an uneasy pricking pain, inflammation, cough, fever, abscess, &c. as in the pleurisy; during which symptoms, the bandage should be omitted.

A boundless Emphysema is sometimes the consequence of the Lungs or Pleura being wounded by the bone; which is to be treated as mentioned under that article, and Paracentesis.

Monf. Le Dran, in Obs. 29, shews the good effect of applying a thick compress dipped in a defensive, made of Armenian bole, the white of egg, and vinegar, immediately over the injured part, and a dry thick compress over each end of the fracture properly confined with a napkin: which applications were renewed as the napkin grew slack. This method and repeated bleeding, he tells us, nearly reduced the swelling, which was considerable, in the space of twenty-four hours.

If the fracture is accompanied with a wound and hæmorrhage from the intercostal artery, it will require some address to secure the vessel; the curved needle and ligature is most handy for the purpose, which in case of great difficulty must be passed round the rib.

A Simple Fracture of the rib is of no great moment, and may be easily cured by making an uniform bandage round the chest; but when the pleura or integuments are pierced through by the bone, it is generally attended with severe and dangerous symptoms.

*Fractured*



*Fractured Vertebrae.* Such cases seldom happen without great injury to the medulla or spinal marrow, producing palsy in the parts beneath, suppression of urine, &c. If the injury is confined to the posterior processes, or the acute tubercles, it may be remedied by replacing them with the fingers, and applying narrow compresses, dipped in a defensative of white of egg, flour, and vinegar, secured with the napkin and scapulary; or compresses dipped in oxycrate, and secured on each side the spinal ridge with pasteboard, and a broad flannel bandage.

Fractures are easily known in these bones, from the pain which follows pressure, and their loose feel.

If the body of the vertebrae is broken, the spinal marrow must be greatly injured, and death generally follows. When the transverse processes are broken, the heads of the ribs also suffer, and the parts are extremely difficult to replace: this accident is also attended with much danger. Those fragments which press upon the spinal marrow, if loose, should be removed as soon as possible; and the wound must be dressed with the balsam and honey of roses, with compresses dipped in Mindererus's spirit, or oxycrate, and a gentle retentive bandage.

*Fractured Os Sacrum and Coccyx.* In accidents of this kind, the broken parts may be sometimes tolerably reduced, by passing the finger of one hand up the rectum, and making an opposite pressure externally



externally with the fingers of the other hand: compress and the T bandage are to be afterwards applied, and the patient must keep his bed for some weeks; when he gets up, the most proper seat is a chair without a bottom.

*Fractured Os Innominatum.* It is most probable, that a blow or fall sufficiently violent to produce such effect, will very much injure the subjacent and neighbouring parts. In order to reduce this fracture, the patient should be laid on the opposite side, and the parts must be retained together by compress moistened with oxycrate, and convenient bandage. Every means should be taken to prevent inflammation, &c.

*Fractured Humerus.* It is exceedingly difficult to manage the upper arm, when broken near either of its extremities: should the condyle be thrown in the bend of the arm, an anchylosis will inevitably follow. In fractures of this bone, extension should be made with the arm in a bent position. In the Simple Fracture, the circular bandage is generally preferred, and the muscles of the lower arm must be kept in an easy relaxed state, with the thumb upwards. When the bone is broken so near the upper joint, as to render it difficult to fix a bandage, it will be right to apply a compress dipped in the defensive round the part, to support the elbow, and to keep the arm close to the side.

If complicated with a wound, or the bone is much broken, let the ends be adjusted as well as possible, and apply cloths, wetted with saturnine applications,



applications, &c. and the eighteen or twelve-tailed bandage; taking care to keep the muscles in a relaxed and quiet state, and resting the whole arm on soft pillows.

As soon as the callus begins to stiffen, it will be of great use daily to try and move the arm at the elbow joint, as far as can be done without giving much pain; at least, not to suffer it to remain constantly bent.

*Fractured Radius and Ulna.* If only one of these bones is broken, the other will serve as a direction and support. When the injury is in the radius, and near the wrist, it is difficult to reduce or retain the bone in its proper place, on account of the fractured part being strongly drawn towards the other bone by the action of the pronator quadratus muscle. The pronator teres is also an obstacle, tending to throw the bone inwards, and by that means prevent a regular apposition.

A fracture of the ulna is much easier to be discovered than one of the radius, from its want of power to support the joint: both may be discovered by a grating feel and noise, if the elbow is held firm, and the hand is moved outward and inward. It will be proper to place the thumb upwards, and bend the arm, as well in the reduction as cure of either fractures, and to use splints of sufficient length to reach both joints.

When both bones are fractured, the hand is also to be placed perpendicularly, and the ends are to be brought together by due extension and compression.



pression. If the processus olecranon is fractured, it is necessary towards its reduction, to extend the arm, and to keep it so, with the assistance of proper splints and bandage.

*Fractured Carpus.* The bones of the wrist are seldom broken, as other bones are, but are liable to be crushed and much injured, by heavy weights and violent blows. From their smallness and number, and on account of the ligaments and tendons which surround or lay contiguous to them, such fractures are extremely difficult of cure.

A regular extension and sufficient pressure are required towards replacing them, together with suitable bandage. Great inflammation and tension generally attend such hurts: the joint of the hand frequently becomes rigid and stiff, and abscesses and incurable caries sometimes follow.

*Fractured Metacarpus.* The bones of this part being longer than the preceding, are much easier to be reduced. The palm of the hand is afterwards to be placed flat over a piece of stiff pasteboard, or thin board, hollowed at the edge for the fingers to lodge easy in; neither of which should reach further than the second joint. A compress of tow or thin cloth should be laid between this broad splint and the hand, with proper bandage.

*Fractured Finger and Thumb.* When a finger is broken, a narrow bandage wound round that part, and carried round the next finger, will be sufficient security. Splints, as well as bandage, are necessary

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towards the recovery of a fractured thumb. In case the finger is much shattered, a deal of trouble and torture will be avoided, by taking it off at the neighbouring joint.

*Fractured Thigh.* The thigh-bone, notwithstanding its size and strength, is very subject to this accident. When the neck of this bone is broken, it is extremely difficult to manage it, on account of the great power and thickness of the muscles which cover it. That injury was long mistaken for a dislocation, and the patient used to be much tortured by the violent means which were employed for its reduction. It is to be distinguished from a luxation in the femur, by the acute pain felt in and about the joint upon motion, the loose state of the limb, which will nearly admit of the foot to be turned round, and by the grating of the bones in moving it. In such a case, a gentle and gradual extension will be necessary, and the limb must be kept in the extended state, the toe being fixed upon a line with the knee and groin: a compress with convenient bandage will be useful, as soon as the callus begins to stiffen; the rest must be left to time. In a fracture of this kind, which happened a few years since, the principal means observed were, placing the whole limb as near as possible to the above direct position on two pillows, one of which was laid under the hip and part of the thigh, and the other reached from a little above the ham, rather beyond the foot, both being confined with tape at proper distances.



distances. This fracture, with due caution and rest, did better than usual, and in less time, and the limb is very little shorter than the other. This patient being of a plethoric habit, was bled twice during the symptomatic fever; he strictly attended to the position of his limb, and conformed to rule in every respect.

If the thigh-bone is broken towards its middle or lower end, after the general means have been used for reduction, it will be best to place the limb on a pillow, on its outermost side, in the curved position, in order to moderate the subsequent tension; but as soon as the swelling and tightness of the muscles are subsided, the limb should be carefully and gradually brought down, and the toe, knee, and groin kept in a direct line with each other.

A double cloth, duly moistened with refrigerants, should be applied on each side of the fractured limb, and an eighteen-tailed bandage, and two splints of sufficient length and breadth to take in nearly the whole of the thigh, in order to steady it.

For the treatment of Compound Fractures of this part, vide the foregoing article.—The bent position is of great use in its reduction, by lessening the powerful retraction of the muscles.

*Fractured Patella.* When this bone is fractured transversely, the limb must be placed in an extended posture, otherwise the bones will separate too far to make good their union. If the fractured edges are



brought within about a third of an inch of each other, it will be sufficient, perhaps better than being nearer. This fracture, after the tension is subsided, generally does best if the knee is daily and moderately put in motion. The upper part is very apt to recede; on which account it will be highly proper to fix a compress just above that part of the knee-pan, and pass a roller above and below the knee.

If this bone is fractured longitudinally, the inflammatory symptoms are principally to be attended to; externally, nothing can be more serviceable than compresses dipped in Goulard's saturnine water, or oxycrate with sal ammoniac, and slight bandage, with rest.

*Fractured Tibia and Fibula.* When either of these bones are separately broken, (which seldom happens, except with the latter) the limb may be laid in either position, as each bone will serve to support the other; there then only needs one splint, with proper bandage. When both bones are broken, after due extension used for their reduction, it may be right to leave the limb for a time in the curved position, as a means to prevent or lessen inflammation and tension; but as soon as those symptoms are tolerably subsided, the limb had better be brought by gentle means to the extended posture. But in this case, unless the fracture is of the compound kind, or the tension is likely to be great, of which a tolerable judgment may be formed from the nature  
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ture and violence of the injury, no material objections can be made to placing it in the extended position from the first. In short, when the fracture is oblique, to raise and support the heel, and keep the toe and knee upon a direct line, evidently tends to obviate the riding of the bones. And here it may not be amiss to remark, that if the latter circumstance is not properly attended to at first, it may be afterwards a difficult business to bring them into regular apposition.

When the fibula or small bone is fractured not more than two or three inches from the ankle-joint, it is commonly attended with a dislocation; to admit of which, the ligaments that secure the joint must be violently stretched, if not torn. When the bone is forced through the integuments, and the reduction is difficult, it may be necessary to enlarge the wound, in order to let in the protruding end; and when the end of the bone is much shattered and pointed, a small portion may be removed with the saw. Provided the injury has already produced much tension and inflammation, it will be impossible to reduce the whole, till those symptoms are subsided.

Even in the simple state, this accident requires great skill and management, both to reduce, and retain the parts in such order, as will prevent lameness and deformity. Broad splints and moderate bandage will be found necessary to guard the whole; and in the early stage, every means must be used to check and subdue inflammation.

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When this accident is accompanied with a large wound, the surrounding ligaments are greatly torn, and the joint is much exposed, a gangrene is likely to ensue, unless timely prevented by amputation.

*Fractured Tarsus, Metatarsus, and Toes.* These bones are to be reduced and secured much after the same manner as the bones of the wrist and upper extremities. Fractures in these parts, accompanied with a laceration, are subject to great inflammation and gangrene, from the number of nerves, vessels, tendons, and ligaments, which are placed among them.

A caries is frequently the consequence of such injuries, particularly in scrophulous habits. These fractures are always succeeded by a stiffness, and want of motion in the neighbouring joint.

#### DISLOCATIONS IN GENERAL.

**DESCRIPTION.** A luxation happens, when the head of a bone is removed from its articulation, and the proper motion is destroyed. Luxations may be divided into two classes, Simple and Compound; the latter when complicated with some violent symptom, such as a wound, fracture, &c.

To be perfectly acquainted with the nature of a dislocation, and its cure, it is necessary to have a clear idea of the natural state of the joint, as well as the attachment and uses of the surrounding ligaments and muscles.

A lux-



A luxation is to be discovered by want of a regular motion in the joint, by distortion of the part, by an increase or diminution in the length of the injured limb, by hollownefs over the joint, and the projection of the head of the bone in an opposite direction.

Luxations proceeding from internal causes, may be known from the limb being easily moved in any direction, from the hollownefs in the joint and opposite protuberance, from the increased length of the dislocated limb, and from the accident being unaccompanied with inflammation, pain, &c.

The two following maxims are invariably true, viz.

When a bone is displaced, the other end of it is thrown into an opposite direction. And,

The more free the joint is in its articulation, the more subject to dislocation.

In this kind of accident, as in fractures, violent force is not so necessary towards the reduction, as peculiar skill and management. The muscles and tendinous expansions, which are tightened in consequence of the bone being displaced, should be brought into as relaxed a state as possible; to which end, it will be proper to keep the joint below in a bent position.

When luxations are difficult of reduction, it is generally supposed that the capsular ligament is ruptured: this may sometimes be the case, but it ought to be no hindrance to repeated and varied at-



tempts towards their reduction. Great obstruction sometimes arises, from fixing one point of extension below the lower extremity of the dislocated bone.

The extension ought always to be made gradually; by which means the degree necessary to bringing the head of the bone on a proper level with the socket, may be effected, without doing that injury to the parts under extension, which sudden and violent force has been known to produce.

The principal means then to be employed in reducing dislocated bones are, steadfastly to fix the resisting point, to put the muscles and tendons in connection with the bone into the most relaxed state, and to make the necessary extension gently and gradually on that bone only.

Various instruments and methods have been used in reducing the luxated humerus, most of which have, at one time or other, been known to fail. From their regular power of extension, and convenient form, Mr. John Hunter's pulleys are most eligible, and what, in fact, no surgeon should be without. The most obstinate cases have been conquered by the use of this instrument; taking care not to attempt raising the head of the bone from the axilla, till it is brought forward enough to be passed into the socket. This instrument is particularly useful in dislocations of the thigh and shoulder-bone.

Luxations of the humerus, after the most violent attempts have been made, are known to have been  
reduced



reduced by the most simple means. A person lived some few years since at or near Colchester, who was in great repute for reducing the dislocated shoulder-bone. The method is said to have been as follows :

Having bent the lower arm, firm hold was taken of the elbow, and a gentle rotatory motion of the head of the shoulder-bone was repeatedly made; after which, the elbow was raised above the shoulder, and placing the left hand doubled under the arm-pit, the arm was suddenly forced down to the patient's side.

The received opinion of the synovia concreting and choaking up the socket, so as to produce a stiff joint, is entirely groundless: the general causes of such immobility are, a fracture, erosion, or caries in the head of the bone, or the socket, the lacerated parts growing firmly together, or a confirmed stiffness in the ligamentous and tendinous expansions.

**CAUSES.** The causes of luxations are either external or internal; the former arising from falls, blows, jumping, &c, the latter from weakness and relaxation of the ligaments, or a congestion of humours in the cavity of the joint.

**CURE.** In dislocations, as in fractures, the bone is to be replaced by moderate and regular extension, and proper pressure. A sufficient degree of extension must be made to bring the head of the bone nearly on a line with the socket, when the muscles themselves will seldom fail in restoring it

to



to its proper place; but this is more readily brought about, by assisting with the towel fixed round the neck of the surgeon, or compressing the parts with the hand, at the same time forcing the head of the scapula backward towards the spine.

Luxations should be reduced as soon as possible, unless the tension is great, when it may be necessary to defer the reduction till the impeding symptoms are removed: this is to be brought about by timely evacuations, nitrous medicines, and opiates; saturnine poultices or solutions, oxycrate, emollient embrocations, and the like. The application of bandage after reduction is of very little service, except in luxations arising from relaxation, which even then will prove of little or no use, unless assisted by immersion in cold water, pumping upon the part, friction, spirituous and saponaceous embrocations, &c. Sometimes great pain, tension, and inflammation, continue after the bone is replaced; which shew that the ligament has received some extraordinary injury, and requires particular care.

Dislocations complicated with a wound, hæmorrhage, abscesses, laceration, &c. are of dangerous tendency, and require similar treatment with fractures accompanied with the like symptoms.

Luxations of some weeks standing are known to have been reduced with the pullies and towel, after having previously relaxed the patient by evacuations, low diet, warm bathing, steaming and rubbing the  
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the part with the vapour-bath, and oleose embrocations.

After cases of this kind, blisters, repeatedly applied round the shoulder, help greatly to recover the tone of the ligaments and muscles.

### DISLOCATIONS IN PARTICULAR.

*Luxated Jaw.* The lower jaw may be dislocated; but it is an accident that seldom happens, on account of the firm ligaments and muscles which retain it in the basis of the cranium. It is subject to be luxated forward, and on one or both sides. If displaced on one side only, the chin is distorted on the other, and the mouth is widest on the opposite sides: if on both sides, the mouth gapes wide, and the lower range of teeth projects; the chin inclines towards the breast, and is thrown strait forward, and the temporal muscles are rigid. The reduction is not difficult, if attempted soon after the accident; but when both sides suffer, bad symptoms soon follow, unless the reduction is quickly perfected.

In both cases, the patient being placed on a low seat, and held firm by an assistant, the surgeon is to thrust his two thumbs, wrapped round with a handkerchief or cloth, as far back as possible into the patient's mouth, and to place his fingers under the outside of the jaw: he is then to press the hind part of the jaw forcibly downward and backward, at the  
same



same time endeavouring to raise the fore part with his fingers. If one head only is luxated, it should be pushed towards the injured side. Great care ought to be taken to guard the thumbs well, and to withdraw them as quick as possible.

If the jaw should appear to be weak after reduction, a supporting bandage may be carried from under the chin, and fastened upon the head.

*Luxated Neck.* In this case, the condyloid processes of the occiput are thrown out of the glenoid cavities of the atlas, or upper vertebra of the neck; which, without immediate assistance, must prove fatal. Persons killed by this kind of luxation, are said to have broke their necks. It is readily known by a sudden deprivation of sense and motion, by the distortion of the head, and the chin being forced down close upon the breast. The best mode of reduction is, to place the knees against the patient's shoulders, closely retaining the neck between them; then quickly seizing the head with both hands, to make a powerful extension of the neck, observing to move the head gently from one side to the other. Luxations of the other vertebræ of the neck are to be treated in like manner.

*Luxated Spinal Vertebrae.* The vertebræ of the back cannot be perfectly displaced, without breaking the processes. Luxations of this kind are known by a distortion of the spine, a paralysis below the luxated joint, and an involuntary discharge of the urine and fæces; the lower extremities grow  
dead



dead by degrees, and the death of the patient generally follows. The violence of the symptoms is in proportion to the hurt received by the spinal marrow. The most likely means for reduction are, inclining the patient over a cask, or some other cylindrical body, then pressing down the luxated vertebra, at the same time pushing the superior part of the body upwards.

If the vertebra protrudes on one side, the patient should be inclined towards the other; one assistant depressing the hip, and another the opposite shoulder. After the part is reduced, bleeding and gentle diaphoretics, such as Dover's powder, or the antimonial tincture and laudanum, as in injuries of the head; compresses wetted with Mindererus's spirit, camphorated spirits, saturnine solution, &c. may be applied to the part, and retained thereon with the napkin and scapulary; and the body is to be laid in the most convenient posture.

*Luxated Os Coccyx.* This bone is sometimes forced inwards by a violent fall or blow, and in difficult labours is liable to be pushed outwards; in either of which cases, the strait gut and lower parts of the spine are subject to great pain, inflammation, and abscesses; a constipation also commonly follows, which requires manual assistance at times. This accident is to be treated like the fracture.

*Luxated Clavicle.* This happens but seldom. It may be dislocated either from the breast-bone, or processus acromion, and is to be reduced and properly



perly confined by comprefs and bandage, particularly obferving to fustain the weight of the arm.

Parey and others remark, that the collar-bone, when luxated near the proceffus acromion, has been mistaken for a diflocated foulder; but thefe cafes may be readily diftinguifhed, by obferving, that in the latter, the fuperior part of the fcapula fticks up; whereas in the former, a cavity is to be feen over the place where the collar-bone is feparated. The diftinction may be further noted, by not finding the head of the foulder-bone in or about the axilla; alfo, by perceiving the natural rotundity of the foulder-bone, upon raifing the whole arm, and by being able to place the arm clofe to the patient's fide; all which circumftances do not occur when the foulder-bone is difplaced.

*Luxated Humerus.* The foulder-bone is of all others the moft fubject to diflocation. It may be difplaced forward, backward, and downward; never upward, unlefs the acromion and coracoid proceffes of the foulder-blade fhould chance to be fractured.

When luxated downward, a cavity appears on the fore part of the foulder, the head of the bone is to be felt in the arm-pit, and the arm cannot be preffed clofe to the fide; the acromion appears to project further than ufual, and the luxated arm is longer than the other, and cannot be raifed without great pain.

When



When luxated downward and forward, the same cavity and projection appear in front, and the head of the bone forms a protuberance towards the breast, under the arm-pit. In the second and third case, the arm cannot be moved without extreme pain, and the nerves and blood-vessels are liable to great injury.

The principal means to be employed in the reduction of this, as well as most other luxations, are, to elude the resistance of the muscles, as much as the nature of the operation will admit; to use a gradual and equable extension; and not to attempt raising the head of the bone, till it is brought even with the socket. These general rules, duly attended to, cannot fail of success, except in the most inveterate case.

The most safe and ready method is that with the large napkin or towel. The patient being seated on the floor, or on a low stool, with his feet held up, let the middle of a long towel or piece of cloth be fixed against the upper part of the chest; one end of which is to be passed through a staple, and tied fast to the other; or both ends are to be held firm by proper assistants, so as to secure the body from giving way to the extension. Let the extension be made from the upper arm, taking care to relax the biceps and brachiaëus muscles, by keeping the arm bent at the elbow joint. The broad part of a napkin, of a proper length, being previously applied under the patient's arm-pit, and its two  
ends



ends tied behind the surgeon's neck, he is to endeavour, with the help of this sling and his hands, to raise the head of the bone, but not before the extending power has brought it even with the verge of the cup; at the same time, the arm should be gently pressed downwards, like a lever. During the extension, an assistant ought to press against the neck of the scapula, in order to keep it from advancing forward, which must otherwise obstruct the return of the bone into the socket.

In recent cases, and weak relaxed habits, sufficient extension may be made with the towel; but in strong muscular subjects, the resistance is frequently not to be overcome without the aid of greater mechanical powers, none of which produce so regular and gradual an extension, as the pulleys already mentioned.

It has been before remarked, that various methods and contrivances have been invented for the reduction of the shoulder-bone; but some of them were rather mischievous than useful: the ladder, gate, and pole have long been justly discarded, on account of violent injuries done to the neck of the scapula, nerves, and ligaments; the ball and heel is still in practice; the ambie is not in so great request as formerly; Mr. Freke's commander is an excellent improvement of that instrument, and when kept perpendicular to the side of the patient, may answer well in difficult cases. Yet, after all, when the strongest powers have been exerted to no effect,  
a slight



a slight turn of the muscles, or rotatory motion of the arm with the elbow bent, has proved successful.

If the humerus is luxated so that the head of the bone lies under the pectoral muscle, the arm should be brought forward, in order to relax it, and the head of the bone must be pressed towards the armpit; the like principle of relaxation and pressure is also to be attempted, when it is forced backward towards the shoulder-blade.

Luxations of three months standing have been reduced, by fixing one end of the pullies to a hook, in a beam of sufficient height, and the other to ligatures fastened round the wrist, then raising the patient gradually from the ground; two persons in the mean time supporting the arm above the elbow, in order to lessen the weight sustained by the wrist. Mr. White, of Manchester, mentions two obstinate cases, wherein this practice prevailed so far, as to carry the head of the humerus into the axilla; whence it was easily restored to its proper place with the heel. The want of a pulley has been supplied, by a taller person raising the arm over his shoulder, and lifting the patient by it from the ground.

A compress and bandage are commonly applied after reduction; but little more is then necessary to be done than keeping the arm close to the side, and supporting it with a sling passed round the neck, unless the ligaments are so relaxed as to require confinement. Except in such cases, it will be

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proper,



proper, after the tension is off, to give the joint a gentle degree of motion now and then, otherwise the ligaments are apt to grow stiff, and thicken; to reduce which, the vapour-bath, &c. and, last of all, blisters, have been applied with success.

*Luxated Elbow.* The ulna or cubitus being situated inferiorly, performs the whole flexion and extension of the arm, the radius moving with it. The latter bone is principally in motion in the pronation and supination of the hand.

The cubitus is so articulated with the lower head of the humerus, and fastened down with such strong ligaments, that it seldom suffers a perfect luxation, except when the processus olecranon is fractured, or the ligaments are torn and weakened.

This joint may be luxated forward, backward, outward, and inward. When the cubitus is thrown backward, which is the most frequent luxation of this part, the arm is bent and shortened, and violent pains arise from the distracted tendons and ligaments. The head of the humerus is protuberant in the bend of the arm, the olecranon protrudes behind, and a cavity appears between the bones. This luxation is to be reduced by steadily drawing the arm, bending the elbow, and bearing back the humerus.

If the luxation is forward, which can hardly happen unless the olecranon is fractured, the protuberance is external, and the cavity internal. Due extension is here necessary; and if the olecranon is broken,



broken, it must be treated according to the method recommended for the fractured ulna.

The inward and outward luxation are to be assisted after the manner directed in the first case.

Great pain and inflammation generally attend accidents of this kind; it will therefore be particularly necessary to guard against those symptoms.

*Luxated Wrist.* This part is subject to dislocation four different ways; more easily forward and backward than laterally: sometimes it is complicated with a distortion of one or more of the small bones. The wrist is to be reduced by a regular extension, and sufficient pressure.

It may be necessary to place the hand on a flat board or table, in order to make a greater compression on the smaller bones.

*Luxated Metacarpus and Fingers.* These bones are easily to be reduced by regular extension and pressure, and they generally require bandage.

*Luxated Femur.* The head of the thigh-bone is usually displaced downward and forward; in which case the dislocated limb is longer than the other, the knee and foot turning outward; the head of the bone lies in the lower part of the inguen, towards the large foramen of the os pubis, and a cavity is to be perceived in the buttock.

It is more seldom luxated upward and outward: when the cavity is formed in the inguen, and the protuberance upon the buttock, the limb is shorter, and the foot turns inwards.



It has been already remarked, that the fracture in the neck of the thigh-bone is to be distinguished from the luxation, by the acute pain which attends the former, the extensive power in turning the limb, and the grating of the bones during that motion. The distinction ought to be positively ascertained, before any attempt is made towards reduction; since the extension which is required to replace the fracture, is little more than the subsiding tension will admit of; whereas the luxation demands a powerful and immediate extension.

This luxation is to be reduced by placing the patient either on his side or back, then passing a long towel, or two tied together, under the thigh, and over the groin, and fastening the same to the head of the bed, or a staple fixed on a line with the body; then fixing a cloth or two of the same kind to the thigh, above the knee, two or more powerful assistants are required to make a proper and equable extension, observing to keep the knee bent. When the extension is made in proper degree, the surgeon is to take the opportunity of bending the knee towards the belly, and pressing the head of the bone, with the hand or sling, towards the socket. The pullies are the most easy and regular extensors, upon every occasion. A compress and convenient bandage may be afterwards applied, particularly in a relaxed state of the ligament surrounding the joint.

The curved position of both leg and thigh is looked upon by some, in every such case, as most  
favouring



favouring reduction, upon the plan of rendering the muscles least capable of resistance: such an attempt ought certainly to be made, prior to any more powerful means, as it will sometimes have the desired effect.

*Luxated Patella.* The patella, or knee-pan, is mostly luxated on the outside and inside of the joint: it seldom suffers a perfect luxation, except when the knee goes with it. It is seldom thrown upward, unless from a rupture or relaxation of the connecting ligament. It is to be reduced by extending the leg, and using some force to press the bone into its proper place. Rest and convenient bandage will be necessary for a time; yet the knee should be now and then gently bent.

*Luxated Knee.* The tibia may be forced from under the head of the thigh-bone laterally or backward; scarce ever forward, from the resistance of the patella and ligaments. It is very easy to discover a luxation of this joint, on account of its thin covering; but the bones are seldom so well replaced as to prevent stiffness, which circumstance more commonly happens from the injury done to the tendinous and ligamentous expansions; it will therefore be proper to give some motion now and then to the joint, during the cure. The bones are to be replaced by regular extension above and below the knee, gently bending the same, and endeavouring to raise the head of the tibia with the hands or sling.



Sometimes the fibula is separated from the tibia, and driven upward or downward, which generally happens when the foot has been dislocated outward. This is to be replaced by gentle extension, and pressing it into its proper station. Bandage is here necessary.

*Luxated Ankle.* The foot is subject to dislocation four different ways; outward, inward, forward, and backward. When displaced inwardly, the bottom of the foot is turned outward; and the contrary, when outwardly. If the luxation is forward, the heel is shortened, and the foot lengthened; if backward, the contrary happens; the foot always inclining in opposite direction to the dislocation.

The ankle is seldom luxated externally, without breaking the lower part of the fibula, or separating it from the tibia; which case it will be both difficult and dangerous to attempt the reduction of, provided it is attended with much inflammation and tension, until those symptoms are principally abated; otherwise, the earlier it is done the better.

When the luxation is thus complicated, the leg should be held, and extension made, by an assistant above, and a skilful person below the joint, who is to bend the foot up, whilst the surgeon is attempting to press the bones into their proper places. In a case of this kind, it will be impossible to keep the bones in their right station, without applying splints in an opposite direction. The eighteen-tailed bandage ought also to be used from the first, for the convenience



convenience of repeating the necessary applications, without disturbing the limb.

This kind of luxation is generally accompanied with violent symptoms.

*Luxated Bones of the Foot and Toes.* In all such cases, the same method is to be pursued, as is directed for the reduction and cure of luxations in the superior extremities. Rest in bed, or on a couch, is here particularly necessary for a time. The heel-bone may be luxated both inward and outward: it is generally attended with severe pain, and may be discovered by the opposite tumour and cavity. This is to be replaced by extension and pressure.

#### BLOOD-LETTING.

This is one of the most useful and nice operations in surgery, and is generally performed with the lancet. It may be divided into three parts, *Phlebotomy*, *Arteriotomy*, and *Cupping with Scarification*. The two former are the most general means of blood-letting; the latter is more frequently confined to a topical discharge of blood.

The parts on which venæsection is most frequently performed are, the veins in the arms, the jugulars, and those of the ankles, feet, and hands. Arteriotomy is principally confined to the temporal artery, and cupping with scarification mostly on the shoulders and back, sometimes locally. Leeches



are also used for the purpose of drawing blood from the smaller veins, and are commonly placed on, or near the part affected.

*Bleeding in the Arm.* The veins in the bend of the arm are commonly very conspicuous, yet sometimes lay so deep, and are so small, as to require much steadiness and judgment to open; under which circumstances, in despite of custom, it would be much safer and better to bleed in the hand, foot, neck, or any other part, where a vein that is safely situated, and of tolerable size, shall offer itself.

The number of veins which generally present themselves in the curvature of the arm, are three: the Cephalic, which lies on the upper part; the Basilic, on the lower part; and the Median, which is obliquely situated in the middle. A large artery and the brachial nerve generally lie under or on one side of the basilic; and the tendon or aponeurosis of the biceps muscle, under the median. Sometimes only two veins are to be found in this part. The cephalic vein seldom lies so fair and bold as the other two.

Previous to the operation, provide a fillet about an ell in length, and full two fingers broad; a small square compress of rag, with a little piece of lint; a basin, or proper number of cups, to receive the blood; a basin of water, and a sponge, or towel: then fixing upon the most eligible vein, apply a ligature, moderately tight, about an inch above the elbow-joint, and fasten it with a slip-knot on the



the outside of the arm. To render the vein bolder, rub the arm well from the hand upwards; make choice of a spear or broader pointed lancet, according to the depth or fleetness of the vein; place it between the lips and teeth, with the blade removed from the handle, so as to make an obtuse angle; then fixing the arm firm and extended against your breast, grasp it with one hand, in such a manner as to be able to press the vein with the thumb, just below the part you mean to open, in order to keep the vein steady; then examine carefully, by pressure made with the middle or fore-finger of the hand with which you are to operate, the situation of the artery, nerve, or tendon, and, as it were, sound the depth of the vein; if tolerably free from danger, take the lancet between the finger and thumb, about half way of the blade, and resting upon the other fingers, thrust the point in rather an oblique direction into the vein; immediately upon its entrance therein, raise the point by depressing its heel, and withdraw it. Let an assistant catch the blood in a proper receptacle, and support the patient's arm till you have time to shut up the lancet. Give the patient a stick into his hand, which he may turn round, to accelerate the course of the blood towards the orifice, if necessary.

If the stream is weak, or stops, slacken the ligature a little, and gently bend the arm, in order to relax the skin at the orifice. The necessary quantity of blood being drawn, take off the ligature; cleanse



cleanse the orifice with a clean wet sponge, and press the edges of it together, so as to exclude every particle of blood: apply the lint and compress over the wound, pressing the thumb firmly thereon; and after wiping the arm clean and dry, carry the bandage over the compress round the elbow, in the form of a figure of 8; leaving enough of it at each end to tie on the outside of the arm, above the elbow.

The bandage and compress may in general be removed the next day; but if the latter should adhere to the lips of the orifice, it will be proper to continue the whole a day or two longer. Some surgeons apply a piece of simple diachylon plaister over the lint, and some only the rag, dry or moistened: but it may be remarked, that plaister does not agree with all; and that the principal obstacles to the orifice's healing are, a small particle of coagulum left between its edges, too great motion of the arm after the operation, and the wound being afterwards exposed to the external air.

*Bleeding in the Hands, Feet, and Ankles.* Two principal veins, with their several branches, run over the back part of the hand; the one named the Splenica, which takes its course towards the little finger; and the Cephalica, which runs between the thumb and fore-finger.

It is customary, and sometimes necessary, to place the hand for some time in a large basin with warm water, and to rub it well at times, in order to make  
the



the veins more turgid. The ligature is to be made on the wrist, and the aperture in the most eligible vein.

If the blood should not flow freely, let the hand be again placed in warm water, and remain therein till the proper quantity is discharged. Proceed then as is before directed.

The saphena and cephalic veins, or the most conspicuous of their branches, which are spread over the foot, may be opened and treated after the same manner; tying the ligature tight about the ankle, and observing to fix upon that vein which is most turgid and free from tendon.

Bleeding in the foot is still particularly practised in feminine obstructions, and the surgeon that does not implicitly comply with that point, will inevitably incur the censure of the good women; whose opinions in medical matters, although generally founded upon and supported by prejudice, may as well be complied with in such trifles.

*Bleeding in the External Jugulars.* The jugular vein lies deep in many subjects; and in order to raise it to view, it is necessary to place a firm linen compress, in the course of the vein, on the lower part of the neck, and to fix a neckcloth, handkerchief, or common ligature over it, and tie it a proper tightness under the opposite arm-pit; or it may be held tight by an assistant. In some instances, it will answer better to apply the compress and bandage on the opposite side of the neck to that on  
which



which you mean to perform the operation. The bandage being fixed, prefs the vein with your thumb, and pafs the lancet in juft above it, in the manner before directed. The orifice fhould be made rather larger than is common on other parts. Apply lint and plaifter, with comprefs and convenient bandage, if neceffary.

In particular cafes, blood is alfo drawn from the parts affected, or thofe which are contiguous thereto; as under the tongue, in the eye, hæmorrhoidal veins, &c.

#### ACCIDENTS FROM PHLEBOTOMY.

Certain accidents and confequences do fometimes occur from venæfection; the principal of which are, the thrombus and ecchymofis, occafioned by an effufion or diffufion of blood, from the opening of the vein into the cellular membrane, wounds of the fubjacent artery, nerve, and tendon, and inflammation in the internal cavity of the vein.

*Thrombus* and *Ecchymofis*. In opening a vein, fometimes from the unavoidable protrufion of a fmall piece of fat, from the change of pofture in the arm whilft bleeding, or from the orifice being too fmall, the ftream of blood is obftructed, and a portion of it is forced between the fkin and cellular membrane, fo as to raife a fmall tumour over the orifice in the vein, which is called *Thrombus*: when the extravafated blood is more diffufed, it  
leaves



leaves a discolouration round the part, which at first assumes a blueish hue, then changes to a bruise-like appearance; this is called an Ecchymosis.

Under such circumstances, little blood can be expected to flow from the orifice; it will be better therefore to remove the ligature from that arm, and make an attempt in the other, or in the hand. Such tumours, when small, require only gentle pressure with the thumb; those of the larger kind may be generally dispersed with compresses, wetted with a mixture of vinegar and brandy, and rather a tight bandage. If this cannot be dispersed, it will be necessary to open it, and treat it as a common wound.

*Wounded Artery.* An injury of this kind in blood-letting, may be ascertained by the blood rushing out in jerks, with great force, notwithstanding it is strongly compressed both above and below the orifice, and by its very florid colour.

The means commonly employed for the immediate relief of this accident are, tight pressure on the orifice, and in the course of the vessel up the arm, by firm compresses and strict bandage.

Mr. Bell, in his excellent System, condemns this practice, and rationally observes, that when the pressure is in so great degree as to stop the course of the blood through the artery, the circulation in the whole limb must be stopped; and that if the vein only is compressed, the blood must be greatly obstructed



obstructed in its return, and more likely to force itself, through the opening in the artery, into the cellular membrane. The method which he recommends for relief, at first, is, to take off all pressure from the veins; to evacuate as much blood as the patient can easily bear the loss of; to retain the lips of the wound together by means of strips of sticking-plaster, without bandage; to keep the limb in the most easy posture, the body cool; to prescribe low diet, gentle laxatives, and repeated bleedings, if requisite; and particularly to enjoin rest. Under such management, he declares that the wound in the artery is much more likely to coalesce, than with the customary treatment by pressure.

Although the foregoing objections to pressure and bandage are perfectly rational, it is well known that strict bandage has been attended with success: but the objections do not make so forcibly against a moderate degree of pressure; that is, such pressure as is just sufficient to restrain the efflux of blood from the puncture, which Heister and others recommend from experience, and which may be brought about by long compresses planted in the course of the artery, above and below the orifice, and another directly over it; together with suitable bandage, rest, and every necessary restraint before enumerated.

In the varicose swelling, which is particularly enumerated under the article Aneurism, moderate pressure at first may be beneficial.

If



If, in accidents of this kind, the means prescribed should not prevent an increase of swelling, which too often happens to be the case, it must terminate in a tumour of the aneurismal kind, and be treated accordingly.

*Wounded Nerve and Tendon.* When the patient complains of exquisite pain in the part bled, at the moment of operating, it is most probable that the nerve is hurt; if the operation is soon succeeded by an obtuse pain, with frequent dartings, the subjacent tendon or aponeurosis is more likely to be the part injured.

Whenever such extraordinary symptoms are complained of, it will be proper to evacuate more largely than was at first intended, from the vein that is opened, or some other part; and to enjoin the patient to keep himself as cool as possible, and the limb perfectly at rest; applying Goulard's saturnine water, or Mindererus's spirit, to the wound and adjacent parts, and administering a cooling purge; which means will sometimes be sufficient, at least to alleviate future symptoms. At other times, inflammation and tension soon form, the pain increases, the lips of the fore grow hard and inflame, and in a few hours discharge a thin serum: thus it may continue for two or three days; when every symptom increases, and extends itself over the whole limb, accompanied with a strong sensation of a burning heat, and a dusky erysipelatous redness, together with a tight quick pulse. Sometimes these symptoms

are



are rapidly succeeded by twitchings of the tendons, convulsive affections, and a locked jaw; from which, death alone generally releases the unfortunate patient.

An ingenious surgeon is of opinion, that these fatal symptoms may be produced by a mere puncture of the vein, and that they are first brought about by an inflammation in the internal surface of the vein; which disease he declares that he has often traced in horses that have died from bleeding, along the course of the vein, even to the heart; and that the same instances have occurred in the human frame. Notwithstanding which, the former opinion still prevails; namely, that every symptom proceeds from the injured nerve or tendon.

If the symptoms of pain and inflammation are likely to increase, and fever rises, repeat the bleeding from some other part, or by a proper number of leeches on or near the part affected, and keep the bowels lax. Cover the inflamed parts repeatedly with linen cloths, moistened with saturnine preparations; apply Goulard's cerate, and exhibit opiates, at proper periods.

Should no advantages be obtained by these applications, a total division of the parts injured will be necessary; fully to accomplish which, the tourniquet being properly applied, let a free and extensive transverse incision be made through the teguments; then gradually and with the greatest caution proceed with the knife and sponge, and narrowly inspect



inspect the parts, to discover the punctured nerve or tendon which lies contiguous to the vein, avoiding, if possible, the larger arteries, tendons, and veins. The injured part being divided, loosen the tourniquet, and carefully secure the wounded arteries by ligature. In prosecuting this business, the parts surrounding the injured nerve or tendon are sometimes more particularly strictured; releasing which alone gives great ease to the patient, and may perhaps be sufficient to render any further proceedings unnecessary.

The wound is to be dressed with soft lint, and afterwards treated as in common; taking care to keep the arm in the most easy and relaxed posture during the state of inflammation.

The following observations, if strictly attended to, will obviate all the foregoing mischiefs:

The situation of the artery and nerve is commonly under the basilic vein, sometimes nearer to the mediana; but the vein being not so strictly attached to the surrounding parts, may be in some measure cleared from all, by twisting the wrist and elbow.

When the person who is to be bled is very timid, grasp the arm firm, and guard the lancet well, by holding the blade rather nearer the point than usual.

Particular care must be taken not to dip the point of the lancet after its entrance into the vein, but rather to elevate it immediately before it is withdrawn.



The situation of the artery and tendon are plainly to be discovered by pressure with the finger, and bending the elbow-joint; the one from its pulsation, the other from a tight cordy feel.

The station of the nerve is seldom to be perceived; sometimes, by a certain twist and bend of the arm before the ligature is applied, it is to be felt like a slender thread. It commonly lies under or parallel to the inferior part of the vein; still, from its minuteness in comparison to the size of the vein, and its inferior station, there will be no risk of wounding it, provided the lancet be entered in the course of the vein, or with the least oblique direction on its superior part. Those who idly accustom themselves to pass the lancet across the vein, are most likely to do hurt.

#### ARTERIOTOMY.

This operation may be performed much after the same manner as phlebotomy; except that the incision ought to be deeper, and always in an oblique direction. It is scarce ever performed in any part but the temples; where the arteries, or their branches, are easily perceptible to the touch, and may be readily and effectually compressed.

The patient is to be seated conveniently, with his head inclined against the light, and held steady against the breast of an assistant. When the surgeon has clearly discovered the course of the artery,  
let



let him place the two fore-fingers, or fore-finger and thumb of his left hand, at a moderate distance from each other, upon it; then dip the end of a strong lancet, not too broad-pointed, carefully between them, observing to enlarge the incision, by elevating its point as it is withdrawn. If the blood follows the lancet in a salient stream, and is of a very florid colour, the artery is properly opened; otherwise, the incision must be repeated, till the vessel is either opened or divided.

Some surgeons first lay the artery bare with the edge of a lancet, or a small dissecting knife, especially when it is deep-seated, and then make an opening into the vessel; others, without any ceremony, divide it obliquely, or quite across, with a small incision-knife. The first method is to be preferred as most dextrous, and least painful; the last, as most certain; which may be a matter of the greatest moment in urgent cases.

After the proper quantity of blood is drawn, the orifice and adjacent parts are to be wiped quite clean, dry lint is to be applied, a small square compress, including a flat bit of lead, a farthing, or some such thing, over it; another long hard compress in the course of the artery, and a third over all; which may be firmly secured by the reversed or nodose bandage, and continued on about a week or ten days, in which time the cure is generally completed. Should the hæmorrhage prove difficult to stop, a circumstance that, under proper manage-



ment, does seldom happen, the vessels may be secured by ligature.

Experience can testify the immediate good effects of this kind of blood-letting, in obstinate disorders of the head and eyes, sanguinous apoplexies, violent concussions of the brain, &c.

#### LOCAL BLOOD-LETTING.

*Cupping and Scarification.* It is the principal mode used in this kind of bleeding, and is performed in the following manner:—Take a very small quantity of fine flax, or dip a little bit of greyish paper into spirits of wine, either of which will do; set it on fire, and put it into the bottom of a cupping-glass, the mouth of which being immediately applied on the part meant to be scarified, will be firmly fixed thereto. After the glass has continued in this station for some little time, let it be removed; which is easy to effect, by depressing one edge of it, and forcing the other upward. The scarificator, which consists of twelve or sixteen small lancet-blades, fixed in a cubical brass box, with a steel spring ready set, is to be placed with the part where the openings are for the blades to pass downwards, close upon the swelled reddish circle; let it then be pressed gently down, and held firm by the fingers and thumb of each hand, on opposite sides of the instrument; one thumb is then to press so hard upon the brass button, as to set loose the blades, which,



which, in passing to the other side of the instrument so instantaneously, will make an equal number of regular small incisions, with little or no pain.

This being done, fix the cupping-glass, as before directed, exactly over the same circular part, and the blood will immediately begin to flow from the incisions; when the glass is nearly full, remove it, and pour the blood into a basin; then sponge the part with warm water, and the same glass, wiped clean and dry, or another of that size, may be fixed upon the same spot, in case it should be necessary. Sometimes five or six glasses have been employed at one time. Should the blood flow too slowly, new incisions may be made to the former. When the necessary quantity of blood is discharged, carefully cleanse the little wounds with sponge and warm water, and apply a piece of soft linen, or a pledgit of lint, dipped in milk or cream, over them. It may sometimes be necessary to apply cerate, or common plaister, upon rag, over all.

Cupping and scarification is used with success on the head, neck and shoulders, occiput, behind the ears, on the back, loins, legs, thighs, arms, and near the ankles, or wherever the form of the part will admit; for the relief of disorders of the head, eyes and ears, hæmorrhage in the nose, the pleurisy, and some other fixed pains, topically or otherwise.

Dry cupping, that is, without scarification, is said to be of service in some local disorders; but



the principal circumstance in which it is likely to be so is, in promoting suppuration, by fixing the glass upon the part affected.

*Bleeding by Leeches.* Naturalists call the common leech an aquatic insect. It has the figure of a worm, and is about the length of a man's little finger; it has a small head, a black skin, edged on each side with a yellow line, and its belly is rather reddish; there are also a few yellowish spots on its back. It is said to produce its young alive, and one at a time, in the month of July. The common blood-drawing leech may be distinguished from the horse-leech; the latter being larger, and having a smooth glossy skin; its back is black, spotted with grey, its belly is also spotted with the same colour, and it has a blueish hue.—Vide Brookes's Natural History, vol. iv.

Leeches may be used with advantage, where the lancet and cupping are inadmissible. The mode of using them is too generally known to need much precision in its description. There is sometimes a difficulty in fixing them, which may be removed by letting them crawl for a few minutes on a dry cloth or board, or by moistening the spot where they are to be fixed, with milk, cream, or blood. They generally suck till they are full, and then drop off; after which, the discharge, if required, may be promoted by the repeated application of a sponge and warm water.

If, after sucking sufficiently, they are not easily to be separated, a grain of salt may be dropped on their  
their



their backs, and they will very soon let go their hold. They ought to be kept in clean water a few days before they are used. Some are so cruel, as to cut their tails off; by which means the blood runs through them, and they are made to suck for a much longer time, but die soon after; whereas those that are more humanely treated, can be returned into the glass, and reserved for future use.

*By Simple Scarification.* This operation may be performed with the fine edge of a lancet, or by lightly brushing the part with the beards of barley; which latter process is principally confined to some obstinate inflammations of the tunica conjunctiva of the eye. The operation with the lancet may be attended with advantage; but that of brushing the eye, as it is called by some itinerants, is likely to make bad worse, the pain being exquisite.

When the lancet is used to the eye, the superior lid should be held up by an assistant, and the inferior pressed down by the operator; a few scarifications may then be made through the most turgid vessels. Vide Ophthalmia.

A few eminent men in the profession have in most ages declared themselves advocates for this operation with the lancet, in particular cases; still there seems to be no probability of its being much practised.

Bleeding also at the corner of the eyes and eyelids was some years since the boast of a famous oculist; but time and experience do not seem to have



favoured the practice, since, at present, it is seldom so much as thought of by the regular practitioner.

### ISSUES *and* SETONS.

*Issues* are small artificial ulcers, made in several parts of the body, for preserving or recovering health. The places where they are chiefly formed are, the crown of the head, the nape of the neck, behind the ears, on the arms, at the insertion of the deltoide muscle, and on the thighs and legs, in the hollow just above and below the inside of the knee.

Issues are commonly made by incision or caustic. The former is the most easy and ready method, and is done by plunging the point of a strong-bladed lancet through the cutis, after the manner of bleeding; then bearing it forward, upward, and outward, so as to make an orifice large enough to hold a pea, or small horse-bean: or by pinching up the integuments with the fore-finger and thumb of the surgeon and an assistant, and making an incision with the lancet upwards, through the point where it is particularly marked or required. After introducing the pea, a proper plaister, compress, and bandage must be applied.

The first mode of incision is most eligible, when the skin is tight and full; the last does best in thin habits, where it is generally loose, and lies near to the tendinous fascia which covers the muscles.

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The mode of using the caustic for this and other purposes, may be understood from what is already said under the article Maturation. The size of the aperture in the plaister ought to be in proportion to the number of peas which are to be employed in keeping the part open, making a proper allowance for the caustic spreading beyond the intended limits. This method is generally used where large discharges are thought necessary; as in the side, for a pleuritic pain, or phthisis; or between the shoulders, in complaints of the head, &c.

Those who are too timid to undergo either of these operations, draw them, as it is vulgarly termed; which is done by placing a pepper-corn, properly enveloped with blistering plaister, upon the part where the issue is to be made, and confining it there with a piece of sticking-plaister, a compress of linen with a small piece of money in it's nearest fold, and rather a tight bandage: by which means, about the second day, a hole will be made sufficient to introduce a small pea; this should also be kept in by the same kind of pressure in a slighter degree, daily increasing the size of the pea till the issue is perfectly formed.

This sore must be dressed once or twice a day, according to the nature and quantity of the discharge; putting in a horse bean, or one or more fresh peas, and covering it with clean plaister, a compress, and a slip bandage.

When the hole inclines to fungus, it may be reduced by blue vitriol, a pea dipped in a watery solution



lution thereof, by burnt alum, or lunar caustic. Bitter oranges, peas smeared with equal parts of blistering salve and cerate, or slightly dusted with powdered cantharides, will be occasionally necessary to increase the discharge.

*Issue on the Head.* Some physicians place great confidence in issues formed in the scalp, at or near the part where the coronal and sagittal future meet, particularly in the vertigo, &c. and in disorders of the eyes and ears. This operation was formerly done with the actual cautery, afterwards by caustic, and is now performed with the knife; it is at this time transferred more to the back part or crown of the head, by cutting out a piece of the scalp, about the size of a shilling or half-crown, down to the periosteum, and keeping it open with a thin piece of gentian root, peas, or horse-beans. The division of the vessels at this point, is supposed to be of particular use. It may be found necessary in the latter opening, to dress for the first time with a plenty of dry lint, compress, and bandage, in order to prevent extraordinary hæmorrhage; and as soon as the opening can be freed, to apply the necessary means for keeping the part open, and promoting the discharge.

This seems to be one of those consequential processes which may at least answer the purpose of renewing hope in a desponding patient. No satisfactory reason has been given why the discharge from issues made by caustic, behind the ears, between the shoulders,



shoulders, or from a seton in the nape of the neck, should not be equally efficacious, or why dividing the temporal artery should not answer every other intention as well.

*Setons* are considered as more efficacious than issues, since they occupy more raw surface, and consequently yield a greater discharge. They are chiefly made in the nape of the neck, and in the side.

There are two methods of performing this operation; the one, by deeply pinching up the skin with the help of an assistant, and thrusting through it a broad-bladed needle, formed for this particular purpose, and armed with several small threads of silk, thread, or cotton-wick loosely twisted: the other is done by taking up the skin as before directed, and passing the end of a double-edged scalpel, or stout lancet through it, then introducing the twisted silk, and drawing one end of it through the opening with the assistance of an eye-probe. This method is generally preferred, as it admits of making a larger aperture than that with the needle.

The ligature should be of a tolerable length, and of an adequate thickness to the opening: from twenty to thirty threads of middle sized silk, loosely twisted, will be sufficient for most occasions. The ligature may be occasionally smeared with a light digestive about the length of the distance between the two openings, and wiped clean once or twice a day, as in the issue. When the whole of the silk is  
nearly



nearly exhausted, a clean skain may be introduced, and a plaister, compress, and convenient bandage applied over it; taking care to carry the spare part of it above the upper edge of the plaister, as it will be less apt to drag and daub.

The use of artificial outlets is daily experienced, more especially in scorbutic and cachectic habits; but in such kind of constitutions, one common issue only can have but little effect.

Complaints in the head and eyes have been frequently relieved by the discharge from the seton.

#### ACTUAL and POTENTIAL CAUTERIES.

*Actual Caution.* It is but of late years that cauterization was almost an universal remedy. The various sizes and figures of irons used on different parts and occasions, and which formed a considerable portion of the surgeon's apparatus, are accurately described and favourably mentioned by some eminent writers.

They were generally used to remove schirrous tumours, cancers, excrescences, carbuncles, and mortified parts; to destroy caries, to make issues, &c. and to suppress hæmorrhages: to cure the gutta serena, apoplexies, epilepsies, sciatica, &c. and to remove fixed pains. A celebrated foreigner is at this time rendering himself famous for applying the actual cautery in various diseases. But so it happens with this, as well as all other universal remedies, that



that it is almost sunk into disuse; being chiefly employed in curing the tooth-ach, and suppressing hæmorrhage from vessels which cannot be secured with the assistance of the needle or tenaculum.

*Burning with the Moxa.* This species of cauterization is esteemed as grand a catholicon in China and Japan, as that with the hot iron was, not long since, in Europe.

This operation is performed by means of cones, made of moxa, which is a kind of Indian mugwort; they are about an inch in length, and the same in diameter at the base; are slightly fixed upon the painful part with a gummy solution, then set fire to at the top, and suffered to burn down, and gradually form an eschar.

Not more than three at a time are ever applied to persons of weak constitutions, but ten, fifteen, and even twenty, are said to have been fixed upon the limb of a robust one.

The Arabians, Persians, Mahometans, and Indians, use cotton for this purpose; the Gentoos and Indians without the Ganges, are said to apply the pith of the bulrush, imbrued with the oil of sesame; and the Laplanders a sort of mushroom.

*Potential Cauteries, or Caustic Medicines.* These, when applied to a part, act slower, and with less pain than the hot iron, but produce the same effect. They have various degrees of strength, and the most powerful is the lapis infernalis, or the stronger common caustic. Those of a milder nature



ture are, a solution of quicksilver in aqua fortis, the milder common caustic, butter of antimony, and the different kinds of catheterics.

### AMPUTATION IN GENERAL.

To separate a limb from the body is considered as one of the most severe operations, yet it is sometimes necessary for the preservation of the patient's life. From the successive inventions of the tourniquet, ligature, and double incision, the operation itself is much less dangerous in its consequences than formerly; and from the improved state of surgery, particularly with regard to the treatment of compound fractures, it is become less needful than of late years.

The principal occasions on which the surgeon's aid is thus required are, when part of the limb is so far destroyed by mortification that it cannot be restored; when the bones, ligaments, and blood-vessels are so terribly injured as not to leave sufficient powers for recovering the part, and it becomes indispensably necessary to saving the life of the patient; and when a joint or bone is so greatly diseased, as from pain, absorption, or discharge, must inevitably prove fatal.

Surgeons of experience, even at this time of day, maintain different opinions with regard to the necessity of the operation, and the point of time when it is most likely to prove successful. One says, immediately



mediately after the accident; another, not till the patient is reduced from a state of high health; and another, from his great sensibility, has endeavoured to prove its inutility.

When the heads of bones and the surrounding ligaments are greatly comminuted and torn, it is, perhaps, more eligible for the safety of the patient to amputate, than to endeavour to save the limb; yet many instances may certainly be found, where the shattered heads of bones have been taken off, and the limb has been saved; but on the other hand, the cure has sometimes scarcely compensated for the danger that has arisen from consequent inflammation, abscesses, and the continued discharge, length of confinement, and other painful incidents; amongst which, languor and despondency were by no means the least.

In fractures on the other parts of the limb, where the injury done is not so violent as to endanger life from repeated hæmorrhage, or where there is not an absolute impossibility of restoring the circulation, it will in general be laudable, to defer the operation at least, and to endeavour to preserve the limb by the simple means already directed under the article Compound Fracture. At the same time it ought to be understood, that in desperate cases no prudent surgeon will either attempt to delay or perform an operation of such moment, without first consulting with the most skilful practitioners in the neighbourhood.

It



It is also to be observed, that when inflammation is risen, and gangrene threatened, whether the latter symptoms be particularly occasioned from age, indisposition of body, or accident, it will be necessary not only to wait till, by the assistance of internal as well as external means, the mortification is checked, but also till the separation is far advanced, and new flesh shews that the operation is warrantable. In which case it will be proper to begin the first incision, at least an inch above the line of separation, except it happens to spread too near the joint, when it will be necessary to perform it upon the limb above.

In some instances of mortification from external injury, where the teguments, tendons, and ligaments have been destroyed, and the bones left bare, sawing through the bones has sufficed.

The apparatus generally requisite to amputation is composed of the following particulars:—Petit's screw tourniquet; a slip of rag or of tape, near an inch broad, to fix round the part as a mark for the circular limits of the first incision; a large knife, strait or curved, as best suits the hand of the operator; a catlin, or double-edged scalpel, for dividing the interosseal flesh and ligament between the ulna and radius, or tibia and fibula; a retractor, made with strong linen cloth or leather, to draw back the muscles with, in order that the saw may be set on as far back as possible; a saw; a tenaculum or hook-like instrument, to draw the ends of the vessels out with,



with, and ligatures for securing them; some crooked needles flat and double-edged only, large and of middle size, properly armed with strong ligatures; a flannel roller for making the circular bandage near the end of the stump, to prevent the retraction of the teguments; scraped lint; long and broad slips of sticking plaisters called cross-plaisters, with which the opposite edges of the wound may be brought nearer to each other; a large thick pledgit of tow spread thin with a mild cerate, or some emollient ointment; a compress made with tow; a cross cloth, or thin cotton night-cap to invest the stump with, and a short roller to confine the cap with at it's superior part.

The next business is, to fix the patient and assistants; in case a lower limb is to be taken off, it will be proper to lay the patient on a table about two feet six inches high; if an arm, he may be fixed on a chair of convenient height. Two ordinary assistants are necessary to keep the head, body, and limbs fixed and secure, and two persons of sufficient skill should hold the condemned limb; one of which is to be placed above the part to be amputated, who may manage the tourniquet, and the other to support and keep steady the inferior part of the limb; a fifth should also be ready to hand the instruments and dressings as called for.

The tourniquet is then to be fixed on the upper limb above the part to be operated upon; if on the thigh or upper arm, placing a compress under the

O

ligature



ligature in the course of the humeral or femoral artery, in order to compress either of those vessels and stop the circulation; in the mean time the operator may fix the circular tape for the direction of the knife.

The tourniquet being properly tightened, and the limb held in a regular direction, the first incision is to be made at the inferior part of the linen roller or tape, through the adipose membrane down to the muscles only; setting on with the heel of the knife far under the limb, and the point towards the upper part, so as with one sweep to form near two thirds of the circle, the wound should then be continued by beginning at the upper-part of the incision on the opposite or further side, and finishing in one circular line.

Then taking off the tape or narrow roller, let the upper assistant draw back the skin, &c. with both hands as far as possible: the second incision is then to be made close to the edge of the retracted skin, through the flesh and periosteum down to the bone, in the same manner as the first. If in the leg or lower arm, the interosseal parts are to be divided with the point and edge of the knife or catlin, in a line with the last incision; and before the saw is applied, it will be best to fix the retractor, by means of which the whole of the flesh above the separation, may be more forcibly kept back, than is possible to be done with the hands only of the assistant, and the saw may be set on greatly to the advantage of the stump.

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The saw should be gently entered at first, and in the leg or lower arm, must be so directed, as to work upon both bones at once; which cannot conveniently be done without standing on the inside thereof, otherwise the bones, the fibula particularly, must be disagreeably splintered. Whilst the saw is in use, the lower part of the limb should be held as steady as possible, rather a little depressed, so as to give room for that instrument to work; at the end of which operation, care should be taken fully to support the limb against its own weight, otherwise it will inevitably snap off, and leave a troublesome point or splinter.

The next step is to secure the vessels, which ought always to be done with the greatest care and circumspection: the most certain way of doing it is with the crooked needle and ligature passed nearly round the extremities of each artery, including a part of the surrounding muscle, and inclosing the whole with the surgeon's knot drawn sufficiently tight.

Many reasonable objections are made to this mode of tying the arteries; the principle of which is, that by including the nerve, it will cause, or at least increase the painful spasms which are too apt to occur after the operation. Upon this account therefore the method of drawing out the ends of the arteries, and tying them without the intervention of either muscle or nerve, is revived; except, that the hook-like instrument called the tenaculum, is used instead of the forceps; which method is thought to be



equally certain with the needle and ligature, still it is found necessary in some cases to fly to the assistance of the needle, particularly where the mouth of the artery lies deep; for which reason some needles ought always to be ready and properly armed.

In order to discover the orifice of each vessel, the assistant should occasionally just loosen the tourniquet; which if set at a proper pitch, may be done at a single turn of the screw; and after securing the large vessels, either with the aid of the tenaculum or needle, the operator should proceed to tie every smaller artery which appears to leak, and that may sometimes be much more securely done by catching the vessels mouth with the tenaculum, and passing the needle and ligature round it, than by forming the noose. A large stump below knee has often required eight or ten ligatures.

If the patient is rather faint, it may be necessary to loosen the tourniquet, especially when but few ligatures have been made; and to sponge the surface with warm water, in order to invite the hæmorrhage before it is dressed up; by which means, and at the same time giving the patient a little wine or wine and water, a lurking vessel has been detected, which might have been the source of much pain and trouble.

When the subject is greatly reduced, or the blood is in a loose state, an oozing will still continue from the smaller vessels; to check which, it may be necessary to dust the surface of the stump with fine  
wheat



wheat flour and starch, or a mixture of starch and gum arabic finely powdered, and to apply snips of lint enveloped with the same.

The hæmorrhage being totally stopped, the next business is to bear the skin as forward as possible over the stump, and retain it so by means of a circular roller made with Welsh flannel, which is to be bound gently round the limb; first fixing it above the superior joint, and winding it down to the end of the stump, just above which it is to be principally spent: soft dry lint is then to be applied to the raw part of the stump, and a pledgit of tow spread lightly with a mild cerate or emollient ointment over it; a compress, cross cloth, and bandage. A thin cotton night-cap turned over the dressings, and fastened on with a slight roller at it's upper part, is equally suitable and more convenient. Sometimes long pieces of adhesive plaisters are fixed across the stump, immediately after the lint is applied to it's raw surface, in order to bear the edges of the teguments nearer to each other: such means are certainly of great use when the stump is large, and may answer very well, provided the part is not loaded with lint.

The cross stitch has been used upon the same principle in amputations of the thigh, but it creates great pain without answering the intended purpose; provided the first incision is carefully and properly made, the assistance of the circular bandage is generally sufficient.



The stump is afterwards to be treated in the same manner as other raw surfaces; with dry lint in the middle, and slips of rag or lint spread with white cerate round the edges. As soon as digestion begins, Dr. Kirkland advises thin pieces of sponge which have been previously wetted and squeezed dry with the hand, to be applied over the lint, in order to suck up the thinner discharge, and prevent it's being absorbed into the habit; which circumstance is generally the occasion of slow fever, diarrhœa, &c. This, with repeated dressing according to the quantity of the discharge, has answered extremely well in weak emaciated habits: so also have gentle astringent lotions, in conjunction with bark and vitriol internally.

It will be proper for some skilful person to keep a strict watch over the patient for the first night or two, and for an assistant to continue a gentle pressure with the palm of the hand against the end of the stump, to resist the violence of the spasms, and to be the more readily apprized of hæmorrhage. The tourniquet ought also to be kept upon the limb so loose as not to restrain the circulation of the blood, yet so as to admit of being instantaneously tightened, in case of hæmorrhage; the manner of doing which, should be explained to every person who attends upon the patient.

If but little blood was lost during the operation, and the patient is plethoric, it will be proper to take a little away from the arm, and to pursue every probable



probable means for preventing or checking the symptomatic fever. The rest of the after treatment must be managed according to the state of the constitution, the quantity of discharge, and the further directions given under the article of wounds in general. The first dressing should not be removed till the third or fourth day, and then only such part of it as will readily give way.

### AMPUTATION IN PARTICULAR.

After this general account of the necessity and mode of performing the operation, it will be proper to remark some peculiarities which each part is subject to in it's performance, beginning with the extremities.

*Amputation of the Fingers and Toes.* These parts are most commonly taken off at the first or second joint above the injury. A common scalpel is the fittest instrument for the purpose, and the incision should be made rather below the joint, in order to preserve the skin for it's better healing. When the separation is required at the metacarpal or metatarsal joint, it is more easily performed by making a longitudinal incision on each side of the joint, previous to the circular one.

Fingers and toes which have been accidentally cut through with a sharp instrument, if regularly and immediately placed together, and retained so by proper bandage, have been known to unite; more



especially when the separation was made in an oblique direction.

Supernumerary and misshapen fingers and toes should be taken off with the scalpel and spring-saw in adults, but in infants, the bone may be easily divided with a stout pair of scissars; and sometimes these appendages have no bone. A ligature or two will be necessary after amputating at the articulation, and the first dressings are lint, cross-cloth, and a narrow roller.

*Of the Metatarsal and Metacarpal Bones.* If a part of these bones only is carious, it may be adviseable to preserve the rest, by removing no more than what is diseased. The wound in such cases often heals kindly, and the heel or remainder of the foot will be of great use.

*Of the Hand and Lower Arm.* These operations as well as the foregoing, used to be performed with the chissel and mallet, but such uncouth means are justly discarded. The patient is generally seated in a chair, and the tourniquet is fixed above the elbow. The amputation of the hand is generally performed at a moderate distance above the wrist joint, yet some give preference to taking it off at that joint, when it is not diseased or injured.

The particular circumstances required in it's performance on the lower arm are, to save as much of the limb as possible, to divide the flesh and ligament between the ulna and radius with the catlin, and to set on the saw in such a manner as shall work upon both those bones at once.

Some



Some surgeons have been so bold as to confide in compress and bandage only, for stopping the hæmorrhage, but that ought by no means to be done, especially as the vessels can be so readily secured with the tenaculum, or needle and ligature.

*Of the Upper Arm and Thigh.* The operation in these parts is to be performed after the general method, always observing to save as much of the limb as the nature of the disorder will admit; since the higher it is amputated, the more subject it is to violent spasms, hæmorrhage, and profuse discharge; consequently, the more dangerous in its event. The tourniquet ought to be particularly attended to in operating upon either of these parts, since a sudden gush from such large arteries may be productive of disagreeable consequences.

The femoral and humeral arteries have been frequently and successfully secured by means of the tenaculum and ligature; but with vessels of such magnitude, and even some of their branches, unless the end can be drawn some length through the noose, the needle should be employed, in order that they may be perfectly secured at a proper distance from their mouths; which may be done with a crooked flat needle, without injuring or intercepting the nerve.

The cross-stitch is looked upon to be a painful and useless mode of approximation, therefore is generally rejected; and two long slips of good sticking-plaister fixed at the sides, and carried across the end of the stump, are used in lieu thereof.

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The bandage for preventing the retraction of the muscles may be fastened round the patient's waist, previous to the operation on the thigh, and be afterwards brought gradually down the limb, in order to encircle the parts near to the end of the stump. When it is managed with moderate tightness, it serves to abate the impetus of the circulation, and to prevent the formation of abscesses.

*Of the Arm at the Articulation with the Scapula.*  
It is much better for the patient under this operation, to be in a recumbent than a sitting posture. It has been several times performed with success, and is necessary to the preservation of the patient's life, when the arm is so injured or diseased as not to admit of being cut off below the joint. The leading principles in its performance are, to preserve the skin, secure the main artery and vein, and to guard against wounding them after they are secured. It is directed to be done after the following manner :

Let the patient be properly secured on a table, with the shoulder brought over its edge ; then make the first incision through the skin and adipose membrane, beginning about two inches below the joint at the upper part of the shoulder, and carrying it across the pectoral muscle down to the arm-pit ; then turning the knife with its edge upwards, divide that muscle and part of the deltoide, in order to expose the vessels, which may be more easily effected by bearing the arm backwards ; after which, with a needle and strong ligature, made with six or eight threads



threads, tie both artery and vein; and being convinced by narrow inspection, and the absolute loss of pulse in the wrist, that they are perfectly secured, carefully pursue the circular incision through the joint; cutting first into that part of the burfal ligament which is nearest the axilla, and in the round, be sufficiently aware of the projection of the processus acromion, and coracoides; then raising the arm, divide the head of the biceps muscle and the ligament at the upper part, lift the head of the bone from the socket, and carefully dissect it away; preserving the skin and teguments, and avoiding the vessels above the ligature, which ought to be made pretty low down.

After having secured the arterial branches, and spunged the part clean with warm water, lay down the teguments as regularly as possible over the socket, and retain them so with slips of plaister across the edges; then dress with dry lint, a pledgit of soft tow, proper compress, and bandage.

Writers in general mention this operation as particularly necessary, where the injury or disease is so high up in the arm, as not to allow of the tourniquet being used. Its advantages are evident in cases of that nature, and it has of late been more generally ventured upon, particularly during the last destructive war. Were an instrument once to be so happily contrived, as to compress the vessels on their passage over the first rib to the arm, with as much readiness and certainty as the tourniquet does those



those of other parts, there can be no manner of doubt that this operation would be much more frequently and easily performed.

*Of the Leg.* In this operation, it is best to lay the patient on a table of convenient height. The tourniquet is to be fixed three or four inches above the knee, and the first incision is to be made about five inches below the patella; in doing which, it is proper to direct the knife in such a manner, as to make the cut rather lower at the calf than any other part, in order to allow for the future excess of contraction in those muscles, and prevent irregularity in the cicatrix. The saw should be applied on the outward side of the leg, and the assistant who supports the leg should humour its progress by the slightest depression of the limb; but when the bones are nearly sawed through, it must be more firmly supported, for fear of breaking off abruptly, and leaving an uneven surface on the bone.

It is customary to amputate at the distance before directed from the knee, even provided the disorder which requires the operation is seated near the ankle; and notwithstanding the success and convenience which has sometimes attended the flap operation, under the management of a few, it is not yet held in such esteem as to subvert the common limitation of the stump in this part. The flap operation, as performed by Mr. White of Manchester, who, from the different accounts already published, seems to have practised it with the most success, is as follows: An



An incision being made with a strait knife through the tendo Achillis, not far from its insertion into the os calcis, is carried about three inches obliquely upwards; the flap thus formed, a semicircular incision is made with the same knife down to the bones, which are then regularly sawed through. The stump and flap were dressed separately, and the dressings were removed as often as necessary, keeping the flap gently up to the end of the stump. At the end of the twelfth or fourteenth day, by which time the ligatures with which the arteries were secured were cast off, the flap was placed in close contact with the stump, and retained so by slips of plaister and gentle bandage. The flap generally began to adhere in a few days, and was frequently healed in about six weeks. It is now the practice to apply the flap immediately, leaving the ends of the ligatures a sufficient length out of the wound. Some make the incision from above downwards, with a double-edged knife or catlin. The portion of tendon, when left on the flap, sometimes occasioned a deep slough, and retarded the secondary union, on which account it was dissected off by some surgeons; but the immediate application of the flap seems to obviate such inconveniency, and render so painful a part of the operation unnecessary.

Machines are so artfully adapted to this kind of stump, as to make the motion extremely easy, and give the appearance of a natural foot and leg.

Mr.



Mr. Allanson, of Liverpool, who has paid the greatest attention to this subject, has pointed out a new mode of amputating, in order to reap the advantage of Nature's first and second process; and his endeavour seems to have been attended with great success, particularly under his own management. This operation has been principally performed above the knee, and is done as follows:

The tourniquet being properly applied, and the surgeon standing on the outside of the thigh, an assistant draws up the skin and muscles, by firmly grasping the limb with both hands; the first circular incision is then made, as quick as possible, down to the muscles, separating the cellular attachments so far, as will afford skin enough, jointly with the division of the muscles, to cover the surface of the wound with ease.

The assistant still firmly supporting the parts, the edge of the knife is applied under the edge of the supported integuments, upon the inner edge of the vastus internus muscle, and at one stroke the vessels are cut obliquely through, upwards as to the limb, and down to the bone, so as to lay the bone bare, about two or three fingers breadth higher than usual in the common circular incision. The operator drawing the knife towards him, so that its point may rest upon the bone, still keeps the same oblique line, that the muscles may be divided all round the limb in the same direction, by a proper turn of the knife; during which, the point is continued in contact



contact with, and revolves round the bone. Mr. Allanson observes, that the more muscular substance there is saved, by fully giving the oblique direction, instead of dividing the membranous attachment, the better.

Gooch's retractor is then to be applied, and at the exact point of the bone where the saw is to be set on, the periosteum is scraped off by the edge of the knife, to make room for that instrument; but this may in general be done by almost a single move of the knife round the bone. A stump thus formed, when the parts are gently brought forwards after the operation, appears to resemble a conical cavity, the apex of which is the extremity of the bone.

The limb being removed, every bleeding artery, beginning with the largest, is gently drawn out with the tenaculum, and tied with a proper ligature, as bare as possible; and the ligatures are left much longer than usual, with intent to have their ends left a proper length out of the wound. Every branch should be carefully taken up, and the coagulated blood must be washed clean away from the mouths of the vessels, with a sponge and warm water.

The skin and muscles are now brought forward, and a circular roller made of Welsh flannel is fixed round the body, and carried rather tight two or three times round the thigh; then forwards in a circular manner to the extremity of the stump, so as gently to support the parts.

The



The skin and muscles are next placed in regular order over the bone, so that the wound appears only a line across the front of the stump with the angles at each side, where the ligatures nearest to each are respectively left out. The skin is secured by slips of linen or rag, about two fingers broad, spread with soft cerate, and applied across the stump; and where the skin does not easily meet, slips of rag spread with adhesive plaister answer best. Over these are applied a soft pledgit of tow and linen compress, with the many-tailed bandage properly adapted to the limb; two of which, are carried from below upwards, to keep the dressings upon the end of the stump.

The stump is placed about half a hand's breadth only higher than the plane of the bed, and the side position used in fractures is the most easy. The dressings are commonly removed about the fourth day, the discharge seldom rendering it necessary to remove the tailed bandage till the third dressing, which circumstance is not desirable till the adhesions are tolerably complete.

If the bloody or serous discharge is great, and the dressings are hard and dry, their pressure must give pain, and they require to be removed, since it is of the utmost importance to keep the inflammation, after the operation, within due bounds.

If the edges of the wounds have been retained by suture, with the needle and ligature, or adhesive plaisters, such means must be discontinued during the inflammatory state.

The



The dressings are renewed every day, and the circular bandage is re-applied very slack, as often as the discharge renders it necessary.

The ligatures round the vessels are removed, as soon as the inflammatory stage is over, the soreness is abated, and a general relaxation takes place; which is done by pulling at each of them as much as the patient can easily bear at every dressing; for if this be neglected, it will be difficult to disengage them, from their being surrounded and entangled by the granulations, whence the secondary union must be much impeded.

When the suppuration is compleated, the edges of the wound should be attentively kept in contact, by repeated applications of slips of sticking-plaster, in order to promote the secondary union as much as possible.

Mr. Allanson finds a double-edged knife or catlin, rather smaller than the common amputating-knife, the most handy instrument for this mode of operating.

This gentleman wholly rejects the tape, which is the common guide to the first incision; but allows of a circular line being marked out by a thin cord, wetted with ink, as being more expeditiously effected; indeed, a surer direction than the eye is certainly necessary to young practitioners.

The chief objections made to this mode of operating are, the chance of the part near the extremity of the bone not uniting, and matter lodging in the  
P hollow;



hollow; exfoliation, and the difficulties and disappointments attending a subsequent hæmorrhage. It is not improbable that the hollow may be prevented from forming, by beginning the incision through the muscles rather lower than the retracted integuments, by which means a sufficient quantity of flesh may be preserved to support the skin, and by fully giving the oblique direction to the knife. Exfoliation is perhaps the consequence of scraping the periosteum from the bone to too great an extent for the application of the saw; and subsequent hæmorrhage is, as in all other cases, to be obviated, by being particularly careful, in securing every minute branch that offers, with the tenaculum and a slender ligature; and detecting such vessels as lie hid from the sight; accurately examining and dislodging every little blood-clot or coagulum, and solicitously inviting hæmorrhage, with sponge and warm water, before the limb is dressed up.

The perpendicular common incision is liable to the two last accidents: want of union therefore, towards the upper part of the excavation, seems to be the principal objection; and that may be partly occasioned by undue management. From the unparalleled success of the ingenious inventor, namely, thirty-five cases which promiscuously occurred in the Liverpool Infirmary, without the loss of one patient, and the speediness of the cure in each, very few exceeding the month, one may with some reason conclude, that with equal care and management, the  
event



event will prove at least more than commonly fortunate with others. The advantages of this mode of amputation, and subsequent treatment, are particularly attested by several eminent country practitioners, and the practice seems to have a gradual advance. For further information, vide Allanson on Amputation; and for the flap operation, Messrs. O'Halloran, Bromfield, and White's Observations and Cases.

## Disorders of particular Parts.

### INJURIES of the HEAD.

*Fissures, Depressions, and Fractures of the Cranium,* are to be suspected from the vehemence of the symptoms which usually attend those injuries. Bleedings at the ears, stupor, and loss of voluntary motion, are strong indications of extraordinary hurt being done to the cranium. In all such cases, scalping and trepanning are positively ordered; in short, whoever deviates from the given rule, is subject to the most severe censure. The operation is also recommended by great and respectable authorities, in violent blows of the head, unaccompanied with either fracture, fissure, or depression, in order to give vent to the extravasated blood or matter, which



may be supposed to lie between the cranium and dura mater.

Notwithstanding which, many gentlemen of eminence in the profession, who have not strictly conformed to the written process, are able to testify, that several persons, who have received the most violent injuries on the cranium, have been perfectly recovered by the free use of the lancet, and antiphlogistic treatment, only. An experienced country practitioner, and bold operator, has several times disobeyed this absolute injunction; and has it in his power to produce testimonials of success, which would stagger the faith of the warmest advocate for the use of the trepan.

The Author of this publication pleads guilty to the charge, in five instances of fractured skulls, all of which did well. One was in the left parietal bone, with moderate symptoms, who recovered with no other operation than removing the bruised and jagged part of the scalp down to the bone. Bleeding twice, and Dover's powder, after a previous immersion in the warm bath, as prescribed by the ingenious Mr. Bromfield; afterwards nitrous medicines, laxatives, and enemas, with slender diet and proper dilutents, were regularly administered.

Another was a fracture on the posterior and inferior part of the os temporis, caused by a violent blow from a malt-mill; in which a loose piece from the squamose part of the bone, not so large as the thumb-nail, was removed with the forceps. It may  
be



be remarked, that this patient was totally deprived of his senses and voluntary motion, till the twelfth day; and that no one was present at the time of the accident; also, that no external indications of injury could be perceived on the side which was fractured: in fact, the skin on the opposite side of the head being slightly raised, induced every one present to suppose that the principal hurt was in that part; but upon stricter examination, and observing a much greater degree of agitation and groaning in the patient, when violent pressure was applied to the unsuspected side of the head, than from an equal trial on the opposite part, it was determined to search there for the injury; and the event proved the propriety of doing so.

The third was a fracture in the os frontis, just above the orbit of the eye, wherein no very alarming symptoms appeared.

The other two instances, in which he was consulted only, were on the frontal and the left parietal bone; both which were treated after the same manner, and did perfectly well.

Two other cases of fractures in the cranium have also come under his immediate care and management; in one of which, a part of the occipital bone was removed with the assistance of the trephine, the injury being so violent as to force three small pieces in upon the dura mater; the symptoms which attended were exceeding bad. The other instance was a fracture and slight depression in the left pa-



rietal bone, with very moderate symptoms. One perforation was implicitly made on the morning after the accident, when the dura mater appeared quite pale and sound. The first instance did well; the last grew bad within a few hours of the operation; the patient was seized with fever, delirium, and every symptom of inflammation, and died on the fourth morning. Upon examination, nothing of any moment appeared on the brain, which could be supposed the cause of so sudden and fatal a change of symptoms. This event, and a circumstance of the like nature, happening at no great distance from him much about the same time, emboldened him to omit the operation in the first instance herein-mentioned, which occurred about a twelvemonth after, and he has pursued the same method ever since, except where the bone was much shattered and depressed.

The cases which have been under the writer's immediate care and attention are not many; but, considering the proportionate nature and violence of the injuries, and the concomitant symptoms, as also the success which attended those cases where the trephine was not applied, it may at least be concluded, that the operation is not so generally necessary as it is declared to be.

The chief indications of internal mischief from blows on the head, without fracture or depression, are, the pericranium being detached and puffy, and painful symptoms supervening. If pain, drowsiness,  
&c,



&c. go off and return a few days after the injury has been received, together with a quick tight pulse, and repeated shiverings; if a sanious matter is at the same time discharged from the wound, and the puffy part is extremely sore and tender, mischief is most likely to be forming or formed within. The cause of such complaints is said to be produced, from the circulation between the pericranium, diploe, and dura mater, being interrupted, from the latter membrane being detached, and from pressure occasioned by extravasated blood: under which circumstances, inflammation and putrefaction are to be expected; and in every such case, the operation is strictly enjoined. Admitting all these causes and effects, is it not probable that venæ-section, duly repeated, together with diaphoretic and antiphlogistic remedies, will, in the early stage of the disorder, answer every intended purpose, independent of perforation? and in the latter period, the bark and antiseptics are much more likely to succeed.

When the force of a blow is sufficiently violent to cause extravasation, depression, fissure, or fracture, can it be expected that the extravasated blood will be confined to a particular spot, or extend but a little way round? Can it be supposed that the fluid will be wholly discharged by the perforations that are commonly made upon such occasions?—But further, if inflammation comes on in consequence of pressure from extravasated blood, how is



it possible to prevent the effect in more diffused extravasations, by a partial operation? At the same time, it may reasonably be asked, What becomes of the blood which cannot find its way through the opening?

To expose the dura mater or any membranous part that is naturally concealed, is not a matter of indifference; since inflammation is commonly produced and increased thereby, and often terminates in maturation or gangrene. When therefore the symptoms which immediately occur from the accident are moderate, and the injury done to the cranium is not complicated, the method recommended by Mr. Bromfield, and the antiphlogistic treatment, are most likely to succeed. That eminent practitioner recommends a venæsection, a stool or two to be procured by glister or some gentle aperitive, and the warm-bath as preparatives; then gives a dose of Dover's powder. He says, that every symptom of concussion generally goes off on the powder's producing a plentiful sweat; and advises the patient to lie between blankets during the process, and afterwards to keep up a gentle diaphoresis, by continuing a medicine of the same kind; such as, antimonial or ipecacuanha wine with thebaic tincture, or the powder to be repeated occasionally, till the patient seems to be out of danger: also, to repeat bleeding and the medicines before prescribed, in case the symptoms return.

The several instances already mentioned do surely warrant such practice, where no very violent oppressive



pressive symptoms occur. No one can suppose that such means, although they have been attended with desired success in very bad cases, ought to be solely and constantly trusted to, when the bone is greatly shattered and depressed; more especially when parts of it are struck in upon the dura mater. Still in simple fractures and concussions, and as a preventative, it may not be unsafe to operate more sparingly. When matter is discovered upon or beneath the dura mater, perforations are ordered to be repeated according to the course of its stream, and it will be necessary in the latter case to give vent thereto, by puncturing that membrane; since the danger arising from pent up matter, is of much greater moment than from either of those operations.

The following case is here given as a proof, that blood may lodge in quantity on the brain, that its pressure is not always productive of inflammation, suppuration, or sanies, and further, that the mental faculties may still continue in force.

A person of a full sanguineous habit was seized with an apoplectic fit, from which he soon recovered. Five years after he was again attacked, and died suddenly. The head was opened, and much fresh blood was discovered in the left lobe of the brain; between its convolutions were found several lumps of concremented blood, one pretty large, which probably proceeded from a ruptured vessel in the former attack. This person had been many years subject  
to



to severe head-aches, which after the first fit were accompanied with dizziness; for relief of which he now and then lost some blood from the arm. Between the two attacks he transacted much business, and had frequent occasion to travel on horseback.

These strictures are not meant to deny the frequent necessity of the operation, but to caution the young surgeon from yielding too implicitly to the practice of it. In blows of the head, which have deprived the sufferers of their senses at the time when they were received, succeeded by pain and a languid dull inactivity, it is a maxim with some practitioners to lay the bone bare; and although upon strict search, neither fracture nor depression can be discovered, to proceed directly to perforation; yet though they plead great authorities, such conduct cannot be generally vindicated. Why should they so readily fly to an operation which might most probably be dispensed with, by the application of less hazardous means? Proofs are not wanting of recovery from much more violent injuries without it.

It is necessary to remark, that some places on the skull are not so eligible to operate upon as others. For instance, along the sagittal suture down to the nose, on account of the sinusses and the spine of the os frontis. The bony sinusses near the orbits of the eye, and the greatest part of the occipital bone are generally excepted; yet in compound fractures of the skull, where the bone is much shattered or drove in, it is the business of the surgeon, let the hurt be  
where



where it will, to relieve the injured membrane, and carefully to remove such a portion of the bone as may afford vent to consequent discharges.

Some practitioners are extremely fond of removing every piece of bone which is broken, but it is seldom necessary to take away more than the depressed part. Authors in general advise a strict search after the utmost extent of the fracture in every direction, and perforations in proportion thereto; but let it diverge ever so much, the central parts are where the skill of the operator is wanted, and there, chiefly to remove the depressed pieces; which may sometimes require two or three perforations to be made, especially when the fractured part is irregular.

One general maxim ought to be observed, in this and every other disorder where cavities are concerned, to expose membranous parts naturally concealed as little as possible. And this is not only adviseable to prevent inflammation, but in weak and vitiated habits to obviate a continued efflux of matter, which in spite of every effort to the contrary, too frequently demolishes the patient.

A material distinction is to be observed both in the symptoms and treatment of injuries arising from concussion, and those from internal contusion, or as it is more generally understood, compression from extravasation. The symptoms attending concussion which seems to be a more immediate affection of the brain and nervous system, are a round, soft, and slow pulse; a general debility and inertness over the whole



whole frame, a deep sleep, and gentle breathing, together with little or no contraction of the pupil upon the eyes, when opened against a strong light.

The marks of internal contusion, which more particularly affects the membranes of the brain, and from which inflammation is most likely to take place, are, a full hard pulse and quicker than common, rather an oppressed respiration, a restlessness and tossing about the limbs when roused, and a quick contraction of the pupils.

In the former case, bleeding seldom requires to be repeated, a moderate dose of Dover's powder or essence of antimony and thebaic tincture may be now and then administered, an enema or gentle laxative occasionally, afterwards wine and bark. Whereas the inflammatory kind requires repeated bleedings and evacuants, according to the constitution, together with diaphoretics and antiphlogistics. A rising pulse, and firm crasis of blood, are always the best indications for blood-letting.

The operation of *Trepanning* may be performed as follows: the head shaved, and the patient being seated upright or placed on a bed, or table, and properly secured by assistants, so that the head may be kept in a steady posture opposite to the light; make a semi-oval incision according to the nature and extent of the fracture or contusion of the integuments, with a round-edged knife, through the scalp, and dissect it off: then remove as much of the tendinous expansion and pericranium as is necessary, till the bone is bare.

The



The bone being sufficiently exposed, and the hæmorrhage suppressed, fix the perforator to the handle, and make a slight entrance at such a distance from the fracture as will admit of the saw, taking in a portion of the shattered and depressed bone: then taking off that instrument, fix the crown saw with its pin, in the hole made for its reception, and twist it circularly till the teeth are fairly entered; after which withdraw the pin, and work the crown saw briskly till it reaches the diploe, now and then cleansing the saw and groove in the bone with a toothpick and brush. In some parts however there is no diploe to be found, in which case it is necessary to proceed with the greater caution, frequently founding the depth and equality of the groove with a toothpick, and bearing the saw hardest upon that part of the bony circle which looks whitest, and more gently where it has a blueish cast. When the latter appears, move the saw with great caution, for fear of wounding the dura mater, till the piece of bone grows loose, then endeavour to remove it by a circular twist with the forceps, and smooth the bony edge with the lenticular, removing such little pieces of bone as lodge in or upon the dura mater.

If that membrane appears dense and discoloured, as if blood and matter were confined beneath it, an incision must be cautiously and gradually made through its coats with the back edge of a lancet, so as to form an opening sufficient to give vent to the contents;



contents; taking care to avoid the arterial branches, whose course is sometimes to be discovered from their pulsation.

In the performance of this operation some recommend the trephine, others the trepan; which are no more than different names to the handle of the saw; the shape of the former is like that of a gimblet, and is by far the most handy; the latter is formed like that of a joiner's whimble, and admits of greater expedition, but is not so manageable at the last.

After the use of the trephine, the most proper dressings are dry soft lint lightly applied, or in case the parts are dry, thinly spread with white cerate, to be repeated according to the discharge; afterwards as an incised wound. Greasy and spirituous applications are in general discarded. A solution of myrrh in barley-water, softened with honey of roses, makes a very good antiseptic dressing.

Sometimes a fungus rises from the dura mater, which if not restrained in due time by lunar caustic, with a proper degree of compression, is apt to increase considerably, and may require to be removed with the knife; but this is seldom necessary to be done, except from bad management and a vitiated habit.

A narrative has been lately published by Messrs. Minors and Jones, proving the possibility, and, perhaps, usefulness in certain cases, of preserving the scalp, and healing by the first intention. This operation is directed to be done as free from angular points as possible, after the following manner:

A simple



A simple incision is to be made through the principal part of the wound four or five inches in length, agreeable to the direction of the fracture, down to the pericranium; and the scalp is to be dissected up on each side, so as to make room for the application of the trephine. In a fracture of large extent, a farther dilatation is to be made by a transverse section of one of the lips of the incised wound. After the bone has been carefully removed, and the dura matter highly spunged, the inner surfaces of the flaps of the scalp, the pericranium, and the dura mater, are to be moistened, by touching them lightly with a sponge dipped in warm water: after which the whole of the scalp is to be layed over the denuded parts, bringing the edges as close as possible, and retaining them so by long and narrow slips of plaister, a soft pledgit of fine tow spread thin with yellow cerate, a soft thin compress, and a six-tailed bandage. Vide History of Trepanning, by R. Minors.

## Disorders *of the* Eyes.

### OPHTHALMIA.

DESCRIPTION. Inflammation of the eyes generally begins with redness in the tunica albuginea or conjunctiva, commonly called the white of the



the eye ; the eye-lids swell at their edges, the eye is stiff, hot, and dry, and is troubled with an uneasy pricking sensation, as if dirt was lodged between that part and the lid, and the access of air and light creates great pain ; sometimes the membranous appearance of the conjunctiva is entirely lost, and the complaint reaches the sclerotica and internal membranes.

The inflammation is attended with more or less pain, and is of greater or less moment, according to the depth of its seat. When light is intolerable, and acute pains dart through the head and temples, the internal coats and retina are most probably affected. The dryness of the eye is generally succeeded by a profuse flow of hot, thin, acrid fluid, which frequently excoriates the neighbouring parts, and turns purulent. When the eyelids become much affected, a discharge of viscid gummy humour is apt to close the lids, particularly towards the morning. The inflammation and pain increasing, the vessels of the external coats are extremely turgid, fever and its train of symptoms occur, and suppuration may take place, though it very rarely does, except from violent injuries. A thickness and opacity of the membranes and humours are the more frequent consequences, particularly if the constitution is in a vitiated state. This disease is either primary or symptomatic.

CAUSES. Ophthalmia may proceed from blows, wounds, extraneous bodies fixed in the coats of, or lodged between the eye and eyelid ; from too great light,



light, heat, or cold. Cold piercing winds, lucubration, habitual drunkenness, rheumatic, venereal, and scrophulous affection; small-pox and measles; the two last complaints more immediately affect the glands of the eyelids.

CURE. In local affection, bleeding is generally prescribed and repeated according to the degree of inflammation, pain, or concomitant fever. Blood is recommended to be drawn from the turgid vessels of the eye; such practice may be useful, but it is seldom complied with. Leeches applied to the temples at a moderate distance from the exterior angle of the eye, are extremely beneficial. When the pain is acute and formidable, opening the temporal artery, or external jugular, seldom fails to relieve: otherwise, common blood-letting, agreeable to the nature of the constitution and exigency of the case, may answer every necessary purpose.

Blisters behind the ears and between the shoulders, are proper; but are said to be most efficacious when applied to the temples, upon the part where the leeches have just performed their office, immediately after the bleeding has ceased.

Cooling gentle laxatives, together with antiphlogistic remedies and regimen, are highly necessary. In obstinate cases, two or three grains of calomel, with the same quantity of camphor, and about a third of a grain of opium, for two or three succeeding nights, followed by a gentle laxative, and occasionally repeated, have proved serviceable. Perpetual



tual blisters, setons, issues, and caustics behind the ears are also useful.

Various external applications have been used in this complaint, but none so much lately as Goulard's saturnine water cold; both in its liquid form, and braided into a poultice with the crumbs of white bread. The stimulus of the hot acrid humours is often to be allayed by the pulp of a rotten apple. When there appears to be great tension and dryness on the part, washing it with a small infusion of camomile flowers and milk just warm, or a slight decoction of poppy heads, will have a good effect; but the thebaic tincture of the London Dispensatory made with mountain wine, as particularly recommended in a late ingenious publication by Messrs. Wathen and Ware, is generally allowed to be the best topical remedy. The method of using it is, by dropping two or three drops into the eye once or twice a day. It occasions a sharp pain at first and a great flow of tears; both which gradually abate, and the eye is left in a much easier state than before the application. Sometimes it is necessary to defer its use till the excessive irritability of the parts has been lessened, by proper evacuants, and cold applications.

When the eyelids are gummy, and incline to adhere, it is not improbable that the edges are slightly ulcerated; to prevent adhesion thereof, it will be necessary to insinuate a small portion of bland unguent, or of the unguentum citrinum of the Edinburgh Dispensatory



Dispensatory, between them, at bed time, applying a soft white cerate spread upon rag over all. Wash them well the next morning with milk and water and repeat the unguent if requisite. This complaint is sometimes a cause of ophthalmia. Bates's camphorated water properly diluted, is an excellent guard against relapse both to the eye and eyelid, after being relieved from inflammation; and is much recommended by these gentlemen. It is made as follows :

Take of Roman vitriol and armenian bole, each one dram; camphor powdered with a little spirits of wine, half a dram: make into a powder. Throw a dram of this powder into a pint of water, whilst it is boiling; then move it from the fire, and set it by, for the fœces to subside.

A dram of this solution, mixed with two ounces of cold water, may be used to wash the parts with.

Every inflamed eye should be shaded from light, and defended from the effects of heat and cold; the best contrivance for which purpose is a paste-board hood, lined with green silk. In dangerous cases, particularly when the eye is wounded, and when the internal membranes are much affected, the patient must submit to be confined to a cool airy room, where no light enters. The practice of binding down the eyes with plaister, compress, and bandage, must ever be injurious.



Inflammation of the eye or eyelid, from a constitutional cause, is to be cured by medicines calculated for the removal of the original complaint, together with local treatment. When it proceeds from blows or wounds, the most necessary applications are, the saturnine poultice and water, Goulard's cerate, and the like. Bleeding, laxatives, and opiates, are also extremely necessary.

If dust, grit, or any extraneous body, adhere, or is fixed to any part of the eye, so strongly as not to yield to the stream from a syringe, or the use of an eye-cup, it will be proper to separate it, if possible, with a small blunt-pointed director, or with the point of a lancet, and not to wait for its exit from suppuration round the part.

*Speck on the Cornea.* This complaint is also called Albugo, Leucoma, and Nebula. It is an abscess or thickness in the different lamellæ of that membrane, and is chiefly the effect of inflammation: it derives its consequence from its size, depth, and situation with respect to vision. The pearly speck is projecting, and generally proceeds from some kind of sore on the cornea; it frequently follows the small-pox. This kind requires to be opened with the lancet or couching-needle, in order to discharge the matter, and prevent its eroding the whole substance of that tunic. In this species, the projecting part should be touched with escharotics, and medicines of the astringent kind, as prescribed in the preceding complaint; the aqua sapphirina,



sapphirina, a weak solution of white vitriol and verdigrease, as also of corrosive sublimate, are strongly recommended.

The cure of the dry speck, or thickness of the cornea, is attempted by various means: levigated glass, sugar with a small portion of calomel, tutty and scuttle-shell finely levigated, blown through a quill, mixed with the simple ointment, or made up in form of a lotion; a mild mercurial course by friction, the bark, calomel and cicuta, &c. particularly if it arises from a venereal or scrophulous diathesis.

The above remedies have often removed specks, but do not always prove effectual, especially if the disorder is deep-seated in the cornea. The projecting speck may be removed with a thin double-edged scalpel; which operation requires the nicest care, and a steady hand. A late celebrated itinerant was known to fail in this operation, by attempting to remove the whole of the deep-seated speck: the edge of the knife was passed too deep, and a circular hole was made in the cornea; through this the aqueous humour was immediately discharged, and unfortunately for the patient, great inflammation ensued, and the whole eye suppurated.

*Ulcers and Excrescences on the Eye.* They are produced from various causes, and are of more or less consequence, according to the part ulcerated, and the general state of the habit. External injuries, inflammation and maturation, venereal taint,



scrophula, and small-pox, are the general causes. The best local treatment, after inflammation is removed, is, touching them with camphorated vi-  
triotic water, diluted in proportion to the parti-  
cular sensibility of the part, with the assistance of  
a camel-hair brush; a weak solution of corrosive  
sublimate in water, in the proportion of one grain  
to three or four ounces, may be also frequently ap-  
plied after the same manner, particularly if the  
edges rise.

Should fungus grow, lunar caustic may be cau-  
tiously and repeatedly applied; taking care to keep  
the eye open with a speculum, and washing it off  
with a small hair-brush dipped in warm milk, be-  
fore the eyelids are suffered to close. It may be  
also removed with the scalpel. The best method  
of extirpating large excrescences, particularly when  
the base is broad, is, to pass a ligature through the  
middle of it, with which the tumour may be raised  
from the eye, and fixed more steady, and carefully  
to dissect it off with the common scalpel. Pendu-  
lous excrescences and tumours have been success-  
fully extirpated by ligature.

A slight solution of gum myrrh in lime-water  
has been of great service in drying up and restrain-  
ing loose fungus in other parts; perhaps it would  
do in this case, if properly adapted to the sensibi-  
lity of the part by dilution. A continued use of  
the lunar caustic, after the manner already described,  
has proved effectual in destroying a large fungus  
situated



situated near the internal canthus. The ulcers are abundantly most obstinate in venereal and scrophulous habits; without correcting which, nothing can answer. Vide Ulcers.

*Encanthis* and *Membranous Excrecence*. This is a flattish expansion, which shoots out from the external canthus of the eye, and spreads like a thick web over great part of the eye-ball: it is of a reddish or palish yellow colour; when inorganic, it resembles a finger-nail, and seldom proceeds further than the edge of the cornea: the latter does not arise from inflammation, is not therefore so injurious in its nature, or so likely to spread over the point of vision, as that which does; and requires little to be done, except washing it with astringent lotions. This complaint does not always take its rise from the same part. In slight cases, arising from inflammation, the best applications, after that symptom is removed, are of the vitriolic, aluminous, and saturnine kind, made agreeable to the irritability of the diseased parts.

Escharotics, in cases of this kind, are both dangerous and ineffectual. In those that will not yield to milder treatment, repeated scarifications through the whole thickness of the excrecence have proved efficacious; after which, saturnine solutions and Goulard's cerate should be frequently applied: every necessary precaution should be taken to prevent inflammation and adhesion. Should vision be irrecoverably lost, and the tumour be large, and likely



to degenerate into cancer, extirpation of the eye, will be necessary.

*Abscess within the Eye.* Internal inflammation will sometimes produce a purulent kind of matter, which diffuses itself throughout the cavity of the eye, and mixes with the aqueous humour; the eyeball is enlarged, and vision is totally obstructed; severe pain and feverish symptoms attend, in consequence of the distension and inflamed state of the part, and the eye is likely to burst of itself, if not timely opened.

The abscess generally arises from some external injury, or violent inflammation, and is, like other sores, to be opened in the most prominent part, observing gently to press out the purulent contents. When the complaint is general, and the iris is particularly diseased, and forced against the cornea, it is termed *Staphyloma*, from the grape-like appearance it makes on the opening or bursting of the eye; in this, as in all other cases of abscess, the opening should be made sufficient to give vent to the discharge. It is sometimes necessary to extirpate the diseased part of the eye.

When the collection of purulent matter lies in the anterior chamber of the eye, and distends the cornea only, it is called *Hypopyon*; this very often begins with excruciating pains in the eyes, and requires to be discharged in due time; for which purpose, a moderate opening is to be made at the inferior part of the cornea, a line or two from the tunica conjunctiva.

After



After the matter is evacuated, apply compresses wetted with Goulard's saturnine water and cerate over all; use also antiphlogistic means of every kind.

*Dropsy or Water in the Eye.* The eye is also liable to be distended, or to burst, from an extraordinary quantity of watery humour collected therein. This disease begins with a sense of fulness in the part, and the eye imperceptibly grows bigger; vision at the same time gradually declines, and is in time entirely lost; the cornea protrudes, and if not timely opened, the eye will burst. A degree of contraction in the pupil, and a gradual decline of sight, are the criteria of this disease.

Before the globe of the eye-ball is distended to such a bigness as must destroy the power of vision, tapping the part may be a means of recovery. It is to be done by passing the end of a sharp-pointed round instrument, not thicker than the blunt end of a common probe, and fixed to a long handle, into the most depending part of the eye-ball, just behind the iris, after the manner practised in the operation of couching. By not deferring the operation too long, the shape and look of the eye will at least be better preserved; after it, bracing remedies ought to be administered both internally and externally.

*Blood within the Eye.* Blood, as well as matter and water, is known sometimes to distend the cavity of the eye, to mix with the aqueous humour,  
and



and thereby intercept vision. This complaint is most frequently occasioned by external injuries. If the extraneous fluid cannot be absorbed, and the aqueous humour is rendered opaque by it, a small opening must be made, after the manner of the operation of extracting the cataract, through both sides of the most depending part of the cornea, completing the division, and carefully avoiding the iris.

The aqueous humour makes its exit with the blood, by which means the eye will appear much lessened, but the natural fluid will be renewed very soon after the union of the cornea.

*Displaced Eye-ball.* The globe of the eye may be driven from the socket by external violence, and thrust forwards, upwards, downwards, and sideways, by tumours or abscesses formed behind, beneath, above, or on either side of it.

The optic nerve is very likely to receive injury from either cause, by being overstretched or compressed. Two extraordinary cases prove, that vision is not always necessarily destroyed: the one instance was a dislocation by violence, the other by a large schirrous tumour. Vide Cases in Surgery, by Mr. Warner, and Mr. White of Manchester.

If caused by violence, any extraneous body should be removed as soon as possible: when abscess is the cause, the cyst should be sufficiently laid open; if from indurated tumour or excrescence, extirpation of the diseased part will be necessary. When the  
protrusion



protrusion is great, the eye must be carefully replaced; if otherwise, it will easily return to its center.

In all such cases, the removal of the cause is of the utmost importance to the life of the patient: tumours of a considerable size may be removed with no great difficulty, and generally with perfect safety as to hæmorrhage. The operation appears formidable, and excites horror; but many a life is lost for want of proper resolution. Every precaution should be taken to prevent inflammation.

*Schirrous or Cancerous Eye-ball.* When the diseases of the eye itself degenerates into a schirrus or cancer, extirpation becomes absolutely necessary; and the earlier in the disease it is performed, the more likely it is to succeed. In doing which, the following method is to be pursued:

The patient, assistant, and surgeon being properly prepared and stationed, let the eye-lids be separated as much as possible. If the eye is prominent, the surgeon may take hold of it with his fingers; otherwise, a broad ligature is recommended to be passed rather beyond the center, through the body of the tumour; with which it may be conveniently held forth by the surgeon, who is at the same time, with a common scalpel, to dissect out every part of the ball from the socket. The hæmorrhage is generally to be stopped with lint and flour; but, if necessary, may readily be checked by slightly touching the mouth of the vessel with the  
actual



actual cautery. The whole of the orbit is to be filled with lint, and a bandage may be made, rather tight, if necessary, over all. Light and easy dressings are afterwards to be applied, and care ought to be taken to prevent the growth of fungus, check inflammation, and relieve pain.

*Artificial Eyes.* Great ingenuity has been displayed in forming and fixing these substitutes. Those which are sold by Mr. Watson, Coverley's-fields, Mile-End, are fabricated upon an improved plan, and may be worn with the greatest ease and safety. Such instruments are most likely to answer their intent, where a part of the eye is left.

### C A T A R A C T.

DESCRIPTION. Is a disease absolutely confined to the crystalline humour, attended with discolouration, and more or less opacity. Cataracts have been variously distinguished, and many false ideas have been formed of their consistence from their colour. The grey, bluish, or wheyish coloured, were formerly considered as loose and soft; the white was concluded upon to be hard, &c. of which the contrary has been often proved. But at this time of day, colour is not so much looked upon as a proof of their consistence. Every cataract also that, from the above mistaken principle, was supposed to be soft, was considered as unripe; and the contrary. The most probable conjecture concerning



ing their consistence, may be formed from the following observations :

When the pupil remains in a state of dilatation, notwithstanding it is exposed to a strong light, the cataract most commonly proves soft ; on the contrary, when it is capable of perfect contraction, the diseased part is generally more firm and resisting.

It is worthy of remark, that the external part of the crystalline lens, in its natural state, is softer than its internal ; and some of the most experienced persons in this matter are of opinion, that it commonly grows softer in the diseased state. They also notice a mixed cataract, which is found to be softer externally, and firmer in the center than in the natural state ; and that sometimes the whole of the crystalline humour will be dissolved into an uniform fluid, of a jelly-like consistence.

The notions then respecting colour, consistence, and maturity, are too visionary to be regarded. Opacity is alike the consequence ; and success has proved, that as soon as the humour is entirely opaque, the operation may be properly undertaken in every state, except when the disease is attended with adhesion to the iris, or an affection of the retina.

It sometimes happens that the cataract adheres to the iris so firm, as to render it immovable. This may be distinguished by shutting the patient's eye, and rubbing the eye-lids ; and upon suddenly opening it, the pupil will be seen to contract, provided there is no adhesion. A few cases of this sort, wherein



wherein the adhesion was slight, have been operated upon with success. Should the retina be affected, blindness must remain, after the cataract is depressed. The state of that membrane may very readily be ascertained, from a total insensibility of light. The black cataract, as it is called, and described by some authors, wherein no disease is said to appear, and the pupil looks black, as in the natural state of the eye, is most probably the amaurosis, or gutta serena. Cataracts may be reasonably divided into three kinds, the Soft, the Mixed, and the Firm.

CAUSES. The cataract takes its rise from inflammatory disorders of the head and eyes, occasioned by external injury, or internal defluxion. Scrophulous habits are more particularly subject to this complaint.

CURE. Previous to an account of the operation, it may not be amiss to remark, that the soft cataract, if the capsula is freely divided, will mix with the aqueous humour, and be gradually dissolved; that the firmer parts of the mixed kind, when they have baffled every attempt to depress, may also be left to dissolve; and that in endeavouring to depress the firmer kind of cataract, even where it has passed through the pupil behind the cornea, and no particular injury was done to the parts within, the crystalline has gradually dissolved and disappeared, to the recovery of vision.

Provided



Provided the cataract be not complicated with any other affection of the eye, it will be proper to depress or extract it. The method of depressing, or *Couching*, as it is commonly called, is as follows :

Having seated the patient in a proper light, upon a stool of convenient height, let a pillow be placed between his back and the breast of an assistant, so that the patient's body may be bent rather forward, and the head be inclined on the breast of the assistant: after covering the other eye, let the upper lid be raised, and be kept so, by pressing it against the superior part of the orbit, whilst the operator depresses the inferior eyelid. This being done, the patient should be directed to incline the eye a little towards the nose; then strike the couching-needle, with the flat surface towards the iris, through the tunica conjunctiva, at a very little distance from the edge of the cornea, and in a line with the middle of the pupil, passing it cautiously forwards till it appears behind it: gently endeavour then to depress the cataract with the flat surface of it, carrying it with the point of the needle towards the outward and back part of the eye. Should the cataract rise again, move the needle carefully towards the under part of it, and gently try to raise it up, so as to dislodge it from its bed in the vitreous humour. If the cataract is mixed or firm, divide the capsula, and depress again and again; if uniformly fluid, make as free a laceration of the capsula as possible,



possible, turning the needle about within the body of the crystalline, and leave the parts to dissolve. If, upon dividing the capsula, the contents should spread, and mix with the aqueous humour, it will clear again in time, and the operation is as likely to prove successful as under any other circumstance.

Observe to withdraw the needle in the direction in which it was introduced. Most operators speak in favour of its insertion with the flat surface upwards and downwards, as wounding the coats in the direction of the fibres. If the operator is not sufficiently dextrous with his left hand, he will find it much more easy to couch the right eye with his right hand, by standing behind the patient, and supporting the head upon his breast or knee, than to enter the most convenient instrument between the cornea and the internal angle of the eye. The speculum is seldom used.

The proper applications to the eye, which should be kept closed, are, cooling repellents, such as compresses dipped in Goulard's saturnine water, his cerate, alum curd, and the like. Bleed immediately after the operation, and let the patient sit upright for some hours. He should also live abstemiously for several days, upon such food as requires but little chewing. The body must also be kept gently open, and opiates may be occasionally administered. Some persons are but little afflicted with inflammation and pain after this operation; others



others suffer severe head-aches; to remedy which, bleed in the temporal artery, and apply blisters. In case of an obstinate vomiting, give opiates.

The method of extracting the cataract is as follows:—The patient being placed and secured, the surgeon properly seated, and the eyelids held firm by him and his assistant, after the manner before directed, let the patient keep his eye as steady as possible, looking strait forward and a little upward; then plunge the point of a knife, contrived for the purpose, into the eye, near the edge of the cornea, and pass it carefully and steadily between that membrane and the iris, across the center of the pupil to the edge of the cornea on the other side, exactly opposite to where it entered; push the point about a quarter of an inch through that part of the cornea, after which move the knife gradually downwards, so that all the lower part of the cornea, between the points at which the knife entered and passed out, may be divided at equal distances from the iris; during the incision, and after the semilunar cut has been made, the pressure, whether by the fingers or speculum, must be moderated.

The incision being compleated, raise up the flap in the cornea with a blunt flat and crooked probe, and cautiously passing the point of a couching-needle, or small probe, through the pupil, make an opening in the tunic of the crystalline; after which, force out the cataract by equal and moderate pressure. Its removal will be much favoured by shad-

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ing



ing the light, so as to occasion a greater dilatation of the pupil.

Should the crystalline lodge in the anterior chamber of the eye, a small scoop is contrived for removing it; but that circumstance seldom happens, unless the opening in the cornea is too small for it to pass; the best instrument for enlarging which, if necessary, is a small pair of probe-pointed scissors.

The operation being finished, dress the eye as directed after couching. The patient should keep in a darkened room for several days after, and observe a low diet. Repeated bleedings may be necessary; and that operation is most effectual in cases of this nature, when performed in the jugular vein, or temporal artery.

Mr. Warner, in his Cases, describes a method of extracting the cataract with one instrument only.

Upon comparing the advantages and disadvantages of the two modes of operating, men of the greatest experience prefer couching. Extracting the cataract is liable to two incidents, which are not known to happen from couching; namely, a general suppuration, and a wasting of the eye. These circumstances considered, the preference is much in favour of depression.

The principal objections to depressing the cataract are, the likelihood of its rising again, the piercing through all the coats of the eye, and the danger of injuring the iris.

The



The first is an unlucky incident, which may in general be prevented by pressing the lens to the bottom of the eye, and carrying it towards the outward and back part of the eye, as it were burying it in the vitreous humour; besides, the operation may be repeated again and again. Mr. Warner mentions a remarkable instance of couching in the right eye of the same person four different times in the space of two months; and that the patient was capable of reading and writing, with the aid of a convex glass, within a fortnight after the fourth operation. It appears also, that the crystalline adhered a little to the back part of the iris; and that operating upon the other eye was totally unwarrantable, on account of a general adhesion.

The second objection is, that an obstinate inflammation and pain frequently succeed couching. Still it must be allowed, that though only one coat is pierced in the extraction of the lens, the consequences of that operation are of a much more dangerous tendency than those from depression were ever known to be, when the case was free from adhesion, or properly managed.

The third objection, viz. that the iris is likely to receive injury from the needle, is of little weight, as it may be always avoided by a skilful operator, except there happens to be a slight adhesion, as in the foregoing case; which being dexterously managed, succeeded to admiration. Quere, whether the iris is not likely to receive great injury in ex-



traction, when the lens is forced with difficulty through the pupil?

Though medicine is very little regarded in the cure of cataracts, still it is not unlikely that relief may be had at the beginning of this disease, when dimness of sight and dulness of the pupil are first observed. If those symptoms are attended with pain and inflammation, bleeding and antiphlogistics may be proper; if these complaints are not relieved by such means, and opacity increases, give small doses of calomel with the extract of hemlock, or the powdered leaf, or persevere in an alterative course of strong mercurial unguent by friction, together with the bark twice a day, if the habit is relaxed, and blisters to the temples, or seton in the neck.

*Contracted Pupil.* The iris or pupil is sometimes so closely contracted, as not to admit light enough for distinguishing objects. This complaint may arise from a violent opthalmia, adhesion to a cataract, or a paralysis of the strait fibres.

Mr. Cheselden speaks of dividing this part with success in the two former cases. He performed the operation as follows:—The eye being fixed open with the speculum oculi, he passed a single narrow-edged scalpel, with its blade held flat, and the edge of it from him, through the sclerotica, as in couching, between the ligamentum ciliare and the circumference of the iris, into the anterior chamber of the eye: he then divided the membrane, which, when



when there is no cataract, is said to fly open, and leave a large orifice. If there is a cataract behind, it will be proper to make the opening above it.

This operation has been seldom attempted since Mr. Cheselden's time, and its event is looked upon as very precarious. All possible care should be taken to prevent or check inflammatory symptoms.

### DISORDERS *of the* EYELIDS.

*Tumours* and *Tubercles* are often to be met with on the eyelids. The species of *Hordeolum* is most frequent. When this kind of tumour is hard, red, and fixed, and is of the inflammatory kind, it is called a *stye*, which generally breaks of itself, and disappears.

Various unnecessary distinctions are made of these, and most other complaints of the eye and eyelids. Most of these tumours are of the encysted kind: they are of different shape and size, and replete with humours of different consistence; they are hard or soft, vesicular or cedematous, round or oblong, with narrow or broad bases, moveable or fixed; and their causes are similar to those of other parts.

If they tend to inflame, suppurative medicines ought generally to be applied; and they will require to be opened. Should they incline to increase without inflammation, it will be proper to remove them, which may be done with the knife, or a ligature made of waxed thread, silk, or hair. Those



that have a broad basis, will require some care and address in dissecting.

If the cyst is thin, it will be better to let out the contents, and dissect away, with the assistance of the hook, as much of it as can be removed with safety, making the first incision parallel with the eyelids; if steatomatous or firm, it is most convenient to preserve the cyst whole. After the skin and cellular membrane which covered the tumour has been divided with the scalpel, it is advised by some to pass a waxed thread through the cyst, and for an assistant to keep drawing the tumour whilst the surgeon is dissecting; but in general, if the eyelid is held steady, the operator will be able to manage the hook with equal ease and advantage. The ligature is particularly calculated for those which have a narrow base.

If the tumour has been removed from within the eyelid, a bland lotion is all that can be applied; if externally, use the dry suture, or the interrupted one with a fine needle, and apply soft dry lint. When the contents are discharged, slight saturnine or vitriolic solutions are necessary, to prevent inflammation, and constrict the parts.

*Warts and Fleshy Excrescences* are also apt to grow on these parts; they frequently become large, and require to be extirpated and treated after the foregoing manner. Caustic applications were much used formerly, to remove these and other complaints of the eyelid; but at this time they are seldom  
thought



thought of. Abseiffion and ligature are the principal means used. Warts and farcomatous tumours on the eyelids, if not removed in due time, are very apt to prove cancerous.

*Inverted and Relaxed Eyelid.* Heister terms this complaint the *Trichiasis*. The cartilaginous edges of the eyelids will sometimes turn inwards, in which case the hairs become extremely offensive to the eye, and from a constant irritation occasion great pain and inflammation, so as in the end to endanger vision. Its causes are a derangement of the hairs, an irregular cicatrix from a burn, scald, wound, or ulceration, relaxation and irregular affection of the orbicular muscle, and relaxation of the skin. It mostly happens to the lower lid.

The following remedies are advised, agreeable to the nature of the causes. For the inverted hairs, removal by tweezers, and confining the new hairs to the outward part of the lid by means of strips of adhesive plaister, as soon as they are grown long enough.

If from contracted cicatrix, one or more incisions may be made, in order to set it free; the means also prescribed in the subsequent complaint may be in part necessary.

To relieve relaxation or irregular affections of the muscular parts, an incision may be made across the eyelid down to the orbicular muscle; then divide the contracted fibres; and if the subjacent muscle should be affected, it will be necessary to separate



the fibres of the orbicularis, in order to get at it, and treat it in like manner; after which a small cauterizing iron, made pretty warm, may be lightly passed over the denuded fibres, so as to give them a regular contraction.

When owing to a relaxation of the skin only, astringent solutions are proper; if they fail, a fold of the palpebra or lid may be removed with the scalpel, and the edges of the skin should be laid exactly together, and retained so by the adhesive strips, if practicable; otherwise the interrupted suture, with a small needle, may do best. This operation ought not to be attempted, except the complaint is become habitual, and hazardous to the eye.

*Everted Eyelid.* When the edges are turned outward, and retracted, so that the interior skin becomes prominent, the complaint is called *Ectropium*.—When the upper eyelid only is affected, it resembles the hare's eye, and is termed *Lagophthalmus*. Sometimes an inflammation of the eye, a sarcoma, or an encanthis, accompanies this disorder. It may arise from the same causes as the former, acting in opposite direction; and sometimes is the consequence of inflammation and tumour.

Little can be done for the relief of aged people, except the application of cooling restringent lotions. A proper instrument, contrived after the manner of temple spectacles, might be made to act as a support to the lid, with moderate pressure; and render the complaint less troublesome and unseemly.

When



When a tumour throws the eyelid outward, the cause, if practicable, should be removed. Supposing it to be occasioned by inflammation, use the means prescribed under that head; if the internal membrane is greatly thickened, and the protrusion is of long standing, scarifications are most likely to be of service.

The retraction is only to be remedied by making an incision parallel and near to the edge of the lid, in order to set free the strictured parts.

Contraction from an ill-formed cicatrix is more likely to produce this, than the preceding complaint; and should be treated after the following manner: Make one or more incisions in order to set it free; if such means should not prove effectual, make an incision of sufficient extent through the integuments, and by a careful dissection raise the contracted parts of the skin, observing to re-apply the same in its proper station, and to keep it so by slips of plaister.

### DISORDERS *of the* EARS.

The ears are subject to various disorders, most of which arise from inflammation and obstruction. Inflammation of these parts may originate from the general causes already enumerated, and produce their consequent effects, such as tumours, abscesses, &c. Obstruction comprehends the imperforated meatus, tumefaction, and dryness of the glandular membrane,



membrane, collected wax and fordes, extraneous bodies, fungous and fleshy excrescences.

*Inflammation and Pain.* These complaints require the same treatment which is ordered for other membranous or nervous parts. Venæsection and antiphlogistic remedies, sedatives, and saturnine or emollient cataplasms, according to the particular stage of the disorder.

*Imposthume in the Ear.* When an abscess has formed in the meatus, it is generally choaked up with matter, which not only obstructs the hearing, but may, from its lodgment and acrid nature, produce an obstinate ulceration; on which account it will be ever proper occasionally to syringe the ear with a small quantity of the following detergent solution:

Take of thin barley-water half a pint, in which dissolve one dram of the best gum myrrh, then add one ounce and a half of the honey of roses.

It may be sometimes necessary to administer the bark in moderate degree, and now and then a gentle purge.

*Imperforated Meatus.* This natural opening, as well as most others in the human frame, is liable to be shut up from the birth, by a membranous covering or adhesion, immediately at its entrance, or more remote; it is therefore more or less difficult to be recovered. When not so deep as to endanger the tympanum, an aperture may be made with a narrow-



narrow-bladed scalpel or lancet, which is to be kept open by dossils of lint, or soft tents of proper length and thickness.

*Tumefaction and Dryness.* The glandular membrane which secretes the wax is subject to grow turgid and dry. This complaint may proceed from an acrid state of the juices, or a thickness thereof after inflammation, and is generally a great impediment to hearing. Scrophulous and venereal habits are most liable thereto. The best method of relieving this complaint will be, to stimulate the part to secretion once or twice a day, with four or five drops of the following medicines:

Take of liquid opodeldock and oil of almonds each equal quantities. Or,

Take of pure oil of turpentine one scruple, oil of almonds or pure olive oil three drams.

The steam of warm water, or of a mixture made with four ounces of the pectoral decoction and two ounces of Mindererus's spirit, conveyed into the passage of the ear, especially when inclining to heat and inflammation, may have the desired effect.

Sometimes a purulent discharge issues from the ear, arising from an increased secretion; this should be frequently washed away at first with the detergent injection, and afterwards may be restrained by one made gently restraining, the bark, &c. The habit and age are particularly to be attended to.

*Extraneous Bodies.* Indurated or concreted wax, peas, pebbles, insects, &c. may sometimes be passed  
into



into the ear. Wax, in slight cases, generally gives way to a few drops of oil of almonds distilled into the ear at bed time, stopping the opening with a piece of black wool, which, on account of its springiness, is not so apt to insinuate itself deep into the passage as either lint or cotton. When more difficult to remove, repeated injections of warm water, which is the most approved solvent, will seldom fail; after which, the oil and wool may be applied.

Warm oil is deleterious to most insects; a few drops then commonly answer the purpose of destroying such as have entered the ear, and they may be washed out with the syringe.

Peas, or such bodies as are apt to swell, can seldom be removed without dividing them into pieces, which may be sometimes effected with small scissors and pliers.

Hard bodies are sometimes to be loosened with the probe, and extracted with small forceps; but when firmly lodged in the bony part of the meatus, near to the tympanum or drum of the ear, they have been the occasion of vehement pain and dangerous symptoms, and are not likely to be extracted by the passage; such are to be sought for, by making an incision in the posterior and superior part of the ear.

Fungus and excrescence may be removed, as in cases of the like kind, by the knife, ligature, or caustic properly guarded, and introduced through a canula.

Instruments,



Instruments, called trumpets, are ingeniously contrived for the benefit of hearing, and are particularly useful in collecting and modulating the sounds, where deafness is the consequence of some defect in the interior part of the ear, or auditory nerve. Internal deafness is said to be relieved by injecting the eustachian tube.

## Disorders *of the* Nose,

### POLYPUS.

DESCRIPTION. The polypus of the nose is a disease of the pituitary membrane, which lines the internal nostrils, and parts adjacent: it has various origins and attachments, and is of different forms and sizes; obstructing the voice, respiration, and deglutition, and is extremely difficult to eradicate. Sometimes it makes its first appearance high up in the nostril, and gradually elongates till it reaches beyond the wings of the nose, stopping up one or both the passages, and sometimes appearing in the fauces behind the uvula; at other times it remains concealed. Two, three, or more, which were perfectly distinct from each other, have been so compressed, that as soon as one has been removed, another has made its appearance.

They often rise from different parts of the nose, even from the os ethmoides and adjacent sinusses.

It



It is a maxim with those who are not sufficiently acquainted with the different kinds of polypi, to aim at extraction in almost every case; whereas persons of experience are sensible, that in several kinds, the operation will prove neither successful nor safe. The surgeon will be able to judge of the impropriety and danger of using the forceps in this disease, from the following circumstances:

The malign or worst kind of polypus, comes on with great pain in the forehead and upper part of the nose; is extremely red, or of a dark purple colour; is painful to the touch, incompressibly hard, and when pressed occasions pain of the eye or forehead, discharges blood and an offensive ichorous sanies, has a dark livid cancerous appearance, and adheres so much to the membrane covering the inside of the nose, that it will not admit a probe to be passed round the lower part of the nostril.

On the other hand, the benign, or milder kind, is pale, greyish, or light brown, springs from a kind of pedicle, is seldom painful, is detached from the sides of the nose for some height, is not always of the same size, easily yields to pressure, when pressed is not painful, and may be extracted without much hæmorrhage or hazard.

CAUSES. They arise from internal latent causes, and from external injuries; too profuse hæmorrhages, catarrhs, or defluxions: they are sometimes attended with caries of the bones of the nose, from a venereal cause, which is truly a deplorable case.

CURE.



**CURE.** Those of the malign kind are to be treated with palliative remedies, and alterative medicines, suitable to the nature of the habit.

The milder kind may in general be extirpated with success; the method of doing which is, by a pair of forceps with an opening at the end of each blade, the inside of which is flattened and roughed like a file; this instrument is to be introduced about an inch and a half up the nostril, or more, if practicable, taking sure hold of the tumour with the forceps, then twisting them from one side to the other, and gently drawing them down at the same time. Should the polypus break, the attempt must be renewed, unless hæmorrhage prevents; if so, defer persevering till a better opportunity. Sometimes a profuse hæmorrhage immediately follows the separation, but the vessels soon retract; otherwise, it may be stopped by dipping doffils of lint in some styptic tincture and powder, and passing the same up to the seat of the vessel. If necessary, a small cautery, like a thin knitting needle, may be passed through a fine tube to the mouths of the bleeding vessels, when high seated, and difficult to stop.

Caustic and cautery have been formerly recommended, in order to destroy the fungous and broad-based polypus; but the attempt seems in the present times to be entirely laid aside. In some cases, it surely would be better to reassume these powerful applications, than suffer the complaint to get the upper hand without some check. The lunar caustic



is more manageable than any other; and it is well known, that sarcomatous tumours have been cured in the eye, and on other parts of the body, by gentle perseverance with that remedy, where the use of the knife could not be admitted.

### FISTULA LACHRYMALIS.

**DESCRIPTION.** The seat of this disorder is in the lachrymal sac and nasal duct. It varies in its circumstances, according to the degree of obstruction in the duct, the state of the sac or subjacent bone, and the general habit.

When the sac is free from disease, and the nasal duct is open, the natural mucus is limpid, small in quantity, and passes insensibly into the nose, together with the fluid secreted from the lachrymal gland, which passes through the puncta lachrymalia into the sac: but whenever the passage through the nasal duct is impeded, the mucus lodges in the sac, increases in quantity, changes its colour and consistence, and is discharged by the puncta lachrymalia. This is the general source of the disease; and except in bad habits, it scarce ever originates from, or proceeds to an abscess or ulcer.

There are two states of this complaint, the imperfect, and the perfect. The first is a distention of the sac and return of the mucus through the puncta, as already described; the latter, or perfect state, is when in the course of the disease, from inflammation

or



or irritation of the secreting gland and membrane of the sac, or a general affection of the habit; the discharge is of a purulent colour, and from its acrid state produces inflammation in the cellular membrane and the skin covering the tumour; which sometimes spreads to the eyelids, down the cheek, and the side of the nose.

When the diseased mucus can no longer find a passage through the puncta; the tumour is more and more distended, repeated inflammation renders the parts covering the sac sloughy, and the discharge makes its way through a small or large aperture in the skin, according as the teguments are more or less diseased.

This state is sometimes attended with a caries in the subjacent bones; but such a case very rarely happens, except in venereal or strumous habits; and in the former, it is generally the consequence of the ethmoid bone being in a diseased state, therefore depends upon the cure of the original complaint. To explain the nature of this disease with the greatest precision, Mr. Pott has divided it into four general states.

The first is, a simple dilatation of the sac, and obstruction of the duct, which upon pressure discharges a clear or cloudy mucus, the skin covering the sac being entire, and void of inflammation.

The second state is, when the tumour is grown rather larger, the skin is inflamed, but entire, and

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the



the discharge through the puncta is of a purulent colour.

The third state, is, when the skin over the tumour becomes sloughy, and bursts, and the mucus which used to be discharged through the puncta, makes its way through the opening in the skin, the nasal duct being thickened only.

The fourth state is, when the passage into the nose is totally lost, and the inside of the sac is either ulcerated, or choaked up with fungus, and the subjacent bone is sometimes carious.

CAUSES. This disorder generally originates in a simple obstruction, or an inflammatory affection of the nasal duct. The perfect state principally happens in cachectic, strumous, and venereal habits.

CURE. The Antients supposed this disease to be always attended with callosity, and most frequently with caries; they therefore thought the cure could not be complete, without removing the callosity, or laying the bone bare, which was done by caustic and cautery; and sometimes the trepan was used instead of the cautery. Not knowing the true cause and seat of the disease, all they had in view was, to destroy the callosity, and forward exfoliation; and when by these means an opening was made into the nose, a cure was sometimes accidentally performed. The present method of cure is much to be preferred, and is perhaps as seldom known to fail, as the former was to succeed.

The



The principal intentions of the modern mode of cure are, to open and preserve the natural passage for the exit of the mucus and lachrymal fluid, or to form an artificial one in its room.

In the first state, the endeavour is, to recover the parts and passage without making an incision. The different attempts for this purpose are, introducing a small probe through the superior punctum, sac, and duct, which is certainly practicable; but from the pain it gives, and the inflammation it occasions, can be but of little use; constant compression, which, whether by bandage or the screw instrument, can at best only prevent an accumulation from the passage through the puncta, and does not in the least contribute to remove the obstruction in the duct; or the syringe, which, if judiciously used in the recent state, whilst the mucus is perfectly clear, may prove serviceable; at least, the trial can do no harm: yet by the frequent use of a restraining collyrium, and avoiding things which tend to irritate and stimulate the membrane of the nostrils and the lachrymal secretion, the disease in its recent state may be kept under for many years, perhaps during a person's whole life.

In the second state, when the adjacent parts become greatly swelled and inflamed, and the skin is likely to burst, it will be right to make an incision into the upper part of the sac, observing to keep the knife at a proper distance from the juncture of the eyelids, and beginning the incision just above



a line drawn even from that part towards the nose, and continuing it strait downwards.

After the incision is made, the sac must be kept moderately distended with dry lint, or prepared sponge, in order to learn the exact state of the inside of the sac and nasal duct.

It sometimes happens, if the sac is not diseased, and the obstruction in the duct is slight, that, after a free discharge for some days, and the inflammation from the operation is gone off, a superficial dressing and moderate pressure will heal the sore, and the cure will be complete. Indeed it is not improbable that the treatment of this disorder after the opening is made, by cramming it with lint, applying escharotics, and making too great compression, too often prevents the good effects of such means. In such a state of the disease, it is always worth while to give this method a fair trial.

If it should not succeed, or the third state should occur, in which there is not the least probability of its being effectual, an attempt should be made to render the duct pervious, by passing a probe, a piece of catgut, or bougie, as far as it will easily go, and occasionally repeating it, until it is pressed through the passage that leads from the sac into the nostril. Previous to this attempt, the upper part of the sac should be dilated with a bit of prepared sponge, in order to get more easily to the duct.

The passage once obtained, let it be diligently kept open for a length of time with a piece of catgut,



gut, a small bougie, or a leaden probe; now and then injecting down towards the nose a little of the detergent solution, or lime-water softened with honey of roses. When the opening is sufficiently established, the fore may be suffered to contract, so as to leave room only for the introduction of whatever is made choice of for the purpose of keeping it so; and when the passage has been long enough established to preserve itself, the tent may be withdrawn, and a superficial dressing applied over the external orifice. Whilst it is closing, a moderate compression on the sac will prevent a fresh accumulation of matter, and greatly assist the cure. Sometimes a fresh collection will form, notwithstanding the nasal duct has remained open; in some of which instances, the process has been successfully repeated. In all such cases, a great deal depends upon the constitution, the state of the diseased parts, and a regular mode of living.

As the eye must be kept confined whilst the dressings are applied to dilate the sac, it will be necessary to keep the skin as clean and cool as possible, by means of cooling lotions, Goulard's and the white cerate, &c, and to renew the dressings as often as the discharge makes it necessary.

The last state, or that in which the natural passage is so diseased as to be totally lost, or in which the bones are carious, is only to be remedied by piercing through the os unguis, which lies under the superior and posterior part of the sac, into the



nose; and to render the perforation capable of affording a passage to the lachrymal fluid and mucus, after the external opening is healed. The curved trochar is the most proper instrument for the purpose; and care should be taken to make the opening through that part which lies immediately behind the sac, and not to thrust the instrument too far up into the nose, for fear of injuring the os spongiosum; rather to turn the point of the trochar obliquely downward from the angle of the eye to the inside of the nose.

The discharge of blood from the nostril, and of air from the wound upon blowing the nose, will be sufficient discovery that the opening is made in a proper direction. A tent of lint is to be introduced into the breach of the bone, big enough to fill it, and long enough to pass into the cavity of the nose: this should be removed on the third or fourth day, and renewed daily until the fore is clean and granulated; and in order to prevent the flesh from closing the perforated part, the end of the tent may be moistened with small spirits of vitriol, or the part within the perforation should be touched once in two or three days with lunar caustic, well guarded at the end with a quill.

This may be done for some time; afterwards, instead of the lint tent, it will be proper to use a piece of bougie, catgut, or a leaden canula, of sufficient length and size to reach from the edge of the wound to the inside of the nose, and to suffer the



the fore to contract round it. The longer the patient wears this, the more perfect the opening; and when this kind of tent is withdrawn, the fore should be dressed superficially, and healed with moderate pressure.

### BLEEDING *at the* NOSE.

The most frequent cause of spontaneous hæmorrhage is an inflammatory diathesis, and it is mostly produced by an irregular stricture in the vascular system: it generally breaks forth from vessels that are least confined, such as those of the nostrils, lungs, rectum, uterus, vagina, &c. Persons whose viscera are weak or obstructed, are very subject to this kind of hæmorrhage; and it is sometimes critical, and originates from an acrid heated bile.

Bleeding at the nose is commonly preceded by quickness of pulse, beatings in the temporal arteries, heaviness in the head, flushings, and a tingling heat in the nostrils. In persons of a relaxed habit, the hæmorrhage is most frequent; and it is most copious in thin bilious costive habits. It is often restrained with difficulty, particularly during the hot months, in young vigorous habits, and where the texture of the blood is loose. It frequently proves salutary; but when profuse, requires to be checked.



For the relief of this complaint in plethoric habits, when bordering upon excess, it will be proper to draw some blood from the arm, and give a cooling purge or two with Glauber's salt dissolved in a large portion of water; also to administer nitre in large doses, and such like refrigerants. If it proceeds from a loose texture of blood, the bark and elixir of vitriol, tincture of roses, and a few drops of laudanum as a sedative, are most proper. But the principal concern which we have with this kind of hæmorrhage is, to point out the different external means employed in suppressing it, when violent, and threatening bad consequences.

The first step towards which is, the frequent application of thick compresses, dipped in vinegar and water, with sal ammoniac and nitre dissolved in it, upon the forehead, nape of the neck, and nose; which have also been known to answer upon the scrotum. Should they not have the desired effect, vinegar, or slight solution of blue vitriol in tincture of roses, may be snuffed up the nostril; or dossils of lint may be tried, dipped in styptic tincture or the vinegar solution, and rolled in a powder made with bole and a sixth or eighth part of blue vitriol; the end of which should be thrust up, so as to be in contact with the mouth of the bleeding vessel, otherwise the blood will continue to flow by the back nostril; and this may be the more easily effected, by previously passing a bougie through to the fauces. The following method is said to have  
been



been effectual in very obstinate cases:—Tie a proper-sized doffil of lint to one end of a piece of strong sewing silk, well waxed, then introduce a piece of catgut up the bleeding nostril through to the back part of the fauces; draw that end out of the mouth, and tie a knot in it, to which fasten the other end of the waxed silk; then withdraw the catgut and silk by the nostril, till the doffil is fixed in the back part of it, after which fill the fore nostril with lint, and the bleeding will stop. The lint is not to be taken away for some days, when it will not be amiss to use the vinegar compresses externally.

Tight ligatures above the knees and elbows are thought useful, by checking the return of blood from the extremities: the contrary is sometimes practised with success, when the hæmorrhage is thought to proceed from partial stricture, by putting the feet and legs into warm water, in order to relax the spasm, and invite a more equable circulation through the whole system.

### O Z Æ N A.

DESCRIPTION. This disorder is a foul and malignant ulceration of the pituitary membrane of the nose: it may be distinguished from a common ulceration by its fœtid stench, and produces caries in the adjacent bones. At length it extends itself into the sinusses of the cranium and the upper jaw-bones,



bones, destroys the septum and other bones of the nose, and erodes its cartilage and teguments, greatly disfiguring the patient, and obstructing respiration and speech.

When it happens in, or penetrates through the cavity of the upper jaw, called Antrum Highmorianum, which is immediately above the dentes molares, or grinders, it is termed *Ozæna in Antro*. The matter, after being some time retained there, makes that part of the bone decay, which lies contiguous to the sockets of the teeth, and forces its way through them, forming obstinate and foetid ulcers behind the gums.

CAUSES. It sometimes proceeds from an inveterate catarrh, which seldom happens but in a cachectic habit. It may also be occasioned by injury done to the nose, particularly if the patient labours under a scorbutic or venereal taint. The malignant kind generally originates from, or is connected with, the lues, or scurvy.

CURE. This disorder is seldom to be cured, even in its mildest state, without having recourse to internal means. Mercurials and decoction of the woods, with the bark, are most likely to succeed; except in the true scurvy, when antiseptics are most proper, and mercurials ought to be omitted. The most effectual external remedies are, injections made with a mild solution of myrrh in barley water, or bark decoction, slightly acidulated with spirit of salt, a weak solution of corrosive sublimate in  
water,



water, aqua sapphirina, or camphorated vitriolic water, properly diluted; and in the worst stage, fumigation with cinnabar by itself, or joined with the dry gums.

When the disorder penetrates the antrum, extract one or more teeth near that part, and perforate the sockets, if necessary, in order to give vent to the matter lodged therein. Cleanse the part well with detergent injections, then use those of the astringent and mercurial class, particularly a slight solution of sublimate, or of calomel and weak lime water. When the complaint is produced from, or complicated with a cachectic or vitiated habit, administer internal medicines accordingly. The cure cannot be regularly attempted till that is corrected, neither can it be complete till the carious bones are removed. A silver or leaden canula is sometimes necessary to preserve the opening, and at the same time admit of a free discharge.

A large portion of the maxillary bone, together with the teeth, has been known to separate, from a quantity of purulent matter being long confined in the antrum. A hard painful tumour first appeared on the cheek down the side of the nose, and in about six weeks a loose pappy fungus sprouted up on the outside of the gum, just above the first molaris, from which oozed a yellowish matter; abscesses repeatedly formed and burst, and in about a year and a half a part of the jaw-bone grew loose, and was removed by incision. Detergent injections,  
and



and lint dipped in an aqueous solution of myrrh and vitriol, were applied at first; afterwards granulations beginning to form, dry lint was the principal dressing, now and then touching it with blue vitriol to keep down the flesh, which rather inclined to be exuberant. The sore gradually filled up, and healed without much deformity. The bark and elixir of vitriol were liberally administered at first, on account of the patient's laxity of fibre, and apparent tendency to scrophula.

*Cancer in the Nose.* This disease generally arises about the alæ nasi, or sides of the nostrils, in form of a slight tubercle or pimple, fungus, or scaly crust, producing induration and tumour, which, in process of time, ulcerates. The surrounding skin is of a dusky red colour, and the sore is either irregular and hard at the edges, or flat and creeping, according to its original form. For its treatment, vide Cancer.

An ulcer of the flat eroding kind has been perfectly healed by the famous Plunket's remedy; and in a case of this kind, where extirpation is likely to occasion a disagreeable deformity, and the case is slight, it is recommended by an eminent surgeon, as a cure, to touch the part slightly and repeatedly with lunar caustic.



*Disorders of the Lip.*

## THE HARE-LIP.

**DESCRIPTION.** This is a natural defect in the upper lip, and is thus called from the division or fissure therein, resembling the lip of a hare. In some, the division is large, and a great part of the lip appears to be defective.

The fissure is single, double, or complicated; the single has one angular point something like the Roman  $\Lambda$  reversed, except that the sides and points are not regular; the double is more inclined to the form of the letter M; the complicated is when either of the former is attended with a division of the palate on each side, in part, or extended to the back nostrils, and uvula, which latter often proves defective.

The size and irregularity of the fissure is sometimes so great during infancy, as to render the operation precarious; yet it may be easily performed in a more advanced age. If a tooth or two should awkwardly project into the fissure, extraction will be necessary.

**CAUSE.** This is one of those complaints whose cause is too intricate to be ascertained.

**CURE.** The cure is generally performed with the twisted suture, if there is skin enough, and the division



division in the roof of the mouth is no objection to the operation; it ought not however to be undertaken, where there is no prospect of bringing the edges together. It is to be managed after the following manner:

First separate the frenulum from the gum with a scalpel, or pair of sharp-pointed scissars, taking care not to wound the latter; then cut off the edges of the fissures with the scissars, so as to meet in a point beyond the upper part, on both sides, and bring the bleeding lips of the wound as apposite and close together as possible, after which, pass one or more pins, according to the length of the wound, through the middle at least of both edges, at about equal distance from each anterior edge, with the depth at which the needle is thrust through, observing not to leave any part of the wound gaping: across and round each of these pins, twist a waxed thread or silk five or six times after the following form  $\infty$ , and place a piece of fine rag or lint under each end of the pins, to prevent injury to the sound part of the lip.

A pledgit of lint is applied by some, dipped in a mixture of honey of roses and traumatic balsam, between the inside of the lip and the teeth; but there seems to be little or no reason for so doing, except to prevent a reunion at the frænum.

A pledgit with the honey of roses may be applied externally, to prevent injury from pressure. Bandage is thought by some to be improper till the pins  
are



are extracted, when the uniting kind will be absolutely requisite. The pins in general are formed of silver, tipped with steel points, which may be snipped off with a pair of nail-clippers. If they are made of a flat form, a narrow double-headed bandage may be carried round the forehead, over the ears, and across the lip, without causing any injury by pressure; at the same time it may be so managed, with the assistance of proper compresses, as to keep the cheek forward, and co-operate with the pins. The union is mostly complete at the end of eight or ten days, when the threads may be divided, and the pins withdrawn; at which time a slit is to be made in each part of the roller, through which its heads are to be reciprocally passed, in order to form the uniting bandage. The double hair-lip requires two operations, which should be performed at least six weeks distant from each other; and the body ought to be kept in proper temperature, both before and after this operation.

The union of the hare-lip has been formed without the use of the pins, by bringing the lower part of the pared edges even together, with the interrupted suture, an assistant at the time pressing the cheeks forward with his hands, so as to bring the edges in contact; two plaister compresses are then applied on each side of the wound, and slips of adhesive plaister are fixed across; a thick compress is also placed on each cheek, which, by the assistance of the bandage with slits, just now described, may be  
made



made to keep the teguments in the same forward position, and retain the raw parts in close contact.

### CANCERATED LIP.

**DESCRIPTION.** This complaint is either latent or ulcerated; the first is an indurated painful discoloured tumour; the last is when that tumour changes to a foetid spreading ulcer, the edges of which are turned in, and the surface appears like a hard compressed fungus: the ulceration begins sometimes with a crack, or a raw-headed pimple. If not timely checked or removed, it will extend itself over the glands of the mouth and fauces, cheek, chin, and neck; destroying the substance of the parts, and producing a hard schirrhous tumour around them, till it either suffocates the patient, or eats through some deep-seated vessel; the hæmorrhage from which soon puts an end to a miserable existence.

In this state of the disorder, the pain excited by the acrid corrosive rheum, which constantly passes over the ulcerated parts, and drains from the glands, together with the foetor of the discharge, are intolerable.

**CAUSES.** Its causes are generally local; from biting or picking the lip, a blow, puncture, &c. sometimes it arises from a pimple or a warty tumour, forming a slight excrescence, which seldom proceeds to the schirrhous or cancerous state, except in cachectic habits.

**CURE.**



**CURE.** The curative intention is largely specified under the article Cancer. Excision should not be neglected in its early stage, and should be done with the knife so effectually, as not to leave the least diseased or indurated part remaining. The edges should be incised in as strait a direction as possible, and be brought close together and apposite to each other, which may be easily effected by pressing the lower part of the cheeks forward: they are then to be stitched up with the twisted suture, after the manner of the hare-lip, and treated accordingly.

When the ulceration spreads into the mouth and fauces, the patient should be frequently washing them with some bland mucilaginous liquor, particularly before taking any thing. A spoonful or two of the mucilage of quince-seeds, held in the mouth and gradually swallowed, allays the torturing heat; thin fluids rather stimulate.

### Disorders *of the* Tongue, Fauces, Uvula, &c.

#### CANCERATED CHEEK *and* TONGUE.

A cancer is sometimes generated upon the side of the cheek or tongue, from a self-formed pimple, a bite, bruise, or pointed tooth, which should be extracted in time. Should it not soon yield to the re-

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medies



medies prescribed for a cancer, the whole of the diseased part must be cut out, if practicable.

It will not be amiss in this place to mention a complaint which has frequently proved alarming, and may in bad habits degenerate into schirrus and cancer. It is a thickness, hardness, and ulceration of the tongue or cheek, from a simple action which many people have of nibbling and squeezing those parts between the teeth. In a case of this kind, the whole cheek and part of the upper lip became greatly thickened and indurated, and a jagged ulcer formed on the injured part, which spread itself to the tongue. Much had been done with no effect; at length it was neglected as an incurable canker in the mouth; but by often syringing the parts with a mild solution of myrrh in barley water, softened with a little honey of roses, now and then slightly touching the ulcerated parts with the following epithem, and administering a cooling purge or two, the tumour soon abated, and the ulcer healed.

Take of traumatic balsam, and honey, each one dram; spirits of salt, five or ten drops. Mix.

A small portion of this epithem may be applied now and then upon the end of a probe or skewer, armed with a piece of fine rag, cotton, or lint.

This application visibly checks the progress of the ulcer in the malignant fore-throat: the quantity of acid must be proportioned to the irritability and putrescency of the parts.

STRICTURED



## STRICTURED FRÆNULUM.

The tongue is sometimes confined close to the bottom of the mouth of infants, so as not to give it sufficient play to buckle to the nipple in sucking. The operation is unnecessary, provided the tongue can be put out of the mouth; otherwise, it may be set free by carefully dividing the bridle only, with the scalpel or a pair of scissars. The tongue is sometimes defective in its office, from a particular thickness and shortness in its make, in which case the frænulum is more like an expanse of membrane; under such circumstances, the operation can have no good effect.

*Ranula and Calculus.* A tumour or abscess formed near the *venæ ranulares*, which lie conspicuous under the fore part of the tongue, is called Ranula. The contents are a tenacious lymph, purulent matter, or stony concrete; it is sometimes quick of growth, at other times remains indolent, and is generally of the encysted kind. A fleshy excrescence grows sometimes near this part, which, if not timely removed, is apt to turn cancerous. An operation near these parts requires great care, to avoid wounding the adjacent nerves, vessels, and salivary ducts, especially in young children. The abscess should be opened transversely, and when large, a part of the cyst should be removed. In some cases, it may be as well to wait till the sore breaks of it-

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felf,



self, particularly when it lies deep under the middle of the tongue. The stony concrete shews itself through the cyst, and may be let out by incision.

The best applications afterwards are, honey of roses alone, or mixed with traumatic balsam, barley water, with gum myrrh, and honey of roses, mucilage of quince-seeds, and the like. In case of hæmorrhage, the part may be washed with cold oxycrate, or alum dissolved in water; if profuse, apply a hot knitting needle, or a small cautery, properly guarded, to the mouths of the vessels, since, under certain circumstances, such means become absolutely necessary.

*Ulcerated Palate.* Ulcers sometimes happen to the roof of the mouth, and erode the adjacent bones, particularly those of the palate and nose: the speech is much injured by them, and liquids flow back into the nose when the patient is drinking. They mostly proceed from scorbutic acrimony or venereal taint, therefore require suitable remedies.

Injectsions, gargles, and the balsamic epithem, as ordered in the ozæna, are necessary; the perforation into the nose frequently remains open, for which plates of gold and silver are substituted with good effect, particularly with respect to the voice. Fleishy tubercles and excrescences sometimes form on this part, and require to be timely removed by excision, for which a curved scalpel, in shape something like the pruning knife, has been found most convenient.

*Tumours*



*Tumours and Prolapsus Uvulae.* The uvula is very subject to swell, and is sometimes so relaxed as to fall down upon the roots of the tongue, the larynx, and pharynx; also to be greatly elongated; all which complaints create a disagreeable sensation in the throat, as if some morsel was lodged there for deglutition; it also excites a troublesome cough and hawking, and a stricture which seems to threaten suffocation. In phlegmatic and debilitated habits, the velum pendulum palati frequently falls with it; in either state, deglutition and respiration are obstructed, and the tone of voice becomes much altered. The uvula is very subject to ulceration from a venereal cause, and, with the neighbouring parts, is also much afflicted in the malignant sore throat.

The tumour sometimes proceeds from a catarrhus affection, accompanied with heat, redness, and pain in the part itself, as well as in those which surround it, together with a thick speech and difficulty of swallowing; which are to be relieved by bleeding, cooling gargles, diaphoretic and nitrous medicines, laxatives, &c. Repeated complaints of this kind produce a thickness and elongation of the part, and prevent a perfect recovery of its tone and shape after inflammation is dispersed.

Sometimes the uvula inclines towards the mouth, looking pale, and being free from pain and inflammation: and instances have been known, of its laying upon the tongue full two inches in length. When the part is free from inflammatory symptoms,



and continues fallen, astringent gargles with tincture of roses, a decoction with pomegranate bark, balauftine and rose flowers, port wine or claret in which ignited iron has been quenched, and a moderate solution of alum in water, have proved effectual. A mixture of pepper and honey applied with a tea-spoon, is a common remedy in the prolapsus from relaxation only, and the bark, elixir of vitriol, or tincture of steel, are necessary internally.

Should all these remedies fail, and the uvula be constantly or frequently so much elongated, as to impede respiration, deglutition, or speech, a part of it should be snipped off with a pair of scissars, taking hold of it with forceps to prevent its slipping. This operation requires some nicety and care, with regard to the portion which ought to be removed, since taking off too little, or too much, will fail of good effect. Mr. Sharp advises all but half an inch, to be extirpated, but perhaps in some cases this may be stretching rather beyond the proper limits, with respect to the voice. The hæmorrhage may be restrained by gargling with cold vinegar and water, a little styptic powder or alum applied at the end of a spoon, or even the actual cautery, properly guarded, if necessary. When this part is ulcerated from venereal taint, or the malignant angina, suitable remedies must be administered.



## DISEASES of the GUMS and TEETH.

*Lancing the Gums.* Infants suffer great pain, and are extremely liable to convulsions, from cutting their teeth. The gums inflame and swell, and consequently grow too thick and tough to be pierced without great pain and irritation of the whole nervous system: in all such cases, a transverse or crucial incision down to the tooth, is necessary. Cutting or scarifying the gums gives great relief to a rheumatic pain, which frequently affects them, the membranous covering of the jaw, and the sockets of the teeth. The gums are subject to little eroding ulcers and sponginess, which generally arise from a scorbutic acrimony, or a collection of tartar, as it is called, which are to be remedied by astringent dentifrices, and the bark with antiseptics.

*Abscesses and Fleishy Excrescences* also form sometimes on the gums; the abscess is generally attended with great pain, quickly suppurates, and bursts; when deep-seated, they should be opened in due time to prevent caries in the subjacent bone. These sores are indiscriminately termed gum-boils, though they sometimes originate in the periosteum and the sockets of the teeth. Emollient poultices applied externally, and roasted figs retained opposite to the part affected, will forward maturation: in the latter case, extraction of a tooth is necessary. Excre-



cences are to be treated according to the directions already laid down for complaints of the like nature in other parts.

### *On the* T E E T H.

The business of looking after the teeth is too much neglected by the regular-bred surgeon in the country. In every metropolis, throughout the more refined parts of the world, we find it considered as a separate profession, and those gentlemen that practise it are in general pretty well convinced of its utility; but this employment cannot answer distinctly in the more diffused parts of these kingdoms, on which account it may reasonably be united with the surgical branch. There can be no kind of doubt, that the surgeon who is well qualified in his profession, may, by a particular attention to the structure and diseases of the teeth, soon become an expert dentist; at least, be fully acquainted with the more necessary parts of that profession. It is therefore recommended to every young surgeon, to acquaint himself with the minutiae, as well as the practical part of it, previous to settling in the country. The most useful books to be consulted upon the occasion, are those written by Mr. John Hunter and Mr. Beardmore, which, with a three weeks course of lectures, will give him a perfect idea of the whole.

The difficulties of the operating part are easily to be conquered by practice and observation. The  
most



most necessary instruments are, the scalprum to remove the tartareous crust with, the rasp or file to take off angular points, the instrument for extracting teeth, and a gum-lancet.

Rational objections are made to the frequent use of dentifrices, when composed of hard substances and mineral acids; notwithstanding which, experience proves, that remedies of that kind, properly prepared, are extremely useful towards removing the tartar or discolouration from the teeth, as well as healing and constringing the loose ulcerating receding gums. As soon as the crust and blackness are removed, they should be only now and then repeated, to keep the teeth in order, and give firmness to the gums. If the latter are much affected from a loose crisis of blood, antiseptics must be administered internally.

The following dentifrice has been known to recover teeth that were extremely loose, discoloured, and loaded with tartar, and fungous ulcerated gums that were worn down and excessively offensive, without leaving the teeth so tender as they generally are after scaling:

Take of armenian bole and cream of tartar, of each half an ounce; powder of cinnamon, two scruples, or two or three drops of oil of cinnamon; pure honey, two ounces; acid of vitriol, a sufficient quantity to give it a slight acidity.

Persevering in the use of this medicine every or every other day, has gradually produced all the effects



effects of scaling: when a part of the tartar is removed, the mouth should be washed with warm water after each meal, and after the use of the dentifrice. Frequent use of the French mallow-root, or a little water just warm, will be sufficient, in some cases, to prevent future incrustations.

*Scaling the Teeth.* When scaling is required, the point of the scalprum, which is an instrument made of steel, and somewhat like a graver, is to be applied to the teeth, close to the edge of the gums, with a degree of pressure equal to separating the yellow or blackish crust, by picking it upwards; at which time the teeth must be supported by placing the fingers of the other hand behind them; the point of the scalprum may also be employed in lightly scraping the tooth, and care should be taken not to wound the gums, or displace the teeth when loose.

*Hollow and Decayed Teeth.* When the tooth is carious, it will frequently give intolerable pain, and tend to injure the neighbouring teeth; for which extraction is the best remedy. With those who cannot submit to the operation, first cleanse the cavity, then fill it up with wax, mastich, lead, or gold, or cauterize the interior part of it: both these methods will sometimes preserve the teeth from foulness, pain, and future decay. Oil of cloves and origanum, or thebaic tincture dropped upon lint or cotton, or about half a grain of opium placed in the hollow of the tooth, will give temporary



rary relief. Some apply a blister behind the ear, submit to boring the antihelix with a red-hot knitting-pin, or cauterizing the hollow part of the tooth, and use emollient poultices externally.

The operation of extracting the tooth is much easier to be learnt by observation and practice, than by written description. Various instruments are used for that purpose: the key with a deep shoulder, and claws of different sizes, for the side teeth, the pelican for those in front, and the punch for stumps, are the instruments most in use.

### DISORDERS of the TONSILS.

*Inflamed Tonsils.* If the inflammation on these parts is so great as to threaten suffocation or gangrene, nothing is so likely to give relief as scarification; more especially when common means have been used without success. The scarificator, made something like a gum-lancet, with a moveable blade, is the most convenient for that purpose, the blade being properly guarded.

*Abscess in the Tonsils.* When the tonsils proceed to suppuration, it should be forwarded by emollient poultices externally, and a sufficient opening ought to be made with the scarificator, as soon as matter appears to be formed.

*Schirrous Tonsils.* These glands are subject to grow large and schirrous; if, after an alterative course, they remain so bad as to threaten suffocation,



tion, or other ill consequences, extirpation is the only remedy. Caustic and the knife were formerly employed for this purpose; but the one is tedious, and requires the nicest management, and the other has been attended with profuse, and even fatal hæmorrhage; ligature therefore is the safest method.

When the base of the tonsil is smaller than its front, the ligature may be easily passed round it with the assistance of the eye-probe, properly curved and fixed in a handle; if it is broad at the basis, it must be perforated at the bottom part, by the needle with an eye at its end, invented by Mr. Cheselden, armed with two proper-sized ligatures; when one end of each is to be drawn out of the needle on its further side, by means of a hook. The needle being bereft of its threads and withdrawn, and the ends all brought together on the outside of the mouth, the ligatures are to be tied strait one at a time, with the assistance of an iron instrument, contrived by that eminent surgeon, for the purpose of slipping the knot up to the part where it is to go, and fastening the same; this may be done by passing the end of the ligature, held out of the mouth from the first, through the circular hole or ring at its end, and carrying the instrument along the ligature near to its middle part; the string is then to be thrust by it beyond the tonsil, and held in firm resistance with one hand, whilst the other retains and draws it on the outside of the mouth. Observe to pull the double ligature forwards, and dividing it properly,



properly, let one part be tied above the tonsil, the other below it, making a double knot to each, and cutting off the remainder of the ligature pretty near it. The separation generally takes place in three or four days, unless the ligatures get loose; if so, the operation must be repeated.

## Disorders *of the* Neck and Throat.

### TUMOURS *in the* NECK.

Such complaints frequently affect this part, but differ much in their nature and quality, being either strumous, encysted, or schirrous.

The strumous or scrophulous tumour is generally seated about the lower jaw, and the parotid or salivary glands, and sometimes turns schirrous, but more commonly tends to suppurate or resolve.

The encysted tumour is formed in the cellular and adipose membrane, either immediately under the cutis, or in the interstices of the muscles. It is tense or pasty, round or irregular, and sometimes deep-seated and extensive, particularly that of the steatomatous kind.

The schirrous tumour is sometimes seated in the course of the lymphatics, and close to the jugular vein; is detached from the muscles or skin, moveable, and without pain. Swellings of this kind, which adhered to the vein itself, have been successfully



fully dissected away, but such operations require the greatest skill, steadiness, and dexterity.

The schirrous tumour, which is of a stony hardness, round or oval, with a jagged edge or irregular protuberances, and attended with darting cutting pains, is very likely to degenerate into a cancer, which disease commonly makes a rapid progress in this part.

All these tumours are to be treated as directed under their general heads, according to their different states. Great care and circumspection are required in extirpating them, on account of the numerous and large branches of arteries which are irregularly scattered throughout the neck, particularly those swellings that lie deep and backward. It will therefore be prudent, in such a situation, to leave a part of the tumour untouched, which will frequently digest away, or may sometimes be safely destroyed, by means of slight and frequent applications of the lunar caustic.

We are told of deep-seated vessels being wounded, and that the hæmorrhage has been suppressed with a body of lint and compress, together with constant pressure of the hand for several days and nights together; where the tenaculum, or needle and ligature could not be effectually used: but let it be remembered, that trusting to such means, when the hæmorrhage is profuse, is exceedingly dangerous, both to the life of the patient and the credit of the operator. The distress of both may in such cases be  
sometimes



sometimes prevented, by making the division in the teguments at first so extensive, as to afford proper room to get at the vessels, and secure them by ligature.

Should the salivary ducts be divided in cutting out a tumour in the cheek, or near the jaw, lint or compress, dry, or moistened with some astringent lotion, together with proper bandage, will sometimes be sufficient towards restraining the salivary discharge, and healing the part; otherwise it will be necessary to make a perforation through the wound into the mouth. For the after-treatment, see each tumour, under its proper denomination.

### WRY NECK.

Some surprising instances are related by one or two German authors, of young people who were afflicted with this complaint from their birth, being cured of it at different ages; notwithstanding which, it is an operation seldom performed in the present improved age.

This distortion may proceed from accident by burn or scald, spasmodic or rheumatic affection, weakness in the opposite muscles, and defluxion; or may exist from birth. When the latter happens to be the case, all the muscles are inevitably affected, and the vertebræ partake of the distortion; on which account it will be impossible to restore the head to its natural position. Mr. Sharp says, that  
the



the operation ought never to be performed, except where the mastoideus muscle only is affected.

If it is recent, and arises from cold or inflammation, bleeding, sudorifics, and gentle evacuants, with discutient and emollient applications, are generally effectual. If it arises from a spasmodic or rheumatic cause, thebaic tincture, with antimonial or ipecacuanha wine, or volatile tincture of guaiacum, are the best internal remedies: the volatile liniment, or opodeldock with laudanum, and the like, may be used externally.

Should it be occasioned by an irregular cicatrix from burn, scald, or any other accident, the contracted parts can only be released by one or more transverse incisions, which must be cautiously done, for fear of wounding the jugular vein.

When it proceeds from a contraction in the mastoid muscle only, the operation is likely to be attended with success. It is to be performed with the crooked scalpel, or an instrument contrived for the purpose, called the probe razor, which is considered as the most ready instrument, and is done as follows:

The patient being laid upon a table, in the most convenient posture, a transverse incision is to be first made with the scalpel, through the integuments, rather beyond the extent of the muscle, and distant about one third of its length from the clavicle; when the probe razor is to be passed close under the muscle, and carried outwards and upwards on the  
opposite



opposite side, in such a manner as to make a total division thereof: which, if managed with proper care, is to be done without injuring any of the larger vessels.

The wound must be filled up with dry lint, the edges are to be attentively kept asunder, and the head fixed upright, by means of the divided bandage.

Dr. Hunter advised making the incision at the lower part of the muscle, on account of the cellular membrane being in less proportion near that part.

### BRONCHOCELE.

DESCRIPTION. Writers both ancient and modern, have been much mistaken with respect to the nature and seat of this swelling, having differently considered it as encysted, adipose, aneurismal, and strumous; their treatment of it also has been equally erroneous, since Mr. Wilmer, in his useful book of Cases, has fully confuted these opinions.

This disorder has its seat in the thyroid gland, and principally shews itself at the anterior and lateral part of the neck. It is sometimes soft and moveable, at other times hard and immoveable, increasing to an enormous size, and pressing so forcibly against the vessels and nerves of the neck, as to occasion a kind of stupidity, which compression is also the cause of a throbbing pulse in the caro-

U

tids,



tids, that gives it the suspicious appearance of an aneurism. The bronchocele is sometimes accompanied with strumous affections of the neighbouring lymphatic glands, but is supposed to be entirely independent of such obstructions. It is certainly endemial in some countries, more particularly those that are mountainous: for instance, it is so frequent in Derbyshire, as to acquire the appellation of the Derby Neck; those that dwell near the Alps, are extremely subject thereto.

CAUSES. Some peculiarities in the air, soil, and waters, have been considered as causes of its being endemic; lifting heavy weights, and great stress on the parts, have also been supposed to produce this disorder; but vain is conjecture till the use of the thyroid gland is manifestly discovered.

CURE. From the nature and situation of the thyroid gland, particularly in its enlarged state, when the size of its numerous arteries are greatly increased, little can be said in favour of extirpation. By respectable authorities we are informed, that several attempts with the knife have been attended with dangerous, and even fatal hæmorrhages; and from its nature and extent in the morbid state, a radical cure is hardly to be expected from the caustic.

Internal means alone are chiefly depended upon in this extraordinary affection: presuming then upon the philanthropy of the worthy gentleman who has ingenuously disclosed the medicines for its cure,  
which



which by others had, from lucrative motives, been so long concealed, the author has taken the liberty to transcribe the two receipts, the remarks respecting the equality of their powers, the particular injunctions in administering them, and the circumstances under which they are, or are not likely to succeed. At the same time, he has subjoined a process which was perfectly successful in a tumour of the same kind.

### N U M B E R I.

The day after the moon hath been in the full, the patient is to take a vomit; on the succeeding day a purge is to be administered. On the third night, going to bed, one of the bolusses is to be placed in the mouth, under the tongue, and being suffered to dissolve gradually, is to be swallowed. This bole is to be repeated the six succeeding nights.

Take of calcined sponge, cork calcined, and pumice stone burnt, of each ten grains, to be separately powdered, and made into a bole with syrup, honey, or mucilage.

On each of the seven days that the patient takes the preceeding bole, the following powder is to be administered in the forenoon, in a proper vehicle.

Take of chamomile flowers, gentian root, and the tops of the lesser centuary, of each, in powder, five grains.



On the eighth day the purge is to be repeated. In the wane of the succeeding moon, the same process is to be entered into and repeated a third time, unless the disease is cured before. The vomit is only to be taken before the first course of medicines.

## N U M B E R    I I.

Take of calcined sponge half a dram, and honey a sufficient quantity to make a bole.

### THE PREPARATION.

“ Tie the best sponge up hard with wet pack-  
“ thread, and calcine it in a crucible.

“ These boles are to be used as those of the former receipts.

“ The bitter powders are to be taken, and the  
“ same directions, with regard to evacuations observed in every respect, as No. I. A very eminent surgeon who hath had many opportunities  
“ of seeing the good effects of both these preparations, assures me, that either of them will succeed  
“ with more certainty, if the patient takes a vomit  
“ and purge during the increase of the moon.

“ Some parts of these directions seem to bear the  
“ character of empiricism; but where no harm can  
“ possibly arise from, nor any inconvenience follow  
“ their use, it is to be wished, that those who think  
proper



“ proper to give either of the preceeding methods a  
 “ trial, will do it in the manner recommended.

“ It seems highly probable, that the chief vir-  
 “ tue of the bole, consists in the calcined sponge.

“ The calcined sponge for either of our prepa-  
 “ rations, is carefully powdered in a glass, or  
 “ marble mortar; if a brass one is used, the salts  
 “ of the sponge may attract so much of the metal,  
 “ as to acquire an emetic property.

“ If the bronchocele is not very large, hard, or  
 “ of long date; if the patient is a female, young,  
 “ or not past 30, I believe it will frequently give  
 “ way to the treatment just described: but if the  
 “ patient is a man, or of either sex past the meri-  
 “ dian of life, I fear that in direct opposition to the  
 “ Coventry, or any other receipt, the Bronchocele  
 “ will still remain one of the opprobria medi-  
 “ corum.”

An obstinate and large swelling of this kind, of five years standing, in a young woman about 20 years of age, was a few years since removed by persevering for about six weeks, in the use of the following remedy, rubbing a scruple of strong mercurial ointment every other night into the part, and taking a proper purge with jalap corrected with ginger, once in six or eight days.

Take of calcined sponge, half a dram; powdered rhubarb root, three grains, mix.

This powder was taken every morning and evening, in a cup of whey, except those days on which the purging powder was taken.



## TRACHEOTOMY,

Or what is erroneously called bronchotomy, is an operation which is very seldom ventured upon in this kingdom, yet absolutely necessary in certain cases that threaten suffocation.

The German and French surgeons have performed it with success. Heister tells us, that by this means, he happily extracted a piece of boiled mushroom from the larynx of a person who was in immediate danger of suffocation; but forgetting his usual candour, he too rashly condemns those who decline performing the operation, and too boldly pronounces it safe, easy, and often salutary.

The principal occasions on which it is recommended are, when any hard body is firmly fixed in the trachea, or in the upper part of the œsophagus, and threatens immediate suffocation, or in order to inflate the lungs of a person nearly suffocated by constriction of the glottis, or superior part of the larynx, particularly from drowning, observing to stop the nostrils, and forcibly blow breath into the lungs through the orifice; or when indurated swellings inflame and totally obstruct the fauces, which can neither be brought to suppurate, nor be reduced. In cases that admit of deliberation, it would be prudent in every respect, to consult with some experienced person in the profession, before the matter is determined upon. The operation may be performed as follows : The



The patient being conveniently laid on a table, and properly secured, with his head leaning back, a longitudinal incision is to be made in front through the integuments, a little below the thyroid cartilage, and an inch or more in extent downwards: the muscles being separated, and the bleeding stopped with the tenaculum and ligature if necessary, the edges must be drawn asunder, and a transverse incision is to be cautiously made with a lancet or scalpel, between the cartilaginous rings, into which should be introduced a silver canula, about an inch long, and made rather depressed and curved; after having passed it through three or four pieces of thin linen rag, ready perforated in the middle, on which the rim of the canula is to rest, and which may be occasionally cut away, in case the part should swell, and will answer the purpose of keeping the canula at pretty nearly the same depth in the trachea. A double canula properly fitted, is preferable to the single one, as it is very apt to fill with mucus, and does not so readily admit of being occasionally cleaned and replaced. When the part has been kept open a sufficient time to answer its full intent, it may be wholly removed. The orifice will soon heal with superficial applications, as mentioned in the cure of wounds of this part.

A more ready and easy method may answer the purpose as well, which consists in passing a triangular, or flat trocar, with a canula of proper size, and constrained to a proper length, into the middle of



the trachea, between the cartilaginous rings, without previous incision. A piece of fine muslin is recommended to be placed over the external orifice of the canula, to prevent dust from entering therein.

#### OBSTRUCTIONS *in the* ÆSOPHAGUS.

It frequently happens that some morsel or foreign substance makes a lodgement in some part of the gullet; the mode of relief for which will depend upon its nature and situation. If the obstruction is in the fauces, it may most probably be extracted by the mouth; if in the gullet, it may require to be pushed down to the stomach.

When the substance is not hard or pointed, its removal has been sometimes effected by forcibly swallowing a draught of some liquid, or a crust of bread, after it has been well chewed; repeated strokes with the hand between the shoulders, and pressure of the throat below the obstructed part, have also proved effectual. Should these means fail, it may be thrust down with an instrument called the probang, which is made of a long piece of whalebone tipped with sponge, or a small wax candle made pliable.

Fish and other bones, needles, and such like substances, have been removed after the same manner; but provided respiration and deglutition are not dangerously affected, it will be generally safer to let them remain in the passage, than try to force them  
downwards



downwards, for fear of striking them deeper, and doing great injury to the passage: besides, the extraneous body has a chance of being set free by partial dissolution, or suppuration in the part where it lodges.

In desperate cases where suffocation is likely to ensue, *Æsophagotomy* is recommended. The Paris Memoirs mention two cases wherein it proved successful. It may be performed by making an incision near the obstruction, about two inches in length, through the cutis and cellular membrane, close to the trachea; then holding the muscles and thyroid gland on one side, whilst the trachea is drawn towards the other, so that the gullet may be seen and the substance felt, a longitudinal incision of fit size is to be made near it into the part, and the morsel to be extracted with pliers or small forceps. The wound should be treated after the method already described, and nutriment must be given for a few days by glyster only; afterwards, thin nutritious diet may be allowed in small quantities.

This business of *æsophagotomy* is one of those possible operations, which from the future eventful process promises little security to the patient, and no great credit to the surgeon.



Disorders *of the* Thorax.

## P A R A C E N T E S I S.

By which word is meant a perforation into that cavity for the discharge of water, blood, air, and matter.

The general effects of either of these fluids being collected in the chest are, great difficulty in respiration, a sense of weight and fulness in the thorax, a feeble and irregular pulse, incapability of laying upon the unaffected side, together with restlessness and interrupted sleeps. There are also certain symptoms annexed to each of these complaints, by which they may be easily distinguished from each other, and be more clearly ascertained.

*Water in the Chest.* This complaint may be general or local, on one side or on both, and takes its rise from a morbid increase of exhaled lymph. It has sometimes its particular lodgement in the duplicature of the mediastinum and in the pericardium.

The symptoms which are peculiar to the hydrops thoracis are, a sense of water undulating in the chest, from sudden jerks, or rising quickly from a horizontal posture; motion of the fluid is also to be perceived, by holding one hand against the side of the chest, and striking the opposite part with the fingers



fingers of the other; a dry cough, palpitation, a small discharge of urine, and swelled feet.

When the mediastinum is particularly affected, the patient feels a weight at the sternum, which obliges him to stoop forward when he stands up or walks. If the pericardium only is affected, the oppressive feel is more in the middle and left side of the chest, and an undulatory motion is said to be perceived between the ribs, at each stroke of the heart.

When these marks appear, attended with the general symptoms in violent degree, the operation is looked upon as necessary, but the matter is not always so clear as to prevent mistake; it is therefore necessary to attend to the nature of the habit:—If anasarca, the disorder in the chest is most likely to be relieved by punctures in the ankles, or a small blister in the thigh; if complicated with an ascites, the operation is of no use; in fact, it ought not to be performed unless the collection is confined to the chest. Before the operation is concluded upon, the strength of the patient should be duly considered, for in weak habits, and where the quantity of water collected is great, it would be better not to draw off the whole at once.

When the existence of the water is ascertained, and the perforation is necessarily determined upon, it is always safer to perform it cautiously with the scalpel than with the trocar, from a probability of  
the



the lungs adhering to the pleura. The operation should be done after the following manner :

The patient being seated conveniently, or laid on a bed in a horizontal posture, an incision, not less than two inches in length, is to be made in the course of the ribs, through the integuments, between the sixth and seventh rib, nearer to the superior edge of the lower rib, for fear of wounding the intercostal artery, which generally lies in a groove at the lower edge of the superior rib ; then gradually shortening the wound, and dissecting through the intercostal muscles down to the pleura, the same is to be cautiously divided about an inch in length, and a short silver canula, which may be closed occasionally, is to be introduced as soon as the water rushes out.

If an adhesion appears at the opening, and no fluid passes out, it may be made nearer to the sternum, or a rib or two higher or lower. It is ordered by some judicious practitioners, that the skin should be retracted upwards by an assistant previous to making the incision, and returned over the division of the pleura after the business is finished, in order to prevent the entrance of the external air into the cavity. This precaution has been neglected in several instances of the empyema without any inconvenience, where one side only was operated upon, but, perhaps, this provision may be more necessary should it be requisite to make the perforation on both sides.

The



The whole of the fluid may be drained off by placing the patient in a horizontal posture, and bringing the opening to the most depending part. The operation being finished, a pledgit is to be applied over the wound, a soft compress, and a retentive bandage: a proper course of strengthening medicines is to be pursued as soon as the water is all drawn off.

It is recommended to perforate the pericardium with the trocar, and to trepan the sternum in order to pass that instrument into the mediastinum, when water is lodged in either of those parts. The first of these is too bold a push to be attempted without absolute authority; the last may be done with safety, but stands in need of the most positive evidence that a fluid exists in the parts before it is put in practice.

*Blood in the Chest.* In this case the general symptoms are more oppressive than in the preceding, and the indications are more overt, part of the blood being thrown up by coughing.

The causes are, wounds, bruises, fractures in the bones of the thorax, erosions, and ruptures of the vessels from violent exertions, &c.

If the collection is great from an external wound, the opening may want to be enlarged, provided the vital functions are greatly impeded. Mr. Sharp, and other eminent men in the profession, advise waiting for the blood to be absorbed, and coughed up: Heister and others recommend an opening to be made as before directed, and tepid water to be  
warily



warily injected, in order to dilute the coagulated blood.

Should a ruptured vessel of some size be the cause of the collection, and the actions of the lungs and heart be vehemently obstructed, so as to endanger the patient's life, it is not likely that any kind of operation would succeed; and in less momentous cases, the vital functions may perhaps not be so much impaired, as to prevent the salutary effects of bleeding, medicines, rest, and regimen, or set aside the more respectable efforts of nature.

*Air in the Chest.* When air passes from the lungs into either of the cavities, it soon proceeds to an alarming height. This collection may originate from injury done to the membrane which invests the lungs, by violent exertion, erosion, or fractured bones of the thorax, which last is the most frequent cause; the air collecting in such quantity as to destroy respiration, and the pulsation of the heart, sometimes forcing its way into the cellular membrane, and diffusing itself all over the body. This emphysematous swelling is particularly known from any other, by a crackling and elastic feel upon pressure or friction.

In such a case it will be proper to make several incisions into the cellular membrane, and endeavour to press the air through them. Should this, and other means already noticed, prove ineffectual, the perforation must be made through the pleura, after the manner described in the hydrothorax near to  
the



the part injured; if not too near the vertebræ or too low down, when it will be right to make the opening between the seventh and eighth rib, about half way from the breast and back-bone, for fear of injuring the intercostal artery and the diaphragm.

Hard compresses placed upon the ends of the rib, and over the tumour, with the napkin bandage repeatedly tightened, has proved successful. See Fractured Rib.

*Matter in the Chest, or Empyema.* This collection is the most frequent of all, and is generally preceded by such symptoms, as leave no room to doubt its existence. It seldom happens without previous inflammation, fixed pain, rigours, cough, and purulent expectoration, inability to lie on one, or on either side, in case pus is collected in both cavities: there also generally appears a kind of œdematous thickness or swelling externally, where nature points for evacuation. The matter generally forms within the lungs and pleura, which if not timely discharged, produces the oppressive symptoms before described, erodes the lungs, diaphragm, ribs, &c. and produces a constant absorption and marasmus.

If there is no natural indication externally, expectoration is stopped, and the oppressive symptoms increase, the operation will become necessary, and must be performed in the foregoing method and place, except that the incision in the pleura, should be generally somewhat longer. A tent is here quite  
necessary,



necessary, and the best kind is that made with a long flat piece of fine linen rag, once or twice doubled, with a piece of thread fastened to its middle and passed round the bandage, which rag will require to be renewed daily, and ought to be proportioned to the size of the fore; a pledgit, soft absorbing compress, and retentive bandage are the further necessary dressings.

Abscesses have been known to form between the pleura and ribs, and to make their way externally, which by being timely opened with the lancet, and kept so by the linen tent till the discharge became trifling, have done exceedingly well. The bark and chalybeate, or vitriolic preparations, with milk diet and proper regimen, are always necessary under these discharges. In two cases of this kind which did perfectly well, the openings were made where nature pointed, the one between the fifth and sixth rib, near to the sternum; the other near to the back-bone, between the sixth and seventh rib.

#### PARACENTESIS of the ABDOMEN.

This operation is performed in that kind of dropfy which is termed *Ascites*: prior to its performance it will be proper to search after the following marks and distinctions, in order to ascertain the existence of the disease, and the propriety of the operation.

DESCRIPTION. The most convincing proofs of a diffused ascites are, an equal and uncircumscribed



scribed tumour of the abdomen, great sense of weight and tightness therein, undulation of the fluid, which is to be felt by placing the palm of one hand flat against one side of the body, and striking it on the opposite side with the other; a dry cough and skin; dyspnæa, particularly in a recumbent posture; great thirst, and paucity of urine; with meagerness and paleness in the superior parts and face.

Sometimes the fluid is contained in cysts of various sizes, and in little vesicles called *Hydatids*, in which instances the fluctuation is not so easily felt, and the tumour is rather unequal. This is also the case when it is partially collected in the *ovaria*, which may be moreover distinguished by the site, hardness, and irregularity of the swelling, by being attended with little or no dyspnæa or cough, and less degree of weakness than when the fluid is diffused throughout the whole of the cavity. The dropsy of the ovary is sometimes complicated with the ascites.

Pregnancy is to be distinguished from the ascites, by the fullness and firmness of the breasts, and the dilatation of os uteri; besides which the thirst is seldom so great, the urine so sparing, or the superior parts so emaciated as in the ascites.

The fluctuation, without perceiving which it is always hazardous to operate, is generally less in degree, in proportion to the viscosity of the fluid, or fullness and tightness of the teguments. The operation is seldom proper when the ascites is mixed



with the anasarca, punctures on the legs and ankles are then far more likely to prove effectual.

When air is collected in the cavity of the abdomen, it is called *Tympanites*. It generally originates in the larger intestines, and sometimes makes its way through a small opening into the cavity. This complaint is easily to be distinguished from the watery tumour, by its tense feel, hollow drum-like sound, and want of fluctuation.

CAUSES. The ascites is produced from debility of the inhalent and exhalent vessels of the abdomen, and obstructions or schirrhous of the liver, or some other viscus.

The tympanites generally proceeds from weakness in the contractile power of the intestines, particularly the colon, which is known to have been wonderfully distended.

When the common course of medicines has not the desired effect, recourse is had to the paracentesis, or tapping. This operation would most probably be less apt to fail, were it not deferred too long. In fact, it ought to be proceeded upon as soon as fluctuation is fully and plainly perceived. Dry and nutritive diet, friction, moderate exercise, bark, and chalybeates, would perhaps have the desired effect, were they administered before the natural contents of the cavity are greatly injured by the surrounding fluid. The operation is to be performed as follows :

The patient being placed conveniently in a chair, or on one side of a bed, is to press his hands, close clasped



clasped together, upon the epigastric region, or an assistant may keep a constant pressure on the upper part of the abdomen, by means of a broad linen cloth perforated or not in the middle, which compression is to be gradually increased as the water is discharged, in order to preserve the patient from fainting.

The surgeon having dipped the end of the trocar in its canula in oil, stabs it suddenly, or pushes it more gradually straight forward into the abdomen, at an equal distance between the navel and the middle of the spine of the ileum or hip-bone, so as to introduce the end of the canula also, which he will perceive to be done by losing the resistance; he then withdraws the perforator, and leaves the canula, through which the fluid is to pass off; all which may be done without the least hazard of wounding the intestines. In the course of the evacuation, the end of the canula is sometimes obstructed by a part of the omentum or intestine, which may be readily pushed away with the blunt end of the probe.

When the fluid is entirely evacuated, a pledget of dry lint and plaister is all the dressing necessary to the wound, over which a large compress dipped in brandy should be applied, and the pressure must be continued, by means of a flannel roller seven or eight yards long, and about five inches broad, which bandage is to be continued from the bottom of the belly gradually upwards, for the support of the intestines and diaphragm. The compress and



bandage may be daily renewed after the second or third day, for a short time.

This operation may also be performed in the dropsy of the ovarium, which commonly makes its appearance more on one side of the body, unless it has burst into the cavity of the abdomen, or is joined with an ascites.

This disease is generally encysted, and has required more than one puncture to evacuate the contents.

The paracentesis was formerly practiced to discharge the air in the tympanites; but it is an expedient of too dangerous a nature to attempt, unless in the utmost point of distress.

It was the practice till of late years, to draw off only a part of the fluid at one time, for fear the patient should not be able to support the discharge; but there is little or no danger in evacuating the whole, provided a weight or pressure be maintained during the time of, and after the operation, equal to that which is removed from the vessels and diaphragm. The encysted dropsy has been known to require more than one puncture, but when the vesicles are small, no good can be expected from the operation.

After the water has been completely evacuated, and every medical attempt to restore the parts to their proper energy and tone, has proved ineffectual, the operation may be again and again repeated. More instances than one are authentically recorded  
of



of persons being tapped once a month for several years together, and of others that have had longer intervals, and felt no great inconvenience, till the time of the operation.

The two following are most remarkable, both which seem to have originated in the ovarium; the one is that mentioned by Dr. Mead, in his *Monita et Præcepta, de Hydrope, of Dame Mary Page*, as recorded on her monument, in Bunhill Fields, who died in the 66th year of her age, was tapped 66 times in 67 months, and had taken away 240 gallons, or 1920 pints of water.

The other case, is that communicated to the Royal Society, by Mr. Martineau of Norwich; in which the disease began to appear after a miscarriage, in the 27th year of the woman's age. She was first tapped in 1757, and had recourse to the operation three or four times in the year, till her death, which happened in 1783; in which space of time, she is said to have been tapped 80 times, and in the whole to have lost 828 gallons and 7 pints, or 6631 pints of fluid. Upon dissection, the left ovarium was found to be so enlarged, as to form an immense pouch, and the peritonæum was greatly thickened, and in some parts ossified.



DISEASED VERTEBRÆ and CURVATED  
SPINE, *with Palsy in the lower Ex-*  
*tremities.*

DESCRIPTION. Persons of each sex, and of all ages, have been attacked with this disorder. In infants, it is generally supposed to proceed from weakness, or some hurt in the birth.

The patient first feels languid and inactive, and presently tires with walking; soon afterwards his ankles and knees grow rather stiff, and his toes point towards the ground, which occasions frequent stumbling, and on moving quickly, the legs cross one another and throw him down. Upon standing up a little while without support, his knees sink and totter, and his body bends forward.

As the complaint increases, his legs and thighs lose much of their powers and sensibility; some being incapable of walking at all, or even moving in bed; others able to walk with crutches, and to turn themselves when laid. The curvature of the spine, which is supposed to be the cause, gradually increases, affecting one, two, or more vertebræ of the neck or back, but seldom those of the loins; the effect of which is only perceived in the lower limbs. Children that are naturally weak, and at the same time afflicted with this disorder in the vertebræ of the back, gradually become deformed throughout the bones of the thorax,

If



If the curvature is not observed, the complaint is generally supposed to be of the nervous kind, and medicines of that tribe, with stimulating liniments and blisters, are in vain repeatedly administered; even when the crookedness is attended to, the whole is commonly attributed to some injury sustained on that part, to remedy which, every kind of machinery is applied, in order to restore the spine to its regular form.

The patient's health does not seem to be materially affected at first, but by degrees he grows weak, and every way diseased; then consumes away, or perhaps continues for a length of time in a lingering wretched state, incapable of moving from the chair or bed; and the curvature still increasing, he is severely afflicted with a train of miserable complaints.

From repeated dissections at different periods of this disease it appears, that in those who have been a short time afflicted, the ligaments were thickened and relaxed, and the bones rather enlarged; that when the disease was of some standing, those appearances were more considerable, and the cartilages between the vertebræ were greatly compressed and diminished; and that in such persons as were in the last stage of this complaint, and died from its consequences, the vertebræ were found to be carious, the cartilages destroyed, and a quantity of sanious matter was lodged between the bones, and the membrane which covers the spinal marrow.



CAUSES. A morbid state of the ligaments and bones, at the part where the curvature first appears, of which the latter is the effect, and not the cause.

CURE. The mode of treatment recommended for the cure of this disease, is said to succeed generally in the first stage, and frequently in the second, except when the spine is greatly and firmly bent; and even in that case, a considerable degree of strength has returned, and the patient has been known to walk alone: but the third stage is ever attended with fatal consequences.

The remedy consists in keeping up a plentiful discharge on each side of the curved part of the spine, by issues made by caustic; which is to be applied in an oval shape, and of proper size to produce an eschar of an inch and a half long, on each side the curve. When the sloughs begin to separate, the middle part is to be cut out, and a large kidney bean placed in each of them; as soon as they are clean, a small portion of cantharides finely powdered is to be sprinkled on the sores, by which means they will be kept from growing up, and the discharge will be increased.

These issues are to be continued open, at least till the patient is able to walk, or till he so far recovers the strength and tone of the ligaments as to get upright. Both issues should not be healed together, and the remaining one may be continued, till the patient can walk firmly. The bark, cold bathing, and other tonic remedies, ought also to be administered during the process. The



The world is highly indebted to Mr. Pott, for the many useful discoveries and improvements which he has made in surgery, particularly for his accurate investigation of this complaint; which, from having been misunderstood for so many ages past, we may venture to say, he was born to elucidate.

### HERNIÆ, or RUPTURES IN GENERAL.

DESCRIPTION. The hernia is a tumour, formed by the intestine, or omentum, or both, falling out of the abdomen into some other part. The appellation of this, as well as some disorders to which the human frame is subject, is not strictly applicable to the complaint. Every kind of rupture, as it is called, being occasioned by dilatation of the peritonæum, or orifice through which it makes its way, and not a laceration.

It has various denominations, according to the situation or nature of its contents. For instance, when these parts protrude at the navel, it is called *Exomphalos*, or *Hernia Umbilicalis*; between the interstices of the muscles of the belly, *Ventralis*; through the rings of the abdominal muscles in the groin, *Inguinalis*, or *Congenialis*; into the scrotum, *Scrotalis*: all which are commonly known by the name of *Bubonocèle*. Should they fall under the ligamentum fallopii, where the iliac vessels pass into the thigh, it is named *Femoralis*; or if through the foramen ovale of the os pubis, by some called the  
great



great foramen of the ischium, its appellation is *Hernia Foraminis Ovalis*. In short, every part contained in the belly and pelvis by a dilatation of its containing membrane, is capable of producing tumours of this kind. When the intestine only is prolapsed, it is called an *Enterocoele*; the omentum, *Epiplocele*; and when both, *Enteropiplocele*.

Herniæ may in general be distinguished from other tumours, by the particular part where the injury happens, and by the swelling returning of itself, or with the assistance of proper pressure, upon laying down, unless when it adheres, or is incarcerated. Further, if the prolapsed portion be *intestine*, the tumour is smooth, flatulent, and spongy to the touch, and smooth and even to the sight: hard excrement is scarce ever to be felt therein; and when devoid of fecal contents, it makes a kind of murmuring noise. The induration from tension is generally mistaken for hardened lumps of excrement; but feces retained in the ileum are commonly thin, which has more than once been unfortunately proved in the operation. If the hernial sac contains *omentum* only, it is flaccid and equal, is more compressible, and appears crumpled and uneven: if the contents are both intestine and omentum, the different marks may, by close attention, be perfectly distinguished. When the hernia has been of long standing, the sac commonly adheres to the adjacent parts, and cannot be returned.

Many



Many persons have fallen a sacrifice to extreme delicacy, by not taking notice of this complaint in due time; indeed, it very seldom happens that a rupture proves dangerous, but from the patient suffering it to remain in the prolapsed state too long, before proper assistance is called: in short, very few of them would prove more than troublesome, were the contents, when in a moveable state, properly reduced, and secured by an accommodating truss. In cases of this sort, neglect and false delicacy too often prove the parents of danger.

Modest women are particularly distressed upon these occasions; and the best way for the practitioner to get at the truth is, to enquire strictly where the pain is most acute; if in or near the navel or groin, let him openly avow his suspicions of some swelling being formed in that part to a female friend or attendant, and let him act according to the report.

Women are most subject to hernia umbilicalis, ventralis, and femoralis; men and children to the bubonocoele.

**CAUSES.** The hernia may proceed from a relaxation in the orifice through which it protrudes, from violent exercise, falls, strains, blows, jumping, or any vehement exertion: a difficult labour has been the occasion of ruptures in the navel and groin; crying, and violent straining, will produce it in children.

**CURE.** The cure of herniæ that are free from inflammation and adhesion, consists in reducing them



them when down, and preventing relapse by the application of a proper truss. The method of reducing the hernia with the hand is as follows:

Place the patient on his back, with his buttocks much higher than his head, raising the thigh of the diseased side; grasp the lower part of the swelling with the hand, and gently press the contents back towards the aperture, endeavouring now and then gently and artfully, with the fingers, to insinuate that part which is nearest the opening. If this business creates much pain and fatigue to the patient, leave off for a time, and try one or more of the following means:

Bleed, and apply cloths dipped in cold water, or a solution of crude sal ammoniac in vinegar, cold, in preference to warm fomentations, which have little or no effect towards relaxing the tendinous expansion, and tend principally to rarefy the confined air, and increase distension. Stimulating enemas, repeatedly injected, and tobacco glysters made from a decoction of the leaves, or with an infusion of the cut tobacco, after the manner of tea, both which will answer equally well as throwing up the fumes. Venæsection to twelve ounces, followed by the warm bath and a dose of Dover's powder, have proved successful when the gut had been down two days, and the parts were too tender to bear handling. A profuse sweat broke out, and in two hours the stricture gave way to gentle pressure. Two glysters were administered previous to the bath, but both came away without fœces.

Linen



Linen cloths dipped in vinegar, alone, or with crude sal ammoniac dissolved in it, and fresh applied as soon as the former grow warm, are esteemed most efficacious.

In cases of this nature, fomentations, cataplasms, and embrocations, avail but little; neither can much be expected from purges given by the mouth, as they seldom get beyond the stomach. Salts dissolved in a large quantity of water, and taken by cup-fulls, are likely to pass the stomach and duodenum; a large dose or two of calomel with opium may perhaps have better effect than medicines in a liquid form. Suppositories made of salt, honey, and aloes, are also said to be useful. Two of the following pills given every hour or two, with now and then a cup-full of the solution of the salts, was prescribed by a late eminent physician:

Take of the cathartic extract, half a dram;  
calomel, ten grains; opium, two grains.

To be made into six pills.

Dashing cold water on the patient's legs and thighs, is recommended, and blisters to the abdomen.

If such efforts should prove ineffectual, and the symptoms of inflammation, &c. rather increase than diminish, to such degree as not to admit of handling the part without extreme pain, the operation becomes the only resource; for which no precise period can regularly be pointed out. In some cases, a reduction has taken place after several days  
extreme



extreme pain; at other times, a gangrene has come on upon the second day. The nature of the patient's habit, the strength of his constitution, the means which have been pursued, and the present symptoms, ought all to be considered, before a matter of such weight is absolutely determined upon. On the other hand, to wait till hiccoughs and vomitings come on, till the pain and tenderness of the part subside, the pulse grows languid, and cold sweats approach, little or no benefit is to be expected.

To decide alone in a matter of so much consequence, when the judicious opinions of others can be obtained, would be the very height of vanity and imprudence; a suitable consultation is therefore adviseable to the most skilful. The mode of operating is described under the following article.

#### HERNIÆ IN PARTICULAR.

*Bubonocèle.* The word bubonocèle strictly signifies a tumour in the groin; but is commonly understood to mean such a hernia as not only falls into the groin, which is more expressly termed inguinalis, but also those that descend into the scrotum in men, or the labia pudendi in women.

It is known by the tumour extending itself from the rings of the abdominal muscles to the groin or scrotum. It generally comes on by slow degrees, but sometimes proceeds suddenly from violent exertion,



ertion, and other causes. It is moveable for a time, in which state it generally returns upon laying down, of itself, or with moderate pressure, making a rumbling or gurgling noise. The external tumour, in the strictured state, is hard and inflamed; the patient suffers most acute pains, attended with heat, and vomitings ensue; first, of aliment, afterwards, of excrement; hiccuping, extreme languor, and cold sweats, follow; which symptoms are generally the harbingers of dissolution. Previous to this alarming period, when every probable effort has been tried without effect, the operation becomes the only resource, which is to be done after the following manner:

The pubes and groin being clean shaved, let the patient be laid upon his back on a table about three feet four inches in height, with his legs hanging down; and after he is properly secured, begin the incision with a strait dissecting knife, just above the rings of the muscles, and carry it through the skin and fatty membrane down to the lower part of the tumour, securing such vessels as may require it, before you proceed. After having carefully divided every adhesion, make an opening into the peritonæum or hernial sac, about an inch and a half below the stricture, so as to admit the end of the forefinger, upon which, as a director, pass a narrow-bladed curved knife, with a probe point, keeping the end of the latter all the way rather short of the former, up to the ring, and down to the bottom of  
the



the incision in the scrotum. On the first opening of the sac, a quantity of serous lymph will discharge itself; and when it is perfectly laid open, the intestine pushes out, and seems to be more in quantity than was expected, except it happens to be confined with the omentum.

The incision at the ring is now to be made, and it ought to be large enough to pass the end of the finger round the inside of it, which is necessary in case of adhesion: this incision may be also made with the probe-pointed knife, planted on the finger as before, or with the probe-scissars, pressing the gut down with the finger, and carrying either instrument between that and the ring; it may be made about an inch in length upwards.

The sac and stricture being now laid open, the state of the contents are next to be inspected. If found and loose, they should be immediately returned; in doing which, the fingers must be applied to that part of the intestine which is next the mesentery, and the part which came forward last is to be slowly and gently pressed in, first observing to elevate the leg and thigh, which greatly facilitates the return.

The prolapsed part being reduced, examine the sac, a portion of which, if large, thick, and hard, ought to be removed with the knife; taking care not to come near that part with which the spermatic vessels are connected.

The next thing to be considered is, what ought to be done when the parts are too unsound to be  
returned.



returned. If the omentum is unfit for reduction, let the injured part of it be expanded, and removed by a pair of strait scissars, just within the edge of the altered part; which caution renders ligature unnecessary, since hæmorrhage is then scarce at all likely to happen.

When the intestine is gangrenous, and there is a danger of the part separating after a return, the upper part is to be connected with the wound by suture; in doing which, the needle should be passed through the mesentery, at a small distance from the gut, including such a portion of that membrane as may render the connection probable, at the same time taking care not to wound the gut. If the intestine is in so bad a state as to require division, and the sound parts of the divided ends can be brought together, carry the ends of the gut just over each other, and sew them together, fastening them both to the inside of the belly at the upper part of the wound, so as there may be a chance of adhering thereto, and forming an artificial anus, in case the ends should not otherwise unite. If the continuity of the intestinal canal cannot be preserved, and there is no possibility of a re-union, stitch the mesentery to the upper edge of the wound, keeping the mouth of the gut as open as possible. The most favourable part of this business is extremely hazardous, but proofs are not wanting where the very worst state has been attended with success: besides, it is evident that in such cases, death al-

Y

most



most inevitably follows the neglect of such an attempt.

When the parts do not adhere to the sac, and are easily returned, a slight stitch or two made through the teguments is adviseable, with slips of adhesive plaister in the intervals; lint spread with cerate, gentle compress, and a retentive bandage over all. In all cases, the patient is to be kept upon his back, and a proper truss should be worn after the wound is healed. The mildest dressings ought to be applied, and quietude preserved. Lint is the best application; and the wound should not be dressed a second time till the third or fourth day, unless the discharge is great and bad: light regimen, and every kind of medicine that will allay febrile heat, are to be administered. See Wounds in General.

The bubonocoele in women is liable to the same accidents, and is to be treated in like manner with that of men; the same kind of truss is also proper.

Those ruptures which adhere greatly to the scrotum, should be properly suspended in a bag truss: they scarce ever do well after the operation.

*Hernia Congenialis.* There is also a distinct kind of rupture, called Congenial, which till lately was indiscriminately known. The sac which contains the intestine or omentum, in this kind of hernia, is formed by the tunica vaginalis testis, the prolapsed portion having intruded itself into the bag which forms



forms that tunic, is thrust forth from the body in contact with the testis, at the time when that part descends by the groin into the scrotum.

This complaint generally begins in the early state of infancy: when therefore a rupture has been known to exist from that period, it may be considered as one of this kind. To distinguish it more clearly from the common hernia, let it be remarked, that the sac of this is never distended to so great a degree as the other often is; that it is generally of a pyriform figure, and is scarce ever remembered to have been lodged in the groin, unless the testicle is there likewise. The parts are more subject to adhesion in this kind of hernia, and are often connected with the testis itself, which cannot often happen with the common hernia, and it requires the utmost dexterity and care to separate them. A large quantity of fluid collected in the sac, and confined by adhesion at the entrance above, has been known to give it the appearance of a common hydrocele; but a strict enquiry into the previous state of the tumour will obviate every kind of mistake.

This species of rupture ought to be particularly attended to in its more early stage, and when reducible, is to be kept up by proper bandage or truss; if strictured, it is to be treated as in the bubonocoele.

*Hernia Umbilicalis, or Exomphalos.* The umbilical or navel rupture is formed by a protension of the hernial sac through the navel, and its contents



are the same as in other ruptures. A great quantity of omentum is sometimes found in those of long standing, and infants and women are most subject to this disorder; the first from the separation of the funis, the last from child-bearing. Some of the latter are large, yet easy to be reduced; others quite immoveable: many have been suspended for years, without much trouble; but persons advanced in life are subject to frequent pain and weakness in the bowels from them.

In young persons, where they are small, and do not adhere, they are to be cured by proper bandage or truss. When strictured, the operation may be necessary; but it ought to be the very last remedy, as it has seldom been attended with success. It is to be performed upon the same principle with the bubonocèle. Cases are recorded where the mortified part has been removed both by art and nature, and the fœces have made a constant passage through the opening for many years.

*Hernia Ventralis* is when the parts protrude between the interstices of the muscular fibres of the abdomen, which disorder is mostly observed in some part of the linea alba. The hernia, in its recent state, may be kept in with a proper truss, otherwise it is apt to increase to a great bulk; if strangulated, the opening must be cautiously dilated.

*Hernia Femoralis.* This rupture makes its descent into the thigh through the arch made by the os pubis and the ligamentum fallopii, where the  
iliac



iliac vessels and tendons of the psoas and iliacus internus muscles pass from the abdomen. It is more frequent in men than in women. In endeavouring to reduce this part with the hand, it must be pressed upwards, rather towards the pubis than the ileum. If the operation should prove necessary, it is proper to remark, that the incision in a male must be made obliquely outwards, in order to avoid the spermatic vessels; and that there is great danger of injuring the epigastric artery, which would be difficult to take up, without hurting the large vessels. Considering the great space between the ileum and pubis, which is chiefly occupied by cellular membrane and fat, it would be right first, to attempt returning the prolapsed part without dividing the tendon; but if a division is absolutely necessary, make the incision as small as may be done with propriety, with the probe pointed knife on the end of the fore-finger, held tight under the edge of the tendon: proceed further as is already advised.

*Hernia Foraminis Ovalis.* This species of hernia very seldom happens, and has been only attended to of late years: it descends through the foramen ovale of the os pubis. In men it protrudes through the perinæum, in women near the labia pudendi. This is to be treated after the manner of other ruptures.



Disorders *of the* Scrotum.HYDROCELE *with its* DISTINCTIONS.

Those disorders which are termed spurious or false herniæ, derive their names from the parts in which they are seated; as hydrocele of the tunica communis, &c. from the change in their natural structure; such are, the circocele, varicocele, and farcocele; to which may be added the inflammatory disease of the testicle, called Hernia Humoralis.

DESCRIPTION. The term hydrocele is arbitrarily confined to the watery tumours, which are formed within the membrane of the scrotum, the coats of the spermatic vessels, and of the testicles. The first commonly proceeds from a general anasarca, and is frequently carried off by punctures in some more depending part of the body; the latter are local, and may be divided into three distinct heads; the first of which is a collection of water, formed in the cells of that part of the cellular membrane, called tunica communis, which covers and connects the spermatic vessels: the second is, when it is formed in one cell only of the preceding tunic, and is termed the encysted hydrocele of the tunica communis;



communis: the third is produced by a fluid collected in the tunica vaginalis testis.

CAUSES. All these membranous parts are supplied with a subtle fluid that keeps the contained parts from adhesion; which fluid, either from a defect in the absorbent vessels, or an increased secretion thereof, becomes accumulated within the confined cavity, and by gradual distension, forms a tumour.

#### PARTICULAR DESCRIPTIONS *and* CURE.

##### *Hydrocele of the Cells of the Tunica Communis.*

When of moderate size, the scrotum discovers no appearance of disease, except when it is corrugated; at that time it seems fuller, and hangs lower on the diseased side, and upon being suspended lightly in the hand, it feels heavier than common; the testis and epididymis are to be distinctly felt below in their natural state, and the spermatic chord is considerably thicker. The form of this tumour is pyramidal; it gradually recedes upon pressure, and falls down immediately upon that pressure being withdrawn; it is attended with a trifling pain in the loins, if the extravasation is confined below the ring of the abdominal muscle, the chord may be distinctly felt; and if the cells within the abdomen are affected, the distended membrane feels not unlike the epiplocele; when this is the case, and the tumour is large, it



becomes exceedingly troublesome, and the cure is hazardous; and in its better state, few persons like to submit to the operation.

*Encysted Hydrocele of the Tunica Communis.* This tumour is seated in the same part with the preceding, except that the water is contained in one cell, forming a cyst. It generally occupies the middle of the chord, and is of an oblong figure, it is commonly so tense as to prevent fluctuation, by which means it has been often mistaken for what never has existence, namely, a Wind Rupture. It gives the person no pain, and sounds when struck as if it contained air, not water. It is sometimes complicated with a true hernia, or the vaginal hydrocele. Infants are more subject to this disorder than adults; and it is often dispersed in young children by warm fomentations, and keeping the belly open. Discharging the fluid by puncture, with a lancet, will also prove successful with children. In adults, the cyst is sometimes so thick as to require an incision its whole length, which may in certain habits be done with the greatest safety.

*The Hydrocele of the Tunica Vaginalis Testis,* or bag which envelopes the testicle, is a common disease, and all ages are subject to it. It is sometimes brought on suddenly, at other times advances slowly; is of various size and figure, for the most part round, but as it grows becomes largest downwards. In some it is hard, when it is difficult to feel the testicle; in others soft and lax, which particularities afford



ford an opportunity of easily distinguishing that part. It gives but little pain, except in the back from its weight, and may commonly be distinguished from an hernia, by being able to feel the upper part of the spermatic chord. When the chord is not to be felt it is most probably combined with an enterocele. In its simple state, it may be known from every other tumour of its kind, by a firmness and hardness at the posterior and middle part of the tumour, owing to the junction of the tunica albuginea and vaginalis; whereas in every other hydrocele, the fluctuation is felt equally in every part. By this circumstance alone it may be distinguished from the anasarcaous tumour of the scrotum, which is every where alike soft and swelled; from the encysted hydrocele of the chord, which though circumscribed, is not compressible; but is the same to the touch in every part; and from the enterocele, by the testicle being generally to be found at the inferior part of the swelling.

The cure is either *palliative* or *radical*; the first, by discharging the fluid; the last, by destroying the cavity of the bag.

The palliative remedy is performed by puncture, with the common lancet, or the trocar; the latter is much to be preferred, as it procures a total discharge of the fluid, without poking with the probe, or much handling. Lint and plaister are generally applied to the little wound, and the scrotum, if large, is to be supported by a bag truss. The orifice com-  
monly



monly heals very soon, but in some habits it has been known not to terminate so readily, considerable inflammation having followed.

The fluid ought to be drawn off much earlier in this disease than it generally is, waiting only till the part is so far filled, as to admit of its being done with safety; since an early treatment of this kind is very likely to prevent a return.

Various means have been used for the radical cure of hydroceles, incision, cautery, caustic, ligature, tent, and seton; and have all been warmly espoused. The intention is, to bring on inflammation sufficient to produce adhesion in the tunics, without alarming symptoms. The more gentle then, and less irritating the method is, if equal to the task, the more entitled to preference; upon a comparative view, no one promises so well, and is supported by more respectable authority, than that by seton. The instruments used for that purpose on the improved plan are as follows:

A trocar with its canula nearly one fourth of an inch in diameter; another canula, called the seton-canula, made of silver, just of fit diameter to pass easily through the canula of the trocar, the length of which ought to be five inches; and a probe six inches and a half long, with a fine steel trocar point at one end, and an eye at the other, sufficient to carry a seton of coarse white sewing silk, that will pass without trouble through the seton canula.

The



The operation is thus performed: Perforate the inferior and anterior part of the tumour with the trocar, withdraw the perforator, and when the fluid is discharged by the canula, pass the seton canula through that of the trocar, so as it may reach the upper part of the tunica vaginalis, and be felt in the superior part of the scrotum; then convey the probe, armed with the silk, through the seton canula, and pierce the tunic and integuments with its point; which done, draw the seton through the canula, and leave a proper length out at the upper orifice, then withdraw both the canulas.

This operation is greatly improved by the particular attention of Mr. Howard, who, in a pamphlet that displays much ingenuity and judgment relative to the subject, has observed, that fewer threads will do in general, and that consequently the trocar and canula may be less in size; he advises a few threads to be drawn from the middle of the seton, when the inflammation runs high; and is of opinion, that in some irritable habits eight or ten threads are sufficient from the first; also that the inflammation might be regulated, by increasing or diminishing the number of threads.

As soon as the operation is finished, let the patient be put to bed, and give twenty drops of the thebaic tincture, which may be occasionally repeated. About the second or third day, the testis and scrotum begin to inflame and swell; when foment, poultice, and suspend the part: order also a  
cool



cool temperate regimen, and keep the body open. As soon as the inflammation is abated, the patient may be permitted to lie on a couch, or sit in a great chair with his legs raised; and a dose of bark in any form may be taken three times a day. A pulse quicker than natural, a white tongue, thirst and restlessness, a slight degree of pain in the part, and sometimes in the loins, are most frequently the general symptoms attending this mode of operating, particularly when regulated by Mr. Howard's judicious precautions.

By the end of ten or twelve days, the foreness and swelling is generally dispersed, when it is time to withdraw the seton; which ought to be done by taking out a few threads at a time. A soft pledgit of lint, spread thin with white cerate, is to be applied from the first over each orifice, and the saturnine cerate over all. In some constitutions, it is necessary to remove the whole of the seton, as soon as the parts become moderately inflamed.

By this most eligible method, for which, in its improved state, the world is indebted to that great ornament of his profession, Mr. Pott, the parts are preserved entire; and except in irritable or bad habits, when properly managed, more inflammation is seldom produced than is necessary, towards forming cohesion.

There are three methods of operating for the radical cure now in vogue, every one of which is zealously supported; namely, by seton, caustic, and



and simple incision. Inflammation is the necessary consequence of each, and must be more or less, according to the nature of the constitution, and the greater or less exposition of the membranous parts.

The operation by *Seton* is already particularly described.

The method of using the *Caustic* is as follows:—Apply a piece of caustic paste, about the size of a sixpence, well guarded with adhesive plaister, on the anterior and inferior part of the scrotum; remove it at the end of five or six hours, then apply a large suppurative poultice, and suspend with a proper bandage. The eschar generally separates in a few days, and the whole tunic sloughs out in about five or six weeks, when the sore begins to heal.

The operation by *Simple Incision* is done after the following manner:—The patient being properly secured by two assistants, let the operator grasp the tumour firm with one hand, and with the other divide the teguments, by making one incision from the upper part of the tumour anteriorly, down to the most depending point; the tunica vaginalis being thus laid bare, an opening is to be made with the lancet, at its upper extremity, large enough to admit the fore-finger, on which the probe-pointed bistoury is to be conducted, dividing the sac, in the course of the incision to the lower part thereof. If the sac is  
much



much thickened or hardened, a portion of it may be removed on each side. Should the testis protrude, gently press it back, and support it so with a long slip of lint placed between that and each edge, and hanging out at the bottom of the wound; dress further with soft lint, a compress of soft linen rag, and suspend with the bag or T bandage. About the third or fourth day, warm fomentations, and the common poultice, are generally used till the parts digest, and inflammation is abated; afterwards, dress as in common. The principal advantage attending this operation is, the opportunity of thoroughly investigating the state of the testis, which if schirrous, can be at once removed, otherwise the cure is not likely to be complete.

The treatment after each operation, is to be governed by the symptoms.

*The Cirsocele or Varicocele*, is a disease or enlargement of the spermatic vein, and may be very troublesome, but seldom requires any other relief than a suspensory bandage. Surgeons formerly attempted its cure when extremely painful, by means of caustic and ligature; but those severe methods are rationally discarded. Heister advises the varicose part to be opened by incision, but this only in very painful cases. It most frequently arises from obstruction by pressure, or relaxation in that part of the venal system.



## SARCOCELE.

DESCRIPTION. Is an induration and enlargement of the body of the testis, which in time becomes schirrous, and frequently degenerates into a cancer. The epididymis is also subject to grow hard and swelled, insomuch that this appendicle, has been mistaken for an adventitious swelling in the testis. The epididymis may remain schirrous for years, and then suppurate; and such indurations are not so much dreaded as to consequence, whilst the glandular part of the testis remains sound: but should that part grow schirrous and cancerous, the epididymis must be so too in the end.

Schirrous tumours of the testis, as well as of the breast, have been known to continue in an indolent state for several years. Some principal surgeons are of opinion, that the latter should be extirpated in the early stage, but that the former should remain till some particular change shall require such assistance; such as increase of size and pain; still when the tumefied testis is of a stony hardness, and uneven, there is scarce ever a probability of resolving it. Under such circumstances then, the earliest opportunity for operating is the best, for fear the chord should partake too much of the injury. The sarcocele in the first stage, is attended with little or no pain, but as it increases in hardness and magnitude, it is accompanied with great sense of weight in the  
loins,



loins, and acute lancinating pains, which frequently strike up the chord to the small of the back.

CAUSES. It may arise from nips, blows, &c. from original inflammation in the part or its process, and from the complaint called *hernia humoralis*.

CURE. In the more early stage, attempts to resolve this obstinate tumour have been crowned with success. An alterative course of calomel with cicuta, has at that period been efficacious. Electrical shocks through the part, daily repeated for a length of time, have been known to reduce both the hardness and tumefaction, in so great a degree, as to set aside the apparent necessity of the operation. See *Schirrus*.

It is remarked by one or two surgeons of the greatest eminence, that extirpation of this part is often attended with bad success in its milder stage of *schirrus*, and has answered well in its most malignant state. This remark only tends to prove, that castration ought not to be advised without absolute necessity; and that success should not be despaired of in the very last stage. Notwithstanding which, when the case is fair for operation, and the necessity of it is truly apparent, it would be extremely wrong to lose the opportunity. When the chord is at the same time indurated and thickened, at or above the ring, and pain is felt in the back, whilst the part is suspended, and the patient is lying in bed, the case is desperate, and the operation ought not to be undertaken.

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This complaint has been known to originate in the abdomen, from an inflammation near the course of the spermatic vessels, which produced a thickness down the chord, with the tumour and induration down the right testis. After repeated bleedings, and cold applications, the parts were for a time relieved from pain, and grew less. In a short time after, the left testis and chord were slightly tumefied, but soon recovered by the use of the antiphlogistic remedies. The inflammation again returned to the right testis, which grew larger and more indurated, and was attended with greater pain in the back, and down the chord, than in the testicle. Not long after this relapse, the inflammatory diathesis still remaining, the testis was extirpated, and in a few days the patient died.

The operation is generally performed after the following manner: Place the patient horizontally on a table of convenient height, letting his legs hang down, which should be properly secured by assistants; grasp the tumour firm, and make an incision down the whole course of the swelling, through the cutis and cellular membrane, beginning an inch at least above the part where the chord is to be cut, and ending at the inferior part of the scrotum. The spermatic chord being bare, separate the artery and vein from the vas deferens, and making a ligature with a running knot round them, about a quarter of an inch above the part of the chord which is to be divided, separate the chord; then dissect away

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the divided part, together with the testicle from above downwards, which being done, untie the knot on the chord, and separate the vein and artery from the nerve, if practicable, and pass a proper ligature round them; otherwise include nerve and all, leaving the former ligature loose, in case there should be necessity for it afterwards.

If the integuments in the line of operation are thin and inflamed, it is thought proper to make two femi-oval incisions, the length of the tumour, so as to include such parts of the skin as are diseased.

This mode of operating is also thought necessary when the tumour is large, because so much loose skin is said to be productive of abscesses, and subject to grow indurated and bad.

Mr. Sharp, after having dissected away the testicle from the lower part of the scrotum, and secured such vessels of that part, by ligature, as required it; advised two ligatures to be made round the upper part of the chord, if there was room enough between the ring and tumour, and the division of the chord to be made just below the inferior ligature.

Mr. Warner, on the contrary observes, that the diameter of the spermatic artery is in this part so small, as to render a previous ligature round the chord unnecessary; and that the vessel may just as easily be secured, as an artery after amputation of the finger, which is never thought necessary to be done till the part is removed. He also informs us, that he has several times trusted to the application  
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of a small piece of lint to the mouths of the vessels, after having compressed them for some minutes between his fingers; notwithstanding which respectable authority, a disagreeable hæmorrhage may ensue, provided the artery is not firmly secured.

The separation of the whole being completed, and the vessels both of the chord and scrotum properly secured, soft lint is ordered to be applied to the bottom of the wound, and a pledgit spread with white cerate over all, with a suspensory bandage. The first dressings are seldom to be removed till the fourth or fifth day, and are afterwards to be renewed according to the nature and quality of the discharge. If the chord is obliged to be divided high up, care should be taken not to separate it too much from the surrounding parts for the introduction of the needle and ligature, of which last a proper length ought to be left, for fear of retraction.

After all these general directions from some of the most eminent men in the profession, an extraordinary revolution seems to be marked out both in the method of operating, and the after treatment of the wound, by Mr. Fearon, whose method of operating both in castration and excision of the breast, deserves due attention. He performs as follows in the extirpation of the testis: He first makes a longitudinal incision from the abdominal ring, nearly to the bottom of the scrotum, and after having freed the chord from its surrounding connection, he separates



the blood-vessels from the vas deferens, then passes a needle and ligature between them, and secures the former only; the whole chord is then divided at the distance of a quarter of an inch from the ligature, after which the testicle is dissected away.

In case of any ulceration in the scrotum, he makes a second incision, beginning a little above the ulcerated part, and continues it in as direct a line as the inclusion of that part will admit, down to the extremity of the first incision, which answers the purpose of dissecting away the diseased part with the testicle.

The arteries of the scrotum are secured by ligature, the ends of which are left a proper length to hang out of the wound; after which the parts are gently spunged with warm water and laid together, placing the edges of the incision in contact, and as apposite as possible from one end to the other, and retaining them so by two or three futures of the interrupted kind, and several slips of adhesive plaister. For the particular mode of dressing the wound, see Mr. Fearon's Treatise on Cancers of the Breast and Testis. The two cases published by this gentleman of castration, as well as those of extirpating the breast, are undeniable proofs of the superior advantages arising from this method of practice, and they are complete specimens of the different modes of operating, viz. with one and two incisions; both which were equally successful, the wounds being perfectly healed in less than a fortnight. In Kelly's case,



case, a painful fungous sore, about the size of half a crown, in the superior and anterior part of the scrotum, was included within two incisions, which were made in as direct a line as possible: the skin also next the septum scroti, was about half an inch thick, and adhered to the testicle, which entirely subsided as he got well.

*Further DISEASES of the SCROTUM.*

The scrotum is generally subject to inflammation, tumour, abscess, fistulous sinusses, callosities, &c. and is particularly affected with anasarcaous swellings, hæmatocele, and cancer.

*Anasarcaous Swelling.* This may arise from a local obstruction, or weakness of the lymphatics, but is most commonly derived from a general anasarca, which sooner or later diffuses itself into the scrotum. It is a soft, inelastic, pellucid, pitting swelling, and in process of time spreads to the groin and penis; which last, becomes greatly distorted, and is at length buried as it were in the tumour.

The pudendum is also subject to the same affection, to great extent and enlargement.

Both kinds are easily distinguishable from herniæ, or any other tumour of those parts, and are to be remedied, by making a few punctures with the point of a lancet in different parts; which are less likely to inflame than scarifications, or any other means, and if required, can be safely repeated.



## 342    DISORDERS of the SCROTUM.

*Hematocoele.* Is a swelling of the scrotum, or of the spermatic process proceeding from or caused by blood, and arises from a rupture, disease, or injury done to the vessels of those parts; and if the testis is sound, may generally be cured, by making a longitudinal incision, and discharging the extravasated contents: but if complicated with a sarcocoele or schirrous testicle, a removal of the testis is advisable, provided the spermatic chord is not greatly diseased.

*Cancer in the Scrotum.* Chimney-sweepers are particularly affected with this disease. It begins with a kind of wart in the lower part of the scrotum, and soon produces an ill-conditioned painful sore with jagged edges, which, in process of time, eats through the cellular substance, and seizes the testicle; then runs up the spermatic chord, and spreads over the groin, abdominal muscles, and viscera, which parts become tumefied, indurated, and continue painful in great degree, till death happily releases the patient. It is called the foot wart, and generally proceeds from want of keeping the corrugated part clean, and as free as possible from that pungent concrete.

The surest method of cure is, to remove the whole of the diseased part by excision, as early in the disease as possible. It is remarked by Mr. Pott, that this complaint seldom or ever appears before the age of puberty; but when it begins to spread, it extends itself rapidly, painfully, and destructively,  
particularly



particularly if it reaches the testis. For the general treatment in its more advanced stage, see Cancerated Ulcer.

## Disorders *of the* Penis.

### PHYMOSIS.

DESCRIPTION. The phymosis is when the prepuce or fore-skin, is so tightened over the glans, as not to admit of its being drawn back; it is generally accompanied with inflammation and tumour of the part, pain, and some difficulty in making urine, also with an ulceration, or morbid secretion between the prepuce and glans. Sometimes the skin is greatly hardened and elongated, and partial adhesions take place; the discharge is confined, and the concealed parts become much eroded, especially if the complaint is virulent.

CAUSES. Natural constriction, a want of cleanliness, and venereal intercourse.

CURE. In slight cases, immersing or syringing the part with warm water, washing it with camomile infusion and milk, or applying the emollient poultice, have frequently sufficed. If the part inflames, the customary means must be pursued, but when it proceeds from a venereal cause, and chancres, or foul ulcerations are concealed beneath the prepuce, provided the stricture cannot be otherwise

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relieved, it will be absolutely necessary to divide that part, and to prescribe a mercurial course. A proper division is generally requisite, when the glans is naturally too tightly covered.

When the prepuce is not much thickened and indurated, an incision only may answer the purpose, and the most eligible and ready manner of making it, is that proposed by the ingenious Mr. Bell; since it obviates the several inconveniences which attend the common mode of cutting it upwards with the knife, or scissars. It is done by passing a director along the side of the prepuce, between that and the glans, with a sharp-pointed narrow-bladed bistoury adapted thereto, and buried in its groove with the edge forward: as soon as the end of the director is felt at the termination behind the corona, the point of the bistoury is pushed through the prepuce, and drawn forward the whole length.

Should the end, or chief part of the skin be greatly indurated, it will be necessary to draw the prepuce forward, and take it off with the knife, or to cut off the whole of it, taking care to secure the vessels with the ligature.

The first dressings should be strips of soft lint, properly interposed between the edges of the wound, in case of a partial incision, also, between the prepuce and glans, to prevent adhesion; linen compress, and the suspensory.



## PARAPHYMOSIS,

**DESCRIPTION.** This disorder is the reverse of the former, being a strictured retraction of the prepuce behind the glans. It is sometimes naturally turned back in this manner without the least inconvenience. In the morbid stricture, the glans and prepuce are both swelled and inflamed, and reciprocally affected, till the circulation is sometimes so greatly obstructed as to produce a mortification; which is commonly preceded by a pellucid tumour, called the crystalline.

**CAUSES.** This complaint may arise, from whatever excites inflammation and tumour in the glans penis or prepuce, when the latter is drawn behind the corona; but it is mostly brought on by infectious intercourse.

**CURE.** In recent cases, the prepuce has sometimes been reduced by pressing the glans back, and at the same time drawing the prepuce forward. Cold applications repeated for some time together, bleeding, and other antiphlogistic means, are proper, when the parts are in a state of inflammation. If the stricture increases, and the crystalline begins to form, three or four incisions are generally made on the sides of the prepuce, with the shoulder of a lancet, sufficiently deep and long to set it free; numerous and slight punctures sometimes answer equally as well. Hæmorrhage, in moderate degree,  
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is serviceable: lint and emollient poultices are proper applications to the wounds, and the penis should be suspended with its end upwards. If the habit is languid, and gangrene is threatened, the bark, cardiac medicines, and warm poultices, will be particularly necessary.

As the paraphymosis most frequently arises from a venereal cause, it will be generally proper to pursue a gentle mercurial course.

*Imperforated Prepuce.* This defect is now and then found in new-born infants. Sometimes it may be remedied by a small puncture, taking care to keep the part free from adhesion, by means of a dofil of lint, or some kind of soft tent. In a case of this kind, where the end was twisted and coalesced, the prepuce was drawn forward, and taken off above the adhesion; which did perfectly well with very little trouble.

*Imperforated Glans and Urethra.* If the obstruction is only occasioned by a thin membrane, an opening is easily to be made with the lancet; if thick and fleshy, and not the least appearance of a passage is to be observed, a small triangular trocar must be carefully passed up the glans, as near as possible to the natural course, to the part where it may appear distended by the urine. All which new passages must be attentively kept open, by dofiles of lint, a small bougie, or whatever will preserve the aperture, without painful distension.

*Incomplete Perforation.* If the urethra should be open just behind the glans or frænum, it may be necessary



necessary for certain natural purposes, to make a proper opening, by means of the trocar, through the glans, to the part where it naturally terminates; and to heal up the false opening with the assistance of a short flexible catheter. In cases of this sort, the operation need not be attempted, till the patient is arrived at a proper age to require it.

*Contracted Frænulum.* Sometimes it happens that the frænulum is so short, as painfully to incurvate the glans at the time of erection; in which case, it may be totally divided with the greatest safety, either with the scissars or scalpel.

*Warts and Excrescences.* These complaints particularly infect the penis, but seldom without a venereal cause: they generally fix on the corona, the body of the glans, and the inner duplicature of the prepuce; are of spongy fungous nature, pendulous, or with a broad basis; separate, or in clusters.

The smaller kind may be easily removed, by gentle catheterics, such as savin-leaf powdered, alone, or mixed with burnt alum, red precipitate, or calomel. Others require to be removed with the knife, or repeated touches with the lunar caustic. A gentle alterative course of mercurial unction, and decoction of sarsaparilla, or of the woods, must be pursued in order to free the habit.

*Fistulæ and Calculi* affecting the urethra, are elsewhere particularly treated of.

*Cancer and Mortification.* A cancer may originate from a mere pimple arising on the glans, which  
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is generally the case with chimney-sweepers afflicted with the foot wart, on this part, or the prepuce. It may also be produced from an enlargement, schirrosity, and erosion of the glans, after the paraphymosis. For its remedies, see Cancerated Ulcer.

A mortification also, sometimes proceeds from a continued and extreme stricture behind the glans. Upon such occasions, *amputation* mostly becomes necessary, and may be performed as follows:

A tourniquet being applied near to the abdomen, make a circular incision through the sound integuments, just above the diseased part, then draw the skin back, and make a second incision boldly through the body of the penis; loosen the tourniquet, and secure such vessels as bleed freely with the needle, or tenaculum and ligature. If after lint and proper compress have been applied, blood should still ooze from the surface, a silver canula may be introduced into the urethra, and a slip of rag wound gently round the penis. The canula is seldom necessary, except when hæmorrhage of this kind happens, to prevent which, every necessary precaution ought to be taken at first.

### STONE *in the* BLADDER.

Stony concretions are formed in most parts of the body, but no where so frequent as in the kidneys and bladder. All ages, and both sexes are subject to this complaint; men more than women; children most. It



It is not the business of this publication to aim at investigating the remote causes of the concrete, or why some constitutions are more loaded with it than others, and such like vain pursuits; the principal design throughout being, to describe the symptoms of every disease which comes under the particular cognizance of the surgeon, and the means for its cure.

**SYMPTOMS.** The following signs generally indicate a stone in the bladder. Great and frequent inclination to make urine, which is voided with much pain, by drops, sometimes comes flush and stops suddenly, attended and succeeded by an uneasy sensation in the glans penis, titillation at the end of the urethra, and tenesmus, or frequent attempts to go to stool. The urine is sometimes very clear, much oftner slimy, gravelly, and loaded with mucus of a purulent cast: it is also bloody, particularly after riding, which exercise generally gives great pain to the bladder, urethra, and penis. The patient is often not able to make water, except in a recumbent or kneeling posture, standing as it were upon his head, and now and then feels as if the stone had shifted its lodgement; all which symptoms and sensations may be produced by inflammation, tumour, stricture, and hardness at, or near the neck of the bladder; also, from a stone or inflammatory affection of the kidneys. Particular stress is laid upon the sense of weight being taken off at the neck of the bladder, by sitting on a hard seat,



feat, or pressure on the perinæum with the fingers; but the most certain method of judging is, from searching, and even that has proved deceitful, under the management of the most experienced lithotomist.

The symptoms generally increase, according to the size, surface, number, and weight of the stones contained in the bladder, and the irritability of the habit. Some calculi grow to a great size in a short time, others may remain many years without acquiring much bigness.

CAUSES. The first formation of the stone is generally in the kidney: a few gravelly particles being there concentered, pass from thence down the ureter into the bladder, and form a kind of nucleus; which is gradually enlarged by the accretion of similar particles, separated from the urine, and retained in that cavity. Coagulated blood, hairs, bullets, needles, small pieces of bone, bougies, and other extraneous bodies, have also become the bases of stones in the bladder.

CURE. Divers medicines have been recommended as solvents to the stone, most of which are prepared from a strong alkali, and taken in a diluted state: besides which, medicated infusions and decoctions, mineral waters, terebinthines, lime-water, fixed air, mineral acids, and neutral salts, have been prescribed; notwithstanding which, no positive evidence of dissolving the stone in the bladder can be produced in favour of the most boasted  
remedy



remedy of them all. That each has its palliative quality, cannot perhaps be denied; but bleeding, diluents, opiates, and gentle laxatives, may have equal effect, devoid of every noxious quality; since every fit of the stone is occasioned by an inflammation of the coats of the bladder.

Great relief is attributed to taking no other liquid than an infusion of dried peach-leaves. It is a fact, that a person who was frequently afflicted with violent pains from a real stone in the bladder, and dreaded being cut, after having continued that liquor for several months as common drink, and taking no other medicine, except a customary opiate and gentle laxative, was able to ride on horseback upon most occasions: during the time of taking the infusion, he voided more gravelly particles than before; and previous to using it, he had been for two or three years greatly confined at home, and was seldom able to bear the motion of his chariot.

When the patient is grievously and repeatedly afflicted with symptoms of the stone, extraction becomes a most necessary and effectual remedy. But before that operation is described, it will not be improper to notice the surest method of ascertaining the existence of a stone in the bladder, which is commonly called searching.

## SEARCHING.



## S E A R C H I N G.

The operation of searching, or founding, is performed by means of a solid instrument, called a found; which, with regard to males, is required to have a long curvature, proportionate to that of the urethra; whereas for females it may be nearly strait. The passing the found into the bladder of the male appears to be a trifling operation; but it has sometimes baffled the most expert, and dexterity in using it is only to be acquired by frequent practice. The difficulty of using the found in females, is principally the introduction of it into the urethra, the passage into the bladder being much shorter, and more direct than that of the male.

Sounds should be of various sizes, and suitable to different patients and ages: the very slender ones are not so easy to pass as those of larger size, in proportion to the size of the passage, by reason of the interruptions they are likely to meet with from the inequalities of the urethra.

The patient being laid on his back upon a table of convenient height, with his thighs elevated and widely extended, take hold of the penis with the left hand, and with the right pass the end of the found, dipped in sweet oil, into the urethra, holding the convex part of it towards the belly of the patient; thrust it gently down the passage, at the same time drawing the penis forward upon the instrument,



instrument, till it reaches the perinæum, near to the anus; then turn the instrument dexterously, so as to carry the concave part next the abdomen, and without much force, push it forward into the bladder. Sometimes its passage is obstructed by the neck of that cavity, to get over which, instead of using force, the extremity must be tilted upwards. If it should not be forwarded by that means, withdraw it a little, and pass the fore-finger of the left hand, properly oiled, up the rectum, by which the end of the sound may be lifted up, and easily slipped into the bladder.

Those surgeons who are not sufficiently skilled in this operation, to make the turn in its proper place, may pass the instrument, with the concave part towards the belly of the patient.

The sound being entered, pass it regularly from one side of the bladder to the other, in search of the stone: if it meets with a hard body, stop, and be convinced again and again, till it shall give positive evidence both to the touch and ear. A stone may be sometimes imperceptible from lodging under the orifice of the bladder, or in a fold thereof; if so, pass the finger up the rectum, and press it against the neck of the bladder, as it were towards its fundus, or alter the position of the body variously.

If all the symptoms of the stone are found to occur without ulceration, or induration of the prostate gland, or neck of the bladder, the search ought not

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to be entirely given up after the first or second time. Too hasty a declaration in a matter of this kind, has been known to injure the reputation of a practitioner. Some authors have laid down rules for judging of the size, shape, and number of the stones, by their feel with the staff; but the business is of too difficult a nature to admit of the least degree of certainty, therefore they deserve but little attention.

If a stone is absolutely discovered, it will be right to examine into the state of the patient, with respect to the probability, or improbability attending the operation of extracting it. The principal objection to its immediate performance is, a fit of the stone in the kidney or bladder, which ought to be clearly removed before the attempt is made. The catheter was formerly the instrument used in searching, till Mr. Sharp recommended the steel found, which from its solidity, renders the sensation much more distinct.

The patient, if plethoric, should lose a few ounces of blood, be kept upon a low diet about a week before the operation, and take a gentle purge or two with oil and manna at three or four days distance. A glyster ought always to be administered early on the morning of the operation. A purge a day or two before, with a glyster the same morning, together with proper regimen for a few days, is sufficient preparation in most other cases.

CUTTING



## CUTTING FOR THE STONE.

The operation has at different periods been performed four different ways. The most antient method is described by Celsus, and was called *Cutting on the Gripe*; it was afterwards more generally known by the appellation of *Apparatus Minor*, to distinguish it from that invented by Johannes de Romanis, and published by his pupil Marianus, anno 1524, which was called *Apparatus Major*, principally from the increased number of instruments used therein; the *Apparatus Altus* first made known by Pierre Franco, anno 1561; and the *Lateral Operation*, invented by Frere Jaques, in 1697.

*The Lesser Apparatus*, or cutting on the gripe, was done, by introducing the fore, or middle-finger of the left hand dipped in oil, into the rectum, in search of the stone, at the same time pressing with the right hand just above the pubis, so as to bring the stone to the neck of the bladder; then forcing and retaining it on the left side of the perinæum, above the anus, an incision was made down to the stone, which was turned out with the fingers, or a scoop. This operation was difficult to perform when the stone was beyond the reach of the fingers, for want of proper direction, and the vasa deferentia or vesiculæ seminales must have been frequently wounded.

*The Greater Apparatus*. In this mode of cutting, a grooved staff was passed into the bladder, and the



convex part of it was made to project against the left side of the raphe in perinæo, and was kept in that position by an assistant, whilst another person held up the scrotum. An incision was made from near the bottom of that part, and continued to within about three quarters of an inch of the anus, in the course of the staff; then turning the back of the knife towards the rectum, the point was slipped forwards in the groove; a great part of the bulb of the urethra was divided, and the incision was continued to the prostate gland: the beak of the gorget was then placed into the groove of the staff, and pushed through the gland, the rest of the urethra, and the neck of the bladder; these parts were then dilated by the fore-finger, the forceps were introduced, and the stone was extracted.

This mode of operating may be reasonably objected to, on account of making a longer wound than necessary, the violent distension and laceration of the parts next the bladder, and the difficulty of extracting large stones. In consideration of which last objection, Pierre Franco is said to have contrived the *Apparatus Altus*.

*The High Operation.* This operation after having been discontinued full 150 years, was revived in London, anno 1719, and performed as follows:

The patient being properly disposed upon a table, with his head lower than his breech, so that the abdominal muscles might be in some degree relaxed, a silver catheter adapted at one end to a flexible leathern



leathern tube, was introduced into the bladder; the windpipe of an Indian cock was used by Mr. Douglas, instead of the leathern tube, and the ureter of an ox by Mr. Cheselden; either of which was fitted to a syringe; by means of which apparatus, from eight to ten ounces of warm water, or barley water, were gently thrown into the bladder. As soon as the bladder was nearly filled, the catheter was withdrawn, and the penis was immediately tightened, to prevent the return of the fluid. Heister says, that drinking small liquors answer the purpose of filling the bladder equally well, if so, it deserves the preference, by acting more regularly upon the bladder than could be done with injection.

The bladder being properly distended, an incision was then made with a round edged scalpel, from three to four inches long, between the recti and pyramidal muscles, immediately above the ossa pubis, gradually dissecting down to the bladder, which part was easily to be felt just above the margin of the pubes, at their symphysis; then pushing back the peritonæum, together with the intestines, the incision was continued into the most prominent part of the bladder. The fore-finger was then introduced, the wound was enlarged by a probe-pointed bistoury, to the length of two or three inches, the stricture on the penis was removed, and the forceps were directed to the stone by the fingers of the left hand.

This method of operating was given up from the following objections: the peritonæum was some-



times unavoidably wounded, and the intestines protruded; the urine insinuated itself into the cellular membrane, and when the peritonæum was injured, into the cavity of the abdomen; both which accidents were the occasion of bad fores, and excoriations, inflammation, suppuration, and sinusses. Besides, it was remarked, that few above the age of 30 survived this mode of operation: the distension of the bladder was also thought injurious. These and some other bad consequences, introduced the lateral operation, which has for some years past been attended with extraordinary success, in persons of all ages.

*The Lateral Operation.* This was much improved by Rau, Cheselden, and others. The inventor was accused of being an ignorant necessitous monk; but notwithstanding the virulent reflections and jealousies which ingenious and enterprising men were subject to, even at that time of day, he is said to have practised latterly with the greatest success, and to have differed but very little from the present mode of operating.

The following is the method now practised, in its most improved state:

The parts being clean shaved, and every thing in readiness, the patient is laid upon a steady table, in length about three feet and a half, or four feet; breadth two and a half; and height three feet, upon his back, and is properly secured, by fixing the noose of a broad tape, about a yard and a half in length, round each wrist, and fastening the hand, ankle,



ankle, and foot of the same side together; he may be further secured, by passing a double ligature under his hams, and round his neck: his head is to be supported upon a pillow, and another or two are to be placed beneath his hips, in order to raise the pelvis rather higher than the belly; his buttocks are to be brought just over the end of the table, an assistant on each side of the table is to keep his legs and thighs properly separated and secured, and a third is to keep the upper part of the body steady.

The operator now passes the grooved staff, and convinces himself and the assistants of there being a stone; he then inclines the handle of the staff over the right groin, so as to fix the convex part of it against the left side of the perinæum, in which position it must be held firmly and steadily, by the right hand of a skilful assistant, who can, at the same time, with his left hand, support the scrotum.

The surgeon being seated in a good light, makes his first incision through the skin and fat, beginning a little to the left of the seam, about an inch from the lower part of the scrotum, and continuing it obliquely along the perinæum, rather below the anus, between that and the tuberosity of the ischium. As soon as the teguments are divided a sufficient length, (on which great convenience depends) the fore and middle finger of the left hand may be inserted into the wound, pressing down the rectum with one, and opening the wound near the seam with the

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other.



other. A second incision is then made in the same direction with the former, through the muscles, so as to be able to feel the prostate gland, and the groove of the staff: at this time it may not be amiss to rectify the position of that instrument. Then turning the edge of the knife upwards, its point is passed on the fore-finger of the left hand, down to the prostate gland, still carefully depressing the rectum with the back of it, in order to avoid wounding the gut. The edge of the knife is then pushed as laterally as possible along the groove of the staff, inclining the handle rather downwards, till the whole, or most part of the gland is divided, which division will be rendered more perfect, by drawing the point of the knife back along the groove in the same line. Others direct the point of the knife to be carried on the finger, and inserted into the urethra, just beyond the bulb; also that the division be continued laterally up to the prostate gland only, then to make the further division with the cutting gorget.

When instead thereof the gland is divided with the knife, the blunt gorget is used. The knife being laid aside, and the beak of the gorget being carefully guided by the finger nail into the groove of the staff, the surgeon standing up, takes the handle of that instrument into his left hand, and holding it firm, and with proper resistance, nearly at right angles with the belly of the patient, pushes the gorget along the groove into the bladder, which if rightly passed, is followed by an efflux of urine.

The



The staff is now withdrawn, and the forceps are gently to be introduced into the bladder; but before this is done, it is a general maxim with those who use the blunt gorget, to pass the fore-finger of the left hand into the bladder, in order to dilate the passage through the neck of the bladder, and, if possible, discover the situation of the stone. The finger withdrawn, a pair of proper-sized forceps are gently introduced along the course of the gorget, with their blades shut: the gorget is then drawn out, if of the cutting kind very carefully, in the same direction by which it was entered.

As soon as this is done, the forceps are gradually opened, moving the upper blade on the inferior one, as it were on an axis, from one side to the other, in search of the stone; which, if found to lodge behind the neck of the bladder, that part of the cavity must be elevated by a finger passed into the rectum.

The stone being fixed in the forceps, they are held firm by both hands, the thumb of the left hand being placed near the joint, by which means the stone is likely to be preserved whole. The extraction succeeds best by gradually increasing the necessary force, and bearing downwards in the direction of the wound.

If a large vessel is divided, it will be proper to secure it by needle or tenaculum before the stone is extracted; but such an accident seldom occurs to interrupt the progress of the operation. The difficulty of taking up the vessels is generally owing to  
the



the external incision being too confined. When the vessels of the prostate bleed moderately, dry lint, or lint dipped in styptic, may be applied, and held some hours to the part; otherwise, a pledgit of lint, and another of digestive, will suffice.

Should the patient be sick or faint, lighten the bed cloaths, and admit fresh air; if he complains of pain low down in the abdomen, within two or three hours of the operation, together with other symptoms of inflammation, recourse must be had to bleeding, emollient glysters, and fomentations; which latter may be put into a hog's bladder, and applied warm to the hypogastrick region.

When the urine passes freely through the wound, it is a good indication that the deep-seated parts are not much inflamed. Mr. Cheselden generally prescribed blisters when the patient's pulse was low, and ordered a glyster to be given on the third day. The patient should be kept in general upon low diet, for the first eight or ten days. Slips of plaister applied to the edges of the wound, compress, and the T bandage, will be useful as soon as the urine passes the right way. It will be proper for the patient to sit raised in his bed as soon as the symptoms will permit, to prevent the lodgement of urine about the adjacent parts. This wound is treated after the general method, except that after the first dressing or two, it will be necessary to avoid pressing the pledgits in too deeply, or applying them too superficially, both extremes being likely to produce  
fistulas,



fistulas. Excoriations of the buttocks may be prevented, by placing a dry doubled sheet, of proper thickness, under them, and occasionally repeating it. Linen dipped in oxycrate, and anointing the adjacent parts with Nutritum, or Goulard's cerate, are also useful in such cases.

The following circumstances ought to be particularly observed, respecting the performance of this operation :

That the incision through the integuments be made sufficiently large, and low down on the buttock ; also, that the muscles be freely divided, in order to obviate the pain and necessity of cutting upon the stone, and to give a free exit to the urine.

That the incision be not made too near the scrotum, as that is generally followed by an inflation of the cellular membrane, and sometimes with more alarming consequences. From an instance of this kind, the left testis is known to have been affected with tumour and inflammation twelve days after the operation, which resisted antiphlogistics, and produced an abscess in the body of the testis ; the matter was discharged in due time, and the sore healed in a month.

That practical authors are divided in their opinions with respect to retaining a quantity, or discharging the whole of the urine, previous to the operation ; and since the authorities are of equal weight, it may reasonably be concluded, that it is not a matter of the greatest moment,

That



That some principal operators perform the whole of the incision with the knife only, and with the greatest success; that others prefer the cutting gorget, perhaps with equal advantage.

That the opening in the urethra be made near to the prostate gland; and that the division of that body be made as laterally as the position of the staff will admit, in order to avoid injuring the rectum, vasa deferentia, or vesiculæ feminales.

That when the stone is too big for the opening, it will be far preferable to enlarge the incision through the integuments, muscles, or prostate gland, as laterally as possible, whilst the stone is brought forward and held firm by the forceps, than risk the laceration of the parts. Or, when such means are not practicable, to endeavour to crush the stone, and remove each particle with the forceps, finger, and scoop.

That instances have happened contrary to the received opinion, where more than one rough stone has been taken from the same bladder at one operation, and not more than one smooth one was to be found. Proper search should therefore be indiscriminately made, immediately after extracting the first stone; which may be done with the finger, female catheter, or some convenient solid instrument.

That in the lateral operation the most remarkable parts wounded by the knife are, the musculus transversalis penis, levator ani, and prostate gland :  
in



in the old lateral way, or apparatus major, the urethra was wounded two inches on this side the prostate; and the gorget and forceps, in that method, were forcibly pushed through the rest of that passage.

### EXTRACTION *of the* STONE *in* WOMEN.

Women are perhaps equally as subject to stony concretions as men; but the urethra is so short and dilatable, that small stones will easily pass from the bladder, and few there are that grow to such a size as to require manual assistance.

Females have been relieved from the stone in the bladder, by simple dilatation of the urethra with gentian root, sponge-tent, and other inventions. Extraction has been performed by simply passing the gorget into the bladder upon the director, distending the neck with the finger, and introducing the forceps. Instances are related wherein the bladder was opened through the upper part of the vagina, and the forceps were passed for the stone through the opening. But these methods are now laid aside, and the following is generally preferred, both for ease and safety:

Let the patient be placed and secured as is before directed in the lateral operation; pass a grooved director, or staff made for the purpose, through the urethra into the bladder; hold it firm in the left hand, with the groove placed so that the cut may  
be



be made on the left side slanting obliquely; then with the right hand fix the beak of the cutting gorget into the groove, and push the end gently along into the bladder; search for the stone with the finger, and extract with the forceps. Should the stone be very large, and the neck of the bladder be brought forward during extraction, it must be released by cutting through that part upon the stone.

The patient is to be treated, both before and after the operation, in the manner prescribed for the male subject. The dressings may be repeated, with applications of cloths dipped in Vegeto-mineral water and Mindererus's spirit, and emollient ointments: in languid habits, warm fomentations are preferred.

#### STONE *in the* URETHRA.

Small stones are frequently met with in different parts of the urethra, and are attended with exquisite pain, inflammatory symptoms, and a partial or total suppression of urine. If the obstruction is of long standing, and the symptoms are alarming, every means should be applied for relief as soon as possible. The patient, if plethoric, should be bled largely, and be repeatedly immersed in warm water; oil or mucilaginous injections may be thrown up the passage, and thebaic tincture, with essence or wine of antimony, should be fully administered. By thus relaxing the habit, stones of some size have been gently pressed out of the urethra.

When



When a stone is absolutely fixed in some part of the passage, it will be necessary to cut upon and extract it. When it is to be felt at the neck of the bladder, the two first fingers of the left hand are to be introduced into the rectum, in order to press the stone forward into the urethra, and resist the incision; which is to be made in due proportion through the teguments and urethra. The stone may then be pushed out by the fingers in the rectum, or removed by a small pair of forceps, probe, scoop, or hook.

If a stone is lodged further into the urethra, it may be cut upon without much inconvenience, by pulling the skin over the glans as far as possible, making a longitudinal incision down to the stone in full length, turning it out, and slipping the skin back into its former situation; by which means the urine is prevented from passing through the wound, particularly if the incision is made laterally into the urethra, and the wound is likely to heal by the first intention: some object to slipping up the skin, as tending to produce the very ill it is designed to prevent.

When it is situated near the glans, or the opening of the passage, it may often be readily pressed or picked out with the fingers, or some other instrument: if it is lodged further into the passage, it may be cut upon with great safety.

In consequence of some part of the urethra being perforated, stones have been known to lodge in a kind



kind of sacculus, formed in the cellular membrane, and increase to a considerable size: these are to be cut upon the whole length of the tumour, and may be easily extracted. Wounds of this kind are known to heal the sooner, by bringing their edges together with the twisted suture, and passing a bougie up the urethra, beyond the incised part, retaining it in the passage for some time every day. Two singular instances of stones formed in the urethra, are mentioned by Mr. Warner and Mr. Gooch.

#### N E P H R O T O M Y.

It sometimes happens that one or more stones form in the pelvis of the kidney, and acquire size too great to pass into the ureter; in such a case the pain is severe, and a dreadful train of symptoms generally ensue. Inflammation and suppuration in the kidney, are frequently the consequences, and the abscesses burst externally, from which a quantity of fabulous and stony particles are discharged. From accidents of this nature, the old surgeons suggested the operation of cutting through the teguments and muscles, and directing an opening into the kidney itself, sufficient to dislodge the stone. But the difficulty of ascertaining a matter of this kind, as well as the evident danger of the operation, forbid such enterprizes.

It is not improbable that most of the boasted performances of this kind, have been nothing more than



than the common opening of an abscess, which formed in and about the kidney; and from which calculous concretions were discharged, or extracted.

### OBSTRUCTION *in the* URETHRA.

DESCRIPTION. This complaint was formerly attributed to a caruncle, or fleshy excrescence growing in the passage; but upon repeated dissections of the part, not one instance of the kind has been found to exist, except a small tubercle or wart, just at the extremity of the urethra. Many surgeons have considered it as an enlargement of that kind of caruncle, which is formed at the extremities of the vasa deferentia, and is called verumontanum, or caput gallinaginis; but this cannot explain the matter in every case, since the impediment is not confined to one place. Various dissections have clearly demonstrated, that the most general causes are, thickness and contraction, and that those affections do happen in different parts of the passage.

In this disorder the urine generally flows in a small stream, which gradually lessens, and is sometimes forked, particularly if the affection is near the extremity of the urethra; the patient is frequently endeavouring to make urine, and sometimes with great pain and straining; the disease increases by slow degrees, occasions great irritation, some inflammation, and may proceed to a total suppression, if not timely relieved.

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CAUSES.



CAUSES. Chancres, ulceration, and cicatrix; thickness and enlargement of the corpus spongiosum of the urethra, and stricture; the untimely and improper application of astringent injections; callosity and schirrosity of the prostate gland, or neck of the bladder, and obstinate gleet; all which most frequently proceed from gonorrhœa or venereal taint. Inflammation and abscess may also be the causes of obstructions forming in the urethra.

CURE. When thickness, schirrosity, stricture, or ulceration, are the causes, whether they have or have not originated from venereal inflammation, or lues, a gentle mercurial course, with decoction of sarsaparilla, or of the woods, will be necessary; and the best manner of administering it is, by inunction, as directed in the Lues and Venereal Ulcer. The following method has a powerful effect, if duly persevered in:

Take of hemlock leaves powdered, or extract of the same, from four to ten grains; calomel finely levigated, from one to two grains, make them into small pills, to be taken every night at bed time.

A purge should be now and then administered, and the course must be occasionally suspended, provided the mouth becomes affected.

The proper applications to heal the ulceration with, and remove the obstruction are, the medicated candles, or bougies. The distension and compression which they are intended to keep up at the  
part



part affected, may be regularly increased by gradually altering their size. This instrument when extremely small and flexible, by frequent gentle applications; may be made to pass through the most contracted parts, by turning it round and at the same time moderately pressing the end of it against the obstruction. It will sometimes require a little force to overcome the impediment, which ought to be exerted according to the degree of irritability in the passage; in such instances, the bougie must be of middling size. When the part is a little inured to the application, it may be suffered to remain for a length of time in contact with the diseased part; since the benefit will be the greater, the longer they can be retained, without irritation.

Bougies are made of different sizes, from that of the large catheter, down to the knitting needle: they were formerly made of wax with a wick in the middle, after the manner of candles, but the best are now principally composed of pieces of fine rag dipped in a mixture of common emplaster, made with the purest oil, and a portion of fine wax, sufficient to give it a proper consistence, then rolled up in due form and size.

The elective quality of ulcerating or healing which was vainly attributed to Daran's bougies, can never be rationally admitted. Experience proves that some are much easier to be bor'n, and far more effectual than others. Those which are vended by Lallier of Rathbone Place, are much



dearer than common, but have proved highly efficacious in a most obstinate case of stricture in three different parts of the urethra, which twice within the space of three months, was seized with inflammation and total suppression, attended with most exquisite torture. The patient was both times happily relieved by repeated bleedings, warm bathing, enemas, and opiates, with mucilaginous and diluent drinks. Bougies of the most bland as well as of the mercurial kind, were attempted to be used several times before these attacks, but to no good purpose.

After the second inflammation was abated, Lallier's were gradually introduced, and in about three weeks they were worn with the greatest ease, and every obstruction was removed in little more than three months.

Sometimes the bougie acts with too great irritation, and creates a copious secretion from the glandular membrane; when that is the case, it will be proper to discontinue its use, at least for a time. There are also instances and times, when it cannot be worn without great uneasiness, and when even the introduction gives intolerable pain; under such circumstances it would be extremely wrong to persevere, for fear of exciting inflammation and general stricture of the parts, and producing a dangerous suppression. Whence it will appear that great care and management, is sometimes required in the use of this profitable instrument.

Bougies



Bougies charged with escharotics, were formerly used and recommended; but as they commonly occasion great pain and irritation, and cannot be confined to the diseased part, they are fallen into disrepute. Great objections have been made to the use of caustic, yet it is well known, under proper management, to have been efficacious in some of the most obstinate and dangerous cases of this kind. Mr. John Hunter, a surgeon of the greatest eminence, to whom the world is indebted for this and many other useful discoveries, has contrived an instrument for the safe conveyance of the lunar caustic to the part affected only, and in his valuable Treatise on the Venereal Disease, has given (amongst many others) the following observations and directions:

“ When a bougie can readily pass, there is no necessity for using any other method. The caustic may be necessary where the stricture is so tight as not to allow the smallest bougie to pass; or where there is no passage at all, having been obliterated by disease, and the urine passed by fistulæ in perinæo. A piece of lunar caustic scraped to a proper shape and size, is fixed in a small port-crayon fastened to a wire, this is introduced through a strait or flexible canula previously passed up the urethra, as far as the stricture. The application of the caustic need not be longer than a minute, and it may be repeated every day, or every other day, allowing time for the slough to come off; or an abatement of the inflammation, irritation, and spasm,



brought on by the use of the caustic, which frequently occasions a total suppression of urine for a time; against which all the means used commonly on such occasions to procure relief, must be employed. If the patient can make water immediately after the application of the caustic, it will be proper, to wash away any caustic that may have been dissolved in the passage; or a little water injected into the urethra, will answer the same purpose."

Inflammation and abscess, are to be treated after the manner already described under those articles, except, that in these parts, it is the duty of the surgeon, to discharge the matter as soon as it appears to be formed.

#### SUPPRESSION *of* URINE.

This disorder is frequently of a most alarming nature, and arises from various causes. From compression at the neck of the bladder, pregnancy, tumour in the neighbouring parts, or prolapsed uterus; want of energy in the acceleratores muscles, and weakness in the bladder, from over distension, under which circumstances, the catheter is mostly employed with success; irritation or spasm, from stones in the bladder, or urinary passages, ulceration, morbid thickness or stricture thereof; and what is most terrible of all, inflammatory stricture, which is commonly attended with extreme pain, and a total obstruction of the passage. Should repeated venæsec-

tion,



tion, opiates in large doses, injections, the warm bath, and such like treatment prove useless, and every attempt to pass the catheter be of no effect, the only resource is, making an opening into the bladder, provided the bladder is painfully distended with urine; since some suppressions originate in the kidneys and ureters, on which occasions the bladder is empty, and its neck is generally very much constricted.

Surgeons are still divided in their opinions with respect to the most proper part for perforating the bladder; some are for doing it just above the symphysis pubis, others prefer, passing the trocar just above, and a little to the left of the prostate gland; the perforation is also advised to be made through the rectum, or through the vagina.

The first method is particularly recommended by the late Mr. Sharp, in preference to that in perinæo, on account of the difficulty which he says there is in guiding the instrument into the bladder, and the danger of keeping the canula the necessary time, in a part so much inflamed and thickened: but experience proves, that the inconveniences are not so great as represented, and that the urine passes off more easily by the perinæum, than above the pubis; also that the canula may be lodged and occasionally taken out to be cleaned, with the least difficulty and uneasiness, at the inferior puncture.

Each operation may be performed as follows:

That above the ossa pubis, by making an incision about two inches long through the teguments



and muscles, and perforating the bladder with the trocar, about an inch, or rather better above the symphysis. The perforation has been made with equal safety in that part, without previous incision. The canula should be from an inch and a half, to two inches in length; if longer, it is supposed to be injurious when the bladder collapses; if shorter, it will be kept with difficulty in the bladder. It may be necessary to remove and clean it once in three or four days; to do which, a probe should be passed through its hollow, upon which the canula may be easily withdrawn and replaced. The canula may be fastened round the body with tapes strung through the rings at its verge.

To puncture the perinæum, which mode is generally preferred, an incision is first to be made through the integuments, at a moderate distance from, and parallel to the seam, just beyond the bulb of the urethra, and the trocar is to be inserted rather to the left of, and a little above the prostate gland; taking care to avoid wounding the urethra, and parts which lie at the back of the neck of the bladder. Mr. Bell has contrived a certain method of discovering the entry of the trocar into the bladder, by forming a deep groove in that instrument, from its point up to the handle, which will admit a passage to the urine the moment it enters the cavity. The canula is to be left, secured, and removed, as before.

Perforation may be easily performed through the rectum, but cannot well be done without either injuring



juring the *vesiculæ feminales*, *vasa deferentia*, or ureters, all which lie at the back part of the neck of the bladder.

When women are troubled with suppression of urine, and cannot be relieved by any other means, the perforation is to be made through the vagina, by introducing the left finger into that passage, and directing the point of the trocar upon it, to a prominent part of the bladder, nearest to the mouth of the vagina. As the canula must necessarily be left in the opening, it should be of sufficient length to be fastened by tapes to the T bandage, made to pass over both the labia.

It will not be improper in this place to notice the use of the Catheter. The method of introducing this instrument into the bladder both of men and women, is respectively the same with that of the sound. The catheter was formerly the instrument used for searching, till Mr. Sharp recommended a solid steel instrument for that purpose, namely the sound; which from its solidity, renders the sensation much more certain and distinct: the catheter therefore is seldom used for any other purpose than drawing off the urine.

There is a particular delicacy required in passing the catheter with women, which every male practitioner ought to be master of, and carries great recommendation with it; viz. introducing it into the *meatus urinarius*, without exposing the pudendum. This is to be acquired with a little practice, by passing



fixing the end of the catheter between the upper part of the labia, over the clitoris, down to the upper part of the entrance of the vagina, and depressing its handle just as it reaches that point; the opening of the urethra being about a finger's breadth below the clitoris,

### INCONTINENCE *of* URINE.

The neck of the bladder may be so injured or weakened, as to lose its retentive faculty. It is sometimes a symptom of the stone, arising from irritation and stimulus, which is frequently relieved by mucilaginous liquors, oily liquors, emulsions, and opiates: it proceeds also from a paralysis in the sphincter vesicæ, for which bark and steel, and cold applications are sometimes used with success; repeated applications of blisters to the os sacrum, have proved effectual in the latter species of the complaint, after every other means had failed: the Bath waters have also been serviceable in this complaint, by invigorating the nervous system. When it proceeds from this cause or a laceration of the parts in extracting the stone, the jugum or yoke, invented by Nuck, will have good effect. A steel truss to compress the urethra with in perinæo, is also recommended by Nuck and others. Where pressure would be injurious, a kind of flat urinal made hollowing to the thigh, may be worn with great advantage.

Women are also subject to this inconvenience from the same causes, but it most frequently originates



nates in them, from difficult labours. Pessaries made with sponge, box, or lignum vitæ, and passed into the vagina, will answer well, when pressure is allowable.

### IMPERFORATED ANUS.

Infants are sometimes born without perforation in the anus; in which case, if an opening is not soon made, the meconium will excite violent gripes, vomiting, swelled belly, convulsions, and death. When the part where the anus should be has the mark of cicatrix, or is covered with a thin membrane, which is generally protruded by the contents of the gut, an opening should be made about an inch in length, with an imposthume lancet, or scalpel. If the parts are closed up by a thick fleshy substance, or there is no mark for direction, the operation is both difficult and dangerous; especially if the rectum terminates high up, toward the sacrum, in the bladder, or vagina.

In an obstruction of this kind, an incision should be made sufficiently large through the integuments, if the fœces do not follow, the finger is to be passed into the wound, in search of the rectum, and a trocar or narrow-bladed scalpel, is to be carefully directed up to the termination of the gut, upon the point of the finger, carrying the edge of the knife towards the os sacrum, for fear of wounding the bladder in males, and the vagina in females.

Dossils



Dossils of lint should be repeatedly introduced, of proportionate thickness to the intended passage, and of sufficient length. The perforation may be easily kept open in slight cases, but if it is made high up, it will require the utmost care and attention, for several months, to preserve the aperture. A large silver or leaden pipe, sponge tent, gentian root, and such like applications, have been used for this purpose, but the distension and irritation occasioned by them, give great pain; proper sized dossils of lint are perhaps the best means for perfecting this work, and may be retained by suitable compresses and bandage.

#### PROLAPSUS ANI.

DESCRIPTION. The rectum is sometimes inverted or prolapsed, both in adults and children, which complaint is generally termed a prolapsed anus. This part will protrude to a considerable length, is often very painful, and appears with a dark fleshy aspect. When the disorder is of long standing, and the patient is of a relaxed habit, the difficulty lies in keeping it up after reduction, since it generally returns upon going to stool. The prolapsed part may sometimes remain a long time exposed, without incurring bad consequences, but from neglect of reduction, it has been known to inflame, swell, and gangrene; the consequence of which was, an entire separation of the verge of the  
anus;



anus; instances are related of the whole becoming cancerous.

CAUSES. Weakness and relaxation of the sphincter muscle or rectum, dysentery, piles, tenesmus, difficult labours, costiveness, or whatever stimulates the rectum to violent exertion.

CURE. The prolapsed part ought always to be reduced as soon as possible; and it may be easily done, when there is neither tumour nor inflammation attending it, after the following manner.

The patient being placed on a bed, in a prone posture, with his buttocks raised higher than his body, the surgeon should press against the protruded end with the palm of one hand, whilst he endeavours to push in that part which is near the verge of the anus, with the fingers of the other. If swelled and inflamed, apply cloths repeatedly dipped in camomile infusion and milk, or weak vegeto-mineral water, emollient cataplasms, &c. bleed also, and order cooling medicines and low diet, and proceed according to rule, postponing every attempt to reduce till the symptoms are removed.

The best method to prevent a relapse when relaxation is the cause, are thick compresses and the T bandage, and astringent injections made with a decoction of oak or pomegranate bark; the truss invented by Mr. Gooch, or a small lump of the strengthening plaister properly formed, and wrapped up in a soft rag, may be applied externally, and secured with compress and bandage. The bark  
and



### 382 TUBERCLES *and* EXCRESCENCES.

and chalybeates should be administered internally, together with cold bathing. If the disorder is produced by dysentery or tenesmus, starch glyster with thebaic tincture, are proper; if by piles or costiveness, the remedies calculated to relieve those complaints.

#### TUBERCLES *and* EXCRESCENCES *in and about the* ANUS.

These tumours frequently infest the lower part of the rectum, and are differently denominated according to their figure and size; among which are ranked the condyloma, ficus, crista, fungus, &c. They generally form on the cuticle, are of a pale white, or reddish colour, and in consequence of pressure, are sometimes broad and flat, at other times grow like warts, &c. in process of time they get connected with the cutis, and even the subjacent muscles.

They are most commonly caused by a discharge of vitiated ichor, or purulent matter, and are particularly observable about the private parts of both men and women that are affected with gonorrhœa, or venereal taint.

If small, and not much compressed at their basis, a slight insersion of favin-leaf powdered, alone, or mixed with a small portion of calomel, or gentle touches with the lunar caustic, will often prove effectual; but the best and readiest method of cure is,  
at



at once to remove them by excision, and to touch the part from which they were extirpated, with lunar caustic. A gentle mercurial course will be necessary, when they arise from a venereal affection.

### HÆMORRHOIDS, or PILES.

DESCRIPTION. When the veins in and about the rectum are distended with, or discharge blood, they produce the complaint which goes under the denomination of piles; and it is distinguished into two kinds, the hæmorrhoides cæcæ or blind piles, and the apertæ or open piles.

The blind piles are when the veins are so much distended with blood, as to resemble and equal the size and shape of peas, grapes, walnuts, or even pullets eggs; they are also of longitudinal form, appear livid, and feel like little bladders: they are sometimes soft and flaccid, and give but little pain, at other times tense and inflamed, tormenting the patient in high degree.

The open piles are when these swellings burst and discharge a quantity of blackish grumous blood preceding or following the fœces; sometimes the distension and irritation are so great, as to produce painful and obstinate stricture. The discharge after the first, is more red, and at length changes to a ferous or slimy moisture, the continuance of which impairs the strength, and induces a hectic or cachectic habit.

The



The common symptoms of this complaint are, a heavy pain in the head or loins, vertigo, or general listlessness, painful foreness, and itching at the fundament; all which pass off as soon as the vessels burst. If the piles have remained some time distended before they discharge their contents, they become a firm fleshy-like tubercle, or swelling, bearing a dusky appearance, which state is mostly occasioned by a previous effusion of blood into the surrounding parts.

Notwithstanding the suggestions of some respectable authors to the contrary, the hæmorrhoids, in certain degree, must be reckoned salutary, particularly in atrabilious and plethoric habits, and the general use of repellents, or too powerful refrigerants, will do great mischief. Instances can be produced of great injury being done, by too implicitly complying with this novel doctrine.

When the hæmorrhoids are produced by compression only, from adjacent tumour or costiveness, the cause being removed, the effect directly ceases; general evacuations seldom prove effectual in a constitutional cause, without the hæmorrhoidal discharge, or topical bleeding.

When the discharge is profuse, dropsy or chachexy, may be the consequence in weak or gross habits; it is therefore necessarily to be restrained. These bleeding tubercles may be sometimes situated so high up the rectum, as to be inaccessible to common means, in which case, the surgeons of former



mer ages recommended passing up the actual cautery through a canula. People are more subject to these complaints as they advance in life.

CAUSES. Compression from indurated fœces, costiveness, gestation, schirrous or other tumours in or near the rectum; sedentary and high living, constitutional plethora, &c.

CURE. The blind piles arising from the three first causes, are to be relieved by gentle laxatives; such as cream of tartar, and washed flowers of sulphur, with electuary of cassia, sulphur troches with nitre, &c. internally: externally, a liniment with simple ointment, an ounce; and oil of box, a scruple; or with equal parts of hog's lard purified, and nut-galls finely powdered; poultices made of bread, or linseed meal, with or without thebaic tincture; or Jones's laudanum, may also be applied to the parts affected. When stiff, inflamed, or exceeding painful, topical bleeding with leeches, or scarification with the lancet, is highly serviceable. Sitting upon a hard seat gives comfortable relief, when the parts are exceedingly painful and heated. If the tumours grow so large as to obstruct the passage of the fœces, create great pain and trouble, and are situated within reach, they require to be extirpated, otherwise they may degenerate into ulceration and fistula; to effect which, the ligature is generally preferred. If the basis is broad, the double ligature may be passed through it, and tied distinctly as on the schirrous tonsil.

C c

When



When the hæmorrhoidal discharge is too copious, or so frequent in its return, as to reduce the patient extremely, cooling and diluting medicines, and proper diet, infusion, decoction, or the juice of yarrow, the juice of nettles, the decoction of bark with elixir of vitriol, and astringent injections small in quantity, and frequently repeated, are likely to be serviceable. Should this treatment fail, a silver or leaden tube, wrapped round with soft rag, is recommended to be inserted into the gut, as is also the appendicle of the blind gut of some small animal, to be thrust up the intestine in its flaccid state, then filled by the help of a small syringe with tepid water, and tied tight, in order to compress the vessels; but if within reach, a part of the bleeding vessels should be taken up with the tenaculum and ligature.

FISTULÆ *near to, and in the* ANUS.

DESCRIPTION. The appellation of fistula should be confined to sinuous callous ulcers, but its sense is more generally extended to collections of matter formed upon the buttocks, and about the rectum, which from the parts being loosely enveloped with cellular and adipose membrane, are particularly subject to deep sinuous ulcers.

Disorders of this kind have different appearances, according to the nature of the patient's habit, and may justly be divided into the incomplete, and the complete.

The



The incomplete, or abscess kind, seizes the patient under various forms, and by neglect, mismanagement, or some bad cause in the habit, is likely in process of time to become truly complete.

One makes its attack under the form of a phlegmon or circumscribed tumour, attended with great inflammation, soon suppurates, and commonly proves critical.

Another comes on with much inflammation, which spreads about superficially; in it the part is not much tumefied, the skin appears of a dusky erysipelatous colour, the cellular membrane becoming sloughy and producing but little matter.

A third is very formidable, and wears a gangrenous aspect. The cellular and adipose membranes are both much affected, and the skin appears of a dusky red, without much tumour or resistance upon pressure; forming distinct loose swellings which resemble the anthrax or carbuncle. The symptoms attending this kind at first are, great thirst and restlessness, frequent chilly fits, with a full jarring pulse; in the progress of the disease, the patient is terribly fatigued with a numb, aching, or shooting pain in the part aggrieved, together with incessant watching; the urine is dark and turbid, the pulse becomes quick, weak, and unequal; and the strength declines apace. The integuments and adipose membrane, are gangrenous and sloughy throughout the diseased part; a small quantity of matter of bad quality is formed under the skin, and sometimes a deep seated sore forms beneath the same.



It often happens, that these affections have great influence on the bladder, vagina, urethra, and rectum; creating strangury, dysury, diarrhœa, tenesmus, and costiveness.

Sometimes an abundance of pus and deep sloughs are formed about the rectum, with moderate symptoms; at other times, a slight hardness only is to be found near the anus, which painfully and gradually suppurates, and breaks with a small opening, discharging more or less matter, of good or bad quality, according to the nature of the cause and constitution.

In some instances, the matter borders closely upon the rectum, perinæum, or neck of the bladder, and pervades them in one or more places. In venereal cases, the disease generally communicates with the urethra, or prostate gland, producing great misery to the patient. It has also been known to form high up in the pelvis, near the os sacrum. In most cases, when the abscess collects in the neighbourhood of the rectum or bladder, it occasions strangury, dysury, and sometimes a retention of urine. An abscess sometimes occurs, which is called the blind internal fistula; it is formed near the anus, and makes its way through the gut only, remaining entire externally. Authors make it appear exceedingly difficult to ascertain the seat of this abscess, which is pretty clearly laid down in the sequel. Thus far relates to the description of sinuous abscesses in these parts which are vaguely termed fistulæ.

The



The true complete fistula is a deep, narrow, callous sore, or sinus, discharging a thin acrid sanies; and generally proceeds either from neglect, mismanagement, intemperance, or bad habit. It may take its rise from a sore formed near the vertebræ of the loins, psoas muscle, or os sacrum; or may be the effect of a diseased urethra, scrophula, lues venerea, &c. forming sinusses which run round and into the rectum, and burst out near the anus; such cases too often prove destructive.

CAUSES. Fever, variolous matter, hæmorrhoids, hard-riding, intemperance, a diseased prostate gland, or urethra, and a distempered habit; the true fistula is mostly occasioned by neglect or bad management.

CURE. No particular method of treatment can be laid down, as suitable to every state of this disorder. Abscesses forming about these parts are not easily to be dispersed, neither is it adviseable to make the attempt, as they commonly afford necessary relief to the habit. The principal business then of the surgeon is, to regulate the inflammation, assist suppuration, discharge the matter by incision, open sinusses, and heal effectually.

If the tumour is of the phlegmon kind, and the symptoms are violent, which is generally the case in full sanguine constitutions, bleeding and gentle evacuations will be proper. The best external application is the common poultice, which should be repeated every four, or at least every six hours. As



soon as suppuration is complete, and not before, an opening should be made the full extent of the abscess.

If the skin of the diseased part is of a yellowish erysipelatous cast, which is mostly the case in bilious habits, and the inflammation has spread wide with moderate tumour, evacuations are not necessary. If it has a dusky appearance, the integuments are soft and pappy, and have but little sense of feeling, attended with languor, drowsiness, &c. as noticed in the description, which mostly happens to aged and debilitated habits; also, in weak atrabilious constitutions, and when the disorder springs from intemperance, evacuations are highly improper. Cardiac medicines, the cortex and red wine, and warm antiseptic cataplasms, are immediately necessary.

The stranguary and dysfury are to be relieved by bleeding, if the state of the patient's habit permits; nitre with gum arabic, or compound powder of tragacanth; also mucilage of gum arabic and syrup of marshmallows in equal parts, a solution of soluble tartar and manna in the common emulsion, laxative glysters, and such like remedies.

In retention of urine, bleeding and the foregoing remedies are necessary; as are also anodynes, bladders of warm water applied to the pubis and perinæum, and the warm bath, together with oily and anodyne glysters. The use of the catheter has been often productive of bad symptoms indeed; during the inflamed state, or violent spasm in the neck of  
the



the bladder, little good can be expected from the attempt.

If attended with a tenesmus, a purge with oil and manna, joined with a few drops of thebaic tincture, may be now and then administered; also, a thin starch glyster, with the same drops, or opium dissolved.

In case of piles, or obstinate costiveness, bleeding and a cool regimen, ripe fruit, laxative glysters, the emulsion with soluble tartar, and frequent application of the common poultice, with or without a solution of opium, are proper.

Should a troublesome diarrhœa afflict the patient, give the starch mixture, or white decoction with an additional quantity of gum, thebaic tincture, powdered rhubarb, and the like.

As soon as suppuration is perfectly complete, a free opening is to be made with the knife or lancet, at the place where the matter points, down to the seat of the abscess, and to be continued upwards and downwards to the extent of the fore.

If the intestine appears to be much denuded, or is eroded by the matter, which may be known by passing the finger up the rectum, and the probe externally by the abscess, it will be necessary to lay both cavities into one, dividing the gut from the upper part of the cavity where the matter formed, or at least from the eroded part of the intestine, down through the verge of the anus.

The curved probe-pointed knife, with a narrow blade, is the most convenient instrument for this



purpose; which being introduced into the sinus, whilst the fore-finger of the other hand is in the intestine, the point is thrust through the opening, if there is one, if not, one may with little force be made, and received by the finger in the gut, which can be conveniently brought down by it, dividing the whole extent with the edge of the knife, from the part pierced by its point, through the verge of the anus. Thus, by one simple incision, the cavity both of sinus and intestine, may with the greatest facility be laid into one, and will answer the purpose of a radical cure equally as well as when part of the gut has been removed, which was the method practised formerly, and is still persevered in by some principal surgeons.

The same method will also prove effectual where the fore has burst of itself, and the gut is denuded, or so perforated, that the matter discharges itself both by the anus, and the orifice of the fore.

How far preferable is this method to that laid down by Le Dran, Cheselden, and other eminent practitioners, as well as writers, who thought it absolutely impossible to cure a fistulous abscess in ano without extirpating a part of the intestine and anus; first drawing out and retaining the parts for excision, by means of forceps, looped probes, and ligatures, and using probe scissars and torturing instruments to operate with.

The three distinctions generally made in this complaint are, the blind external, the blind internal, and the complete; and are meant to signify  
little



little more than the bursting by one or more orifices, through the skin only, through the intestine without an orifice in the skin, or through both skin and intestine. The first and last are easily to be discovered; the second by matter being discharged with the stool, and by pressure of the gut; also, by the expulsion of air from the cavity of the fore into the intestine, which is perceptible both to the touch and ear. The seat of the abscess may be further discovered, when the tumour is subsided, by the discolouration of the skin, and a kind of hardness, which a careful examiner can clearly investigate by the touch. The hollow being thus discovered, a stout lancet, or a knife passed deep enough, will seldom fail to enter it; thus it becomes what is commonly termed complete, and is to be treated in the preceding manner.

Sometimes, especially when the adipose membrane is sloughy, and skin is worn thin, instead of one opening only, several will be formed, all uniting in one cavity, though frequently mistaken for so many sinusses. When they are but few, it will answer to lay them open one into the other, observing to remove the irregular angular points, and make a longitudinal incision down the intestine; but if the skin is loose and tattered, with many openings, it will be necessary to remove the teguments.

In all these cases the dressings ought to be of the mildest nature, and should not be crammed; instead of which, to suppress a slight hæmorrhage,  
and



and prevent the reunion of the edges, a soft pledgit of lint may be placed between them, both after a common opening, and the incision of the gut; dressing the rest of the wound with the same, and a pledgit of soft lint or tow spread with a bland cerate over all; afterwards, a light superficial dressing, with a thin compress, and the T bandage.

In the complete fistula, as represented in this book, proceeding from distempered habit, negligence, uncleanness, or intemperance, it will be absolutely necessary to correct and remove their general effects, before the surgical part can be regularly undertaken. As soon as those circumstances are changed, there is a visible alteration in the state of the sore and its discharge. The sinusses ought then to be divided in such a manner as to prevent a lodgment of matter, and the opening may be made lengthways into the rectum. The callous parts in the sinusses may be scarified with the knife or lancet, and red precipitate rubbed fine and mixed up in moderate proportion with a soft digestive, may be spread on soft lint and applied thereto. If from a number of openings, or from the flabby ragged indurated state of the edges near the fundament, there is no likelihood of healing properly, such a portion as tends to impede the curative process, must be removed.

The dressings in this state of the sore should in general be light, easy, and suppurative, and be repeated twice a day, or occasionally after a stool; to regulate



regulate which, a dose of rhubarb will be now and then useful. The suppurative poultice alone, applied for a few days, will sometimes bring the parts into a more regular state.

If a loose fungus should rise in the sinus, the lunar caustic is the best remedy.

The age, strength, constitutional or incidental disease, rest, and regimen, should be attended to and enforced. Diseases of this kind happening in cachectic, strumous, and venereal habits, especially when they proceed from sores formed high up in the pelvis, and when the bones are carious, may for a time be palliated, but are commonly productive of a fatal decline.

#### FISTULA *in* PERINÆO.

DESCRIPTION. In this complaint is comprehended, not only the sinuous and callous ulcer in the perinæum, but also sores which open into the bladder, scrotum, and penis; discharging urine and matter, and being more or less hard, tumefied, and painful. Le Dran gives an instance of successful treatment in Obs. LXXVII. wherein the scrotum and perinæum were extremely hard and enlarged, full of fistulous ulcers and sinusses, discharging a mixture of pus and urine, and where the callosity in the part at which the urine first burst forth, was full two inches thick.

This disorder is frequently consequent to the bruising and laceration of the parts after cutting for  
the



the stone the old way, but seldom happens after the lateral operation, unless from mismanagement.

CAUSES. Wounds, lacerations, and every such kind of injury done to the urethra and neck of the bladder, obstructions of long continuance, inflammation and abscess, gonorrhœa virulenta, callosities and ulcerations in the prostate gland, and adjacent parts, from venereal affection, &c.

CURE. When this complaint takes its rise from obstructions, the bougie is particularly necessary; every sinus must be opened to its full extent, even into the bladder itself, and the portion of callosity, which is not likely to be reduced by suppuration and discharge, is to be removed by the scalpel.

The best mode of operating on this occasion is, to pass a staff beyond the place where the urine is discharged, which should be held firm whilst the surgeon makes his incision into, and pursues the sinusses, by means of a probe introduced at the external openings of the fore, which serves as a director to the knife or bistoury.

A bougie, or flexible catheter, is generally introduced beyond the part where the obstruction or sore extends to, and kept in the passage to prevent adhesion or contraction, and wear down any obstruction, and in order to divert the urine from the sore, and many a desperate case of this kind has been thus cured; but the ingenious and experienced Mr. Bell declares, that both are unnecessary and injurious,



ous, unless in cases of obstruction, when the former is required as usual. It must undoubtedly excite much pain, and keep up inflammation and fever to attempt the use of either, whilst the wounded parts remain turgid and inflamed from the operation.

At first, it will be proper to press strips of lint lightly between the lips of each opening, and a pledgit of soft ointment applied over the whole of the sore, with proper compress and T bandage. If the edges are hard and tense, and do not seem likely to digest or suppurate, the cataplasim with bread and milk will be requisite, and a course of medicine should be administered agreeable to the vitiated state of the habit.

#### MORTIFICATION *of the* TOES *and* FEET.

DESCRIPTION. This complaint is mostly preceded by an obtuse pain in the foot and ankle; it generally appears first in form of a small black speck, at the end or on the inside of the small toes; the cuticle is detached, and the cutis is of a dark reddish colour; its progress is slow or quick according to different circumstances; the pain grows more violent, and is accompanied with a sense of burning heat. If not checked at first, it generally spreads from toe to toe, and over the whole foot up to the ankle, where it commonly stops for a time, and contaminates the whole mass of fluids.

CAUSES. The causes are, an acrid state of juices, and a languid circulation.

CURE.



CURE. The treatment of this disorder is differently directed by men of the greatest skill.

One orders barks, cardiacs, warm antiseptic poultices, scarifications, and the removal of the dead part; fomentations, and strong digestives.

Another confides principally in repeated doses of opium, and the least irritable applications, such as warm milk, and the emollient poultice, and prohibits scarification and removal of the dead part if in the least attached.

A third denies the good effect of opium when frequently and largely exhibited, and declares that it has the better effect when applied externally; also, that much depends upon external applications, recommending an ointment of a thin consistence to be made with pitch, oil, and wax; also, an anodyne emollient cerate, composed of diachylon, marshmallow leaves powdered, or linseed meal, opium, pitch, and oil, with a little wax.

Experience has proved the following means to be efficacious in a few instances of this kind of gangrene, and even when the toes were sphacelated. Opium in moderate doses, repeated according to the degree of pain and irritability; full doses of bark, and red wine as a cordial, a few grains of rhubarb occasionally, and a cataplasm made with two thirds white bread and milk, and one third of the strong beer grounds and oatmeal poultice, and the latter in much greater proportion when the complaint is advancing to a sphacelus. Neither  
 scarifications



scarifications nor digestives were employed, and the parts were suffered to separate of themselves. The good effects of the fermenting poultice made with wheat flour, honey, water and yeast, as mentioned under the article Mortification, have been also proved in one instance, where two toes separated.

### VENEREAL DISEASE.

This complaint is said to have been brought by Columbus and his sailors, from America into Spain, in the year 1493, and was not long after diffeminated throughout Europe, and its distant connections.

The virus by which it is communicated, is different from every other infectious matter, and is more or less malign, according to the nature of the constitution on which it acts. In hot bilious, or irritable habits, it makes its appearance in a few days with great virulence; in the cold phlegmatic temperament, it lies concealed for a length of time, and is seldom accompanied with violent symptoms.

It is divided into two stages, the local, and the universal; which by some are called the first and second infection. A new doctrine is advanced with respect to this disease, which few careful people would choose to practise by; namely, that the second infection cannot be generated from the first; one truth is clear, that it is not likely to be so under proper management.

The



The terms local, or first infection mean the sole affection of the genitals, which degree of disease is called *gonorrhœa virulenta*, or *clap*; whereas universal or second infection signify, that the whole habit is vitiated by it; which stage goes under the denomination of *lues* or *pox*. The virus may be communicated by the lips, saliva, nipples, genitals, &c. and first manifests its effects upon those parts by which it is received.

### GONORRHOEA VIRULENTA.

**DESCRIPTION.** The gonorrhœa, or clap, is an infectious involuntary discharge from the urethra in men, and the urethra or vagina in women, and is subject to the following circumstances, conformable to the different sexes. Involuntary erections of the penis and clitoris, fullness and uneasiness in those parts, great heat of urine, restriction of the frænum, and incurvation of the penis, phymosis, paraphymosis, chancres, verrucæ, and excrescences, buboes, hernia humoralis, tumour, abscess and fistula in perinæo, obstructed urethra, and gleet.

The general course of the symptoms in men, is as follows: about the third or fourth day after receiving the infection, the patient perceives a sense of titillation and itching at the extremity of the urethra, particularly after making water, a hardness and redness at the end of the glans penis, the orifice of which is more open than usual, and sometimes



times a rotatory motion of the testicles; soon after the linen begins to be spotted with a slight discharge of whitish ropy mucus, of which he is just able to squeeze a drop or two from the end of the penis: heat and pricking pain in making water soon follow, the discharge grows thinner, is more in quantity, and of a purulent colour tinged with green; the patient now becomes troubled with involuntary erections, a compressed feeling in the penis, stricture of the frænum, and incurvation of the glans or body of the penis, particularly when warm in bed, and the heat and pain is felt up the whole of the urethra. Every symptom still increases, and the perinæum feels full, hot, and painful, particularly when sitting; the discharge is of a more green hue, and sometimes tinged with blood. Proper remedies being administered, the symptoms gradually abate, the running grows thick, ropy, and white, and decreases apace: a stringy matter comes away with the urine, in which it is seen to float, a drop or two of gluey mucus now and then closes the extremity of the urethra, and the complaint soon goes entirely off.

This is the general order of the symptoms, yet liable to variation in different subjects. Other symptoms seldom appear, except from a high degree of inflammation, or virulence, neglect, or mismanagement.

The progress of the disease is much the same in women, allowing for the difference of the parts of



generation; but it is remarked, that the inflammatory symptoms seldom run so high with them as in men, and that the discharge commonly lasts longer.

The phymosis, paraphymosis, bubo, abscess and fistula in perinæo, verrucæ and excrescences, and obstructed urethra, have been already noticed under their particular denominations, together with their treatment; the nature and cure of chancres also, are specified under the article Venereal Ulcer. The hernia humoralis and gleet then, are the only symptoms amongst those of the first infection which remain unnoticed, and in practice will sometimes be found to be the most troublesome.

*Hernia Humoralis.* When the running is checked too soon, the infection commonly produces inflammation on the groin or testicle; the latter is most likely to suffer if the stimulus falls upon the seminal vessels. The first symptoms of this spurious hernia are, a dull heavy pain in the testicle and spermatic chord, and an enlargement of the epididymis; afterwards the testicle itself swells, the pain is more acute, and strikes up the spermatic vessels; inflammation increasing, a phlegmon of the inflammatory kind is generally the consequence, and without proper care, may terminate in abscess, gangrene, or schirrus, according as the constitution is inclined to inflammation, erysipelas, or œdema.

*Gleet and Seminal Weakness.* These complaints may arise from relaxation, or ulceration in the lacunæ, verumontanum, prostate gland, or excretory ducts



ducts of the *vesiculæ feminales*, and are often the consequents of a gonorrhœa. The gleet is frequently produced by over-purging, during the progress of the disease; the feminal weakness is sometimes occasioned by other causes. When this symptom alone constitutes the gleet, it leaves a speck on the linen, and appears like the white of an egg; if it comes from the glands of the urethra or prostate, it is thinner, and serous, or milky; if attended with slight ulceration, it is more of a purulent cast.

The gleet generally partakes of the two former only, and originates from weakness; but sometimes are all conjoined, when it is exceedingly difficult to suppress the discharge. The complaint thus complicated, has been known to occasion inability, atrophy, *tabes dorsalis*, and a miserable lingering death; and all from a mismanaged gonorrhœa in a weak constitution.

CAUSES. The nature of the virus being concealed, we are under the necessity of forming our opinions concerning it from its effects; from which it seems reasonable to suppose, that it consists of acrid corrosive particles, and there is sufficient authority to declare it infectious. The common way of contracting this disorder is by impure coition; and it is supposed to happen after the following manner:

A small portion of the infectious matter being absorbed, and conveyed to the *lacunæ* of the urethra or vagina, produces stimulus sufficient to excite

D d 2                      inflammation,



inflammation, and an increased secretion of the mucus; which mucus becomes tainted with the same principle.

Buboes form when the inflammation and virus extend to the inguinal glands, and often proceed from too early an use of astringents; phymosis, paraphymosis, and chancres, commonly arise from not keeping the parts clean, sometimes from the violence of the inflammation; heat, pain, and ulceration in the urethra, from the increased action of the stimulus; thickness and constriction, with their concomitant symptoms, from repeated inflammation, cicatrix, or the untimely use of astringent injections.

CURE. The general indications of cure are, to abate inflammation, correct the virus, and restore the tone of the parts. The first stage is to be treated much after the same manner as it is in other parts; bleeding, when the nature of the constitution, and degree of inflammation require it; gentle laxatives, such as purging salts, dissolved in a large quantity of water, a solution of manna and soluble tartar in infusion of fenna, or common emulsion; or the following laxative electuary:

Take of lenitive electuary an ounce and a half, powdered jalap two drams, cream of tartar, and gum arabic, each three drams, and a sufficient quantity of syrup of roses to make an electuary.

The bigness of a nutmeg may be taken every, or every other night. It may be here observed, that  
little



little more is required of the remedies than to keep the body cool and open. Refrigerants are also necessary in this stage, nitre dissolved in the common emulsion or decoction of marshmallows is extremely proper, except when it acts as a stimulus upon the inflamed parts, for which reason it acts most agreeably when covered with mucilaginous or demulcent liquids, such as the mucilage of gum arabic and syrup of marshmallows, of each equal portions, of which a small spoonful may be frequently taken in some diluting liquor; the mucilage may be made with double the quantity of hot water to that of the gum in powder.

The foregoing electuary taken in quantity sufficient to keep the body gently lax, with now and then a large cup of mallow, or bran tea, just sweetened with honey, has been known to answer the purpose of internal remedies throughout the disease. In the mean time, the parts both inside and out were washed frequently with warm water alone or mixed with a little milk, and a scruple of the mercurial ointment was rubbed into the groin every other night, for a week or two after the inflammatory symptoms were abated. A thin mucilage of quince-feed, and a little bland oil, may be now and then thrown up the urethra.

If the perinæum throbs greatly, apply cloths dipped in Mindererus's spirit alone, or mixed with Goulard's vegeto-mineral water, once or twice in the day time, and at going to bed; which means,

D d 3                      together



together with an opiate pill, may alleviate the chordée, whilst the inflammation runs high. Sometimes, though very seldom, the gonorrhœa has suddenly gone off with these means only. Yet when the inflammation is nearly subsided, it will ever be proper to administer small doses of some mercurial preparation, or to rub into the groin every other night at least, for some little time, about a scruple of mercurial ointment, made with equal parts of pure quicksilver, and prepared lard, which latter will more easily kill the quicksilver, if mixed with a very small portion of goose fat properly melted down; now and then taking a piece of the laxative electuary; which mode of exhibiting mercury, as has been before observed, is by far the most eligible upon every occasion. Care must be taken not to suffer it, particularly in this instance, to affect the mouth; and experience has proved, that as an alterative only, it has equal effect, with any other process, in the most confirmed lues.

As soon as the running becomes ropy, of a good colour, and lessens in quantity, a few drops of the balsam of copaiba on sugar, and mixed with the mallow infusion, or it may be blended with the following electuary, will generally suffice, and the parts will most commonly recover their tone; otherwise astringent injections may be used.

Take of lenitive electuary an ounce, cream of tartar and powdered rhubarb each a dram and a half, balsam of copaiba four drams, syrup of roses a sufficient quantity, mix.

The



The bigness of a nutmeg may be taken night and morning, if it does not open the body too much.

The injections may be made, by dissolving a few grains of sugar of lead, white vitriol, or roche alum in common, or rose water, taking care to make them very mild at first, so that they may be easily bor'n, since the quantity can be increased, if necessary: from five to ten grains of the white vitriol, in two ounces of water, has answered very well in several cases. In the use of such medicines, it ought to be remembered, that these parts in some are much more irritable than in others. Such are the general symptoms, causes, and rational modes of treatment in this species of the disease; but unfortunately for many, great stress is laid upon the speediness of the cure.

Some bold practitioners, yielding too implicit a faith to the doctrine mentioned at the beginning of this subject, and presuming upon a few instances, where the virus has had a trifling effect, have frequently ventured too soon upon the use of astringent injections. Others have been so enterprising in their practice, as to aim at precluding this disease by means of injections, prepared with a very small quantity of the caustic lixivium, diluted in such a proportion of water as, upon applying the solution to the tongue, shall give a certain degree of warmth thereto; some of which is thrown into the urethra immediately after a probability of impure coition. But from the degree of pain and



heat of the passage, which is intended to follow its use, when of sufficient strength to excite the discharge of mucus necessary to carrying off the virus, particularly in debauchees, the preventive remedy has sometimes proved more injurious to the parts, than the disease itself might have been.

To obviate the mischiefs which have been known to attend such means, and the unnecessary application of them, it cannot be amiss in this place to insert the following recipe, which is celebrated as a powerful antidote, if applied immediately upon the appearance of the first symptoms, that is, just before the running appears; nay, even when a drop of the mucus has first lodged at the end of the penis, this remedy is said to have proved efficacious; but it should be cautiously applied, agreeable to the state of irritability in the part.

Take of corrosive sublimate mercury, one grain; distilled water, from one to two ounces, or rather more in very irritable habits. Mix.

A little of this solution, made warm, is thrown into the urethra, compressing that part with the fingers, just below the frænum, so as to prevent any of the liquid from passing further than the first seat of the gonorrhœa. It is repeated according to the effects which it is intended to produce, namely, moderate irritation, and an increased secretion of mucus: if the parts feel extremely tender, it will be proper to alleviate that symptom by injecting a little warm water, or bland oil, some time after, observing



serving the same precaution in compressing the canal.

*Hernia Humoralis.* The principal intention towards its cure are, bleeding, agreeable to the degree of inflammation, and the nature or strength of the constitution; laxatives, steaming the part with hot water, cloths dipped in saturnine water, Mindererus's spirit, and the like; lenient glysters with oatmeal gruel, oil, and a full dose of opium, or thebaic tincture, occasionally administered, and poultices with the saturnine solution, or rather of the emollient kind, in case this symptom is aggravated by a suppression or decrease of the discharge; and as soon as the inflammation is subsided, mercurials are necessary, particularly by inunction, in order to resolve the hardness which generally remains in the epididymis, and sometimes in the testis itself. See Schirrus and Sarcoma.

When this complaint remains obstinate, or returns, a brisk vomit or two with ipecacuanha and emetic tartar, at proper intervals, will occasion the symptoms to remit, even in the inflammatory state. Should abscess or gangrene follow, which is very seldom the case, proceed as directed under those heads.

If, after all, the parts continue enlarged and indurated, which is most frequently the case with the epididymis, the cortex, pills with hemlock and calomel, and the poultice with white bread and milk, and a moderate portion of the leaves of hemlock bruised,



bruised, or the scraped root, according to the season, are likely at least to reduce the parts, if not to restore them to their natural size. After repeated relapses, the bark and cold bathing have had good effect in relaxed habits. Electricity has proved a cure in an inveterate schirrus of these parts.

It will be necessary for the patient to keep as much as possible in a recumbent posture, and at all times to support the parts in a bag truss, or by means of some convenient bandage. Opiates are occasionally proper.

*Gleet and Seminal Weakness.* The gleet cannot be remedied without strictly adhering to proper diet, and restraining the passions. Strong exercise on horseback, high saucers, frequent venereal intercourse, &c. have often produced a relapse, when the cure was nearly compleated. If it arises from relaxation only, it easily admits of cure; but if the excretory ducts or seminal vessels are eroded, a phthisis or tabes dorsalis are most likely to follow.

The mode of cure is the same in every state of this complaint. Ass's, goat's, or cow's milk, lime-water and milk, or decoction of sarsaparilla and saffrafras, with bark and elixir of vitriol, will generally suffice in the gleet that proceeds from relaxation, attended with an acrid state of juices; the more powerful means are, terebinthinate or balsamic medicines, with Japan earth, dragon's blood, bole, &c. bark and steel, tincture of steel in spirit of salt, also chalybeate water and claret, or red wine,



wine, cold applications to the perinæum, or, what is much more efficacious, a proper use of the cold bath. The cure may also be greatly assisted by astringent injections made with a few grains of white vitriol, alum, or sugar of lead, and a proper portion of water, as before directed in this disease; also the solution of corrosive sublimate, sufficiently stimulating to excite the slightest degree of inflammation, and increase of the discharge; in using which, the pipe should be properly suited to throw the injection against the part affected. Bougies have been used in this complaint, but they are principally beneficial in thickness and strictures of the urethra: blistering the perinæum has also been serviceable. Dr. Dickson, in Med. Obs. vol. iii. mentions an obstinate gleet, that was at length attended with an incontinency of urine; a blister was applied to the region of the sacrum for relief of the latter complaint, and the bark in substance was plentifully administered; but before the blister was removed, both the complaints ceased.

An obstinate and painful incurvation of the penis, or what is called a chordée, which continued long after the rest of the complaint was removed, has been cured by the application of a blister to the perinæum.

### LUES, or POX.

The slightest degree of lues will, if neglected, become a matter of the most serious consequence;  
on



on which account, it is absolutely necessary to be acquainted with the various signs of the disease. They are distinguished into two kinds, the pathognomonic, or certain; and the equivocal, or doubtful.

The certain signs of the lues are, spots, blotches, eruptions on the skin, tubercles on most parts of the body, corona veneris, and furfuraceous eruptions; ulcers of the tonsils, fauces, uvula, and nose; nocturnal pains, gummata, nodes, tophes, and ganglia; exostosis, hyperostosis, caries, and fragility, or softness of the bones.

The doubtful symptoms are, disorders of the eye-lids, eyes, and ears; fixed pain in the head, muscles, or joints; affections of the animal or vital functions, serpiginous eruptions, atrophy, phthisis, &c. all which may or may not be independent of a venereal cause.

Buboes, chancres, excrescences, and ulcers, may also break out in consequence of the second infection, which is sometimes attended with and productive of habitual disorders.

*Venereal Spots.* They may be distinguished from any other, particularly from freckles, tan, or morpew, by not being confined to the face, neck, and hands, and having a copper-coloured appearance.

*Tubercles and Eruptions* are to be found on every part of the body, more particularly amongst the hair of the head. They sometimes suppurate, and turn to a yellowish pustule, or dry crusty scab, which,



which, when it furrounds the hairy scalp, is called Corona Veneris.

*Furfuraceous Eruptions.* They resemble the branny scurf, or scales of the leprosy, but may be distinguished therefrom by the copper-coloured appearance of the subjacent and surrounding skin.

*Venereal Ulcers* in the fauces, tonsils, uvula, and nose, are generally round and circumscribed, eat deep, and have a yellowish slough at the bottom; they are commonly surrounded with a thin red skin, and produce caries in the subjacent bones. These complaints are mostly accompanied with nocturnal pains, spots, or other symptoms of the disease.

*Nocturnal Pains* have a jarring, shooting, rending sensation, and are deep-seated; they principally affect the periosteum, about the middle part of the cylindrical bones, and portend nodes, exostoses, &c. They generally come on as soon as the patient is warm in bed, and grow easier towards the morning.

*Gummata* and *Nodes*. The first are tumours or thicknesses in the muscles, the last affect the periosteum only; the ligaments and tendons are also subject to swellings, which are called tophi, and ganglia, and are ranked among the common symptoms. All these complaints are frequently accompanied with nocturnal pains, or some other distinguishing symptoms.

*Exostosis, Hyperostosis, Caries, and Spontaneous Fractures.* These diseases may arise from a confirmed lues, and are generally preceded by some nodous



nodous swelling in the part. They chiefly happen upon the cranium, or in the solid part of the tibia or ulna, and are accompanied with violent pains in the bone, without the appearance of heat or redness. Sometimes mischief does not shew itself externally, till the whole substance of the bone is corrupt.

*The Equivocal, or Doubtful Signs,* are generally indicated by a peculiar resistance of the specific disease to common treatment: if on such occasions there is reason to conclude that the patient is free from scrophulous or scorbutic complaints, a venereal taint is the most probable cause; and the plan of cure ought to be regulated accordingly.

Buboes, chancres, excrescences, and ulcers in various parts, are already described as common to both stages of the venereal disease. When these complaints are consequents of the second infection, they are generally accompanied with spots, eruptions, nocturnal pains, nodes, or some other convincing type of the disease; they are also inclining to grow phagedenic, or fistulous.

CAUSES. Most instances of a confirmed lues may be traced from a previous affection of the genitals; and every humour or particular mucus may become a vehicle of the virus into the habit. It may therefore derive its origin from four different causes; a neglected or ill-managed gonorrhœa, the direct application of the virus to some exterior part of the body, an immediate absorption in coitu without a morbid affection of the genitals, and a transmission from the parent to the child.

CURE.



CURE. Various means have been pursued in the cure of this disease. Much confidence was formerly placed in the virtues of guaiacum, china-root, sassafras, and sarsaparilla, separately, or together; at length, mercury, its real antidote under proper management, was brought into use: but from the timidity of the Regular, and temerity of the Quack, that remedy soon fell into disrepute. Afterwards reason and experience sufficiently proved, the absolute use of that invaluable medicine in every stage of the confirmed lues; and its peculiar efficacy is well known, when it is introduced into the habit in a slow progressive manner, and joined with the decoction of sarsaparilla, and mezereon root, or of the woods.

Some physicians are still of opinion that salivation is necessary in inveterate cases, whilst others maintain that it is totally needless. One circumstance however is indisputably true; that the slow alterative course renovates as it were the animal functions, whereas salivation leaves them greatly debilitated.

It is generally supposed, that the habit must be fully loaded with mercury to effect a radical cure, the present mode of administering it proves the contrary; since a regular perseverance in very small doses is, in most instances, equally effectual with the deepest salivation, and it is also evident, that a complete cure is often obtained by weakly persons from the alterative method, when it might be fatal to attempt it by the latter mode of practice. Besides,



sides, it is possible in the former to comfort the patient with a generous diet, and corroborating medicines, air, and exercise; which he is necessarily restrained from during salivation. Preference then is certainly due to the milder method of cure; and from a salivation being scarcely heard of, except in hospitals, where it seems to be kept up by an exclusive right, we may fairly conclude that it is the most approved practice.

The animal œconomy may be so impaired by a long continuance of the disorder, as not to admit of relief from mercury in any shape or mode whatever; the disease may also be complicated with scrophula, or scurvy, under all which circumstances, endeavour must be made to correct and strengthen the habit with bark, &c. preparatory to the use of mercury, and conjoined therewith.

The cure by salivation ought not to be attempted during infancy, extreme old age, or pregnancy; or in persons labouring under habitual diarrhœa, or dysentery, great weakness of the nervous system, epilepsy, hæmorrhagy, fever, hectic, scurvy, schirrus, or cancer in the womb, paralysis, &c. whereas instances of perfect recovery from the lues have been known under most of these particulars, from the milder process.

The principal remedies in the alterative course, are the following:

Take of corrosive sublimate mercury, ten or twelve grains, crude sal ammoniac half a dram,



dram, distilled water an ounce, to be well mixed. Sixteen of these drops are supposed to contain near half a grain of the sublimite.

It will be right to begin with eight of these drops in about half a pint of the decoction of sarsaparilla, every night and morning, and the dose may be gradually increased to twelve or sixteen, if the symptoms require it. It is proper to observe, that if this medicine be taken in a less quantity of smooth liquid, it is liable to create great pain and irritation in the bowels; but should they be affected, a few drops of the thebaic tincture in a little rice gruel, occasionally taken, or a plentiful dilution with thin gruel, or barley water, will relieve.

Or, Take of corrosive sublimite one grain, malt spirits two ounces, mix.

A spoonful or two of this is given night and morning, in a draught of some diluting liquor, or a dose of the following decoction, which is said to render it much more effectual:

Take of sarsaparilla root sliced three ounces, mezereon root two drams, boil in three pints of water to a quart.

Or, Take of calcined mercury from one to two grains, precipitated sulphur of antimony five grains, thebaic extract from half a grain to one grain, conserve of hips enough to form a bolus.

This is to be taken every night at bed time; half a pint of the foregoing decoction is also to be

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taken



taken three times a day. A grain or two of calomel in lieu of the calcined mercury, has sat easier on the stomach and bowels, and has been equally efficacious.

Or, Take of the purest quicksilver two grains, conserve of hips one scruple, make into a pill to be taken at bed time.

But after all, the method most to be preferred, as being least injurious to the animal functions is, to rub from a scruple to half a dram of the strong mercurial ointment, into the thighs, groins, or legs, every, or every other night, if the constitution is equal thereto, and without making the mouth sore; persevering therein for at least a fortnight after the symptoms of the disease are dispelled. A pint and a half of the decoction before-mentioned, or of the woods, should also be taken with this process; which being regularly persevered in, has been known to cure the disease in the most debilitated habit, when accompanied with a train of the severest symptoms.

Its effect will certainly be greatly accelerated, by uniting one or other of the internal means, provided the stimulus is not too great for the stomach or bowels, or does not excite a ptyalism. If the mouth becomes in the least sore, it will be proper to desist with respect to the mercury for a few days, and to give a gentle laxative or two.

Cold should be guarded against, by wearing drawers, and an under waistcoat, made of flannel,  
in



in winter, and of callico in summer: gauze stockings ought also to be worn under others; and a dram of the peruvian bark taken twice a day is an excellent auxiliary in weak constitutions.

After this manner mercury may be safely introduced into the weakest constitution; whereas in slender hectic habits, when it is differently used, the remedy now and then proves as bad as the disease: the pulse becomes more and more quickened, the body wastes, and the strength is gradually exhausted. In all such cases therefore, it should be conveyed into the constitution as it were by stealth; that is, in small quantities, and by slow degrees, so as not to occasion too great stimulus or evacuation.

*Salivation.* The easiest and safest method of raising salivation is, by inunction, and the course may be slight or full, according to the nature of the complaint, and strength of the patient. Previous to each, it will be proper to use some preparatory means, such as bleeding in plethoric habits, the warm bath and friction, a gentle purge or two, plentiful dilution, and suitable remedies in case of a scorbutic or scrophulous taint.

*The Slight Salivation* may be brought forward by rubbing into the thighs, at bed time, about two drams of the unguent, made with equal portions of quicksilver and lard; and repeating the quantity every third, fourth, or fifth night, according to the apparent approach of the spitting, the signs of which are as follow:



A brassy or brackish taste, foetid breath, whiteness and tenderness in the mouth and tongue, quickness in the pulse, heaviness, and pain in the head, slight tumour in the cheeks, &c. which symptoms should be carefully attended to before every repetition of the unction; since by such precaution, more mercury need not be rubbed in than is necessary to promote a moderate flux of the saliva, that is, a pint or two at the utmost, in twenty-four hours; which degree may, with proper care, be carried on without any troublesome symptom. A dose of salts and manna may be interposed, if restraint is necessary; and on the contrary, should the spitting abate, or the disorder not seem to give way, the frictions must be repeated at proper intervals.

The patient need not be absolutely confined to the chamber, but must wear flannel, keep his throat and jaws warm, and be guarded well against catching cold.

The most suitable food in this course is, water or thin milk gruel; broth made with chicken, veal, or mutton, and freed from the fat: beef tea, bread pudding, and the like; meat, wine, or spirituous liquors, should be carefully avoided, and the chief drink should be barley-water, or milk and water. This method ought to be continued at least six weeks, or rather for a fortnight after each symptom has disappeared.

*The full Course of Salivation* requires much more skill to regulate, since the unguent must neither be administered



administered too precipitately, nor too sparingly; yet, in full quantity to keep up a regular spitting. To effect this, not less than two drams, or more than three of the ointment before-mentioned, should be rubbed into the ankles, legs, or thighs, every, or every other night.

After the second or third application, the state of the breath and mouth should be strictly enquired into; and if any of the signs already noticed should appear, the unguent must not be repeated, till the spitting has fully shown itself; if it is not in regular quantity, a fourth application will be requisite, otherwise, the salivation may be suffered to take its course, unless it should still flag. When it breaks forth too profusely, or much tumour and inflammation affect the head and face, fever rises, &c. it will be necessary to check the impetus, by bleeding, glyster, and a gentle purge or two. Small doses of nitre may be now and then given in a cup of the common emulsion, or a draught of barley-water. During this process the patient must wear a flannel shirt, with drawers and stockings of the same sort, a piece of flannel under his chin, and a flannel cap; and be confined to his bed or chamber.

If after the third or fourth friction, no spitting comes on, it will be best not to endeavour to force it, but to let nature take her own course; and at distant intervals, to throw in a moderate quantity of the unguent.

It may be called a full salivation, when three or four pints of viscid saliva flow from the mouth, in



the space of twenty-four hours; which degree of discharge is to be kept up for a fortnight or three weeks, supplying the patient during that time, with plenty of diluent liquors, and thin nourishing broths, after which term it may be suffered to decline.

In case the mercury excites a diarrhœa, or diabetes, give rhubarb in powder, diaphoretics, and opiates; the white decoction, and broths boiled with rice.

If the mouth is ulcerated, or the salival ducts are choaked up with sloughs, let the parts be touched with honey, lightly acidulated with small spirits of vitriol, or spirits of salt; also, use gargles, with common emulsion, and spirit of nitre, or barley-water with myrrh dissolved in it. Gummata, nodes, tophs, or any local tumour, should be anointed with a proper portion of the unguent, every other day.

Particular care must be taken to keep the gums and teeth clean, and to wash the mouth frequently with sage, balm, or barley-water, sweetened with honey of roses. and now and then adding a little red wine: this should be particularly done before and after every draught of liquid. The patient ought also to be careful neither to swallow the saliva, nor to lay on one side long together, and when sitting up, should incline forward; by observing which rules, he may prevent deep ulcerations in the sides of the mouth, and the involuntary course of the saliva down the throat.

During



During the severity of the course, the most proper diet is of the liquid kind before-mentioned; afterwards, the patient may proceed by degrees, to pudding victuals, poached eggs, chickens, &c. A gentle dose or two of opening physic will be requisite during the decline of the spitting. The best restoratives are, the bark, ass's, goat's, or cow's milk, jellies, and country air: the constitution will also be much the better for a moderate course of sarsaparilla decoction, and an immersion in the warm bath.

For a more full account of the nature, progress, and cure of this complaint, see Astruc on the Venereal Disease, or the second edition of Dr. Chapman's valuable abridgement thereof; and Mr. John Hunter's Treatise, in one volume quarto, with seven engravings of the diseases of the urethra.

### INOCULATION.

The adventurous resolution of Mr. Sutton, and the great discernment of Dr. Dimisdale, have brought this practice to its present perfection and success.

Every object to its safety and certainty is entirely done away, and it is at this time nearly reduced to as simple a process, as in Turkey; where, we are told, it is the province of an old woman to conduct the whole.

Much stress has been laid upon preparing the patient two or three weeks before inoculation, by



the most abstemious diet, mercurial pills or powders, brisk purges, and other evacuations; the time of life and season of the year have been also particularly specified and directed; but all these rigid peculiarities, which did more harm than good, are pretty well got the better of. A bleeding may be necessary in some full habits, and mercury has great power over this disease. Some inoculators, in order to master it more completely, and obtain credit from its very favourable appearance, have so far ventured to use it in the preparation, as to excite salivation. Such conduct deserves the severest censure, since it is needless with respect to the disease, and may do no small injury to the patient's constitution.

A certain female has inoculated many hundreds, with no other preparation, than a spare diet from the time of making the puncture, and two or three moderate doses of salts, one of which she always gives on the morning after the operation, and another at the approach of the symptoms. Her practice lies principally amongst farmers and husbandmen, whose food in common is of the grossest kind, very few of whom were much confined from their respective employments; and she boasts, perhaps with reason, that none of her patients were ever hurt by inoculation.

The most that can be required towards the preparation of a person in tolerable health is, immediately after inoculation, to enter upon a low diet; such as tea and toasted bread, gruel with or without



out milk, for breakfast; plain or plumb pudding and dumpling, with vinegar and sugar for sauce, bread or rice pudding with or without currants, and apple pudding or dumpling, for dinner; persons of very languid and infirm habits being now and then allowed a piece of boiled chicken, or mutton, with turnips or potatoes; and for supper, a roasted apple, turnip, or potatoe, and raspberry jam or treacle, spread thin on a slice of white bread. Their common drink may be toast and water, or milk and water; no wine, beer, butter, cheese, or meat, except the latter occasionally. A cooling purge or two ought to be administered within the first six days, and the body should be kept cool and temperate, during the eruptive fever especially, by avoiding the heat of the fire or bed as much as possible, and taking a small quantity of a decoction with fenna and prunes occasionally. Infants may be gently purged once or twice with a few grains of rhubarb, and require a slight puke, or something opening, during the eruptive fever.

Scorbutic, scrophulous, and other chronic habits, have done as well as possible with no other means; yet when complaints of that kind are in great degree, they require particular attention. Some relaxed habits have profited much by a dose or two of the bark in the day. It is sometimes thought necessary to give, according to the age of the patient, from three to ten grains of Dr. Dimisdale's preparative powder the night before the purge, and  
once



once at the time of the eruptive fever, if the symptoms are oppressive; which is prescribed as follows:

Take of compound powder of crab's claws, and calomel, each eight grains; emetic tartar, one eighth of a grain; to be made into a powder.

Bark and antimony are sometimes used as preparatives. In short, the best general direction that can be given for preparation is, to restore those that are much below the standard of health, and not to reduce those too much, who are equal to, or rather above it.

Inflammatory, putrid, epidemical, and critical complaints, are the chief prohibitions. Teething is also looked upon as a strong objection to inoculation; but if the body is kept rather lax, and the symptoms are moderate, it may be more dangerous to defer it.

The best and most certain way of communicating the infection is, to take the matter upon the point of a lancet, fresh from a pustule not too much matured on the diseased subject, and insert it immediately into the arm of the person to be inoculated. Lint or cotton thread may be saturated with the variolous matter, and kept close shut up from the air, in a phial or small box, for future use; or it may be spread and dried upon a piece of smooth glass. The least visible quantity of the dried matter may, by gently breathing upon the glass or lint, be taken up on the point of a lancet, and introduced, by the flightest



slightest puncture, in one or both arms; may be inserted by lightly sliding its point horizontally between the cuticle and cutis.

If, on the second or third day, a few circular peach coloured pimples can be distinguished, with the help of a magnifying glass, on the edges of the puncture or incision, it has certainly taken effect. Sometimes it inflames on the second or third day, without displaying these circular pimples, and then disappears: such incision is very uncertain; and unless the edges should in two or three days inflame again, and grow tumid, it would be adviseable to repeat the operation.

Pain and stiffness are commonly felt under the arm on the fifth or sixth day, which is a never-failing sign of the disorder taking place, and approaching; it is generally attended with remitting pains in the head and back, shiverings, heats, &c. these complaints continuing till the eighth or ninth day, when the eruptions begin to appear, the whole of which is complete about the eleventh day.

As soon as the eruptive fever begins, it is customary to give a few grains of the preparative, and pass it off with a gentle aperient the next morning. It is supposed that the famous Mr. Sutton's regulating pill was of the same nature, which, when the skin was parched and stiff, and a kind of eruptive heat or rash appeared therein, he used to repeat according to the strength of the habit, and violence of the symptoms. But the liquor of the stewed  
fenna



fenna and prunes, or a few salts dissolved in a large quantity of water, sufficiently taken to render the body gently lax, will for the most part answer equally well. Sometimes a few drops of ipecacuanha or antimonial wine will be equally efficacious, by acting either as a diaphoretic or gentle evacuant by puke or stool, particularly if the stomach is over-loaded at that time, which is often the case with children during the preparation, unless under proper restraint, and is sometimes the occasion of convulsions. Balm-tea, or thin barley-water, acidulated with the juice of Seville orange or of lemon, apple-water, or small tea, are proper to allay both heat and thirst with, during the symptomatic fever; and when the symptoms run high, cold water may be now and then given, if earnestly required. At this period of the disease, the patient should neither indulge in bed, nor by the fire-side; but be led or carried out into the cold air, properly cloathed, be the weather what it will; which alone will most commonly abate the severity of the pains and fever, and prevent an abundance of pustules. The aged and infirm may be allowed a little wine whey, or small red wine negus, if the pulse is languid, and delirium attends. Inflammation and maturation are trifling in general, unless agitated and increased by preternatural heat and particular management; the body should therefore be kept in moderate temperature, during the whole of the process: a purge or two is commonly given when the  
pustules



pustules grow dry and scaly, and the patient should gradually return to his common food.

Thus it generally happens with the regular and most favourable kind; but sometimes no symptoms appear till about the eighth or ninth day, and then they come on rapidly, the puncture wearing a purple aspect, with a narrow circle of dark reddish pustules, and a depression in the center, which are commonly regulated according to the state of the bowels at that time; if purging, to be checked; if costive, rendered lax: further treatment is to be suited to future appearances. These untoward symptoms are apt to attend upon the atrabilious, erysipelatous, or scorbutic habit; but seldom run to any bad consequences, unless from too rigid a preparation, or too loose a texture of blood; when the bark and antiseptics are most likely to be of use.

The following instance happened not long since:—A woman of an atrabilious habit, aged 73, being in danger of catching the small-pox in the natural way, chose to be inoculated: her conduct was not the most regular during preparation, in which mercury was administered. The eruptive fever was attended with delirium, and a weak pulse; and the eruption was coherent and profuse, remaining flat in the skin, and with a disagreeable purple hue. The bark and elixir of vitriol were pretty freely administered on the third, fourth, and fifth day from its appearance, together with small red wine negus and whey;



whey ; upon which the inflammation grew brighter, and the pock gradually rose and matured. She persevered moderately in the bark and vitriol, had a stool procured every other day by glyster, sucked an orange now and then, and took gruel with a little wine in it, and thin milk broth as nutriment, till the eleventh day, when the tumour began to subside, but the pustules were a long time drying away : during maturation, great restlessness came on, which was relieved with moderate doses of syrup of diacodium.

From this case it plainly appears, that, when the pock should rise and mature, the heat will sometimes require to be regulated by cordials and tonics, as well as by cooling and diluent means ; and that the necessity for it is according as the fever inclines to be high or low ; indeed, some weak constitutions, at a much earlier term of life, may, at that period of the disease, have occasion for cordial nutritive diet.

The following maxims are generally allowed :

That no other disease is conveyed with the true variolous matter.

That it is of no consequence whether the matter is taken from a pustule of the natural or inoculated kind, from the mild or more violent sort ; since the principal advantages arising from this practice are, the proper disposition of the habit, and the mode of communication.

That the ichorous matter is more likely to take immediate effect, than that which is nearly matured.

That



That the crude matter, taken from the puncture or incision before the symptoms have appeared, may suffice.

That the puncture is not so likely to inflame, and run to a tedious unnecessary sore, as the incision, provided neither plaister nor any other covering is applied.

That the inflammation or pustules round the incision may be checked, by applying cold water to the part, or rubbing in a little mercurial ointment.

That the natural infection can be precluded by that from inoculation, perhaps up to the sixth or seventh day; since the symptoms of the former seldom come on till the fourteenth day after receiving it.

That keeping the puncture or incision open as an issue, is of no kind of use with regard to the disease.

And that the secondary fever scarce ever attends the small-pox by inoculation.

#### ANCHYLOSIS.

This word, in its strict sense, has reference only to the crooked position of a part; but is commonly applied to the fixed state of the joint, more particularly when the bones are immoveably united, or ankylosed, as it is technically termed. Till lately, this complaint was supposed to be occasioned by a concretion of the synovia. Gouty persons, in whom  
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the mucus of different parts do sometimes concrete, may be subject thereto; but in other cases, the seat of this disorder is either in the ligamentous and tendinous parts near the joints, or in the bones themselves.

The former affection may proceed from the limb being a long time continued in one position, inflammation both from external and internal causes, and a consequent morbid thickness, rigidity of the parts, and union of the heads of the bones: the latter is when the heads and epiphyses of the bones become diseased, from external injury, or a vitiated habit.

When it originates from the limb being long confined in a particular position, it generally yields to relaxing and lubricating means; such as, repeatedly steaming it well with warm water, and rubbing it with neat's-foot oil; or plunging it into the body of an animal when first slain, and keeping it there as long as the heat continues. The removal of the thickness and rigidity of the parts is much more difficult; but such complaints are sometimes to be relieved by the means already prescribed under the article White Swelling. Warm emollient baths, pumping Bath waters upon the part, the steam of warm water impregnated with sulphur, and aromatics applied thereto, or the fall of warm water thus medicated from some height, followed by friction with the flesh-brush or flannel, and frequent movement of the limb, have been found very beneficial.

M. Mo-



M. Morand speaks highly of a poultice made with powdered coal and water, for the relief of rigid and contracted tendons, proceeding from large wounds; and Dr. Lobb has recommended the part contracted to be bathed three or four times a day, with a mixture composed of the yolk of an egg, and six spoonfuls of pure water.

### SACCULI MUCOSI.

These bags are chiefly placed near the joints, and the fluid secreted therein serves to facilitate the motion of the compact tendinous parts, which play over the heads of bones, or upon one another.

Some practitioners, not being sufficiently acquainted with the situation and connection of these bursæ or facculi, have been deceived with regard to the discharge which flows from abscesses and wounds affecting them, and have falsely concluded, from the similitude of this secretion to the synovia of the joints, and the contiguity of the injury to those parts, that it proceeded from within the capsular ligament. In such cases, no absolute decision can be made from the discharge alone; in order therefore to form a proper judgment of the nature and depth of the sore, it will be necessary to attend to the violence of the symptoms; such as pain, inflammation, fever, delirium, &c. and carefully examine the part with the probe.

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The seats of the principal are as follows :

*Deltoides.* A large one situated under this muscle upon the acromion scapulæ.

*Biceps Brachii.* A small one investing the tubercle of the radius, which lies under the tendon of the biceps, and part of the supinator brevis.

*Iliacus Internus* and *Psoas.* A large thin one under the tendons of those muscles, as they pass down to their insertions in the os femoris.

*Latissimus Dorsi* and *Teres Major.* One between the extremities of their tendons.

*Gluteus Maximus.* A large thin one, partly connected to the back part of the trochanter, lying under the termination of the gluteus medius, and loosely attached to the rest of the trochanter, and the tendon of the gluteus maximus.

*Gluteus Medius.* A small one, between the termination of its tendon, and that of the pyramiformis.

*Gluteus Minimus.* A small thin one, attached to its tendon and the trochanter major.

*Gemini.* A small one between these muscles and the end of the obturator internus, connected with both, and with part of the capsular ligament.

*Biceps Cruris.* One between the end of its tendon exteriorly, and the capsular ligament of the knee.

*Semimembranosus.* A small one between its tendon, where it runs between the inner condyle of the tibia, and the capsular ligament,

*Cruralis*



*Cruralis* and *Vasti*. A large thin one, connected with the tendons of these muscles, and fixed to the patella; adhering also to the capsula of the joint.

*Gracilis*, *Sartorius*, and *Semitendinosus*. A large one, situated under the ends of their tendons, adhering to them on one side, and to the burfal ligament on the other.

*Gemellus*. A large one, firmly attached to its tendinous origin, to the end of the semitendinosus, and to the capsula near the anterior condyle.

*Soleus*. A large one between its tendon, where it passes over the upper part of the os calcis, and that bone.

*Tibialis Anticus*. A small one fixed to its tendon, where it works upon the top of the foot.

*Peroneus Longus*. One under its tendon, where it works upon the os cuneiforme, on the outside of the foot.

## OPENING *a* DEAD BODY.

The necessary apparatus for this operation are, knives, a razor, a great and small saw, strait and crooked scissars, elevators, threaded needles, sponges, tow, saw-dust or bran, basons with water, towels, receivers, lavender-water, and vinegar.

The body should be laid upon a table of convenient size and height, and be decently covered; the contents of the cavities may then be regularly



examined or removed, as the nature of the case requires.

The *Head* is to be opened by making an incision across from ear to ear, to the bone; then dissecting such a portion of scalp from the skull, as will make room for the saw, turning it down over the face and neck. The saw is to be set on at the middle of the os frontis, and carried round to each temporal bone, observing to finish at the middle of the os occipitis. The divided part of the skull is then to be raised with the elevator, and its connections with the dura mater should be occasionally separated; after which, the brain may be taken out carefully, dividing the attachments of the dura mater.

The most eligible method of opening the *Thorax* and *Abdomen* together is, by first making an incision on each side of the sternum, in the course of the cartilaginous parts of the ribs, dissecting back the teguments two or three inches, and cutting through the cartilages with a strong-bladed knife, rather curved at its point. The incision is then to be continued from the sternum, obliquely over the abdomen, down to each ileum or inguen: after which, the clavicles may be separated from the sternum; which bone being dissected from the mediastinum, may be turned downwards, together with the abdominal covering.

To remove the *Viscera of the Thorax and Abdomen* together, it will be necessary first, to cut the diaphragm



diaphragm down to the spine on both sides; when two very strong ligatures should be made at a proper distance from each other, round the œsophagus and large blood-vessels, including the trachea, observing to divide these parts between the ligatures; the same is to be done with the inferior vessels a little above the bifurcation of the aorta, including the vena cava; and upon the rectum. The viscera, with the diaphragm, are then to be carefully and closely dissected away.

If the *Viscera of each Cavity* are required to be separately removed, the ligatures upon the vessels must be made just above and below the diaphragm.

In order to open the *Abdomen only*, a longitudinal incision is generally made, from the ensiform cartilage to the symphysis pubis, intersecting it at right angles with another at the navel, so that the different sections may be reversed, and the contents be properly exposed.

The parts should be afterwards neatly and regularly sewed up with the glover's stitch.

Great care is necessary, upon all such occasions, to correct the putrid effluvia, which may be generally done by spunging the parts with vinegar and brandy, and sprinkling them with lavender or hungary water. When the body is extremely putrid, more powerful means are required to defend the surgeon from its noxious effluvia; such as stopping up the ears and nose, and being frequently enve-



loped with the steam from a strong solution of gum myrrh in vinegar, by repeatedly pouring the same on an ignited iron, or common heater, placed in a firepan, or some such receptacle, and now and then washing his mouth with brandy.

### E M B A L M I N G.

The surgeon is very seldom called upon to perform this office, except upon the death of some great personage; yet it cannot be thought unnecessary to give some account of the means which are said to have been used abroad upon a certain occasion of this kind.

The face and hairy parts being close shaved, and the viscera removed from the thorax, abdomen, head, and orbits of the eyes, each cavity was well cleansed with vinegar and water, and after the moisture in every part was perfectly absorbed with sponges, and the whole wiped dry with warm cloths, the inside of each was washed with a solution of ambergrease in Hungary water, and filled with the following composition, grossly powdered; after which, the eyelids were closed, and the rest of the cavities were stitched up with the glover's future: the mouth was also well cleansed, and some of the powder was put into it: the whole of the external surface was then lightly rubbed with essential aromatic oils, in which a little ambergrease had been dissolved, and  
covered



covered with proper cloths and rollers spread with a cerate, made with resin, wax, gum storax, and sheep's suet; a double stay spread with the same, was also placed under the chin, and fastened upon the upper part of the head. The brain and viscera well cleansed, and covered with the aromatic powder, were put in a leaden chest and foldered up; and the heart, after being properly cleansed, and its cavities well filled with the powder and sewed up, was placed in a silver urn.

Incisions are sometimes made into the fleshy parts, which being first cleansed and properly filled with the powder, are afterwards covered with the rest of the body.

Mr. Gooch prepares his cere-cloth with wax, resin, storax, and painter's drying oil; which composition he says, being made of a proper consistence and degree of heat, may be laid on with a brush to a moderate thickness, and have a faint flesh colour given it with vermillion; which covering when cold and stiff upon the part, may be lightly struck over with hard varnish; or, that a varnish of that kind, applied thick, may here serve the purpose alone. He advises a cap to be well adapted to the head, falling down upon the neck, and to be sewed under the chin, making a few circular turns about the neck, with a roller of suitable breadth.

All the rest of the corpse is to be inclosed in a sheet, artfully cut, and sewed on very close and  
F f 4 smooth,



smooth, with the finest herring bone seam, then dressed, and placed in the coffin.

#### POWDER FOR EMBALMING.

Take of lavender and rosemary flowers each four pounds, the tops of wormwood, Arabian stæchas, and southernwood, with the leaves of the Syrian herb mastiche, aloeswood, and calamus aromaticus, each three pounds; of the gums, myrrh, storax, benjamin, frankincense, and the bark of saffras, each one pound; nutmegs, mace, cloves, and cinnamon, each two ounces. Make a gross powder.

It will be found rather difficult to procure every herb or flower in this receipt in the exact quantity; if so, the best substitutes are those which are most fragrant: and such articles should be added in regular proportion, having due regard to both the strength and weight of the original.



Disorders *and* Operations *peculiar*  
*to* Women.DISORDERS *of the* BREASTS.

These, like other soft parts, are subject to inflammation, both from internal and external causes. When proceeding from external injuries, the part is more likely to turn schirrous than to suppurate, particularly if they affect the glandular part of the breast.

*Milk Sore.* The inflammation which attacks the breasts of women, mostly happens soon after delivery; particularly when the lochia begin to abate, or are prematurely suppressed, and the fluids are too copiously derived to the breasts to admit of a regular secretion, or an easy exit. The breast then begins to grow turgid, is hot and throbbing, and distinct hardneſſes are to be felt therein; and if not timely prevented by proper assistance, or relieved by an efflux of the secreted fluid, the inflammation is very likely to proceed to maturation. This kind of inflammation may also tend to suppurate upon very slight occasions, at any future period, during the time that the woman continues to suckle.

Sometimes, for want of due maturation, small tumours or knots remain in the cellular and adipose membrane, and the glandular part of the breast is obstructed



obstructed and grows indurated; which, through neglect or mismanagement, may lay the foundation of an incurable schirrus. Such indurated tumours differ much in their nature, shape, and general consequences; those of the cellular and adipose membrane being of an irregular form, not much afflicted with pain, nor very hard, and seldom adhering; whereas those in the glandular part are of the true schirrous kind, round, or oval, and particularly hard to the touch. The former are often relieved by topical applications, the latter generally require excision. These kinds of tumours are therefore of more or less consequence, according to their size, depth, and the state of the patient's constitution, or as they affect the mammary gland.

CAUSES. The inflammation which precedes the milk sore, may arise from too sudden a distension of the mammary vessels, an imperfect secretion, improper and topical applications in order to prevent or repel the secretion, cold, an acrid state of juices, plethora, or external injury; which latter may be the cause of inflammation, whether accompanied with, or independent of the milk secretion.

CURE. If the inflammation which happens after lying in, is attended to in proper time, it may be prevented from running to a great height, by keeping the patient in a half-sitting posture in bed, gently opening the body by glyster, or some other means, and giving her plenty of diluents. If the breast feels very tense, bathe it now and then with  
a little



a little of the purest sweet oil; or if, on the second or third day, the milk secretion is irregular, the breasts swell, and indurations are to be felt, apply the common bread poultice, night and morning at least. The nurses, to whose care the good women are too much trusted upon all such occasions, eagerly and repeatedly put the child to the breast, apply glasses, or try some kind of method to draw the breasts, as they quaintly term it, to the no small pain and fatigue of the patient. But to those who can reason properly upon the subject, it is evident, that such means being employed during the irritable state of the part, must do more harm than good; and that the tension is much more likely to be relieved by a few applications of the poultice, assisted with gentle diaphoretics and laxatives.

Should the complaint resist these attempts, maturation will commonly ensue, and the emollient poultice is most likely to assist its progress. As soon as it appears to be matured, an opening should be made sufficient to discharge the contents; and whilst hardness remains, the poultice alone is the best remedy: afterwards lint lightly spread with white cerate may be applied. When more than one sore forms in the breast, the treatment should be the same; taking care to make a sufficient opening for discharging the matter, at the place where it points only. Some quondam practitioners were very fond of poking out sinusses, and formidably flashing the breast in every direction; but experience



rience tells us, that it is best, particularly in abscesses of this kind, to follow the dictates of nature; except where her process has been disturbed by probing, tents, escharotics, and such like rough methods; and even then the more acceptable change of gentle and superficial treatment will most frequently answer best.

When it is necessary to repel the milk, that is, when no ends can be procured without occasioning inflammation, it ought to be proceeded upon with proper caution. Sometimes warm cloths will promote its discharge by the nipples, and carry it off; at other times a flux of urine, profuse sweats, or a copious discharge from the bowels: but if none of these excretions should take place after it is gone back into the habit, much mischief may follow, particularly in weak habits. In such cases, it will be proper to use gentle diaphoretics, aperients, &c. since slow remitting fevers, œdematous swellings in the legs and thighs, abscesses under the arm-pit, and such kind of accidents, have happened in consequence of its remaining in the habit,

If the lochia or menstrual discharge should not return, perhaps a slight bleeding will be necessary; in which the practitioner must be governed by the nature of the constitution, and particular circumstances. Compresses dipped in Mindererus's spirit, fairly neutralized and gently warmed, is a much more mild and safe repellent than Goulard's vegetable-mineral water, plaisters, and ardent spirits with camphire. Those



Those indurations which are formed in the cellular and adipose membrane, are frequently resolved by a long continuance of the common bread poultice, and now and then interposing a calomel pill or two, with a laxative draught. Those which are fixed in the glandular substance, have been known to yield to a poultice made with linseed meal, hemlock, and camomile decoction, as mentioned under the article Schirrus, together with a slight alterative course with calomel and cicuta, or now and then rubbing into the part a small portion of the strongest mercurial ointment. If the foregoing means should not have the desired effect, excision is the only resource. It will be highly improper upon any occasion to apply the cicuta, or administer active medicines, before the child is weaned.

The œdematous tumour in the leg and thigh, which sometimes runs to an enormous size, has been relieved at first by the saline draughts in effervescence, when it has promoted the urinary secretion, and a laxative draught with manna and soluble tartar occasionally. If it proves obstinate, and the patient's strength will admit, the more likely remedies to carry it off, and restore the tone of the parts, are, a small pill of calomel and camphor for a night or two, passed off with a mild aperient, bark, a tightish spiral bandage from the toe upwards, country air, moderate exercise, and a dry diet.

The best applications to the nipples, when excoriated, are, mucilaginous lotions, or mild cerates.

*Schirrus*



*Schirrus* and *Cancer*. These complaints chiefly affect the breasts of women. The different stages, causes, treatment, and the general mode of extirpating schirrous tumours, or the occult kind of cancer, are already noticed under those heads; it is intended therefore in this place, more particularly to point out the common method of operating, where the skin is more or less diseased; and to describe the mode of excision invented by Mr. Fearon, Surgeon of the Surry Dispensary; in whose Treatise on Cancers, satisfactory proofs are given of its utility and success, in every case where the teguments could be sufficiently preserved for healing by primary and secondary union. Previous to which, it may not be improper to state a two-fold objection to the operation in general, which the surgeon will find strongly impressed on the mind of his patient.

It is frequently urged by the afflicted, and their numerous visitants, that the milder schirrus may remain in an indolent state for many years; and that in the confirmed state, there is no certainty of its proving effectual. Both these arguments are delusive, and tend greatly to prevent the operation being performed in due season. In answer to which, it should be zealously proved, that many knots in this part, which appeared to be of little importance, have rapidly degenerated into cancers, particularly about the end of menstruation; and that some most virulent cancers, in which the diseased part adhered to the muscles and ribs, and even when the latter  
were



were carious, have been cured after extirpation, and remained free from relapse. Also, that it is an indisputable truth, that the earlier in the disease the operation is performed, the more likely it is to be attended with lasting success.

Nothing then absolutely prohibits its being performed, but when the life is likely to be endangered from it, or the glandular system and habit are too generally affected. In such cases, the means prescribed under the article Cancer are earnestly recommended; it will be also right, in the large ulcerated cancer particularly, to use the alterative course, together with the bark, as soon after the operation as the suppurative process is confirmed.

Great improvements have been lately made in the general mode of extirpating schirrhous tumours from the breasts, by preserving the sound skin which covers the diseased part, in order to lessen the dimension of the sore, and heal it the sooner; but it is with many practitioners, still exceedingly deficient in the latter design, by their stuffing the wound with lint, and thereby impeding the natural process by the first intention, whenever such means are admissible. Heretofore it was a maxim, in case the tumour occupied a part of the breast only, to remove the whole; but the remarkable success which attends the new practice of excision, and healing by the first intention, clearly proves, that the limits of the operation ought to be diminished as much as possible, except when the teguments are pretty much diseased.

In



In scirrhus or cancerous complaints, where the teguments are diseased, or adhere so close as not to admit of being separated from the tumour, one incision is sometimes made the whole length, and the bad part taken off from one or both sides, in as strait a direction as possible; at other times, the whole of the bad skin and teguments are included within a circular, or two semilunar incisions. If a chain of indurated glands run up to the clavicle or arm-pit, they are dissected away by an opening continued from the breast, but if not particularly connected with the fore at the breast, different openings are made.

The tumour which is formed in the arm-pit, is dangerous to meddle with, when firmly attached to the neighbouring parts; but if in the least moveable, it may be safely cut out, by drawing it forwards with the hook, fingers, or a strong ligature passed through its middle. It ought to be observed also, that the operation can be of little, or no service, unless the tumours under the arm-pit are totally removed.

Mr. Fearon's mode of excision, and his after-treatment are conducted as follows:

The patient being seated conveniently, with her head supported upon a pillow, by an assistant behind, and her arms held by one on each side, the surgeon makes a horizontal incision, in the direction of the ribs, a little below the nipple, the assistants then draw the teguments as far asunder as possible,  
and



and prefs their fingers on the bleeding arteries, whilst the furgeon is diffecting the difeafed mafs from the fkin above, and the pectoral mufcle or parts below: after which, the wound being carefully examined, every fmall indurated or thickened part is removed.

The hæmorrhage by this time generally ceafes; but if an artery ftill bleeds freely, it muft be fecured by means of the tenaculum and ligature, the ends of which are left a proper length out of the wound. The whole is then fpunged clean, and the parts and edges of the wound are laid in even and perfect contact, and retained fo by two, three, or more futures of the interrupted kind, according to the extent of the wound, and by the applications of flips of adhesive plaifter, in the intermediate fpaces, acrofs the line of incifion.

About the third or fourth day the ferous difcharge appears through the bandages, and the flips of plaifter grow loofe and require to be removed: the ftitches in the teguments are then to be divided with a pair of fciffars. The incifion is afterwards drefsed daily with fmall flips of lint, fpread thin with a mild cerate, made of the pureft oil and wax. The ligatures by which the arteries are fecured, are gently tugged every day after the firft inflammation is abated, and drawn away in due time for the fecondary union, or what is termed adhesive inflammation, to take place. The cure is greatly accelerated, by repeatedly fupporting the edges with a few flips of adhesive plaifter.

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When



When the skin is ulcerated or diseased, a second incision is made in as strait a line as the inclusion of the diseased part will admit, down to the extremity of the first; and the edges, &c. are brought together in the same manner as in the first incision. The incision is directed to be made below the nipple, because the natural position of the part more readily assists the union, and the breast is less subject to deformity.

This method deserves particular attention, since the cure is said to be generally completed in a fortnight or three weeks; nay sometimes in as many days as weeks, where the suppurative process has been allowed to take place.

The difficulties that the inventor has found in establishing this method, are not at all to be wondered at, since credit or discredit will attend every new mode of practice, according as it is countenanced by the leading men in the profession.

A large thick soft compress made of linen which has been in use, is to be applied after each mode of dressing, and a linen, or rather a flannel roller, about five inches broad, and six or eight yards long, bound gently tight over all. The arm on the affected side is to be supported in the flexed position, by a handkerchief tied round the neck.

Wens, glandular, strumous, or encysted tumours, may be operated upon after one or other of the foregoing methods; and care should be taken to preserve a due quantity of sound skin and integuments,  
in



in order to promote their union by the first intention, as much as possible.

The method of extirpating schirrous or cancerous tumours by caustic, is infinitely more irritating, painful, and imperfect, than that by the knife; it is therefore seldom attempted by the regular practitioner, except where the knife is inadmissible.

### CÆSAREAN SECTION.

The most considerable impediment to natural child-birth is, when the pelvis is so distorted, or contracted in its dimensions, as to prevent the child's head from passing without being opened. In order therefore to preserve the life of the child, two formidable operations have been put in practice: the one of which is denominated the Cæsaean section, the other, the section of the symphysis of the ossa pubis.

The Cæsaean section was originally practised immediately upon the death of the mother, afterwards, when there was no other prospect of saving either mother or child.

The honour of ascertaining the extreme dimension of the pelvis, in which embryulcia, or the extraction of the foetus can be performed, of fixing due limits to the Cæsaean operation, and checking the dangerous practice of dividing the symphysis pubis, which latter operation was humanely, though mistakenly pointed out as a medium for the safety of



both mother and child, is principally due to Dr. William Osborne, of London, who in his excellent Essay on Laborious Parturition, has regularly proved, that death is almost infallibly the mother's lot in the Cæsarean operation, and that no circumstance can render the *sectio symphysis* warrantable.

Much has been written for and against the Cæsarean operation, but the want of success with respect to the life of the unfortunate mother, in every attempt lately made in these kingdoms, seems strangely to contradict the accounts published in its favour. In instances where the diameter of the pelvis is less than one inch and a half, it is perhaps the only means of delivery, since the gaining three or four lines by means of the *sectio symphysis*, will be manifestly useless. In every such case therefore, it is surely more warrantable to give the mother the chance of this operation, although dangerous in extreme, than suffer her to die undelivered.

The mode of operating is as follows: An incision six inches in length, beginning between two and three inches higher than the navel, is to be made in a longitudinal direction about a hand's breadth from that part, and on the side of the abdomen to which the uterus inclines, through the adipose membrane: an opening is then to be carefully made through the tendinous expansion of the abdominal muscles and peritonæum, sufficient to admit the fore-finger of the left hand, upon which the curved knife is to be conducted upwards along  
the



the course of the incision, when (unless the case should be extra-uterine) the uterus being brought to view, an aperture is to be made with the same caution near the center of the wound, into the uterus, and large enough for the introduction of the finger, upon which the point of the knife is to be conducted upwards and downwards, in equal extent with the outward incision. The placenta and membranes will most probably incline to protrude at the instant that the incision in the uterus is complete. The sides of this incision are to be kept as much asunder as possible, whilst the hand of the operator, or an assistant, is introduced for the foetus, which must be extracted by the feet.

This being done, an assistant should be ready to tie and divide the umbilical chord, and the placenta is to be removed as soon after as possible, since the uterus quickly contracts, but more especially as soon as it is freed from its contents; which circumstance occasions the omentum and intestines to press forward in such a manner, as to require an assistant to keep them back, whilst the operator cleanses the wound, and sews it up. This ought to be done with the quilled future, and double ligature at proper intervals, each stitch being made an inch at least, or an inch and a half from the edge of the lips of the wound, which should be dressed with lint and a common pledgit.

Heister advises the incision to be made longitudinally between the navel and ilium, through the



point where the paracentesis is usually made; but in the account of this operation, as performed in the year 1769, by that ingenious and skilful operator, Mr. Thompson, late surgeon to the London Hospital, it is proved, that the course of the linea femilunaris, near to the outer edge of the rectus muscle, is by far the most eligible part, as well to lessen the chance of hæmorrhage, as to avoid protrusion of the intestines. The whole loss of blood during that operation, which is the standard of the foregoing directions, did not exceed four ounces.

It is also recommended by Heister, to sew up the wound in the belly in such a manner, as to leave a space at the bottom, for the insertion of a canula, tent, &c. which precaution is certainly of no kind of use, since it cannot, with either convenience or safety, be made a depending orifice, or be in the least connected with the internal wound.

#### DIVISION *of the* SYMPHYSIS PUBIS.

From the favourable opinions which many principal men in the profession abroad have publicly avowed concerning this operation, the extravagant encomiums of some most eminent practitioners in midwifery who have performed it, and the singular honours and rewards conferred on M. Sigault, its inventor, one would hardly suppose that the utility of it could be at all disputed. On the other hand, when we duly consider, that to gain four lines, or  
one



one third of an inch at most, the ossa pubis must be separated two inches and a half; and when, as Dr. Osborne very justly observes, "we reflect upon the mischief that the soft parts must suffer from such a separation, particularly those which lie immediately behind and in contact with the ossa pubis, by being torn from the bones to which they are naturally connected, exposed for a considerable time to the external air, and by being pressed against the divided edges of the bones of the pelvis in the passage of the child's head," it seems to be rather more extraordinary, that men of such experience should give it the least degree of countenance.

Whoever regularly and attentively follows the Doctor through this sensible performance, will find that he has clearly demonstrated the following facts:

That a child at full maturity cannot be born alive through the natural passage, where the dimensions of the pelvis are not two inches and three quarters from pubis to sacrum.

That when a pelvis measures from two inches to two and three quarters, the head being opened in the beginning of the labour, may collapse and be forced down by the powers of nature, without the use of the crotchet; or, that it may at least be more easily and safely effected therewith.

That a child's head at full maturity cannot be engaged in a pelvis which measures only from one inch and a half to little more than two, without the help of the crotchet.



That a child at full maturity has been extracted by the Doctor, with safety to the mother, by means of the crotchet, where it measured not more than one inch and a half from pubis to sacrum; which dimension is much less than is thought to require the Cæsarean operation.

That considering the life of the child in its true and natural light, it ought not to be put in competition with the safety of the mother. And,

That, as has been before remarked, the ossa pubis must be separated two inches and a half, to gain four lines, or one third of an inch at most.

From these facts, together with the history and event of seventeen cases out of twenty-five, wherein the sectio symphysis had been performed previous to the publication of the essay, particularly the detail of the first case, which the Doctor very justly calls a hair-breadth escape, he has satisfactorily confuted every argument advanced in its favour, by proving, from the accounts of those who are partial to the operation, that every one of these cases was attended with fever, inflammation, gangrene, fistula of the bladder, exfoliation of the os pubis, and other grievous symptoms; and that in most instances it has not answered one part of its original intent, namely, that of preserving the child; also, that in several it has terminated fatally both to mother and child.

The following is a brief description of the operation, as it was first performed by Messrs. Sigault and Le Roy, together with its event:

It



It was performed with a common bistoury, by cutting through the integuments and linea alba, beginning the operation at the upper and central part of the symphysis pubis; then introducing the fore-finger as a director, and dividing the ligaments and cartilage; immediately upon which, the ossa pubis separated about two inches and an half. The feet of the child are said to have been brought down by M. Sigault, and the delivery to have been quickly accomplished by his able advocate, M. Le Roy. The child was born alive, and no hæmorrhage is said to have ensued. A bandage was afterwards applied round the body of the mother, in order to keep the pelvis firm. All went on pretty well till about the sixth day, when the patient was seized with rigour, and every inflammatory symptom; gangrene and slough ensued, in the urinary passage at least, which was wounded in the operation, and most probably in the bladder itself. She had two dangerous relapses, in both which her life was despaired of; and she could not be pronounced out of danger from the operation, till about the thirtieth day, after which she gradually recovered. No inconvenience is said to have remained, except that while standing or walking, her urine would pass away involuntarily. It ought to be remarked, that the child was very small, and that its birth was supposed to be premature.



OBSTRUCTIONS, COHESIONS, *and* STRICTURES *in the* GENITALS.

Obstructions and cohesions sometimes happen in girls, at the entrance of the urethra and vagina.

The first is discovered soon after birth, from there being no passage for the urine; in which case, if not speedily relieved, the infant must inevitably perish. Sometimes the passage is small, and contracted in such a manner, that the urine can only be discharged by drops. The orifice of the vagina is also at times shut up, by the hymen, or a thick fleshy membrane; which circumstance is seldom discovered till the age of puberty, when the menstrual discharge is prevented from making its exit; producing tumour and fulness at the part, with the general symptoms of suppression. Cohesion and stricture are also known to occur on the sides of the vagina. The former instances are mostly natural defects and imperfections; the latter may proceed from thickness in the coats, ulceration, and cicatrix.

In all such cases, relief is principally to be had from the knife and director, or finger in its stead, as described for the imperforated anus; taking care to avoid injuring the bladder and rectum. When the hymen is extended over the urethra, a longitudinal incision may suffice.

When



When either passage is very small and contracted, it may be relieved in great measure by dilatation, or gradual distension, with a bougie of proper size, or after the manner described by Mr. Bromfield; which is, by introducing the closed end of the appendix of the blind gut of a small animal or fowl, in a collapsed state, up the passage, to the extent of the constriction, and filling it with tepid water by means of a syringe; then securing the open end, which is to be left out a proper length, by ligature. This contrivance answers well in many cases, where dilatation or compression is necessary; particularly to compress the mouths of the vessels, in the bleeding piles, when they are seated out of the reach of the needle.

Scarifications, or small incisions, are recommended on the sides of the vagina, when strictured from cicatrix, &c.

*Warts, Tubercles, Caruncles, Excrescences, and enlarged Nymphæ.* Excrescences of various size and shape, resembling warts, grapes, mulberries, mushrooms, &c. infect the private parts of women, both internally and externally, are exceedingly troublesome, and have sometimes degenerated into cancers. Heister speaks of some being so greatly elongated, as to hang down nearly to the knees: proper distinctions ought to be made between some particular shaped excrescences, and the prolapsus uteri.

When tumours of this kind greatly obstruct the passage, it will be necessary, if possible, to remove them



them by ligature, scissars, knife, or catheretics; as in those about the anus. The nymphæ are sometimes greatly enlarged and indurated, requiring to be partly, or wholly extirpated with the knife.

When such complaints arise from a vitiated habit, a proper course of medicines will be necessary.

### PROLAPSED and INVERTED UTERUS.

*Prolapsus Uteri.* This complaint is distinguished into two kinds; the incomplete, which is so termed whilst the uterus remains in the vagina, formerly called a descensus, and the complete, to which alone was given the appellation of prolapsus, when it reaches beyond the orifice of the pudendum.

When the prolapsed part gets low down in the vagina, the sense of weight, irritation, and painful distension, are exceedingly fatiguing; and as it proceeds towards the os externum, the pressure against the urethra and rectum frequently creates great difficulty and pain in making urine, and going to stool: much more inconvenience arises, when the prolapsed part protrudes beyond the external orifice, particularly excoriation and painful irritation from friction in walking.

When the disorder proceeds from relaxation, not violence, and makes a gradual progress, it is not so likely to inflame; but when it follows immediately after a laborious birth, the parts should be quickly returned; otherwise, the sudden dislodgement and  
exposition



exposition to the air are very likely to produce inflammation and gangrene.

The prolapsus uteri may, by a careful examination, be perfectly distinguished, either from its inversion, the prolapsus vaginæ, or excrescences of that part. The former is of a firmer texture, and wears a smoother surface than either of the latter complaints; besides, the os internum is commonly to be seen, or felt, whereas no such appearance is to be met with in either of the other tumours.

CAUSES. The prolapsus is generally supposed to arise from a relaxation of the ligamenta lata and rotunda, but chiefly from weakness in the vagina, all which may be occasioned by a general debility of the habit, laborious births, or frequent miscarriages.

CURE. When it follows a difficult labour, or rough treatment, it ought to be reduced as early as possible, otherwise the consequences may be alarming. After reduction, the patient must be kept for some time in a supine posture, with her hips elevated, and her thighs close to one another; by which means only, in a recent case, the parts have been known to recover their tone. Should inflammation come on, proceed as in other cases, agreeable to the nature of the constitution, and the particular state after labour. The thebaic tincture with antimonial or ipecacuanha wine internally, properly repeated, together with diluent liquors, are most likely to be serviceable under such symptoms.

If



If the complaint is of long standing, and its descent is low, reduction will be proper; and it may frequently be retained by means of a counter-distension in the vagina with the pessary, which may be made of box, lignum vitæ, or ivory; the bark, chalybeates, and such like tonic remedies, together with the cold bath, are particularly necessary. Fumes, fomentations, and injections, are not likely to have any good effect, unless the weakness proceeds from, or is increased by, a copious discharge of mucus, or fluor albus; then dry fumes from the gums benjamin, mastich, olibanum, &c. and astringent injections, have proved extremely useful. The distension of the uterus during pregnancy often supports the prolapsed part, but it is afterwards apt to relapse in greater degree.

The mode of reducing a prolapsus is easily to be understood, from what is observed respecting the prolapsus ani. The patient must be laid on her back with her hips elevated, and the part is to be artfully passed up as high as possible, by means of pressure with the fingers of each hand near to the verge of the vagina; then retained so, by keeping in the forementioned posture in case of inflammation; or if free from such dangerous symptom, by means of the pessary, compress, and bandage: pessaries are made of different shapes as well as sizes; the globe pessary, as recommended by Dr. Denman in the London Medical Journal for 1786, part the first, is esteemed the easiest and most effectual to support the prolapsed part.

*Inverted*



*Inverted Uterus.* This disaster seldom happens but from the rashness or mismanagement of the midwife. Too great force applied to the naval string, together with the compulsive throes of the woman before the uterus has had time to contract, is very likely to draw down the fundus without the os externum. In such a case, it is extremely dangerous to wait for separating the placenta, both on account of violent hæmorrhage, and contraction of the vagina and uterus at the entrance of each; instead thereof, try immediately, yet carefully, to revert the fundus; which if not practicable otherwise, press the fingers of both hands on the inward part, and gradually squeeze it up as in the prolapsus ani, following it with the whole hand whilst the os uteri and vagina remain relaxed and dilated. The patient should afterwards be placed and continued in the posture before described, with her thighs placed close together.

Cases are known, where the inverted uterus has remained down in the vagina, and even out of the os externum, nearly contracted to its natural size; in which, a constant drain sooner or later proved fatal.

*Retroversio Uteri.* This disease is but lately understood. It is a reflection or doubling down as it were of the fundus uteri, between the body of the uterus and the rectum, in the early months of pregnancy. Its general indications are, a sudden and continued pain in the lower part of the abdomen,  
pain



pain and a sense of weight in the back, loins, pelvis, and thighs; together with a partial or total stoppage of urine, and difficulty in going to stool. When this complaint attacks the patient about the time that the fundus uteri should rise above the brim of the pelvis, or is inattentively suffered to continue after that period, it becomes locked up in the pelvis, and is attended with the following circumstances:

Great difficulty in passing both stool and urine, both which evacuations by degrees become totally suppressed. A large tumour is formed in the inferior part of the abdomen, by the distended bladder; the finger cannot be passed either up the vagina or rectum, on account of the reflected uterus, which presses the former against the ossa pubis, and the latter against the inside of the os coccygis; the neck of the bladder or some part of the urethra is also compressed, so as scarcely to admit the catheter to pass; and the distended bladder posteriorly presses the uterus backwards and downwards; and as it rises up into the abdomen, naturally drags with it the collum uteri and meatus urinarius.

The pain, weight, and bearing down, are constant attendants of the complaints; and the subsequent symptoms, such as dry tongue, languor, rigour, fever, inflammation, tension, and gangrene, are produced by the continued obstruction and distension of the bladder, and intestinal canal: the bladder is in danger of bursting, if the urine cannot be drawn off.

CAUSES.



CAUSES. A pelvis formed most capacious at its inferior part, together with an over-distended bladder.

CURE. If this disorder happens early, and is properly attended to, it generally gives way to the frequent use of the catheter, glysters, and gentle laxatives; otherwise attempts should be made to reduce it after the following manner: Place the patient on her side, then introduce two fingers of one hand into the vagina, and one or two other into the rectum; and whilst she turns herself gradually on her knees and elbows, press the uterus forward and upward. When the attempt succeeds, a relapse is to be apprehended; therefore the patient should be kept in a recumbent posture for some days, or till the fundus uteri has passed the brim of the pelvis; and both the bladder and intestine should be frequently emptied.

If after several attempts, the parts are found to be so wedged in, as to render the reduction impracticable in the distended state, perforation of the uterus per vaginam, is *suggested* by the great Dr. Hunter, as the only means of relief; from which operation, the liquor amnii being discharged, the size of the uterus may be so diminished as to admit of reposition.—See Lond. Med. Obs. vol. iv. v.

*Prolapsus Vaginae.* A part, or the whole of the vagina will sometimes protrude beyond the os externum, like a fleshy ring, red and bloody, and more or less swelled. This complaint is generally

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occasioned



occasioned by weakness, or over distension; be it from either cause, it requires much the same treatment as the prolapsus uteri.

Some attention is necessary to distinguish the partial prolapsed vagina, from the polypous or fleshy excrescence which sometimes grows out of that part. The remains of rugæ appear most commonly in the former; its basis is mostly broad, and the tumour does not feel pendulous. Strict enquiry into the rise and progress of each, as well as a proper examination of the part, will enable the skilful surgeon clearly to distinguish every kind of tumour to which these parts are subject.

*Laceration of the Perinæum.* This complaint is to be prevented, by placing the hand firm against the part, as soon as what is called the tumour begins to form, and forcibly resisting the latter part of the labour. If the perinæum alone is torn, it may not be attended with very great inconvenience; but when the laceration extends into the rectum, it becomes dreadful indeed.

Dr. Denman is of opinion, that (sometimes at least) it ruptures from the posterior part; as he collects observing a laceration between the rectum and frænulum vaginæ.

The interrupted suture is said to have been often tried in vain; the chief remedy therefore employed at present towards its recovery is, keeping the parts as apposite as possible, by laying a long time in bed with the legs closed. Perhaps in some cases of this kind,



kind, just paring or snipping the edges, and retaining them together whilst in the bleeding state, by means of the twisted future, as has been sometimes successfully practised with the jagged callous edges of the perinæum and urethra in men, might prove efficacious.

*Cancerated Uterus.* Women who have been subject to profuse menstruation, are very likely to be afflicted with this terrible disorder, which commonly makes its appearance about the time when that discharge leaves them. It may originate from difficult labour, neglected prolapsus, as well as the general causes already mentioned under the article Cancer.

The symptoms are, stretching lancinating pain in the groins, belly, and about the pelvis; induration and ulceration at or near the collum uteri; a foetid, sanious, and sometimes bloody discharge; and in process of time, tumefaction, and œdema in the labia pudendi, which generally extend themselves to the groins and down the thighs.

The powdered leaf of hemlock, with calomel, and bark, are said to have cured an evident schirrus in this part; but in this, as well as all complaints of this kind, no good can be expected from the use of medicine, without due perseverance, and the aid of a well-regulated diet. See Cancer.



Disorders *of* Infants.

Many irregularities and imperfections in the formation of the different parts of children, previous to their birth, which require the assistance of the surgeon, are already noticed under the several articles, respecting the penis and urethra, anus, hare-lip, cohesions and obstructions, &c. It remains therefore principally to advert to the following complaints :

*Distorted Knees, Legs, and Feet.* Children are sometimes born with their knees or feet turned on one side; the bones of their legs are also sometimes weak and crooked; which complaints are frequently confirmed, from being too long neglected, or being set upon their feet before the legs are strong enough to bear the weight of the body.

The distorted parts are not unlikely to be restored to a tolerable state, by gradually attempting to lead them towards a direct position, with the help of pasteboard splints dipped in oxycrate, applied over a thin compress, and proper bandage.

The club-foot, in its early state, is said to have been cured by reversing the position of the limb as much as possible, and repeatedly applying slips of linen cloth, dipped in an epithem made of whites of eggs and flour, keeping the limb in that posture till the cloths grow dry and stiff.

In



In some instances, machines have been so contrived, at a proper age, as not only to assist the weakness, but also to relieve the distortion of the limb.

When the legs of a child are weak and distorted, it will be proper to enjoin rest, till the part is relieved as far as may be, or the constitution is generally amended by the use of the cold bath, tincture of bark, and flowers of steel, and now and then interposing a gentle puke and dose of rhubarb.

*Tumours on the Head.* The tumours here meant are such as form upon the head, principally over the fore part, and on the sides thereof, and are supposed to arise from some injury received during a laborious birth. A tumour of this kind is without inflammation, soft, and containing a fluid of a purplish red colour; it also feels bounded by a ridge, as if there was a depression or deficiency in that part of the cranium, particularly when the fluid, which is generally extravasated blood, is lodged between the skull and pericranium.

Many practitioners have still a terrific idea of these tumours; and supposing them to have an important connection, do not care to meddle with them; but the fluid contained in them is commonly between the teguments and pericranium, now and then between that membrane and the skull; in which case, the external surface of the bone is sometimes injured.

Some surgeons endeavour to disperse them, by applying repeated compresses wetted with brandy



or red wine, and vinegar, in order to excite absorption; whilst others condemn such practice, lest the contained fluid should not be in a state fit to be absorbed, and use the knife indiscriminately; making an incision nearly the length of the tumour, pressing out the contents, and dressing superficially, with moderate compress and bandage.

EXTERNAL



## EXTERNAL MEDICINES,

## GENERALLY RECOMMENDED.

*Goulard's Extract of Lead.*

TAKE a pound of litharge of gold, and two pints of the best white-wine vinegar; boil, or rather simmer them in a glazed earthen pipkin, for an hour or rather more, now and then stirring them with a wooden spatula; set the whole by to settle, and pour off the liquor, which is upon the top, into bottles for use.

*Goulard's Vegeto-Mineral Water.*

Put two tea-spoonfuls, or one hundred drops, of the extract to a quart of water, with four tea-spoonfuls of brandy. The quantity of extract and brandy may be diminished or increased according to the nature of the complaint, or the greater or less degree of sensibility in the grieved part.

This is an excellent remedy for external inflammations, and should be used cold in summer, and just warmed in winter.

*Bell's Saturnine Solution.*

Dissolve half an ounce of sugar of lead in four ounces of vinegar, and two pints of spring water.

This preparation is of the same nature with Goulard's.

*Mindererus's Spirit.*

Take a dram of the volatile salt of sal ammoniac, and gradually pour upon it about four ounces of distilled vinegar, occasionally stirring the mixture.

This is an useful discutient externally, and is often successfully employed internally as a diaphoretic. The dose from one dram to half an ounce.

*Solution of Crude Sal Ammoniac.*

Dissolve half an ounce of crude sal ammoniac in a pint of French or distilled vinegar.



This is also a powerful discutient, particularly in deep-seated tumours of the inflammatory kind. All these may be applied by rags moistened with them, or mixed with crumb of bread in form of a poultice.

*Emollient Poultice.*

Take of milk half a pint; crumbs of white bread a sufficient quantity to make it of a proper consistence. Stir up the bread with the milk when it is heated, and add two or three spoonfuls of the purest oil, or a proportionate quantity of fresh butter; then braid the whole with a spoon into a smooth mass. This is the common suppurative poultice, and is to be applied every three, four, or six hours, spread thick upon doubled rag.

*Fermenting Poultice.*

This is made with wheat flour, honey, water, and a sufficient quantity of yeast to raise a fermentation. It is made into a thin paste and set by the fire to ferment, then applied once or twice a day.

This poultice is strongly recommended in mortifications. The Peruvian bark and thebaic tincture may be occasionally added. Its antiseptic quality is to be increased by using the decoction of bark instead of water. The sphacelated part is left to separate and fall off of itself.

*Warm Discutient Poultice.*

Take of the crumb of white bread, or the flour of oatmeal, and the lees of strong beer, each a sufficient quantity, and form them into the consistence of a poultice.

This is of great use in cold indurated tumours and mortifications; serving to assist the powers of circulation.

*Resolvent Poultice.*

Take of the crumb of white bread, oatmeal flour, or linseed meal, three parts; the leaves fresh or powdered, or the root of hemlock scraped, one part; infusion or a slight decoction of camomile flowers, enough to make a poultice. For its virtues, vide Schirrus.

*Anodyne*



*Anodyne Embrocation.*

Take of opodeldoc, or spirit of wine and camphor, an ounce and a half; thebaic tincture three drams. Mix. This is a good succedaneum for Bates's Anodyne Balsam.

*Detergent Lotion.*

Dissolve one dram of gum myrrh in eight or ten ounces of barley-water; then add two ounces of honey of roses; a sufficient quantity of spirit of salt to render it tolerably acid, may be occasionally added.

*Goulard's Cerate.*

Take four ounces of refined wax, and a pound of pure olive oil; melt them gently together, and pour them into an earthen dish fit for the purpose; as soon as this mixture begins to cool, incorporate the following quantity of vegeto-mineral water, by little and little, with the wax and oil, by means of a wooden spatula, so that each quantity of the water be thoroughly absorbed, before more is added. Mix four ounces of the extract of saturn with six pounds of water. The above quantity of oil and wax has been made to absorb eight or nine pounds of the water.

It has the property of healing ulcers, wounds, excoriations, burns, scalds, chilblains, &c.

A very few drops of the extract added to two or three large spoonfuls of cream, makes a neat and efficacious liniment for kibes, &c.

*White Ointment, Liniment, and Cerate.*

Take of olive oil 4 oz. — — 3 oz. — — 4 oz.

Sperma ceti 6 drams — 6 drams — half an oz.

White wax 1 oz. — — 2 drams — 4 oz.

Melt each of these compositions over a gentle fire, and keep them briskly stirring till cold.

*Yellow Cerate.*

Take of the purest yellow wax and olive oil, of each equal parts; melt them together, then pour the mixture into a gallipot, and keep it stirring till it grows cold; rather more oil will be necessary in winter time.

These



## 474 EXTERNAL MEDICINES.

These cerates are of general use, spread upon tow, or doubled rag ; and are preferable to most other applications, in ulcers, abscesses, wounds, &c.

### *The strong Mercurial Ointment.*

Take of pure quicksilver and hogs lard, each equal quantities ; rub the quicksilver first with a small portion of goose's fat, then rub the whole well together, till the quicksilver is perfectly mixed and extinct. Vide Venereal Ulcer, Lues, &c.

### *Camphorated Spirit of Wine.*

Take of camphor two drams ; rectified spirit of wine four ounces : put them into a phial, cork it close, and set by for solution.

### *Camphorated Oil.*

Dissolve half an ounce of camphor in two ounces of the purest olive oil. This with or without thebaic tincture, is an useful embrocation against spasmodic pains.

### *Camphorated Vitriolic Water.*

Take of white vitriol half an ounce, camphor two drams, boiling water two pints, mix them ; and after the fœces are subsided, filter the liquor through paper.

Many an obstinate ulcer has yielded to the application of this water, and proper bandage. See Ulcers in General. This preparation diluted, is also a very useful ophthalmic.

### *Eye Waters.*

Ten grains of white vitriol in two ounces of rose water ; or one dram of compound powder of cerusse to six ounces of rose water ; or Goulard's vegeto-mineral water ; or common emulsion and camphor julep, of each equal parts.

The first is principally to strengthen the parts after inflammation, the second and third, to abate that symptom, and the last is useful as a detergent.

### *Traumatic, or Vulnerary Balsam.*

Take of benzoine one ounce and a half, storax one ounce, balsam of tolu half an ounce, focotrine aloes two drams, rectified



fied spirit of wine one pint; digest in a bath heat, and let them stand together for some time, frequently shaking the bottle; and when the gums are dissolved as much as possible, strain off the balsam for use.

This is an elegant improvement of Turlington's Balsam, and its external uses are particularly described under the articles Wounds, and Compound Fractures.

## INTERNAL REMEDIES,

### GENERALLY RECOMMENDED.

#### *Saline, or Fever Mixture.*

To two drams of salt of tartar, add three ounces of lemon juice, and ten ounces of pure water, two or three spoonfuls of brandy or spirituous cinnamon water, and half an ounce of sugar. A small tea-cup full of this mixture should be taken every three or four hours. It is sometimes rendered more effectual, by adding a grain or two of emetic tartar to the whole quantity.

If lemon juice is not to be had, the salt must be first dissolved in the water, and a sufficient quantity of spirit or elixir of vitriol dropped in, till it ceases to ferment, and so as not to make it acid.

#### *Nitrous Julep.*

Boil two drams of pure nitre powdered, in twelve ounces of water for a few minutes, then pour off the liquor, and add to it two ounces of syrup of lemons, or one ounce of refined sugar: from two to four spoonfuls of this, may be taken alone, or with a cup of thin barley-water, every two, three, or four hours.

From



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From five to ten, or more grains of nitre, rubbed into powder with equal quantity of sugar, and two or three grains of camphor powdered, with a drop of spirit of wine, may be taken now and then in a cup of barley-water, according to the degree of fever, and as it agrees with the stomach.

### *Camphor Julep.*

Take of camphor one dram, double refined sugar half an ounce, boiling water one pint: rub the camphor with a little spirit of wine, afterwards with sugar, then add the water by degree, and set the mixture by to cool in a close vessel; when pass it through a strainer.—The dose is from one spoonful to three occasionally, as a cordial, and to ease spasms in the stomach.

This julep may be used with the nitrous mixture, in the proportion of one third, should the stomach nauseate the latter.

### *Almond, or Common Emulsion.*

Take of sweet almonds blanched one ounce, gum arabic half an ounce, double refined sugar six drams, barley-water two pints. The almonds and sugar are to be beat together in a marble mortar; the barley-water, with the gum dissolved in it, is to be poured upon them by little at a time, and the liquor is to be strained off. Its use is to dilute and obtund bilious and acrimonious humours, taking a cup-full now and then. It is a pleasant vehicle for the nitrous powder, and may be made a gentle laxative, by adding an ounce of manna, and three drams of soluble tartar to about a pint of it.

### *Cooling Purge.*

Dissolve half an ounce or more of Glauber's, or Rochelle salts, and the same quantity of manna, in three ounces of boiling water; strain off the liquor, and add to it one dram of tincture of cardamoms, for a dose.

The same quantity of salts may be dissolved in half a pint, or more of water, and divided into two or three doses, to be taken at the distance of an hour or two from each other, if necessary.

*Common*



*Common Glyster.*

It may be prepared with eight or ten ounces of gruel, decoction of bran, or camomile flowers, adding four spoonfuls of sweet oil, and one of coarse sugar; if meant to be purging, dissolve in it half an ounce or more of lenitive electuary, or the same quantity of purging or common salt.

*Dover's Powder.*

Take of opium and ipecacuanha root, powdered, each two grains; nitre and tartar of vitriol, each eight grains; will make one dose, for an adult.

*Antimonial Wine.*

Take of crocus of antimony, washed, one ounce; mountain wine, a pint and a half. Digest for a few days without heat, and filter through paper.—Given from ten to sixty drops, it acts as a diaphoretic and alterative.

*Thebaic Tincture, or Liquid Laudanum.*

Take of strained opium, two ounces; cinnamon and cloves, each one dram; mountain wine, one pint. Macerate without heat for a week, and then filter the liquor through paper.—The dose is from ten to thirty or forty drops; it is an excellent sudorific, when joined with antimonial or ipecacuanha wine.

*An Opiate Pill.*

Take of crude opium and hard soap, each one grain, and form into a pill for a common dose, to be repeated or increased according to the exigency of the case.

*Mucilage of Gum Arabic.*

Take of gum arabic, powdered, two ounces; warm water, four ounces. Rub them well together, and press through linen cloth.

*Alterative Pill.*

Take of calomel, from one to two grains; camphor, two grains; conserve of hips, a sufficient quantity.

For other formulæ, vide Schirrus, Scrophulæ, Lues, &c.

*Decoction*



*Decoction of the Bark.*

Take of the peruvian bark, from one to two ounces; spring water, a pint and a half. Boil to a pint.—From two to four large spoonfuls may be taken two or three times a day, with or without a few drops of elixir of vitriol, as a restorative, or every two, three, or four hours, according to the exigency of the case.

*Sarsaparilla Decoction.*

Take of sarsaparilla, four ounces; boil in a gallon of water to half the quantity, then strain off the liquor.

*Decoction of the Woods.*

Take of guaiacum shavings, three ounces; raisins of the sun, stoned, two ounces; sassafras shavings and sliced liquorice root, each an ounce; water, a gallon. Boil down the water with the guaiacum and raisins, over a moderate fire, to four pints, adding the sassafras and liquorice towards the end; then strain off the liquor.

Both these decoctions may be taken by themselves, or joined with a mercurial or antimonial alterative, from a quarter to half a pint, three times a day. The former agrees best with hot and bilious constitutions, the latter with cold phlegmatic habits.

*Decoction of Serpentry.*

Boil half an ounce of snake-root, bruised, in a pint of water, to twelve ounces, then strain off the liquor without pressure.—This is of great use in languid habits, when joined with the bark decoction, in the proportion of one, to two or three of the latter.

*Diluting Drinks.*

Are to be made with pearl or common barley properly washed, rice, whole oatmeal, and bran, slightly boiled in water; infusions of balm or sage, with or without lemon or orange juice, and sugar or honey; apple sliced, ripe currants, &c. infused in boiling water; pleasant cooling drinks may also be prepared from the currant and raspberry jam, rob of elder, tamarinds, &c.—

Small



## INTERNAL REMEDIES. 479

Small spirits of vitriol may also be used to acidulate drinks with, made after the following manner.

### *Small Spirit of Vitriol.*

Weigh four ounces \* of water in an open vessel of glass, or white stone; to which add by drops, or in a small stream, four drams by weight, of strong spirit of vitriol.

\* Troy weight.

F I N I S.



## E R R A T A.

**P**AGE 16, line 22, for "its," read "their;" p. 21, l. 1, read "schirrus;" p. 33, l. 28, for "it," read "the fore;" p. 35, l. 24, after "furgeons," add "to remove the teguments;" p. 41, l. 22, dele "s" in "chancres;" p. 45, l. 21, after "vegetable," add "diet;" p. 46, l. 1, dele "s" in "spirits;" p. 49, l. 24, dele "s" in "pills;" p. 71, read "cruftæ lacteæ;" p. 87, l. 22, read "effected;" p. 220, l. 3, for "upon," read "of;" p. 228, l. 9, read "adheres;" p. 272, l. 14 and 18, read "schirrous;" p. 298, l. 3, read "the cavities;" p. 305, read "abdomen;" p. 324, l. 23, read "near," instead of "in;" p. 327, 2, read "in the cavity of;" p. 330, l. 11, add "they;" p. 337, l. 4, dele "the;" p. 354, l. 11, add "of success."

