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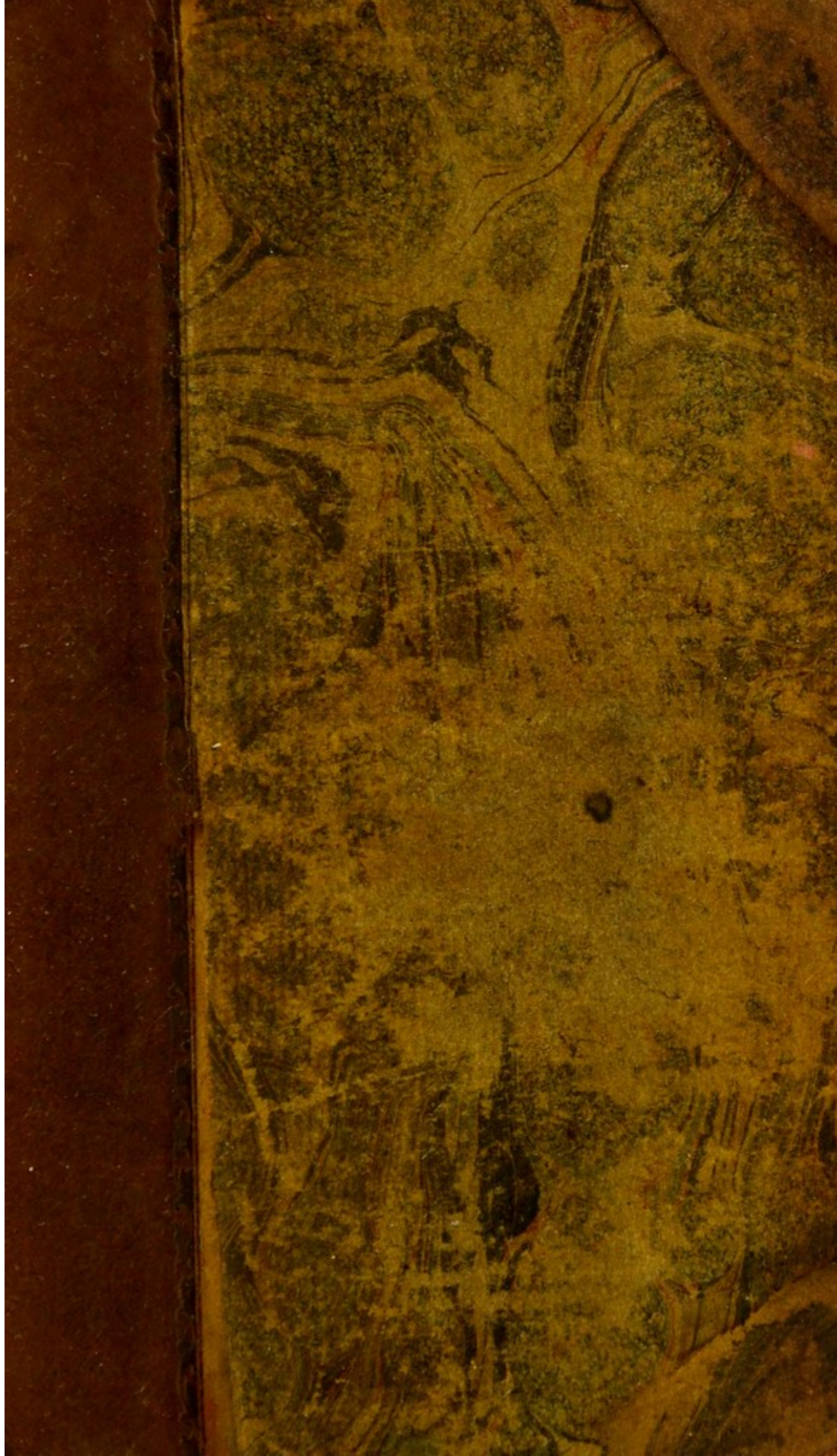
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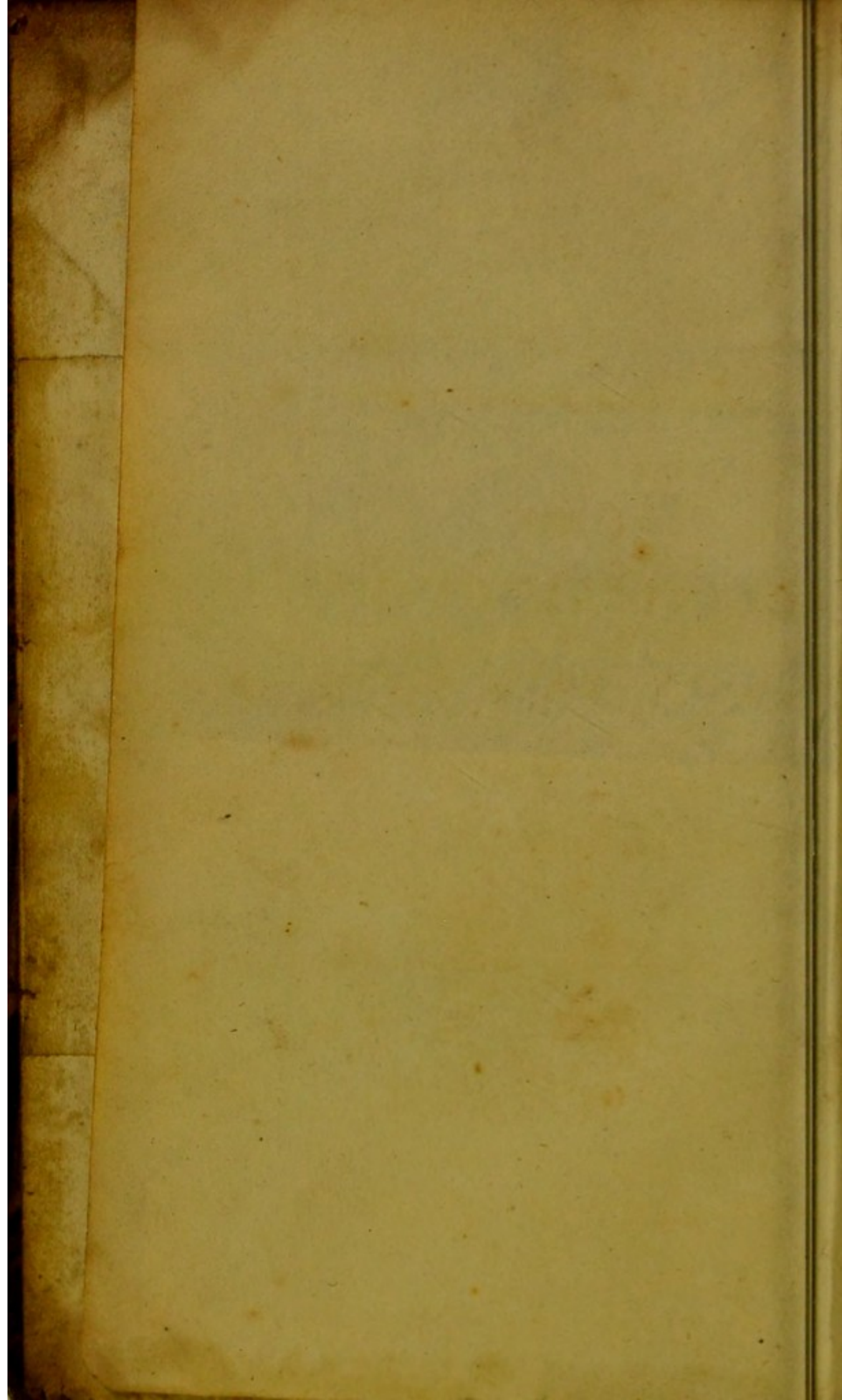
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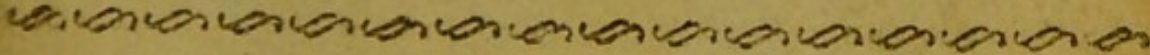
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THE
CLINICAL GUIDE;

PART II.

CONTAINING,
SURGERY AND SURGICAL PHARMACY.





Edinburgh, 1st November 1799.

This day is published,

By James Watson, No 40. South Bridge.

Price 4s. 6d. in boards.

THE
CLINICAL GUIDE;

OR, A

Concise View of the Leading Facts,

ON THE

HISTORY, NATURE, AND CURE OF DISEASES;

To which is subjoined,

A PRACTICAL PHARMACOPŒIA;

In Three Parts :

viz.

*MATERIA MEDICA, CLASSIFICATION, AND
EXTEMPORANEOUS PRESCRIPTION.*

Intended

AS A MEMORANDUM-BOOK FOR PRACTITIONERS.

BY WILLIAM NISBET, M. D.

FELLOW OF THE ROYAL COLLEGE OF SURGEONS, EDIN.
ONE OF THE SURGEONS TO THE ROYAL INFIRMARY, &c.

THE THIRD EDITION,

MUCH ENLARGED, BY CONSIDERABLE ADDITIONS TO THE
TREATMENT, AND ALSO TO THE PHARMACEUTICAL
OR PRESCRIPTIVE PART.



In the course of the ensuing Winter will be published,
By the same Author.

PART III.
OF THE
CLINICAL GUIDE,
CONTAINING
MIDWIFERY
AND
OESTETRICAL PHARMACY;

OR, A
CONCISE VIEW OF THE LEADING FACTS
ON THE
HISTORY, NATURE, & TREATMENT
OF THE
VARIOUS DISEASES THAT FORM
THE SUBJECT OF MIDWIFERY,
OR ATTEND THE
PREGNANT, PARTURIENT, AND PUERPERAL STATE.
ILLUSTRATED WITH A SET OF COPPERPLATES.
Intended as a Memorandum-Book for Practitioners.

TO WHICH IS ADDED,
AN OBSTETRICAL PHARMACOPŒIA;
DIVIDED INTO THREE PARTS, viz.
MATERIA MEDICA, CLASSIFICATION, & EXTEM-
PORANEOUS PRESCRIPTION.

THE
CLINICAL GUIDE,

OR, A

Concise View of the Leading Facts,

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HISTORY, NATURE, AND TREATMENT,

OF

SUCH LOCAL DISEASES AS FORM

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OBJECT OF SURGERY.

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F. R. S. & S. A. LONDON.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS,

AND F. R. S. EDINBURGH, &c. &c.

EQUALLY DISTINGUISHED FOR HIS KNOWLEDGE

AND DESIRE OF PROMOTING SCIENCE,

THIS WORK,

IS PRESENTED AS A MARK OF RESPECT AND ESTEEM,

FROM HIS OBEDIENT SERVANT,

THE AUTHOR.

THE HISTORY OF THE

ROYAL COLLEGE OF PHYSICIANS

AND OF THE ROYAL SOCIETY OF PHYSICIANS

AND OF THE ROYAL SOCIETY OF PHYSICIANS

THE WORK

OF THE ROYAL SOCIETY OF PHYSICIANS

AND OF THE ROYAL SOCIETY OF PHYSICIANS

THE AUTHOR

It was intended to have given two farther divisions of this Work, one comprehending Military, the other Naval Surgery, so as to bring together, under one point of view, the peculiar circumstances which modify local disease, or the subjects of Surgery in these particular situations. It was found, however, that this addition could not be comprised within the limits of one volume, a circumstance which would frustrate the intention of this work, and oblige the Pharmaceutical part to be curtailed.

A set of plates was also begun for this Volume, but were given up on the same account. They are indeed less necessary, as every Surgeon is well acquainted with the common instruments in use, tho' by being on the same page, it might have facilitated the description of the operation.

The last part, viz. a Pharmacopœia, limited entirely to Surgery, it is hoped, will be found highly useful. To bring into a single point the treatment of each disease that occurs in the preceding part is its object, and to join with that the peculiar forms of prescription adapted to each, where such peculiar forms are in use. Very little has hitherto been done in the way of a Surgical Pharmacopœia, and the want of it every practitioner is fully sensible of. Perhaps, at a future period, the Author shall endeavour to render it more perfect.

He has also to apologise for this Part not appearing sooner, being promised two years ago. The pressure, however, of particular circumstances, has deferred it; and, even at this late period of its appearance, he is but too sensible, from the same cause, of its many defects. As it is, he hopes it will be received with the same indulgence as the former Part. The sole object of the work is utility; and, to young practitioners, he has no doubt it will prove so. In a future edition he will endeavour to profit by the observations that may be made on this.

P R E F A C E.

THE favourable reception which the First Part of this Work, comprehending Medicine, has met with, now induces the Author to extend it to a Second, containing Surgery. He does it the more readily, as the same reasons that urged him to the plan of the former Part, operate still more forcibly here; for, except some small detached treatises on certain parts of the Subject, or others, which are too short, and serve only as text books to particular courses of lectures, all the modern publications on Surgery will be found too diffuse and extensive to be carried about, or to prove useful in the hurried routine of actual practice. This observation, however, is not made as any detraction from their merit. On the contrary, the most extensive of them, Mr B. Bell's work, is one which no surgeon should be without, who has a desire to excel in his profession.

It contains the experience of a well informed and judicious practitioner, who has made it his business to be well acquainted with the opinions of preceding writers, and who has subjected these, before adopting them, to the sure test of his own practice, and that of the most respectable of his contemporaries. Wherever a slight difference from him occurs in this volume, it is offered with much diffidence. But the plan of the present Work admits little room for difference of opinion on the subjects it comprises; what it chiefly aims at is, to unite all the information contained in the larger works with such conciseness, as to be easily consulted on every occasion, and fitted to accompany the surgeon to the field, the camp, or the bed-side. Such a work cannot fail to prove highly acceptable to every practitioner who knows the extensive nature of his profession, and the necessity for resorting to some *memorandum book* in the course of his practice.

In treating any surgical disease, the same plan is observed in this as was done in the Medical Part, and the same attempt made, as far as possible, to avoid all theory.

The description of the disease is first given, so as to distinguish it from every other; its general history is next detailed; this is followed by its causes, and, where necessary, its prognosis; and last of all, are given the various modes of treatment.

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CHAPTER IV

SURVIVAL OF THE Fittest

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INTRODUCTION.

I. **T**HE human body is composed of a solid and fluid part, differently proportioned in their arrangement, but mutually dependent on each other for the continuance of existence. An alteration in any particular portion, changing these relations, constitutes *Local disease*.

II. Surgery is the art of removing such diseases by the assistance of external remedies, in so far as their situation admits of it.

III. These remedies consist in the use of the hand and instruments, with superficial applications.

IV. The causes of local diseases arise, either from a fault in the constitution, injuring the conformation of a part, or from a variety of external accidents, to which the body is exposed.

V. The latter, by commonly destroying more or less the continuity of texture necessary to health, or otherwise occasioning its derangement, produces inflammation in a part. The former, by the action of the system itself, under this vitiated state, unequally directed to parts of a weakened or irritable nature, displays there a similar effect.

VI. Inflammation then is a natural consequence of irritation, and an almost constant attendant of Local disease in some period of its progress. Though varied somewhat by peculiar morbid circumstances, it always displays an increased afflux to the part, and also an increased action of the contiguous vessels to a certain extent. Hence its presence is denoted by uncommon heat, pain, redness, swelling, and disorder of the functions of the part.

VII. The peculiar circumstances which vary the appearance of inflammation in different parts, or modify this state of morbid action, may, in general, be reduced to three heads :

1. The special cause from which it arises.
2. The particular function of the affected part ; and,
3. Its peculiar structure or texture.

VIII. This variety, in the appearance of inflammation, is equally extended to its termination, which takes place in three different ways :

- 1st, By resolution ; or the withdrawing of the increased afflux from the inflamed part, and the absorp-

tion of the effused fluid into the general circulation. This is denoted by abatement of heat and pain, subsiding of swelling, and increasing mildness of the other attendant symptoms.

2d, By suppuration; or a change of the effused fluid, in consequence of the increased action of the vessels, into a bland whitish matter termed *pus*. This change is marked by increase of the different symptoms, especially heat, tension, and pain; the latter becoming of a throbbing kind, attended with an augmentation, and partial prominence of the swelling, which acquires a clear shining appearance, and tendency to softness.

3d, By gangrene; when the effusion, instead of thinner parts, consists of the blood in its gross state, which undergoing a change connected with putrescency, destroys the vitality of the affected part. The marks of this state are, the increase of general symptoms, without any change in the augmentation of the part; and the approaching symptoms of this termination are displayed in an alteration of colour, from a vivid red to a dusky, livid or leaden hue, the appearance of watery vesicles on the surface, with a remission of pain, and falling of the pulse. The skin also loses its former morbid tenseness, acquires a soft emphysematous feel, and at last becomes black.

IX. During the progress of the two last terminations, the increased action of the vessels described (vi.) is not confined to the part, but extends more or less to the system at large. This is termed the symptomatic fe-

ver, which corresponds always in its nature to that of the morbid change in the part.

The symptoms of this fever are first a shivering, or cold stage, which is of shorter duration than in those fevers that arise from a different cause, succeeded by head-ach, increased heat, and thirst, diminution of appetite, with a frequency, fullness, and hardness of the pulse, though the latter varies in its progress, depending on the circumstances of the subsequent termination, and also on the state of constitution; but an unfavourable prognosis is to be formed in all cases where the symptoms of the fever exceed in degree the appearance of the injury, or are continued beyond the period of actual inflammation in the lesed part.

X. The *first* termination of inflammation, viz. resolution, is always the most desirable one, especially in cases depending on an external cause. But it is frequently not in our power, for only in the first days of the disease is it effectual. It is particularly to be promoted in parts of a firm texture, or the tendinous and ligamentous, and in serophulous constitutions, or where the healing of a part is difficult; while, in inflammations appearing of a critical nature, it is, on the other hand, rather to be avoided.

The *second*, viz. suppuration, is to be considered as the most general termination, and may be always suspected where the symptoms do not subside in a few days. The period, however, in which it takes place, must vary according to the nature of the part attacked with

it, the state of constitution of the person, and the diligence with which remedies are applied.

The *last*, viz. gangrene, is always to be dreaded; and, where the smallest symptoms of it appear, a very doubtful opinion must be formed of the event. This is often very sudden, and without the appearances of the disease seeming to correspond in degree with this fatality.

XI. The treatment of inflammation must be varied according to the tendency to these different terminations of the process. Where *resolution* is aimed at, every cause of irritation existing in the part, or acting upon it, should be removed. For this reason an antiphlogistic regimen should be strictly enjoined, consisting of a low spare diet, composed chiefly of acids and vegetable matter in the most dilute form; the removal as much as possible of external heat, and shunning motion, and agitation of every kind. If these should not prove sufficient, and a full hard and quick pulse with other symptoms of fever, still attend, the irritation of the system is to be farther abated by the different evacuations from the general mass of fluids, as blood-letting, the use of purgatives, &c.

The treatment of the part itself again consists in the application of similar means. Its vessels are to be immediately emptied of the morbid increase of their contents, by topical venesection with leeches, or a scarificator, and remedies of a sedative nature, particularly the

preparations of lead must be had recourse to,—or the vegetable acid, united with a proportion of sal ammoniac. They should be used cold, and applied either in the form of solution or cataplasm frequently renewed.

2d, Where *suppuration* is either unavoidable, which we can generally determine in 3 or 4 days, or is preferred on account of the critical nature of the disease, the reverse of the former treatment is to be adopted. The constant and equal application of heat to the part, is the chief means to promote it; and, in proportion to the degree of heat will the process be hastened. The application of it will be best made in the form of a warm fomentation or poultice, and the latter should be renewed so soon as the heat becomes deficient, that is at least 4 or 5 times a day.

Where the inflammation, however, is deficient from the indolence of the disease, or the part of the body in which it is seated, the addition of some other stimulant, besides the simple application of heat, may be made, as some of the warm gums or acrids to increase the inflammation, and occasionally the use of dry cupping near it; when by these means suppuration is induced, the remission of the throbbing pain takes place, and if the teguments are entire, gives place to a dull heavy weight in the part, attended with irregular rigors or shiverings.

The constitutional treatment must be regulated here by the degree of inflammation. A moderate fever should always attend suppuration, and where too violent

lent it is to be repress'd by the antiphlogistic course, as recommended in resolution (xi.) ; or where too slight, it is to be increased by a full diet, the use of wine and other means of increasing the tone of the system.

3d, Wherever a tendency to gangrene appears, the most active means must be employed to prevent its increase, and obviate the effects of it already begun.

If it arises from extreme action or violence of inflammation, as generally happens in cases from external causes, evacuations are especially pointed out ; but these evacuations must be confined to the period of its first appearance ; for, as a powerful cause of debility, the gangrene of the part soon brings on a highly weakened state of constitution, and then the sole chance lies in preventing the sinking of the strength till the action of the vessel produces a separation of the gangrenous from the sound part.

In this last state the constitutional treatment consists in a full diet, and liberal use of wine, joined with the exhibition of the bark, in as full quantities as the stomach can bear, not less than 2 ounces or more in the 24 hours ; and this medicine is to be preferred to all the other stimulants formerly had recourse to, which may be assisted in its effects here by its junction with the vitriolic acid ; and, in particular cases, also, when there is much pain, by opium.

In the way of local treatment little is to be done.

The separation of the diseased parts depends on the efforts of the constitution at large, and the remedies here should be such, as, from their antiseptic or spiritous nature, gently stimulate without much irritation, as the solution of sal ammoniac, spirit. Mindereri, &c.

When the separation takes place, the part is then reduced to the state of a common sore, the treatment of which is detailed in (Class I.).

XII. From the nature of the injury itself, as well as the peculiar circumstances described (vii.) as varying the morbid action in the part, the appearances of Local disease come to be considerably diversified. Hence, for more clearly understanding this difference, and directing the success of their treatment, the objects of surgery have been arranged into certain divisions or classes, the first and most simple of which is that of Wounds.

CLASS I. WOUNDS.

A Wound is a recent and total solution of continuity of texture through the teguments and its substance.

III. Wounds are divided into different kinds, from the *texture* of the part; from the *nature* of their cause; and from the *extent* of its action.

III. The symptoms that attend this division of substance or wound, are the appearance of more or less redness in the divided parts, according to the texture of the particular portion of the body, which is the seat of the accident. This is succeeded by a discharge of blood, proportioned in quantity to the size of the injured vessels, and the degree of lesion they have suffered. The discharge is gradually diminished by the approach and subsequent progress of inflammation, increased by the irritation of the external air. After a certain time, varying in different cases, from the state of constitution, the extent of the injury, it is followed by an oozing of a faint coloured or ferous fluid, which ends in the fur-

face of the fore turning dry, or being covered with coagulated blood.

IV. During the progress of this state, pain commences, and gradually becomes more acute as the inflammation of the part proceeds, which then becomes red, tense, and swelled. When the injury is extensive, symptoms of fever now supervene, and this state terminates in two ways; either by the extreme action of the vessels inducing gangrene, or, what is more common, by a ferous fluid oozing from the surface of the fore, where collecting, it is converted into pus, with the removal of all the more violent inflammatory symptoms of heat, tension, and pain.

V. From this period the process of healing appears. The surface of the divided parts displays every where points or sprouts of a firm, red, fresh, or vermilion appearance, termed granulations.

These granulations gradually increase, and fill up the loss of substance, the effect of the injury, and the rapidity of their growth is proportioned to the health of the part. When examined, this growth appears highly vascular. With it a decay also of the contiguous divided parts takes place to a certain extent; and a surface level, or nearly uniform, being thus produced, the process terminates in the formation of a cicatrix or exsiccation of the injured part, either by a scab being put by nature to its further extension or growth, or else by the interference of art to hasten it.

VI. The general prognosis in wounds must be drawn from a variety of circumstances, but the principal deserving attention in forming an opinion are,

1. The state of inflammation or degree of action the morbid cause.
2. The tendency to a lodgement of matter when checked in the part, or its free discharge.
3. The constitution of the patient.
4. The texture of the part; and
5. The particular portion of the body injured.

III. With respect to the *first*, a certain degree of inflammation must necessarily attend the process of suppuration. Wherever, therefore, it exceeds, it threatens gangrene of the part; where it is deficient, the process of healing becomes retarded or even entirely suspended.

In regard to the *second*, the lodgement of matter, as a cause of irritation, is always unfavourable to the repair of a part. Hence, where the free exit is prevented by the form of the wound, our opinion must be guarded, such wounds being often highly embarrassing.

On the *third* it may be observed, that independent of the simple circumstances of the wound itself, our opinion must be unfavourable where a taint of constitution is known to prevail, or where the state of the system, from age, are less capable of going through the process of reformation.

On the *fourth*, or texture of the part, much depends on the facility of the cure, as well as the ease of the patient. Thus the more yielding texture of the cellular membrane, and muscles, is repaired in half the time as a ligament or tendon, or where a bone is injured, or a gland divided. The division also of nervous

structure is often attended, independent of pain, with alarming and fatal tetanic symptoms.

On the *fifth*, or the part of the body, much depends in forming our prognosis. Wounds of cavities are highly to be dreaded in comparison with those which affect surfaces. Wounds of the extremities are favourable, compared with those which are in the immediate vicinity of joints. Wounds of the large blood vessels are also dangerous, from the difficulty of restraining hemorrhage, and even, when restrained, from the danger of impeding circulation.

VIII. From a consideration of these various circumstances, a very guarded judgment falls to be formed of the probable termination of injuries of this kind, independent of accidental circumstances that may arise from the conduct of the patient himself in their progress.

IX. The cure of all wounds is effected in two ways, either by *adhesion* or *suppuration*; and, previous to employing either of these modes, two preliminary indications are to be attended to.

1. The first is to stop the hemorrhage, or fatal effusion of blood.
2. The 2d to remove any extraneous irritation present in the part.

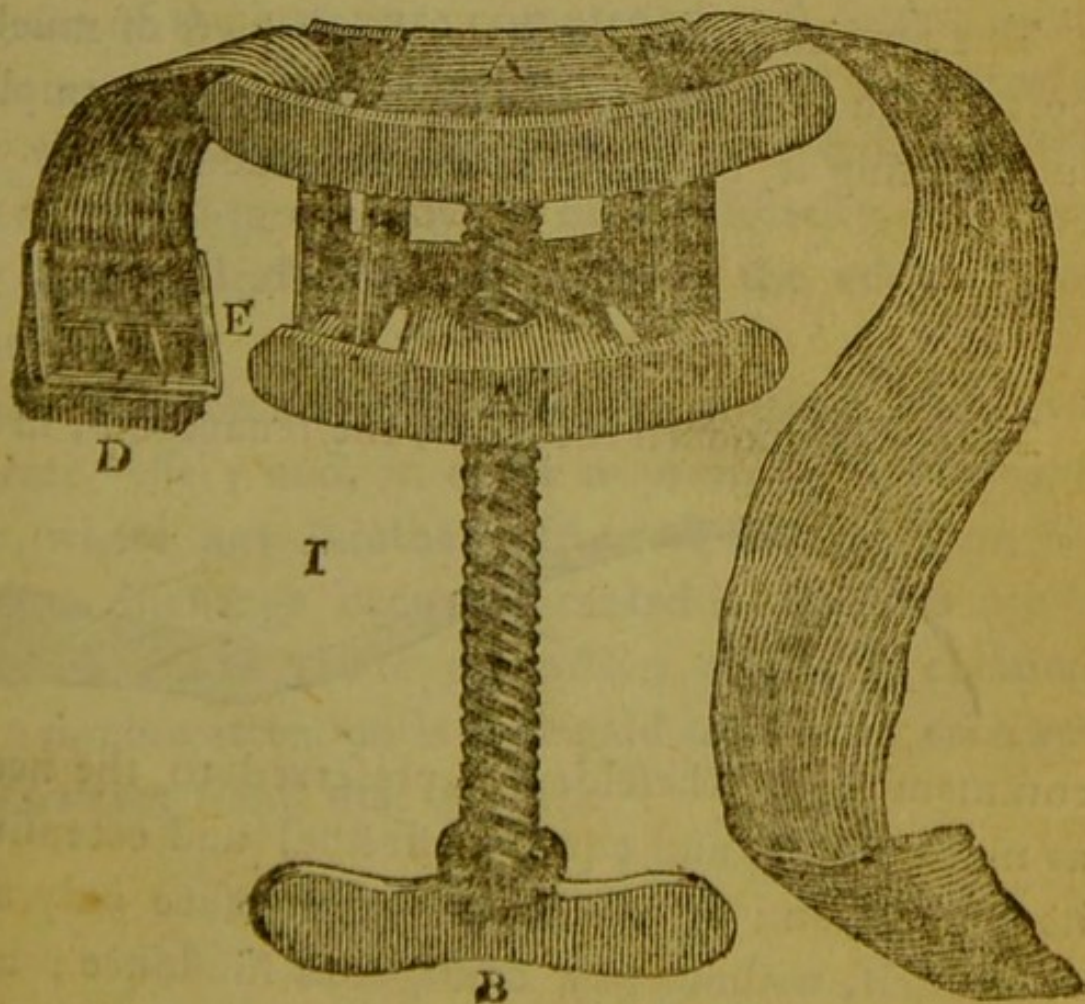
X. The former of these is to be immediately executed by pressure, till some permanent means by ligatures are applied.

This pressure is to be made in the head and trunk by the hand, to the superior part of the artery, when practicable; or, where it cannot, by the application of dossils of lint, or pieces of sponge, or agarie, in

mouths of the bleeding vessels, held over them by the hand, or secured by a bandage ; but in the extremities, a more effectual restraint is in our power, from the use of the tourniquet.

Tourniquet.

XI. The Tourniquet is an instrument well known to every surgeon, which, after successive improvements, is now made to act with such an equal pressure on every part of the member, as completely to restrain the hemorrhage from its smallest vessel. In order to use it properly, a small linen cushion, about 3 inches long, $2\frac{1}{2}$ broad, and about $1\frac{1}{2}$ thick, must be provided, to be applied over the course of the principal artery, and secured by a slip of cloth, or roller, to which the cushion is attached, passed two or three times round the limb.



The instrument is then to be applied, by bringing the strap (D. A. C.) round the limb, and pulling it through the buckle, as far as necessary to make an equal and proper pressure or tightness, while, in adjusting the instrument, the handle of the screw (B.) is to be placed opposite to the cushion over the artery ; in which case, if properly applied, half a turn of the screw is sufficient completely to restrain any hemorrhage.

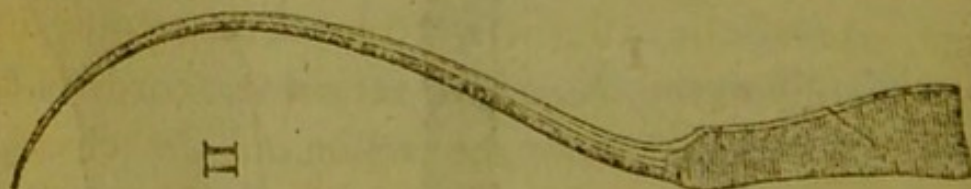
XII. Having restrained the hemorrhage, by either of these temporary means pointed out (x. xi.) according to the situation of the wound, the ligature of the vessels, as affording a permanent security, becomes the next object of attention.

Ligatures.

The application of ligatures is a subject of much importance in surgery ; and two methods are employed in executing it, by the needle and tenaculum.

Tenaculum.

XIII. By modern surgeons, the tenaculum, first re-



commended by Cheselden, is preferred to the needle as more simple, and equally effectual and extensive in its application ; as admitting the inclosure only of the vessel itself, without any contiguous substance ; as less apt to produce, on that account, the more violent

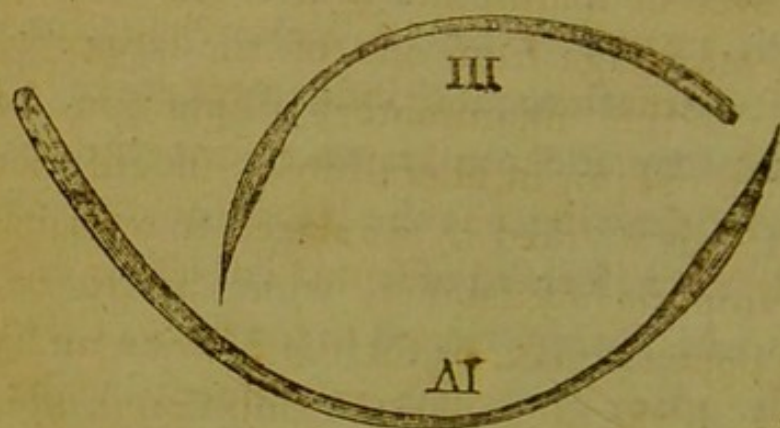
symptoms of spasm or pain; and as occasioning, in the end, an easier removal of the ligature itself.

XIV. Having slackened the tourniquet, or, in other situations, removed the compress from the mouth of the vessel, in order, by its hemorrhage, to discover exactly its situation, the instrument here delineated is to be used by sticking its point into the coat of the artery, and drawing out the latter for an $\frac{1}{8}$ of an inch, when a ligature (formed of from two to four or five white waxed threads, proportioned to the size of the vessel, and previously placed over the instrument in the manner of a ring, by one of the ends being put twice through the other, termed the surgeon's knot) is to be pulled over the point of the tenaculum by an assistant; and, when upon the vessel, its two ends drawn gently till the sides of the latter are compressed. A second knot, if the artery is somewhat large, may be then made, after which the tenaculum is to be removed, and the ends of the ligature cut off, at such a distance, that they may hang at least one inch without the edge of the wound.

XV. The same method is to be pursued with each separate vessel; and, in order to promote the hemorrhage, where any faintness, from fever, cold, or the previous discharge occurs to retard it, cordials are to be exhibited to excite the action of the circulation, and a minute attention is to be paid to take up each vessel, however small that appears.

Needle.

XVI. But the needle, instead of the tenaculum, comes



to be preferred in some cases of the deep situation of a vessel, or its retraction beyond reach. In employing it for this purpose, the size of the needle and thread should be proportioned to the appearance of the vessel. When chosen, the concave side of it moderately curved, as here delineated, is to be turned towards the vessel, and introduced about $\frac{1}{4}$ of an inch from its situation, and brought out at the same distance from it on the other side; while the same thing being repeated a second time in the opposite direction, the situation of the vessel will be completely encircled, and, on the ends of the thread being tightened, the hemorrhage from it restrained.

The ends of the thread are then to be disposed of as in using the tenaculum (xv.).

XVII. In this manner, either by the use of the tenaculum or needle, is every hemorrhage from the larger vessels permanently restrained; but in many cases of injuries of this kind, though the larger vessels are restrained, a general superficial effusion or oozing continues from the surface of the sore.

XVIII. This is produced either by the general increased tone of system, the effect of the accident, or from the opposite, joined with a dissolved state of the fluids.

The former is commonly connected with strong symptoms of fever or spasm, and is best removed by allowing the hemorrhage from one of the larger vessels to proceed, till the inflammatory disposition somewhat abate, when opium, in liberal doses, should succeed.

The latter is marked by a relaxed state of habit, and general symptoms of debility, which are to be removed by an opposite plan, or the use of wine and nourishing diet, with the same liberal exhibition of opium.

In this last case, the state of the part also requires particular attention, and the debility of its vessels are to be counteracted by the application of stimulants, particularly the balsams; as the myrrh, benzoin, &c. dissolved in alcohol, the best form of which is the traumatic balsam; or instead of this, the contents of the vessels may be simply inviscated, by dry powders spread over the surface of the sore, as starch or wheat flour; or the two methods joined, of both stimulating the vessels, and inviscating their contents, as in the use of the myrrh, or galbanum, united with the gum arabic in powder.

XIX. When to these means, pressure, either by the hand or a bandage, is joined, all hemorrhage comes soon, for the most part, to be restrained.

XX. But besides the use of ligatures, as described in this preliminary stage of wounds, for merely restraining hemorrhage, they are afterwards employed with another view, for promoting also a more speedy reunion of the divided parts, and therefore claim particu-

lar consideration here. In this last case, they have been distinguished by the appellation of futures.

Sutures.

XXI. Sutures, then, are different ways of applying a ligature suited to the circumstances of an wound; and, though very numerous in the older writers, are now reduced to four kinds, viz. the *interrupted*, *twisted*, *quilled*, and *glover's* future.

XXII. In forming futures, two general rules have been laid down.

1. That one stitch, or future, is sufficient for every inch of wound; and,

2. That the ligature or stitch should always be carried to the bottom of the wound. A good deal, however, must be left in all cases to the judgment of the surgeon, and the particular circumstances of the injury, in adhering to this rule.

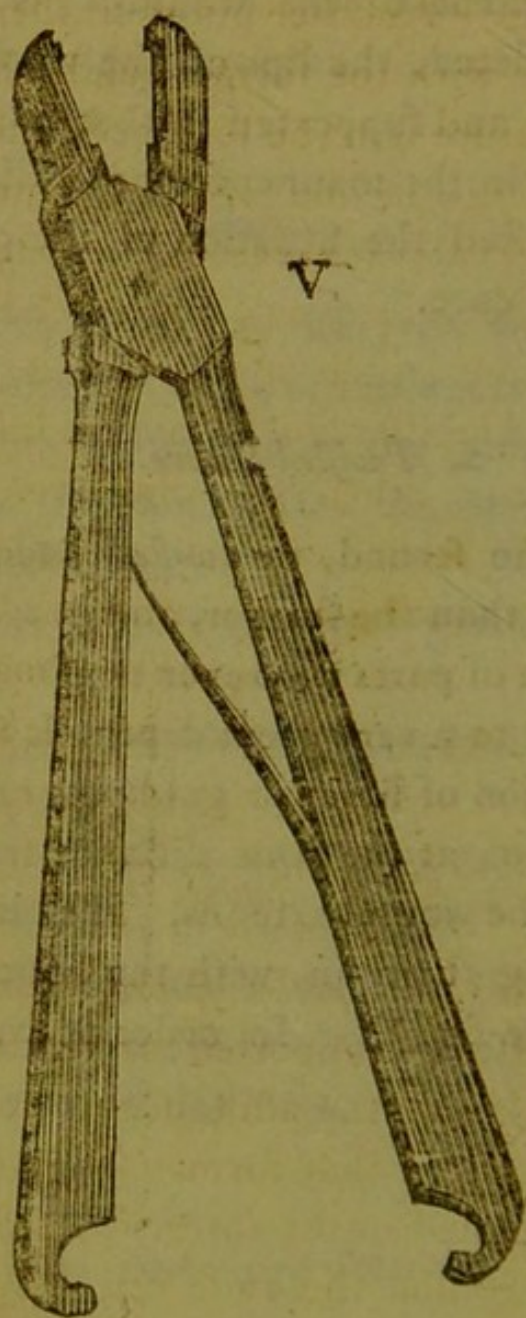
1. Interrupted Suture.

XXIII. In making the *interrupted future*, (and it is chiefly used in deep wounds) it is most easily and neatly done by passing the threads from within outwards. Thus, a needle being put upon each end of the same thread, well waxed, and each of the needles inserted at the bottom of the fore, when pushed outwardly about $\frac{1}{2}$ an inch to an inch from the edge of the wound, according to its depth, will form one stitch, and the needles being withdrawn, the same thing is to be repeated, ac-

ording to the extent of the wound. When all the stitches are completed, the lips of the wound are to be pressed together, and supported in that position till the ligatures are tied in the manner formerly directed, (xvi.) Having first adjusted the situation of the part for the remainder of the cure.

2. *Twisted Suture.*

XXIV. But the second, or *twisted suture*, is now in more general use than the former, and produces a more accurate re-union of parts wherever employed, provided the wound is not to a very great depth. It is performed by the introduction of silver or gold pins of a flat form, having steel points at the same distance from its edge, as the depth of the wound extends. The pins are passed either by pressing them in with the finger, or by the *porte aiguille*. (See fig. V.) In order to pass them, the



divided parts are to be brought, by an assistant, nearly into contact. One pin is then introduced through both sides of the wound near its end, entering it externally, and carrying it out on the opposite side at the same distance from the edge at which it entered on the former side. A firm waxed thread is next passed across it, so as to describe the figure of 8, secured by a loose knot, merely to keep the surface in contact; and therefore not tight.

than to effect this. Another pin must then be passed in the same manner with the former, and when passed, the knot of the ligature is to be loosened, and the ligature carried round this second one, as round the former; and so successively for every pin that is passed. Each pin should be at about $\frac{1}{2}$ or $\frac{3}{4}$ of an inch from the other, according to the length of the wound; but whatever its length be, a pin should always be inserted near each extremity of it. When the pins are all passed, and all the ligatures completed, the parts should be covered with lint dipt in mucilage or ointment; and in the course of from five to seven days, the pins may be withdrawn, adhesion being in that time produced.

3. *Quilled Suture.*

XXV. The third, or *quilled suture*, is merely the first, or interrupted one, supported or rendered firmer to prevent retraction, by the assistance of quills, or bits of plaister rolled up in that form. For this purpose the thread, when passed in the interrupted suture, is to be made double, so that the quill or plaister may be inserted in the doubling of one side, and the knot made to pass on the quill on the other. Little advantage, however, is derived from this addition.

4. *Glover's Suture.*

XXVI. The last, or *glover's suture*, has been confined to its application to wounds of the intestines. It consists in making stitches with a common needle and

thread, in an oblique spiral direction along the divided parts, which are joined together in the same manner as practised by glovers in the stitching of leather, from which it is named.

XXVII. After having, in the manner described, fulfilled this *first* preliminary indication in the treatment of wounds, viz. restraining the hemorrhage, the *second* or removing any extraneous irritation, comes next to be attended to; and, in doing this, the situation of the member where the accident is seated, should be placed in a position most favourable for the relaxation of the divided parts, or a complete inspection of the wound to its bottom. The removal of the extraneous body is then to be made, either by the hand, by the assistance of the forceps; or, in some cases, by washing the fore, or injecting a fluid into it.

XXVIII. The *first* is confined to those situations where the extraneous body appears, and is easily come at; but unnecessary and rough handling, by increasing inflammation, is always to be avoided.

The *second* is employed where the extraneous body lies somewhat deep; and, before using them, its precise situation in the wound should be accurately discovered; but if much injury to the parts must attend the traction, it should rather be allowed to remain till removed by the efforts of nature; though, in the execution of this, or permitting the delay, much must depend on the judgment of the operator.

The *third* is limited to those cases where the body consists of minute particles, as sand or glass, &c. which cannot be laid hold of in any other way.

XXIX. After this preliminary treatment, the

the wound, the principal object, comes then to engage our attention ; and this, we observed, is completed either by adhesion or suppuration.

XXX. 1. Cure By *Adhesion*.

The former, or healing, as it is termed by the first mention, consists in the adhesion of surfaces by an involution of parts, through the connecting medium of a glutinous excretion, which cuts short the process of healing, and prevents any decay of divided parts. This is performed by drawing the divided parts closely into contact, and covering them completely with the external teguments. The means of doing this, where the wounds do not extend very deep, consist in the use of cups of adhesive plaister, termed the dry future, which is applied by fastening one half of the plaister on one side of the wound, and the other on the skin, on the other side of the wound, drawing it tight, and holding it firm till the warmth of the part secure it ; but if the wound is deep, this contact of the sides must be made, instead of the dry future, by the twisted or interrupted future, (xxxiii.) over which the uniting bandage is to be applied, and before it, the fore covered with some soft lint or charpee, wet with some oily matter to prevent the access of the external air. A position of the part is then to be chosen, most favourable for preserving its juxta position of the surfaces. By this treatment, adhesion soon takes place, from a consequent increased vascularity of the contiguous surfaces, and a new arterial circulation of the part is substituted in the room of the former vessels destroyed by the division ; dissections show the latter, where of any size, in the

XXXI. The period of adhesion varies in different cases, but it generally takes place in a few days, five or six, when the ligatures may be removed, and this mode of treatment, though the division does not admit a complete apposition, will generally be successful to a certain extent, and at any period of the accident, unless two circumstances occur, which, if not readily alleviated, require its being discontinued.

XXXII. The circumstances preventing adhesion, are

1. Excess of irritation, pain, and inflammation from the ligatures; and,
2. Lodgement of matter occasioning troublesome sinuses.

XXXIII. Where the former take place, every mode of relaxation is to be employed by unguents and emollients, to soften the teguments of the part; and, if failing, topical venesection and opiates may be used; but still ineffectual, the ligatures should then be completely removed.

The lodgment of matter, again, is easily prevented by guarding against any cavity being left betwixt the surfaces in employing this method of cure, and particularly in passing the sutures.

XXXIV. The constitutional treatment under this mode of cure, should be guided by antiphlogistic principles. A low diet should be strictly enjoined, and unless in a very feeble habit, it should be laid down as a general rule not to be departed from. A slow belly is hurtful in all cases of wounds.

XXXV. 2. Cure By Suppuration.

The second mode of treatment, by suppuration, is

avoidable ; where, in consequence of the injury, the re-
action of parts is so great as not to admit their juxta-
position, or possibility of inosculation. The cure here
depends, as formerly described (v.), on the forma-
tion of new substance by granulations, and the de-
pression of the contiguous divided parts, to reduce the sur-
face to a level with the cicatrix. The method of effect-
ing this is by exciting and keeping up a certain degree
of inflammation in the part, such as is sufficient to hasten
the process of healing. The chief remedy for this
purpose is a due application of heat, suited to the state
of the wound ; and this application should be made so
soon as the inflammation succeeding the injury is fair-
ly begun, and continued till a full appearance of pus,
with relief of the more violent symptoms of inflamma-
tion, takes place. The means by which heat is applied
here, is either in the form of fomentation or poultice.
The former is commonly employed where the pain and
inflammation are violent, as a temporary relief. The
latter is used as a permanent application in this first
stage, and as, at the same time, excluding an addition-
al cause of irritation, the access of the external atmo-
sphere to the part.

XXXVI. When the symptoms of violent inflamma-
tion abate, and the process of healing is begun, such a
degree of heat and relaxation as the poultice conveys,
is unnecessary, and even prevents that firmness of new
growth which hastens the cicatrix of the part. Such
applications must then give place to those that merely,
by their soft spongy nature, afford a covering, and fill
the space of the sore, excluding, at the same time,
the access of the air here, as in the former case, by

lint or charpee ; and, these soft coverings may be previously spread with some liniment, to prevent adhesion, and facilitate their removal. After a due quantity of covering upon it, a compress should always be applied over the fore ; which may be supported by a bandage either of linnen or flannel, though the latter is now commonly preferred.

XXXVII. The frequency of removal of dressings in sores, is a point still undetermined by practitioners, and the appearance of the discharge is the only rule to regulate it. Till a full appearance of this ensue, there is no obvious necessity, which will generally not be sooner than three or four days, sometimes later ; and so soon as the poultice is laid aside, a daily dressing of the fore should follow. When the process of healing becomes interrupted, and a change arises in the nature of the fore, it belongs then to the class of ulcers, to be afterwards considered.

XXXVIII. But in the progress of wounds, certain constitutional symptoms arise that demand particular attention : These are acute fever and spasmodic complaints.

CONSTITUTIONAL MORBID SYMPTOMS.

1. *Fever.*

XXXIX. The first is marked chiefly by inflammation and pain ; for the alleviation of which a particular attention is necessary to the state of the wound, and to remove from it any extraneous irritation, if arising from that cause ; attention to relaxation in the position of

the part is also proper, and these means may be farther assisted by the internal use of opiates. Where the inflammation is violent, and deep seated, unloading the vessels by topical venesection, or the scarificator, will mitigate the symptoms, which may be farther aided byomentations and poultices, to produce the same effect. If these are not sufficient, and the pain still continues acute, it probably depends on a partial separation of nerves, to relieve which, a complete division of them should be made.

2. *Spasm.*

XXL. The latter complaints, or the spasmodic, are often very violent, and attended with the greatest danger. They vary in degree from the slightest convulsive twitches, to the highest state of spasm in the attack of lock jaw and tetanus.

The treatment of such symptoms, when slight, depends on the use of opiates, and in attending to the nature and ease of the wounded part.

When severe, and of the tetanic kind, they are then to be obviated by the means commonly had recourse to in the cure of Tetanus, arising from other causes. (See vol. I. p. 176.) These are by large doses of opium, the use of the warm bath, mercury, friction, rubbing with emollients, &c.

XXLI. The removal of the wounded part, or member, when in the extremities, was formerly a practice much employed; but in every case of spasm it is now known that the effect survives the cause, and such

practice not being successful, and often adding to the irritation of the disease, has occasioned its being now laid aside. Such complaints never arise in the first stage of the affection, or while the inflammation continues acute; hence exciting inflammation in the part, in cases of slight wounds, has been considered as one means of cure, and conducting the constitutional treatment, on the idea of debility, by the use of wine, bark, and tonics, has been experienced the most successful practice.

XLII. Such is the treatment of what may be termed Simple Wounds, or of such as arise from a free incision of parts; but this treatment comes to be more varied when the injury is effected by *puncture*; where there is much *contusion and laceration*; or where it takes place from a substance of a *poisoned or contaminating nature*; even in parts of a *firm unpliant texture* the cure is attended with difficulty. All such, then, may be distinguished under the general term of Complicated Wounds, and require next a particular consideration.

We shall divide them into two kinds, as affecting either parts of a simple, or of a more complex structure. Previous to which, it may be observed, it is astonishing how far the power of nature extends in repairing such injuries. But their cure, in general, has been remarked to proceed quicker in spring, slower in winter and summer, but slowest of all in autumn.

COMPLICATED WOUNDS OF COMMON STRUCTURE.

1. *Wounds from Puncture.*

XLIII. Punctured Wounds are distinguished by the *smallness of their aperture*, by *excess of pain and inflammation*, compared with the *apparent degree of injury* they display, and by *their difficult tendency to heal*.

XLIV. The causes that retard their healing are,

1. The irritation of extraneous substances, from the nature of the wound, not easily removed.
2. The lodgement of matter.
3. Partial divisions of nervous parts. And,
4. Small tendency to adhesion in the contiguous surfaces.

XLV. The treatment of Punctured Wounds demands, for its success, in accomplishing one of two circumstances, either procuring access to the bottom of the sore, or, failing of this, in preventing a lodgement of matter there.

XLVI. The former of these is executed in different ways, according to the situation of the wound.

1. First, and most simply, by laying open the parts, introducing, for this purpose, a director, and dividing the part upon it with a scalpel; or introducing a probe pointed bistoury, where it can be done with safety. But wherever the puncture runs deep, or near the blood vessels, this practice would be hazardous.

2. When the violence of the inflammation subsides, it is in a proper situation for a counter opening, introducing a seton through it; which is to be gra-

dually lessened by diminishing the thickness of the cord in the progress of the cure. Or,

3. Where a seton cannot also be employed, by the introduction of *tents* to preserve open the external aperture. In order that the matter may procure a free discharge, they should never entirely fill the opening. Hence *metal tubes*, especially of lead, are preferable to any thing else, as not being apt to swell on their introduction, or they may be even made hollow to admit the discharge. The use of tents, however, is very limited in practice.

XLVII. When these modes of treatment are not admissible, the *second*, or preventing a lodgement of matter, is next to be attempted; and this is executed chiefly by pressure, or the use of astringent injections.

A proper application of pressure will often both prevent a lodgement of matter, and also produce an adhesion betwixt the two surfaces, so as to effect a cure. Where it fails, astringent injections may be employed. They should be moderately strong, to suit the advanced stages of such sores. A solution of sacchar. saturn. of lime water, diluted port, or solution of alum, are all used with this view.

In spite of all the treatment detailed, punctured wounds are highly embarrassing to practitioners, who often fail completely in their cure.

2. Wounds from Contusion and Laceration.

XLVIII. *Lacerated* and *contused* wounds are marked by their *ragged edges*, by the *greater swelling* of the parts.

compared with *simple wounds*, by their *less alarming external appearance*, from little or no hemorrhage, and by their *strong disposition to gangrene* in their progress.

XLIX. Wounds of this kind are the most dangerous of all others, and the prognosis to be formed should be always doubtful till a proper suppuration of the parts issue.

L. The chief indications in the treatment of such wounds, is to counteract the disposition to gangrene; and having finished the preliminary treatment in the restraining any hemorrhage, if profuse, and in removing extraneous irritation, our great object must be directed to this point.

LI. Gangrene arises here from two causes; actual destruction of vessels, or violence of inflammation. In the first case, as gangrene will almost unavoidably take place, the practice should be directed to counteract its effects on the system, by the use of the bark, vitriolic acid, wine, and a full diet, employing antiseptic applications to the part, as recommended in the general treatment of gangrene. (xi. 3.)

In the latter case, diminishing inflammation is pointed out as a pretty certain means of preventing this state, if timely employed; and, for this purpose, topical venesection should be chiefly trusted to, in such quantity as the violence of the symptoms requires, while every attempt is to be made to induce suppuration of the part, by the application of heat in the form of fomentation or poultice, and this process taking place, relief of all the symptoms will occur, when it is to be treated as a simple wound.

If this treatment, however, should fail, and gan-

grene also appear, the same plan must then be adopted as in the *first* case, when arising from destruction of vessels; and should a separation of the divided parts ensue, the fore will then come to be treated as a common wound.

II. COMPLICATED WOUNDS OF PECULIAR STRUCTURE

1. *Wounds of Veins.*

LII. Wounded Veins can never be attended with any trouble, except when very large. Their hemorrhage will generally yield to pressure with a compress, to the use of the sponge or agaric; and these failing, a ligature may be used as in arteries, though there will seldom be occasion to employ it. The treatment is to be conducted here chiefly by dry dressings of lint or linen.

2. *Wounds of Lymphatics.*

LIII. Wounded lymphatics are distinguished by a *troublesome serous discharge*, continuing after the rest of the injury is healed; and, when considerable, producing a deal of weakness in the system.

LIV. The treatment is the same as in the former disease, and if pressure, joined with the use of astringents, as sponge, agaric, or puff ball fail, it should then be taken up by ligature.

3. *Wounds of Nerves or Tendons.*

LV. Wounds of such parts are chiefly distinguished by an *excess of pain*, without a *corresponding excess of inflammation* always accompanying it; and by the attack also of convulsions, so as, in the end, to prove fatal.

LVI. Two methods are employed here; a palliative and radical. The *first* consists merely in the use of antispasmodics, particularly large doses of opium; but its effect is merely temporary. The *second*, in the complete division of the wounded part, so as to take off the irritation arising from the partial separation. When this is performed, the part is then to be treated as a simple wound.

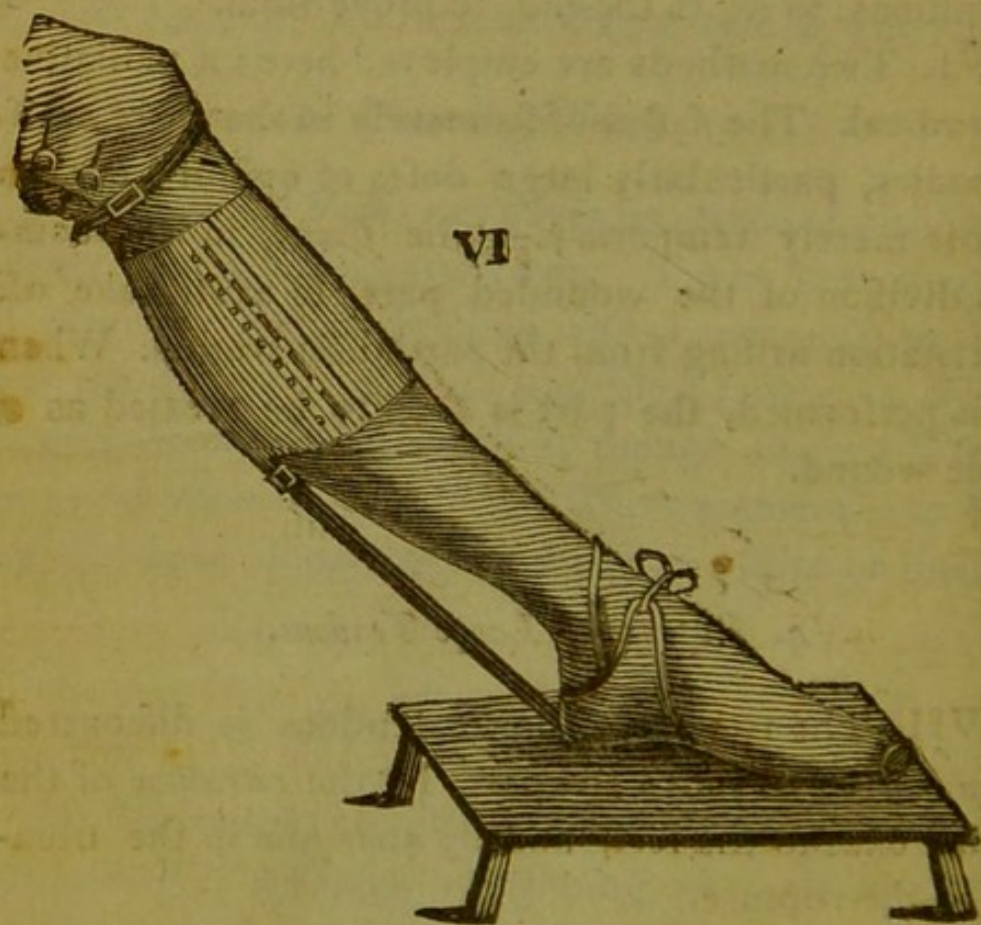
4. *Rupture of Large Tendons.*

LVII. The rupture of large tendons is discovered by an *inability* to move the part, by the *retraction* of the divided ends to the feel, and by *acute pain* in the situation of the rupture.

LVIII. The cure of this accident depends chiefly on apposition of the ends, or as nearly so, as can be done in ease, and avoiding motion. The *first* is accomplished by placing the limb in a situation the most easy and relaxed. The *second* depends on rest, and tying down the muscles of the part, so as to prevent any extension, should motion take place.

LIX. The most frequent accident of this kind is that of the *tendo achillis*; and, in studying the practice, the knee should, during the cure, be kept bent, while the foot is,

on the contrary, extended. A roller may then be applied to preserve the member in this situation, and some firmness must attend its application. The position of the foot will be best preserved by the instrument invented by the late Dr Monro, and here delineated as applied on the member.



During the cure, a considerable swelling, hardness, and thickness of the ruptured part arises, which gradually again departs.

LX. In beginning to move the parts, the motion should never be carried so far as to give pain, and it should be made in a very gradual manner, nor should it be even attempted for the first fortnight at soonest. When farther advanced, and the patient begins to walk, every caution should be observed to prevent exertion.

re, by placing the affected leg first, at every step, taking the assistance of a stick; and when still farther advanced, having the heels of the shoes considerably elevated.

The strengthening of the muscles of the limb is to be chiefly procured by the use of the cold bath.

5. *Wounds of Ligaments.*

LLXI. Wounds of the capsular ligaments are distinguished by their *slight morbid symptoms* at first, and an *apparent slowness of their inflammation*; but when the latter has once fully commenced in the course of their progress, *acute pain, swelling, and tightness*, extending to all the *adjacent parts*, as well as *the joint*.

LLXII. This state of disease is relieved by suppuration, and a discharge of synovia, but is occasionally renewed, and a successive series of the same train of symptoms, from time to time, occurs, exhausting the patient, and contracting the malady, so as to prove frequently fatal in the end, or to occasion amputation of the member.

LLXIII. After the removal of any extraneous irritation here, as in other wounds, the treatment of them consists either,

1. In preventing the attack of inflammation, which flows slower than in other cases. Or,

2. If already commenced, in suspending its progress before it arrive at suppuration.

LLXIV. The *first* depends on hindering the access of the air to the cavity of the fore; and for this purpose the part should be placed in such a posture as to relax the skin surrounding the seat of the injury, when pulling it for-

ward over the wound in the ligament, it is to be there retained by the application of adhesive plaister; and the latter is to be farther assisted by a roller brought spirally round the joint, so as to occasion an equal, but not too firm compression; the member being supported on a pillow, and the patient confined to bed.

But where inflammation is already commenced, instead of this more simple treatment, the most active means of removing it must be employed. Topical venesection by leeches, to a considerable extent, must be used, and eighteen or twenty applied at once. These are to be succeeded by warm steams received on the joint, either of simple water or of vinegar. To the wound itself soft emollient dressings are most proper.

LXV. If in spite of these means, however, the progress of the inflammation should extend, and suppurations form, the chief point then is to procure an easy and free evacuation of matter before it acts on the joint. This is to be done by the frequent use of warm fomentations and poultices, and attention to mark when the presence of matter is denoted, so that an opening at the most dependent part may be made.

LXVI. Such collections will successively occur; and will require the utmost attention, though, even in case of recovery a stiffness of the joint is apt to ensue; but if, instead of recovery, a tendency to hectic symptoms should arise, and an evident destruction of the joint appear to be going on, as there will then be little chance of a favourable termination, amputation of the member should take place; and the great point is to determine the exact period when this should happen: that is, while no chance of a cure is afforded, and

While the patient is not yet so reduced but that there is uncertainty of his surviving the operation. This can only be determined by experience, and more success generally attends a late than a too early recourse to the operation.

The constitutional treatment of ligamentous wounds requires, during the first stages, the strictest attention to the antiphlogistic course, in a low spare diet, an occasional laxative, and, where much pain, opiates in small doses. When suppuration is formed, a fuller diet will then be necessary, and in the way of medicine the bark thrown in.

Having now examined the general treatment of Simple and Complicated Wounds, we shall next trace the peculiar circumstances that mark them, according to the parts of the body on which they are inflicted, beginning first with those of the Face.

WOUNDS OF PARTICULAR PARTS.

1. *Wounds of Face.*

CLXX. Simple wounds of the face, independent of the division of the salivary duct, when occurring in the cheek or the harelip, have nothing peculiarly distinguishing them. Their treatment, however, must be conducted with much nicety, to prevent deformity, and an accurate juxtaposition of the retracting edges should be made and retained by adhesive plaister. Where this is not sufficient, from the extent of retraction, then the twisted suture (xxiv.) may be used, though it will seldom be necessary.

Wounds of the forehead are generally attended with

troublesome hemorrhage. Every means of restraint by compression with sponge or agaric, should be employed; and failing these, the tenaculum should be used to draw out the extremity of the vessel, though the powder of agaric held for some time over it will generally succeed.

2. *Wounds of the Eye.*

LXXI. Wounds of this part are of two kinds, either affecting the eye itself, or its appendages.

Wounds of the Eye-lids.

LXXII. The latter are the most simple; and, in the division of the lids, the chief point requiring attention, is to effect a re-union of the sides, and, at the same time, no way to impede the motion of the part.

In a longitudinal wound, this is easily done by bringing the sides together, and securing them by adhesive plaister; but in a transverse division, and where a portion of the cartilaginous substance is also included this is more difficult to effect, and must be attempted either by the twisted or interrupted suture. (xxiii.) The former is generally preferred; but, in performing it much nicety is required, as the pins should be both very small, and passed only partially, not entirely through the fibres of the orbicular muscle. When the suture is made (as directed xxiv.) all motion of the eyes is to be avoided, and light carefully excluded from them both.

Where so much of the lid is destroyed that no re-union can take place, the cure must be trusted to nature for filling the void in the progress of healing.

Wounds of the Eye-ball.

CLXXIII. In most wounds of the eye, if near the transparent cornea, a loss of vision seems unavoidable, even though superficial; but wounds here are chiefly to be considered alarming in proportion to their *depth and extent*.

In the *first* case, the symptoms of inflammation which ensue are highly to be dreaded, as they are apt to communicate to the brain; in all wounds of the eye, therefore, however slight they may appear, the most active means are to be used to obviate this symptom, in the manner detailed under *Ophthalmic Inflammation*. (*Vide Diseases of the Eye.*)

In the *second* case, their extent endangers a discharge of the humours of the eye, and causes, along with blindness, a shrinking of the eye itself.

Wounds of the eye are simply to be dressed with any emollient liniment, occasionally washed with a farnine solution; and, where exciting much pain, the latter is to be obviated by the use of opiates.

3. Wounds of the Throat.

CLXXIV. Wounds of the throat are commonly met with in the rash attempts of suicide, and in these cases the trachea or œsophagus are always more or less divided.

CLXXV. In divisions of the trachea, the use of adhesive plaster is to be chiefly trusted to for producing union of the sides of it. When divided longitudinally, this will always succeed; when transversely, it requires the assistance of the position of the head,

which should be kept bent down towards the breast, and the use of a night cap, with a broad tape under each ear; so as to secure it by a roller round the breast, will retain it in this state. If this method should not be sufficient to procure adhesion, ligatures may then be applied, but the stitches should be passed only through the skin and cellular substance, without passing into the trachea, and made from within outwards. Three will generally be sufficient, the ends of which should be left out of the external wound, and the plaisters are then to be applied above.

LXXVI. In divisions of the œsophagus, the same treatment is to be pursued, especially in passing the ligatures, which cannot here be omitted from the danger of the food escaping, and the interrupted future (xxiii.) will answer best, while, in order that it may be properly applied, the divided parts should be brought freely into view.

In both situations, certain morbid circumstances require to be attended to, previous to this treatment. These are the division of nerves and vessels producing hemorrhage. Wherever hemorrhage takes place here, every vessel, however small, must be taken up, to prevent the irritation and disorder which the blood passing into the stomach and lungs occasions, as cough, sickness, &c. Where the carotids are wounded, the wound is generally fatal. Where the jugular veins are divided, an attempt may be made to restrain the effusion, and produce re-union by pressure, either simply with a roller, or by the instrument which avoids the trachea, as delineated and recommended by most authors.

4. *Wounds of the Thorax.*

CLXXVII. Wounds of the thorax are always highly alarming, and that in proportion to their apparent depth, and their chance of having penetrated some of the viscera. They may be divided into three kinds, *External, Penetrating, and Complicated.*

External Wounds of the Chest.

CLXXVIII. External wounds here differ little from common wounds elsewhere, except where they run deep in the form of sinuses, and when this is the case, speedy discharge should be procured by the most effectual means, from the danger, if the matter lodge, making its way through the pleura into the chest.

CLXXIX. Our prognosis must be entirely regulated by the tendency to this, and the ease with which a free discharge of the matter can be made.

CLXXX. The means of doing it were formerly pointed out in the treatment of wounds from puncture, (xlv.) viz. either by introducing a director, and cutting upon it, as to lay the wound open to the bottom, or inserting a seton into it; or if both these are disliked by the patient, it may then be attempted by pressure alone; for which purpose a roller is to be brought round the body with some tightness, and supported by a scapulary.

CLXXXI. From the nature of the affected part, the constitutional management is here of much importance. An antiphlogistic course should be rigorously joined, and rest and quietness particularly recommended, so as to diminish, as much as possible, the action of the thorax.

Penetrating Wounds of the Thorax.

LXXXII. Simple wounds of the thorax, which enter into its cavity without injuring the contained viscera, are chiefly hazardous from the admission of extraneous matter to the lungs. These are blood and atmospheric air, either of which produce difficulty of breathing, and other symptoms of oppression that attend a compressed state of the lungs.

LXXXIII. The marks which shew a penetrating wound of the chest are,

1. The depth to which a probe or bougie can be passed; but it should be cautiously done.
2. The effect of the injury on the pulse and respiration.
3. The discharge of air during respiration.
4. The injection of any liquid, which, if not thrown back, shews it has entered the cavity. And,
5. The emphysematous state of the teguments round the part.

LXXXIV. The prognosis in such wounds must be highly doubtful, and an unfavourable opinion should generally be formed, from the danger of the inflammation attacking the contiguous vital parts.

LXXXV. The principal step in the treatment of such wounds, consists in the removal of the extraneous irritation; and the first attempt towards it, is restraining the hemorrhage. This operation is attended with some difficulty, from the situation of the intercostal artery, the one divided, as it is not easily reached so as to apply a ligature. If the opening to come at it is small, it should be first extended, and when reached, an at-

attempt may be made to draw it out with a tenaculum, so as to take hold of it; or if this method fail, a firm broad ligature may be passed round the rib, even though it should include part of the pleura; and by means of this ligature, a small doffel of lint may be tied over the bleeding artery. Having effected this, the extraneous irritation is then to be removed. If it consists of blood, it may be discharged by the wound, if still in a fluid state, and the wound is not situated very high; but if otherwise, an evacuation may be procured by the operation for empyema. (*Vide Diseases of the Breast.*)

When the extraneous irritation depends on the access of the external air, it is to be expelled by a full inspiration of the patient, carefully closing the wound by drawing the skin over it during expiration; and this repeated for twice or thrice, will relieve the oppression by expelling the irritating cause. The fore is then to be treated as a simple wound.

Complicated Wounds of the Thorax.

LXXXVI. By complicated wounds of thorax are understood such as not only penetrate the cavity of the chest, but also extend their injury to some of the contained viscera.

Wounds of the Lungs.

LXXXVII. Wounds of the lungs are distinguished by the frothy and florid appearance of the blood discharged; by spitting of blood from the mouth; by the hemorrhage not being checked on pressure of the intercostal artery; by a continued rushing out of air from

the wound ; and by the state of the respiration and pulse.

LXXXVIII. Wounds of the lungs, though always alarming, are chiefly dangerous from two circumstances ; the violence of hemorrhage ; and the tendency to the formation of abscess inducing a hectic state.

LXXXIX. The *first* is to be restrained by lessening the force of the general circulation by venesection, by a strict antiphlogistic course, and particularly avoiding, as much as possible, all action of these parts, or whatever may occasion motion of the chest ; though this symptom proves here often fatal. When this is accomplished, the treatment of the wound must be conducted on the same plan as when simply penetrating the cavity.

XC. Where an abscess forms in the injured part of the organ, it is a tedious process, and before it discovers itself, the external wound is frequently healed.

XCI. The symptoms which attend this are much the same with those that mark suppuration in other parts, viz. frequent shivering fits and fever ; but here, along with them, there is felt also difficulty of breathing, and particularly when lying on the sound side.

XCI. The matter of such abscesses is discharged in one of three ways ; either by bursting into the stomach and being thrown up ; by emptying into one of the cavities of the chest ; or by being discharged at the wound itself. In allowing the first to take place, there is always danger of suffocation ; but should this not happen, the treatment, after the discharge, must be conducted in the same manner as recommended in the

second stage of the Phthisis Pulmonalis (*Vide* Clinical Guide, page 129.) by attention to a light nourishing diet, moderate exercise, particularly riding on horse-back, or, what is preferable, a sea voyage.

Where matter empties itself into the cavity of the chest, it is to be removed by the operation of empyema; but before this take place, if the previous symptoms indicate its formation, and a small oozing should appear at the orifice of the wound, or without this the introduction of the finger give evidence of this process going on, the external opening of the wound should be first enlarged to ascertain its extent, and then an opening cautiously made with a bistoury pushed slowly into the substance of the tumour, to evacuate its contents. When this is accomplished, the external opening for the discharge of any farther accumulation should be preserved by the introduction of a tube or trant, suited in size and length to the state of the wound, and continued till the internal parts heal up. Frequently, however, such abscesses continue to discharge matter for years, or the whole of life, and it is not in the power of the practitioner to accomplish completely the process of re union. The chief step towards it, is preserving the free discharge of the matter.

When, in extensive wounds, the protrusion of part of the lungs is a consequence of the injury, it should be carefully replaced, and if, in a gangrenous state, that part of it removed previous to the replacement.

Wounds of the Heart and Large Vessels.

XCIH. As such wounds are always mortal, the merely mentioning them is all that is necessary. A

temporary suspension of the fatal event may be attempted by copious venesection, so as to lessen the action of the organ, and by the other parts of the antiphlogistic course.

Wounds of the Thoracic Duct.

XCIV. Wounds here are always fatal. They are known by the situation of the wounded part, the duct running always in the course of the aorta; by the discharge from the wound being mostly of a white or chylous nature; and by the considerable and increasing debility which attends it.

XCV. The treatment consists in a strict antiphlogistic course, with a farther attention in employing it, that even the quantity taken at a time in the way of food or drink, should be extremely little, and rather more frequently repeated, so as to avoid distension of the part.

Wounds of the Coverings of the Thoracic Viscera.

XCVI. Wounds of the diaphragm are indicated by difficulty of breathing attending the injury; by much pain, during respiration, over all the parts of the chest to which this membrane is connected. These symptoms are further accompanied with affections of stomach, as pain, sickness, vomiting, and hiccup; with inflammatory fever, denoted by quick hard pulse, with pains of shoulders, and involuntary laughter, which are likewise enumerated as marks of this injury.

XCVII. The treatment consists entirely in the antiphlogistic course, and especially in obviating irritation, by large doses of opium.

XCVIII. Wounds of the mediastinum and pericardium are to be treated in a similar manner, and are generally fatal.

4. *Wounds of the Abdomen.*

XCIX. Wounds of the abdomen admit the same division as those of the thorax ; into *External, Penetrating, and Complicated.*

External Wounds of the Abdomen.

C. External wounds here are known by *examination of their depth* ; by their *small discharge* ; by the *little effect they have on the pulse* ; and by their *slight degree of pain*.

CI. Their treatment is the same with that directed in other cases of simple wounds, guarding particularly against a lodgment of matter, and during the cure, confining the patient to a horizontal posture, so as to avoid any protrusion through the injured parts of the internal viscera, producing hernia ; and this caution must even be continued, by giving a proper support to the part, by means of a roller or bandage for some time after the cure.

Penetrating Wounds of the Abdomen.

CII. Penetrating wounds are discovered here by the *depth* to which a *probe*, or the *finger can be passed* ; and by the *protrusion* of some of the *internal parts*, while the *absence* of any of the abdominal excretions in the *discharge*, the *moderate quantity* of the *hemorrhage*, the *belly free from much pain and tension*, and *little fever*, point out that the effects of the injury have not extended to any of the viscera.

CIII. Wounds of this kind are always alarming, and their fatality is to be dreaded in proportion to the danger of the access of air to the internal viscera, and the formation of matter pent up.

CIV. Wounds here are also more or less difficult in their treatment, according as they are combined with a greater or less number of morbid circumstances. These are protrusion of parts, and formation of matter.

CV. Simple penetrating wounds here should be cured by adhesion; and in order to effect this, after restraining the hemorrhage by the application of a ligature to any wounded vessels that present, the access of the external air should be immediately prevented, by drawing the lips of the wound together, and securing them by slips of adhesive plaister, with the assistance of a compress and roller; and should adhesion not quickly take place, they should still, however, be dressed as seldom as possible, and when done, the operation quickly dispatched.

CVI. Such wounds, when complicated with protrusion of the internal viscera, are highly dangerous and troublesome. The parts protruded are generally some of the intestines, more rarely the stomach or omentum, and they should be as quickly returned, as possible, even though some marks of tendency to gangrene should appear. If, however, extraneous matter should adhere to their surface, the removal of this, by bathing them in warm milk and water, will be proper.

CVII. The method of replacing the protruded parts, consists in relaxing the parts as much as possible, by attention to posture, and diminishing the size of the

protruded part, if the aperture is small, by exhausting
of its contents.

CVIII. To relax the part, the patient should be placed with the upper parts of the body somewhat lower than the abdomen and buttocks; and to diminish the size of the protruded part, where inflated, an attempt is to be made to press the air into that part which remains within the abdomen. This being accomplished, the protrusion is returned, by the surgeon pressing one end of the gut, and continuing it along the curvature to the other.

CIX. Where the wound or aperture is so small that these means are insufficient, it is often found necessary, instead of using force, to enlarge it, to procure their replacement. This is best done by making an incision at the lower part of the wound; and if the finger cannot be admitted betwixt the protruded parts and those to be divided, the incision should be made in a slow gradual manner, by scratches through the teguments and muscles in the direction of their fibres, till the peritonæum appear, when a probe pointed bistoury being introduced betwixt it and the protruded part, it may be divided safely, and enlarged afterwards by the introduction of the finger at pleasure, though never more than is absolutely necessary. On replacing the bowels, attention should be paid to see if properly lodged in the abdomen, and next, to preserve them in that state.

CX. This last is done in two ways; either by posture and bandage alone, or by means of ligatures assisting them. The posture is by elevation of the head and buttocks, and by repeatedly passing a roller firmly round

the body as a support. But where the aperture is extensive, this mode is insufficient, and ligatures are also required.

CXI. The ligatures employed here are either the interrupted or quilled future.

The interrupted future is made here, after placing the patient in a posture as favourable as possible for relaxing the parts, by a broad ligature armed with two crooked needles, the surgeon inserting the fore finger of his left hand into the wound in contact with the peritonæum. On this finger he guides the point of one of the needles to within $1\frac{1}{2}$ inch from the edge of the wound where he enters it on one side, pushing it through till it come out at the same distance from the edge on the external surface. He next does the same with the other needle on the other side of the wound, and continuing the operation at the distance of every three quarters of an inch, beginning at the top till he reach to the bottom of the wound. The ligatures being passed, the parts are then to be supported and properly adjusted, when a knot is tied on each ligature. The wound is covered with lint, and dressed as a simple incision, covering the whole with a roller.

CXII. Where the quilled future is here preferred, it consists in passing a needle with a double thread through both sides for so many stitches as are necessary, then opening the thread as being doubled, and introducing between its folds, on each side, a piece of bougie, wooden peg, or quill, when the parts being supported by an assistant, and the sides properly brought together, they are secured by running knots.

CXIII. The ligatures should never be removed till

parts are united, which will require eight or nine days, unless violent symptoms of inflammation occur on their being relaxed.

CCXIV. Formation of matter, the next morbid circumstance, is often not less troublesome than a protrusion of the viscera, and at times equally fatal. Unless threatening symptoms actually take place, such collections of matter should never be interfered with, and where such interference becomes unavoidable, any opening to be made should be as small as possible, and done in the most guarded manner, by means of a trocar, as directed in Paracentesis. (*Vide Diseases of Chest.*) In many cases, however, absorption takes place, and such collections are removed without any danger.

3. COMPLICATED WOUNDS OF ABDOMEN.

Wounds of Intestines.

CCXV. Wounds of the intestines are discovered by the depth and direction of the injury; by the discharge of blood from the mouth, or by stool; by the appearance of feces, or the expulsion of fetid air at the wound. To these symptoms certain others are also joined, consisting, in a general disorder of the system, as well as of the parts, viz. faintings, cold sweats, sickness, nausea, pain of bowels, &c.

CCXVI. Wounds of the intestines are not always fatal; but if not an unfavourable, at least a very guarded prognosis should always be made of them, and that more in wounds of the smaller than larger ones.

CXVII. With a view to their treatment, two varieties of intestinal wounds require to be mentioned.

1. The first being attended with the protrusion of the wounded part. And the second

2. Where no protrusion takes place, and the nature of the injury is only judged of by the apparent symptoms.

CXVIII. In the *first* case, the treatment must differ according to the extent of the injury in the gut ; that is, where the division is partial, complete, or, in other cases, complicated with gangrene.

CXIX. In a partial division of the protruded gut, before replacing it, the opening should be sewed by the glover's future, an operation never to be omitted ; and the method of executing this is the same as employed in the stitching of leather (xxvi.) A small fine needle, armed with a silk thread, is passed through the lips of the wound exactly placed together, and brought out opposite to where it entered, forming one stitch. The same is continued for the whole extent of the wound, at the distance of one-eighth of an inch from each other, and when completed, a length of thread is to be left out at the external wound, in order to draw it away when a complete re-union has taken place ; yet, in performing this, great caution should be used not to injure the gut, and the ligature rather allowed to remain.

CXX. In complete divisions of the gut, this operation of re-union is more difficult. It is attempted where the two ends are both at the external wound, by passing a roller of tallow, or some unctuous matter, for an inch or more within each end, bringing them together upon it, and stitching them completely round

with a fine needle and thread, placing the upper end within the under, in doing it. If the two ends are not both at the external opening, this cannot be done. An attempt, however, may be made, where one has dipped into the abdomen, by enlarging the external wound for the admission of the finger to reach it, and effect their re-union; and unless this is done, where the lost end is the upper gut, death must unavoidably ensue. When the one at the opening proves the upper one, it may be sewed to the peritonæum. Frequently, without any stitching, by securing the two ends of the gut to the peritonæum, a re-union of them has, in a short time, naturally taken place.

CXXI. Where these injuries are complicated with gangrene, the replacement must be delayed till the dead part is cast off, when the state of the intestine will be reduced to that of a common fore.

CXXII. Where no protrusion of intestine takes place, though the symptoms discover their being injured, nothing peculiar in the treatment can occur, as their management must be left to nature and the constitutional treatment.

Wounds of the Stomach.

CXXIII. Wounds of the stomach are known by immediate vomiting of blood after the injury; by unusual sickness, hiccup, and derangement of the organ; with the discharge of its contents quickly after their reception at the opening.

CXXIV. The prognosis here is equally doubtful as wounds of the intestines, and there are, perhaps, even fewer instances of cure in this situation.

CXXV. The treatment here depends on accurately replacing the protruded part, having first, by ligature re-united the wound in it; and where the injury does not appear, an attempt must be made to reach it, which is easier than in the intestines, and the re-union by no means delayed.

CXXVI. A strict antiphlogistic course is here particularly necessary, and even nourishing the patient by the mouth to be restricted as much as possible, and support by means of injections preferred.

Wounds of the Omentum and Mesentery.

CXXVII. The injuries of these parts are *only* discovered by *their protrusion*.

CXXVIII. Where the omentum appears, if gangrene is advancing, the affected part is to be removed, and the remainder replaced; but if still in a healthy state, then immediate replacement should not be delayed.

CXXIX. Where the mesentery protrudes, its injured vessels should be secured previous to replacement, and the ends of the ligature left at the wound, so as to admit of their removal when separated.

Wounds of the Liver.

CXXX. Wounds of the liver are distinguished by *the situation and depth of the injury*; by *the degree of the hemorrhage*; by a *bilious tinge of the blood discharged*, especially when *thrown up by the stomach, or passed by stool*; by *swelling and tension of the abdomen*; and by the *peculiar pain on the top of the shoulder*.

CXXXI. The prognosis here is more favourable

man in the two former situations, and injuries of the liver are often recovered.

CXXXII. The treatment consists in restraining hemorrhage, and afterwards evacuating the accumulated fluid. The *first* is performed by a strict antiphlogistic course. The *second* is executed so soon as the symptoms of such accumulation appear, by an opening at the most depending part, as formerly taken notice of. (cxiv.)

Wounds of the Gall Bladder.

CXXXIII. Wounds of the gall bladder are suspected from *the situation of the wound*, and from *the discharge of bile by the stomach or anus*.

CXXXIV. Such wounds are almost always fatal, from the extravasation of it into the abdomen.

CXXXV. Their treatment consists in giving a discharge to it at the external opening, and preventing any accumulation taking place in the abdomen. When symptoms indicate this, it is to be removed as recommended in wounds of the liver. (cxxxii.)

Wounds of the Spleen, Pancreas, and Receptaculum Chyli.

CXXXVI. Injuries of these parts can only be known by *the appearance of their peculiar secretions at the external opening*.

CXXXVII. Their treatment is no farther in our power than by attending to that of the constitution; and should an accumulation of their discharges take place in the cavity of the abdomen, it is to be removed as in injuries of the two preceding organs.

Wounds of the Kidneys and their Appendages.

CXXXVIII. Wounds of the kidneys are marked by violent pain extending over the loins and lower part of the belly, especially the groin, penis, and testicles; by sickness and vomiting; and a painful discharge of bloody urine.

CXXXIX. According to the direction of the wound, the urine is either discharged at the external opening, or extravasated into the abdomen. Where this last takes place, the event must be fatal; but where discharged at the external opening, if the hemorrhage is not fatal, the patient may survive, and the injury end in a fistulous sore remaining for life.

Wounds of the Bladder.

CXL. Wounds of the bladder are discovered by two symptoms; the appearance of urine at the opening, and also the discharge of bloody urine.

CXLI. The danger of such wounds depends much on their situation, or as they open into the cavity of the abdomen in the upper part of the bladder, and endanger extravasation. Where confined to the under part, there is little risk.

CXLII. The treatment becomes also varied according to the situation of the injury.

Where inflicted on the upper part of the bladder, the wounded sides of the latter must either be brought to adhere to the peritonæum to prevent extravasation, or what is preferable, they should be accurately stitched as in wounds of the intestines, by the glover's suture, and then replaced.

Where the under part, again, is the seat of the in-

ry, nothing particular is necessary, farther than to treat it as a simple wound.

(CXLIII. In all wounds of the bladder, a strict antiphlogistic treatment is to be observed, in order to prevent or moderate inflammation. The use of venesection should be liberally employed, mild laxatives prohibited, and fomentations, and other means of applying heat to remove abdominal tension, frequently had recourse to. Where there is much pain, opiates are also strongly indicated.

Wounds of the Uterus.

(CXLIV. In case of pregnancy, where the uterus is in an expanded state, it may become the seat of injury. Wounds here, in the pregnant state, will be discovered chiefly by *the excess of hemorrhage, and tendency to abortion.*

(CXLV. Wounds of this organ have proved generally fatal, and an unfavourable opinion may be always given.

(CXLVI. The treatment of such wounds will consist in the removal of the child as a preliminary step, and this is to be done either by promoting abortion, or if that easily taking place, by extending the wound of the uterus and external parts, and extracting the child in the same manner as by the Cæsarian operation. When this is accomplished, the injury is reduced to the same state as a complicated wound of the abdomen, formerly enumerated. (cxv.)

GUN-SHOT WOUNDS.

CXLVII. **G**UN-SHOT Wounds are peculiarly distinguished by *violence of inflammation*, and the appearance of *deep sloughs* or *eschars*, the effect of contusion.

CXLVIII. The prognosis, in such wounds, is to be determined by the tendency to gangrene, or excess of suppuration; and it is from these circumstances alone, independent of hemorrhage, on which the danger of the fatal event proceeds.

CXLIX. In the treatment of such accidents, two indications arise.

1. The *first* is the removal of the extraneous irritation or cause. And

2. The *second* the treatment of the wound.

CL. The former is accomplished in one of three ways; either by the use of the forceps, where the extraneous body appears, or can be easily come at without much hazard of injuring the contiguous parts; or else by extending the wound to the site of the extraneous body where the length is not great; or lastly, by mak-

by an incision or counter opening into the place of its
displacement, wherever it can be safely done, and the
length is too great for the former method.

Failing the success of all these, experience has now
shown, that such substances may be safely allowed to
remain in all the soft parts of the body without much
inconvenience to the patient, till nature effect their ex-
pulsion by the process of suppuration, and sometimes
they continue for life, though, at the same time, their
being withdrawn is always a desirable circumstance,
when attended with safety.

(CLI. In the treatment of the wound itself, three
stages are to be observed in its progress, which may
be termed the inflammatory, suppurant, and the in-
ternating.

(CLII. In the management of the first, or inflamma-
tory stage, much nicety is required; and as the ten-
dency to gangrene arises here alone from extreme ac-
tion of vessels, blood letting, both general and topical,
to relieve this, should be had recourse to, provided the
hemorrhage from the accident has not been sufficient.
Emollients are then to be applied, and after covering
the surface of the wound with a soft liniment, or one
with a proportion of lead, a common poultice is to
be laid above it, rest enjoined, and an anodyne, in or-
der to procure it, exhibited.

(CLIII. In the *second*, or suppurant stage, the chief
point is to check the excess of suppuration, and dispose
the wound to heal.

This depends on a light nourishing diet, the plenti-
ful exhibition of bark, and the vitriolic acid; and in
the commencement of this stage, where the wound is

near large vessels, as there is some danger of hemorrhage from the casting off of the sloughy eschars, or contused parts, a tourniquet should be placed so that it can be immediately applied on any appearance of blood, till permanent means, by ligature, are had recourse to.

CLIV. The *third*, or incarnating stage, is promoted by giving a free discharge to the matter; by the removal of irritation from the wound, and the use of healing, or gently astringent, instead of emollient, applications.

To accomplish the first of these, in placing the member, a dependent posture should be preferred, and the discharge assisted by pressure at the same time. To remove the irritation, as arising from some splinter within the wound, or else its sinuous form, a cord may be either drawn through it, or else it may be laid open where its extent is not great.

CLV. By attention to these circumstances, will the cure of almost every gun-shot wound be accomplished; and it is chiefly from two circumstances they prove fatal; the attack of extensive mortification in the first stage, or the laceration of parts so great, where they occur in the extremities, as to require amputation, under the consequences of which the patient frequently sinks.

CLVI. In the treatment of the first, or extensive mortification, there is no difference from that occurring in other cases, but extreme action of vessels here always precedes; and though the topical remedies should be of a stimulant and antiseptic nature, yet the general action of the system requires rather to be moderated than debility to be repaired.

CLVII. The extent of injury rendering amputation unavoidable, has much divided the sentiments of practitioners, and it must be regulated a good deal by the peculiar circumstances of the patient in many cases. But the situations to which it may, in general, be reduced, are

1. Injury of the large joints, particularly shattering and splintering of their bones.
2. General fracture of a large bone through its whole extent, with corresponding laceration of soft parts.
3. Contusion and destruction of the soft parts to that degree as to destroy their circulation.

B U R N S.



CLVIII. **B**URNS are a species of wounds of a *peculiar nature, varying in the depth and extent* of the injury, according to the violence of their cause, but always marked by *severe pain, excess of inflammation*, and, where extensive, a *greater or less tendency to gangrene*.

CLIX. Such symptoms frequently affect also the system at large, and fever is induced, which occasioning torpor, and often coma, proves at times fatal.

CLX. The causes of this accident are violent application of heat, either in an elastic, fluid, or solid form; in the last case, the injury is always greatest.

CLXI. In directing the treatment of burns, they become properly divided into two species, the superficial and ulcerated.

The former consists in simple effusion into the cuticle, the consequence of the inflammation, displayed in vesications without any abrasion.

The latter depends on a real denudation of surface

with loss of substance, attended with the formation of matter.

CCLXII. The leading indication in all burns is the abatement of pain, and this, in the first species, is effected by whatever induces insensibility of the part, as plunging it suddenly into hot water, applying brandy or strong spirits to it, the use of astringents, as a strong solution of sugar of lead, alum, or common ink. Even dipping it in cold water, or a change in extreme, from its own temperature, has produced the same effect.

The continuance of such applications is to be regulated by the feelings of the part, and they require to be some time persevered in. When once a total insensibility, or at least absence of pain, is induced, the discharge of the effused fluid, or opening the vesications, ought to be made, which should be done by slight punctures, preserving the cuticle, for a certain time, as long as possible.

CCLXIII. In the second, or ulcerated species, the application of emollients has been chiefly confided in, particularly a liniment composed of equal parts of lime water and lintseed oil. This is to be frequently renewed, by daubing the surface of the sore with a feather dipt in it, so as to keep it wet. Or, instead of it, a more successful practice, which prevents even the ulceration from taking place, or at least its extending, is the application of cloths wet in either cold or warm vinegar, renewed the moment they dry, and continued in this way for the space of some hours till a total cessation of pain is induced. They are then to be seldom removed, but still continued till a complete cure is effected. This method also prevents the appearance

of fungus, which often springs up in the cure of ulcerated burns, where emollients alone are employed, requiring the use of astringents and pressure to reduce it. Other cold liquors besides vinegar, and likewise ice itself, has been applied in the same way.

In the cure of this species, the contact of neighbouring surfaces is also to be prevented, as those of the fingers and toes, where they are the seat of the accident, from the danger of adhesion in this abraded state.

CLXIV. The constitutional treatment of burns must be regulated by the degree of inflammation and pain. Where the former is considerable, and affects the system at large, blood-letting, and the other parts of the antiphlogistic course are properly indicated; and also in violent pain, the topical remedies should be assisted by the internal use of opium.

CONTAMINATED WOUNDS.

CLXV. **C**ONTAMINATED Wounds are such as arise from the *introduction of a specific matter or poison* along with the injury producing them.

CLXVI. Such wounds proceed from the bites of certain animals, or else from the weapons inflicting them being tinged with such applications.

CLXVII. In this climate, the animals occasioning such wounds are wasps, bees, and some other small insects. In the warmer climates, they are produced by the viper and rattlesnake; but in every climate they are liable to occur from animals, especially those of the canine kind in a rabid state.

CLXVIII. The treatment of the first, or the bites of small insects, is of little importance. They are attended with acute or sharp pain, quickly succeeded by inflammatory swelling; but they produce no formidable symptoms, and readily yield to ablution of the part with vinegar, spirit of wine, or rubbing it with honey or oil, or frequent bathing of it with cold water.

CLXIX. Wounds of the viper prove often fatal, and

are always highly to be dreaded. The symptoms from absorption often arise in twelve or fourteen hours, and affect the system with faintness, langour, and extreme debility, marked by quick, low, intermitting pulse; fixed pain in the region of the heart, vomiting, and yellow tinge of skin, to which cold sweats and convulsions of different parts succeeding, death soon terminates the scene.

CLXX. Previous to these constitutional symptoms, acute pain is felt in the wounded part, with a swelling, at first red, afterwards livid, which, by degrees, spreads and affects the contiguous surface.

CLXXI. The treatment here consists in removal of the poison, either by destroying the wounded part, or changing its specific state.

The *first* is executed either by immediate excision, or the use of the actual cautery. The *second*, by strong suction of the part, or the use of alkaline salts, particularly the solution of salt of tartar to decompose the poison. After these applications, an attempt should be made to produce a full discharge, by irritating applications in the way of an issue.

CLXXII. When the constitutional disease has commenced, producing a strong determination to the surface, by emetics and diaphoretics, as the volatile alkali, eau de luce, &c. Theriaca is found useful, and anointing the body also with warm oil, as well as its internal exhibition, in the quantity of two spoonfuls every hour, has been recommended.

CLXXIII. The poison of the rattlesnake is still more dangerous than that of the viper, and quicker in

operation. It is to be treated, however, by the same means, (*Vide* vol. I. p. 231.)

CLXXIV. In every climate, wounds are apt to be afflicted by the bites of rabid animals, especially of the canine kind, and when affecting the constitution, they produce a disease of a most fatal nature termed the hydrophobia.

CLXXV. To prevent this taking place, the treatment of the wound is a most important step. Immediate destruction of the affected part should take place, either by excision or the actual cautery, and a plentiful discharge be afterwards induced and kept up for a length of time by irritating applications, while the farther means of venesection, friction, and sea-bathing, should not be omitted in the way of prevention.

The period of excision should be as soon as possible; but if this has not been done, since the time of absorption is uncertain, it should still be attempted; as the constitutional symptoms are known to be so late of appearing, from six weeks to even at times six months. For the farther treatment of the disease, *vide* vol. I. p. 110.

CLXXVI. Wounds of the hands from contagion, when treating particular diseases, are to be cured by the means employed for the removal of the specific poison from which the disease arises, as the venereal virus by mercury, cancerous virus by immediate excision, &c.

CLXXVII. Wounds from poisoned weapons are unknown in this country, and the specifics for them are understood among the natives of those countries who, in the business of war, inflict them.

CLXXVIII. To this species of wound, may be referred one very frequently inflicted by surgeons, or the operation of inoculation for the small pox.

Inoculation.

CLXXIX. Though many of the eruptive diseases, and even, from experiment, the plague itself, has been readily communicated by a similar mode, yet the operation is almost exclusively practised for this particular disease; and after a variety of different methods have been tried in the progress of improvement, the preference is now decidedly given, in the way of performing it, to a *slight scratch* or *puncture* with the point of a lancet.

CLXXX. For the circumstances necessary to be attended to in conducting the operation, and also in the after treatment, we refer to vol. I. p. 45. It is only necessary here to show the particular steps in introducing the disease.

CLXXXI. In order to be successful, it is necessary the variolous matter taken on the point of the lancet, should be in a *crude state*, or before suppuration is induced, that when introduced it should be *somewhat liquid*, and therefore, if dry, that the point of the lancet should be previously held over warm steams till some moisture take place.

CLXXXII. The operation itself is generally performed in the arm. The point of the lancet is introduced beneath the cuticle till it touch the cutis vera, and continued there for a second or two, when a small drop of blood generally follows the lancet. To ensure success, two punctures are commonly made at a

little distance from each other, and the certainty of the operation can, for the most part, be judged of in two or three days, by one or both the wounds becoming *red and swelled*, or *surrounded with small pimples*.

CLXXXIII. No after treatment of the wound is at all necessary; and if, in the progress of the disease, ulceration should form, it is best treated by saturnine applications.

Cow Pox.

CLXXXIV. Of late a question has arisen, whether inoculation for the small pox should be performed with matter taken from the human subject, or the cow? To a similar disease the udder of the cow is subject, which extends its infection to those persons employed in milking or handling it; and when such persons receive this infection, it is marked on them by similar symptoms to small pox; it also prevents any future contagion from this disease, and is always mild in its train of symptoms and consequences than the disease produced by matter taken from the human subject. Time, however, must determine the veracity of this practice.

CLXXXV. We have hitherto, except in the last, or inoculation, treated of those wounds or divisions of tendons, which are the effect of injury or accident, we come next to consider some which, on the contrary, are the effect of design, and inflicted by the surgeon as a means of palliating or removing other diseases of a more dangerous tendency. The simplest of these is the various operations for discharging blood from the system.

Blood-letting.

CLXXXVI. The leading circumstances that claim attention in performing this operation, on whatever part of the body it is inflicted, are

1. The *particular effect* or intention of the discharge.
2. The *proper compression of the part* in order to induce it.
3. The *situation of the surgeon* while performing it.
4. The *choice of his instrument*.
5. The *manner of his using it*.
6. The *progress of the discharge*. And
7. The *proper quantity to be drawn*.

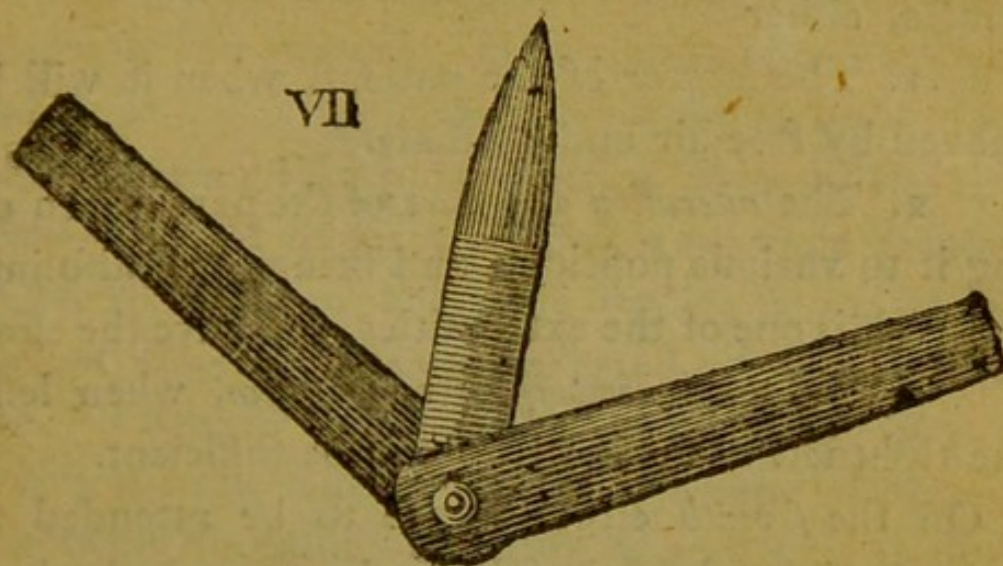
CLXXXVII. With respect to the *first*, the tendency to faintness will be best promoted, if wanted, by a standing or sitting posture of the patient during the operation, while, on the contrary, if this state is wished to be avoided, the horizontal position should be preferred.

On the *second*, it may be observed, that no flow can take place unless a proper pressure on the veins by ligature is made, so as to prevent the reflux of blood to the heart; but the degree of this pressure must be carried no farther than a proper swelling of the veins, that the pulsation of the artery below may still continue to be felt.

In regard to the *third*, the operation should always be performed by the surgeon in a sitting posture, as giving him more the command of his hand in the operation; and he should be able to use equally both hands in doing it.

On the *fourth*, it is to be remarked, that though a beam is occasionally used in some places, many incon-

inconveniencies attend it, so that the lancet is decidedly preferred, and of the form of lancet, the spear, or acute pointed (here delineated) is best, as giving less pain in



the operation, making a less wound in the teguments, and the flow after it being also easier stopt.

In regard to the *fifth*, or use of the instrument, much delicacy is required. The choice of the *firmest vein* should be made, (if left to choice) and the *thumb* of the *left hand*, if the right is used in the operation, is to be pressed firmly on the vein about $1\frac{1}{2}$ or 2 inches below the ligation. The lancet bent to a *somewhat acute angle*, is then to be taken betwixt the *fore finger* and *thumb* of the *right hand*, leaving at least *one half* of the blade *uncovered*, and resting the hand on the three fingers. The point of the instrument is then to be pushed freely through the teguments, and carried forward in an *oblique direction*, till the *blood appear on both sides* of it, when it is to be withdrawn, *without raising the handle*, and brought out in the same manner it entered. The thumb of the left hand is next to be removed, and the discharge allowed to take place.

With respect to the *sixth*, or progress of the discharge,

the blood, in general, will readily follow the operation, provided the member is kept in the *same position* as on performing it; but it may fail from one of three causes, either

1. The *languor* of the patient, when it will be removed by free air and cordials.

2. The *alteration of posture* of the part, when changing it to various positions, and bringing it also into action, if it is one of the extremities, will have the effect. Or

3. *Too great compression of the vein*, when lessening the tightness of the ligature will be sufficient.

On the *seventh* circumstance to be attended to, on the quantity taken, it falls to be remarked, that this must be regulated by the particular morbid circumstances requiring the discharge, and it extends from 4 or 5 oz. at a time to 20, or even the length of 24 oz.; but 12 oz. are generally reckoned a full bleeding.

I. GENERAL BLOOD-LETTING.

CLXXXVIII. The situations usually chosen for a general discharge of blood from the system, are three, the neck, the fore-arm, and the ankle; but of these the most common is the fore-arm.

From Veins.

Arm.

CLXXXIX. In order to employ the lancet here, let the skin of the arm be pressed strongly upwards, and a *ligature one yard in length, and 1½ inch broad*, be passed with some degree of tightness round it, a *little above the el-*

Now being continued for some time before proceeding farther, till a *proper turgescence* of the veins is conspicuous, and forming the ligature, at the same time, with a *slip knot* on the *outer side*. The thumb of the left hand is next to be applied on the vein, $1\frac{1}{2}$ *inch below* the place of your *puncture*; that vein which is firmest, and least inclined to slide under the skin, and most removed from the situation of an artery (which is the Median Basilic or Cephalic) being preferred, if left to your choice. Then the lancet opened, so as to form an *acute angle*, is to be taken in your right hand, holding it firm betwixt the thumb and fore finger, and plunge it *obliquely* into the vein for such a length till the *blood appears* issuing on each side, when it is to be withdrawn, *without, however, changing* its direction, and *raising the handle*; at least the point, being lowered in proportion, should not cut the under coat of the vein, or perhaps even wound an artery. When withdrawn, the blood is to be allowed to flow into the vessels placed to receive it, and it may be promoted, if slow in its discharge, by the means formerly recommended, (clxxxvii.) especially by the motion of the fingers. When the proper quantity is drawn, to be determined by the views of the practitioner, the ligature is untied, and the *thumb* pressed firmly on the orifice of the vein, and *there kept*, while the lips of the wound are previously brought together, to which particular attention should be paid. The arm is then to be wiped clear of any blood, and next removing the thumb from the wound, a small compress, made by twice doubling a piece of linen about 2 *inches square*, is laid over it, after which, if necessary, a larger one; and last of all, a roller describing a figure of eight is to

be applied, *always crossing above* the comprefs. When finished, the arm is to be *bent inwards*, in order to comprefs more firmly the fides of the wound.

CXC. Though fuppreffion of the difcharge is here, in general, eafy after the operation, yet in fome particular cafes it becomes more difficult; when compreffion muft be made with the fingers *both above and below* the orifice, the orifice itfelf fhould alfo be properly cleared from any plug before applying the bandage.

CXCI. Though the veins are alfo, in general, very confpicuous here, yet at times, from corpulence, they are not fo eafy to be traced. If, however, a vein is fenfible to the touch, we may proceed; or where this fails, we may apply the ligature below the fituation of the intended opening, inftead of its proper one above it, when it will make the veffel perhaps fwell out.

Neck.

CXCII. In the fecond fituation, or neck, blood-letting is performed by making an opening in the external jugular vein; and in order to do this, by bringing it into view, a good deal of preffure is required. This preffure is made by *first* compreffing the vein on the *opposite fide* of the neck, by applying over it a firm comprefs of linen, which is to be fecured by a ribbon tied under the oppofite arm-pit, the head being laid on one fide and properly fupported, the thumb of the left hand of the operator is then to be placed on the vein about $1\frac{1}{2}$ inch below the intended place of the opening, while the latter takes place by the furgeon plunging the lancet held in his right hand into the vein, which requires here a confiderable depth, till the blood appear on each fide,

and the flow will readily stop, on removing the ligature.

Ankle.

CXCIII. In the ankle, to produce a discharge of blood, the same compression of the veins is necessary as elsewhere, and is here made by passing a ligature *above* the ankle joint, which brings all the branches of the *phæna* into view. On making the opening, if the flow is not copious, it may be increased by immersion of the part in warm water; but where it discharges freely, this is unnecessary. On removing the ligature, the flow is here easily stopped, and adhesive plaister is the best bandage.

CXCIV. Wherever else the opening of veins has been advised, all that can be done, if conspicuous, is to make the orifice in them; and when made, if the discharge is not free, to assist it by immersion in warm water, if practicable.

From Arteries.

CXCV. Such are the various situations chosen for discharging blood from the system, and the incision of veins is, with this view, obviously preferred; but in certain cases, the opening of arteries has been also proposed; though, in doing it, the operation, as yet, has been solely confined to the temporal one.

Temporal Arteriotomy.

CXCVI. In performing it, where the artery appears near the surface, it may be done with the lancet as in the dissection, though the instrument, in entering, should

here divide the vessel *obliquely*, going neither quite across it, nor directly longitudinal. When divided, the blood readily flows, and rarely stands in need of compression of the parts above to assist it. Where the vessel again is low, or deeply covered instead of being superficial, the skin should be previously divided till brought into view, and then the opening made with the lancet. The compression necessary to stop the discharge after the operation, is here equally simple as in venesection, consisting of a compress and roller; but where more difficult, as may happen also at times, it may be always commanded, either by a bandage suited, by its stricter pressure, to obliterate entirely the cavity of the vessel, or else, by immediately cutting the vessel across, and allowing its end to retract, or by taking it up with a needle and ligature. (xvi.)

2. TOPICAL BLOOD-LETTING.

CXCVII. We have hitherto considered the methods of discharging blood from the system at large; but particular morbid circumstances requiring it more immediately from the affected part, the means of executing the latter fall next to be described.

CXCVIII. These consist in the application of *leeches*, in *slight incisions* with a lancet, or in the use of the *scarificator*.

By Leeches.

CXCIX. In order to employ the *first*, they must be previously prepared by *drying them*, or allowing them to

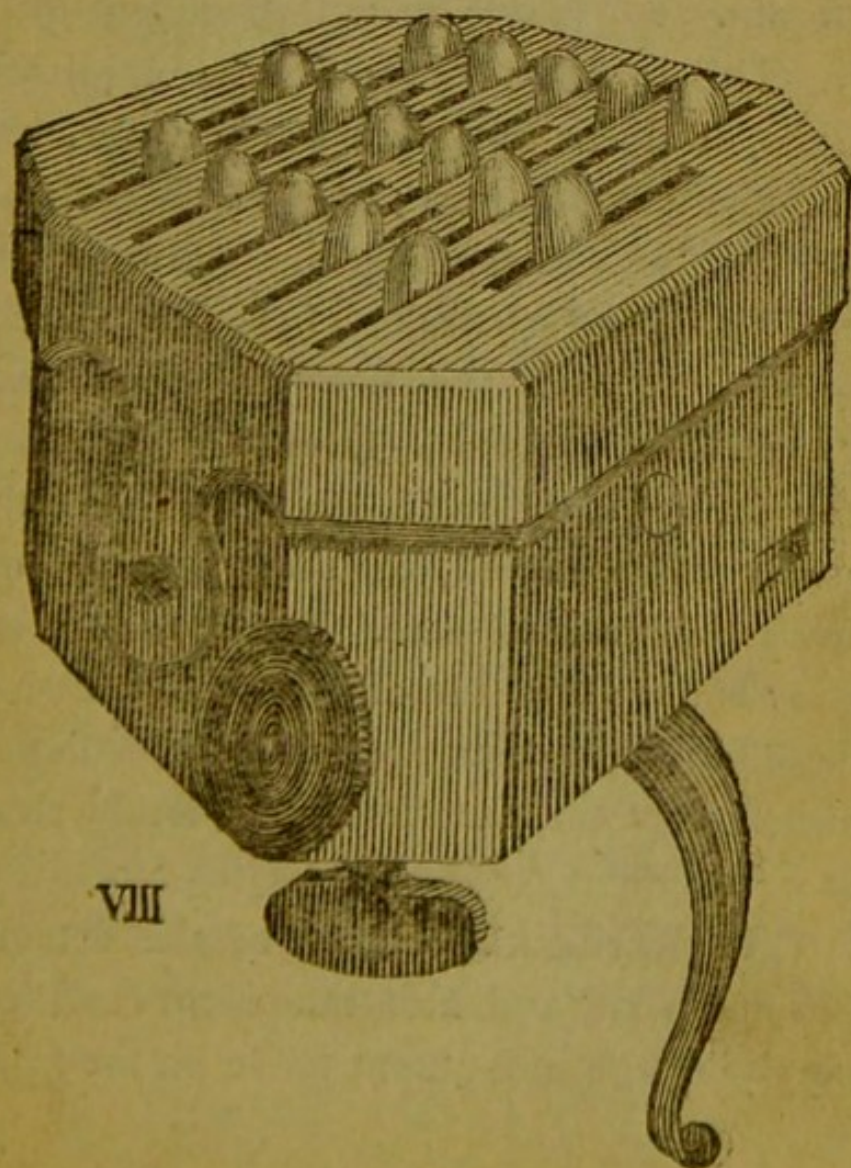
creep over a dry cloth, the part also, to attract them, must be *moistened* with cream, sugar, or blood, and if still not fastening, *even cooled* by a cloth applied to it dipped in cold water, and they must also be *confined upon it*, for which purpose a small wine glass is generally applied over them.

By Incisions.

CC. The *second* mode, or incisions with a lancet, is now confined entirely to Ophthalmic Inflammation. But

By Scarification.

CCI. The *third*, or the use of the scarificator, is generally preferred wherever it can, from the situation of the part, be applied. This instrument (here delineated) consists of from one to twenty lancets contained



in a case, which are moved by a spring, and in acting with the latter, they are driven in to a certain depth, so as to divide a number of small vessels, and give an opportunity for drawing a quantity of blood from the part. Some nicety, and also practice, is required to perform the operation exactly, and the instrument ought to be *kept firm* in its place with both hands of the operator, and when the lancets are discharged by *pressing* the button with the thumb, the fore finger should pull forward its handle, in order to assist the action of the spring.

CCII. But in employing these several means, only small vessels, as observed, come to be divided; something, therefore, more than the mere operation, or the simple division of the vessels, is necessary to elicit their contents.

CCIII. This consists either in the application of warm cloths, or cloths wetted in warm water, and frequently renewed, to the part; or, what is preferable, in the various methods of forming a vacuum on the part, by the use of cupping glasses. These are glasses fitted to the form of the part, the air of which is rarified by burning over them for a few seconds a bit of soft paper dipt in the spirit of wine, on the flame of which being nearly extinguished, the glass is to be instantly applied over the scarified part. When full, it is easily removed by raising one side of it to admit the air, and another glass may be then applied in the same manner, the surface of the part being previously cleared to receive it.

CCIV. The scarifications may be also extended to more than one part, and also made to cross each other by applying the instrument twice on the same part

According to circumstances, and the same process to elicit the discharge will be necessary after each.

CCV. When the discharge is finished, the wounds are to be covered with soft charpee wetted with cream, or some other mild unctuous liniment.

MORBID CONSEQUENCES OF BLOOD-LETTING.

CCVI. Though the operation of blood-letting is, in general, attended with little uneasiness to the patient, yet, either from the *manner* of performing it, or *peculiarity of constitution* in the patient, certain morbid consequences at times arise, which demand a special treatment.

CCVII. These consist in swelling of the part, its acute pain, and wound of an artery, or aneurism.

Swelling of the Part.

CCVIII. The *first* is known by the names of thrombosis and ecchymosis, according to its extent, being a tumour formed by the blood, insinuating itself between the skin and cellular substance, where the membrane is not exactly retained, during the progress of the operation, in the same position as on making the wound.

Where it is immediately observed, removing the ligature, and shifting the position of the part, so as to induce a free discharge, will lessen the tumour, if not entirely remove it.

Where this, however, from its size, does not take place, or where it occurs after the operation, the ligature being removed, discutients are to be applied to it,

as compresses dipped in the solution of sal ammoniac, or wetted with brandy; and if, in a certain time, it still continues without any diminution, the tumour should be opened, and the effused blood evacuated; after which the sore is to be treated as a common wound.

Acute Pain.

CCIX. This accident in blood-letting is more hazardous than the former, and the train of symptoms induced by it have even, at times, proved fatal. It commences with exquisite tingling pain, first felt on the introduction of the lancet, and communicating from the part to the extremity of the member. This is sometimes temporary, but in general it gradually increases, the edges of the wound become sore, hard, and inflamed. The parts adjacent to it swell, and in a short time, a day or two, a serous effusion takes place from the orifice. The disease then continues stationary for some days longer, at last the symptoms rise to a still more exquisite degree, marked by intolerable pain, joined with a sensation of burning heat, and increased swelling and hardness of the part, communicating over the whole member, whether arm or limb, which assumes at last an errisepelatous colour.

During the progress of this state, the constitutional symptoms are equally severe. The pulse is felt quick and hard. There prevails an universal restlessness, starting of the tendons takes place, followed by convulsions and lock jaw, till death at last terminates the distress of the sufferer.

CCX. The cause of these symptoms is evidently the

striking of a sensible part, whether nerve or tendon, and the inflammation of the vein is to be considered as the consequence of this irritation.

CCXI. The treatment of this complaint must vary according to its continuance and degree.

If observed at the commencement, preventing the subsequent inflammation is evidently pointed out, and that by copious blood-letting, both general and topical, viz. by leeches to the part, joined with attention to the life of the member, low diet, the use of laxatives, &c. ; while, to the place itself, saturnine applications, in the form of solution, are the most effectual.

CCXII. Where, however, the progress of the disease is advanced, and does not yield to the former treatment, joined with the occasional use of opiates in large doses, the only remedy that is then left is a free division of the affected parts, conducted in the following manner.

To prevent hemorrhage from the division of an artery, the tourniquet is to be previously applied, and a large incision with a scalpel then made across the original orifice of the vein, through the teguments. This incision is to be gradually deepened by shallow and slight ones through the cellular and muscular substance, cautiously avoiding the larger arteries, tendons, and veins, till the lacerated nerve is fairly cut through ; and if relief appear, which will then be known on loosening the tourniquet, the incision may be carried to the depth of the periosteum itself. If still unsuccessful, as a last resource, the tendon, or parts of tendons near the vein, should be separated, which is all that remains in our power. The operation is next finished

by undoing the tourniquet, taking up the vessels that present, and dressing the part in the same manner as any other wound.

Wound of an Artery.

CCXIII. Equally serious with the former, is the last accident that falls to be noticed, or the wounding of an artery. It forms a kind of swelling termed aneurism; and as various species of the same swelling also occur from other causes as well as blood-letting, it will be proper, in order to understand their nature, to consider the whole species here.

ANEURISM.

CCXIV. Aneurism is a tumour arising from the wounding or dilatation of the coats of an artery, and it has been divided into three kinds, the *false*, the *true*, and *varicose*.

1. *False Aneurism.*

CCXV. The *false*, or *cellular* aneurism, consists of a tumour formed by the effusion of blood from an wounded or ruptured artery into the cellular substance. It is distinguished by the appearance of a small tumour, soft, and for the greater part compressible, having a strong pulsation, which gradually lessens as it increases in size. The progress of its increase varies in different cases, and according to its size its compressibility becomes diminished.

CCXVI. The causes of this tumour are most fre-

frequently, as observed, wounds in venesection, erosion from ulcers, or external violence.

CCXVII. As the first is the most common, its situation is generally, therefore, in the arm. It is known immediately after the operation,

1. By strong compression of the vein above and below the orifice, which does not, as usual, stop its discharge.

2. By the salient manner in which the discharge takes place.

CCXVIII. But when the disease is in another situation, and at the same time much advanced, the symptoms that mark it must be drawn from the previous history, and, at the same time, the disappearance, on pressure, of the contents of the tumour, if practicable.

CCXIX. The progress of this disease is generally small for some weeks. It then extends up the arm, gradually diffusing itself around, and acquiring firmness without much prominence, till at last the pulsation is almost imperceptible. As it increases it excites pain, and affects the functions of the surrounding parts with stiffness, want of feeling, &c. In this progress, the teguments also lose their natural appearance, and pass through the different shades of inflammation, till at last, if left to nature, they end in gangrene, or becoming œdematous, they crack and give way, allowing a rupture of the internal sac.

CCXX. The prognosis to be here formed must be regulated by the constitution of the patient; for being the effect of accident, and the situation of it favourable to compression, there is little danger where the constitution is sound.

CCXXI. The cure of this disease is attempted either by *compression* or *ligature*.

The first of these is very uncertain in its success, and often manifestly hurtful. Its effects are confined entirely to the early stage of the disease, and they must be assisted with the farther means of lessening the force of the general circulation by blood-letting, a low diet, and the other parts of the antiphlogistic regimen. On their failing, recourse must then be had to more powerful means, or the cure by *ligature*.

CCXXII. By this operation is intended the entire removal of the morbid part or tumour, and then securing the ends of the vessel by means of a ligature till a re-union of the parts is effected, when the circulation is made to pursue a different channel.

CCXXIII. In order to do this, a full command of the circulation of the part must first be acquired; and for this purpose the tourniquet is to be applied round the member, as formerly directed. The patient is then to be placed on a table of a convenient height, and the member secured by assistants. An incision is next to be carried longitudinally through the teguments and cellular substance, a *little beyond* the extent of the tumour. On the latter being then laid in view, a broad pointed lancet is to be pushed into it, and the fore finger, on withdrawing the lancet, introduced into this opening. On the finger a flat pointed bistoury is next to be passed upwards and downwards, dividing the whole length of the cavity. The latter may then be cleared with a sponge, after which the tourniquet is to be slackened, in order to perceive the orifice of the tumour. When perceived, after tightening the tourniquet,

The probe is to be introduced so as to raise the artery, or it may be taken hold of by a pair of small forceps. A strong waxed ligature is now to be passed round the vessel, one-eighth of an inch above the orifice of the tumour, by means of a blunt curved needle passed below it; and before tightening this ligature, let the tourniquet be again slackened, by which it will be known if the orifice be below it, and when tied, let the same thing be done to know if properly tightened. A second ligature is then to be brought round the artery below the tumour, after waiting a little time that blood may be discharged from the inferior part, from which the success of the operation is usually judged of. The ends of the ligatures then being brought over the edges of the wound, the latter is to be dressed with some mild liniment, and wrapped up pretty loosely with a compress and some turns of a roller, and laid in bed in a relaxed posture. The tourniquet is to be allowed to remain, without any degree of pressure, for several days, till the danger of hemorrhage is over. It is commonly twelve hours before the under part receive its natural heat, and at least five days before the pulse in the wrist can be felt, while the patient, for part of that time, complains of a numbness and want of feeling.

CCXXIV. After this, like every other important operation, the antiphlogistic regimen must be pursued, and about the fourth or fifth day, the dressings may be removed, being previously softened by applying a poultice over them. The ligatures should be allowed to drop off of themselves, which they will do at some subsequent dressing.

2. *True Aneurism.*

CCXXV. The true or *arterial* aneurism, consisting in a partial dilatation of the vessel, is distinguished by the easier disappearance of its tumour on pressure, which is always smaller than the former species, by the pulsation of the artery below, and by its swelling, shewing more prominence than diffusion in its progress. Like the former, as it increases it becomes less compressible, and also communicates pain. The teguments assume likewise the same shades of inflammation, and tend to gangrene, or become œdematous, when they crack or give way, in consequence of which, after some partial hemorrhages, the disease proves suddenly fatal, if not in a situation to be relieved by the operation as in the former species.

CCXXVI. The cause of true aneurism is partial debility of the vessel, or injury of its external coats, which makes the rest yield to the impulse of the circulation. Hence it is often a constitutional disease, and displays itself in different parts.

From this view of its cause, the most common seat of true aneurism is the larger vessels, particularly the aorta at its arch. The femoral artery, those in the arm and axilla are also at times the seat of it. Middle age is the period at which such affections most commonly occur.

In the three last situations, the operation, as already described, has been performed; but its success is little to be depended on.

3. *Varicose Aneurism.*

CCXXVII. The varicose or *venous* aneurism may be considered as a combination of the two, being a wound of the subjacent artery through the vein. It is marked by a sort of tremulous motion in the vein, with a sort of hissing sound occasioned by the passage of the blood; by the swelling not being affected as it would be by a ligature on the under part of the member; by the total disappearance of the tumour by compression of the vein; and by a more feeble pulsation in the upper part of that, than in the under part of the member on the opposite side.

CCXXVIII. The prognosis in this species may be always favourable, as it remains for a length of years without such increase as to require an operation. But when an operation should become unavoidable, its situation, as in other cases, must determine the chance of success.

CLASS II.

U L C E R S.

CCXXIX. **A**N Ulcer is a chronic solution of substance, attended with an unhealthy discharge, either of *pus*, *sanies*, or a *matter otherwise vitiated*.

CCXXX. It differs from an wound (I. i.) in *three* leading circumstances; *its state of inflammation*; the *nature of its discharge*; and *its want of tendency to heal*.

CCXXXI. Ulcers are properly divided into two kinds, the *local* and *constitutional*. The former proceed from a morbid fault in the structure of the part; the latter are connected with a general taint of the habit.

CCXXXII. The causes of Ulcers may be referred to the same general head with those of Wounds, viz. external injuries exciting inflammation; but they may arise also from depositions on parts, and these of a critical nature, ending in an erosion of the teguments.

CCXXXIII. Our opinion in Ulcers must be regulated by the same variety of circumstances as in Wounds; (I. vi.) but in forming it *three special* ones claim our attention, which are

1. The specific nature of their cause.
2. Their particular situation or position in the body. And
3. The age and peculiar habit of the patient.

CCXXXIV. With respect to the *first*, a more favourable opinion is to be given in all cases of free incision or solution, than where combined with contusion, laceration, or imperfect division of parts, which increase irritation, and also occasion lodgment of matter.

In regard to the *second*, the texture of the part has a considerable influence; for those parts of an unpliant texture, as tendon and membrane, are with difficulty cured when suffering injury, compared with the same accident to soft muscular substance.

The place or position, also, of such accidents in the body, must have an equal influence as when seated in a part exposed, from its dependent situation, to a considerable afflux. Thus ulcers of the trunk heal more readily than in any of the extremities, particularly in the lower ones. Their neighbourhood likewise to parts of importance, as large blood vessels, must increase the danger arising from them.

On the *last* circumstance it is to be remarked, that the secretions in the progress of life becoming more or less of a vitiated nature, ulcers in the young and vigorous afford a favourable prognosis, compared with those of the old and infirm.

CCXXXV. In the treatment of all ulcers, our prin-

principal aim consists in their reduction to a simple wound; previous to which, wherever they have appeared of a critical nature, or where, from long continuance, they have become habitual, it is necessary to substitute, in place of their discharge, an artificial drain in order to prevent any new deposition from the habit or irregular determination to more important parts, and this drain may be gradually lessened after the cure, till such determinations are no longer dangerous.

CCXXXVI. The particular indications to be formed in the cure of ulcers, must be determined by their peculiar nature; and this last circumstance renders, therefore, a farther division of them necessary, so as to mark the *special circumstances* in which they differ from each other, and to accommodate their treatment to this *difference*, or *peculiar state* of each.

I. LOCAL ULCERS.

CCXXXVII. Local Ulcers are varied according as the morbid circumstances of their appearance respect either the state of the *fluid* or of the *solid*.

From the former they are distinguished by the appellation of the Benign and Vitiated Fluid Ulcer.

From the latter they are named by the different appearances the sores assume, as of fungus, callus, sinus, &c. each of which it is proper *separately* to examine.

1. Simple Benign Ulcer.

CCXXXVIII. By the *Benign Ulcer* we understand every sore, the discharge of which possesses a purulent appearance, but without the part discovering *much*

tendency to heal, or at least so quickly as a recent wound.

CCXXXIX. Its causes may be ascribed to every local injury of parts inducing a suppuration, not vitiated by any fault of constitution.

CCXL. Our opinion is here always favourable, but regulated, in some degree, by the extent and continuance of the affection.

CCXLI. In order to its cure, it requires to be divided in its progress into two stages, termed the *incarnating* and *cicatrizing*.

In the former, of which the indication formed is,

1. To regulate the state of inflammation. And
2. In the latter, to promote the contraction of the divided parts.

CCXLII. To accomplish the first, or preserve the sore in that state favourable to reformation, several circumstances are necessary to be observed.

1. The first is, the removal of every extraneous irritation, as formerly taken notice of in the treatment of wounds, (I. xxvii.) and applying dressings of the mildest kind, as the ungt. simplex, or saturnine ointment spread on charpee.

2. The second is, the *proper period* of dressing, when matter is fully accumulated before it turn acrid and act on the sore, and this must be daily.

3. The *third* is, the prevention of irritation on the removal of the dressings, by as short an exposure of the sore as possible to the access of the external air.

4. The *fourth* is, the accumulation of heat in the affected part, by additional coverings added to the dressings in the form of compresses, &c.

5. The *fifth* is rest and a horizontal posture, in order to prevent, as much as possible, an afflux to the diseased part.

6. The *sixth* is regulating the constitutional treatment, so that *excess* of inflammation be avoided on the one hand, and a *deficiency* of the vital powers on the other. Hence a diet strictly nutritious, without much use of stimulants, will be found most useful, though it may be altered somewhat according to the prevailing morbid state.

CCXLIII. The *second* indication, where the incarcination of the part, or second stage of the disease is begun, and the state of inflammation is abated, is best promoted by compression and the use of mild astringents.

In making this compression, where the ulcer occurs in the lower extremities, it may be made either by the *laced stocking*, or by a *roller spirally applied* from a good way below to the same length above the diseased part. In case of being applied too tight, the roller should be of *woollen* or *calico*, which will yield, in some degree, from its elasticity; but the compression should always be such as to give a proper support. The use of mild astringents are highly useful towards the end, as they increase the firmness of cicatrix, and cut short the process of healing, by giving some strength to the new surface naturally soft and spongy.

The astringents most useful here are the cerussa ointment, lime water, ardent spirits, dry charpee, &c.

So necessary is this support to the cure of local ulcers, that an attempt has been lately made to effect a cure of them by it alone. This practice consists in the application of *slips* of adhesive plaster brought from

found surface on each side over the fore, till the whole is covered by them. These are succeeded by compresses of linen or *calico* laid above the plaisters, all over the whole a bandage of *calico* or roller is applied, brought up from the ankle joint to the knee, so as to cover the whole member. The coverings are to be moistened with cold water, to make them apply better, all that frequently, and the dressing may be removed every twenty-four hours, and should be applied generally in the morning when the parts are least swelled.

Simple Vitiated Ulcer.

CCCXLIV. Where a fore, without an apparent morbid change of solids, emits a discharge of a vitiated nature, various in its colour and consistence, viz. either purulent, ichory, or sordid, and, at the same time, unconnected with any constitutional fault, it becomes properly an ulcer of this appellation.

CCCXLV. The discharge here is generally more or less of a corrosive nature, producing irritation or fretting of the adjacent parts, and giving to the granulations of the ulcer itself an appearance different from those of the former species, being dark, brown, livid, black, or sloughy; so that the morbid change is conspicuous at sight.

CCCXLVI. The causes of this ulcer are various. The same injuries that induce the former species, often induce this, and the difference frequently depends entirely on the texture of the affected parts, as tendon or ligament instead of soft muscular substance, or on improper applications inducing, in the former species of ulcer, this change.

CCXLVII. The prognosis here must be determined by the *extent* of the disease, and the *period* of its duration; for by these two circumstances must our opinion of the *strict locality* of its nature be determined.

CCXLVIII. From the description of this species of ulcer, irritation appears the principal morbid symptom, and its removal, therefore, forms the chief indication in order to reduce it to the former species. The means of accomplishing this is by the use of anodynes, both internally as well as externally. The first consists in large doses of opium suited to the degree of pain and inflammation. The second in sedative and emollient fomentations kept constantly applied, and removed as often as the degree of heat necessary to suppuration fails, as the saturnine poultice, decoction of poppy heads, of hemlock, powder of carbon, &c.

When this last process of suppuration is fully completed, and the more violent symptoms of inflammation abate, the treatment is then to be altered, and the same plan adopted as recommended in the former species; but to promote cicatrization, where difficult and the sore extensive, the use of nitre, internally, is recommended, to favour an increased determination to the urinary organs, instead of the seat of the disease; or what is more certain, a drain should be placed somewhere near the situation of the sore, if convenient, which will give a new determination to the fluids, and thus admit the cicatrix, acquiring a proper firmness in the seat of the disease.

CCXLIX. The constitutional treatment of this species of ulcer, from its depending oftener on debility than any other cause, has been chiefly trusted to a

nourishing diet, and the liberal use of the bark, to the quantity of ʒvi. or an ounce in the twenty-four hours. When by these means, joined to the local applications recommended (ccxlvi.), a proper suppuration has been produced, its farther exhibition becomes unnecessary.

3. *Vitiated Solid Ulcer.*

CCCL. The vitiated solid ulcer is more obstinate in its nature than the former, and consequently more difficult of cure.

The morbid appearances it exhibits, are also much more varied, as formerly remarked. The first of them to be taken notice of, is that of an irregular fungus or morbid growth, termed Hypercarcosis.

With Fungus.

CCCLI. The size and consistence of this growth is very various in different cases. It feels at first generally soft and lax on pressure, but as it enlarges, and is allowed to spread, it acquires a proportional firmness, and often hardness. The discharge connected with this does also considerably, and different degrees of pain attend it, according to the state of irritation in the

CCCLII. The causes of this growth arise from excess of the healing principle, or from morbid irritation, in consequence of matter confined. The first takes place in the wounds and ulcers of young healthy people. The latter is met with in sores where no degree of compression is applied, either from want of management, or from their particular situation not admitting of compression, as in the case of sinuses.

CCLIII. Their cure must be regulated by the nature of the cause.

In the first case, strong stimulants rather than escharotics or ligature, and these succeeded by compression, are the certain remedies. When escharotics are preferred, that with most practitioners now is the lunar caustic, either in a solid or fluid state; in the latter case, being dissolved and applied to the fungus by means of a pencil or brush dipped in it, and renewed daily. The stimulants most useful here are a weak solution of lunar caustic, a solution of sal ammoniac, of verdigris, of the vitriols, and of mercury in the nitrous acid, also powder of bark, rhubarb, citrine ointment, or ointment with red precipitate. Where caustics are applied, they should not be spread over a very extended surface, but made to act only partially at a time. The parts should be afterwards covered with dry applications, to prevent their action being weakened.

The ligature, again, is circumscribed in its operation, and confined to those cases where the growth arises from a small point or narrow neck; and where difficult to apply it, Dr Hunter's needle for polypi may be employed with advantage.

CCLIV. In the second species of fungus, where occurring in sinouey sores, a free opening to the bottom of the ulcer will remove the source of irritation; or if this is insufficient, the caustic may be also applied here, after which compression properly made, as in the benign ulcer, will prevent its rising in future to a more bad degree; for the growth is here of a softer texture than in the former species.

With Sinus.

CCLV. Next to an irregular growth in ulcers, comes to be noticed the incomplete state of their external opening, and the consequent confinement of matter, which, discharging imperfectly through one or more small apertures, forms what is called a sinus, or when more confirmed with a hardened edge of the sides of the aperture, a fistula.

CCLVI. The causes of this state of ulcer arise from the soft texture of the cellular parts yielding to the impulse of the matter corroding it, or from the unequal impression of the sore externally giving the matter a direction.

CCLVII. Our opinion here is determined by the possible nature of such sores; by their situation; and by the danger of their opening into some of the joints or cavities; for if recent, and in a favourable situation, though often troublesome, they may be cured; but if long continued, and pointing internally, they are attended with much risk, and are often incurable.

CCLVIII. Their cure is conducted in three ways, either by *incision*, the use of the *seton*, or by *injection*; previous to either of these, the exact direction of the sinus must be discovered by the introduction of a probe, or by pressing the matter so as to observe the place from which it proceeds.

CCLIX. The cure by *incision* consists merely in laying open the parts along the course of each sinus, and is suited to those cases where some degree of callosity has taken place.

The use of the *seton* is well adapted to the cure of

recent ulcers of this species, and where there is danger, from their situation, of the sides of the fore uniting. The directions for employing it were already detailed in Class I. xlvii.

The cure by *injection* is now much laid aside. Cases, however, will occur, where it may be necessary to combine it with the first mode of treatment, where the incision, from particular circumstances, cannot be made complete.

The injections consist of escharotic substances inducing a degree of inflammation along the sides of the cavity. (Class I. xlviii.)

CCLX. Wherever the sinuses are once removed, the ulcers are to be reduced to a benign state.

With Callus.

CCLXI. Where, instead of the irregular growth from the surface of the ulcer, formerly described, (ccli.) this state is confined solely to the edges, which acquire a morbid hardness and thickness, with varicose veins surrounding it, this appearance is distinguished by the particular appellation of Callus.

CCLXII. The discharge from the ulcer in this state is always of a thin vitiated kind.

CCLXIII. The causes of this appearance arise from irritation, joined at the same time, with compression in the applications made to the fore.

CCLXIV. The cure here depends, first on the removal of the present morbid state; and secondly, on preventing a renewal of the morbid causes.

The former is accomplished by the use of *caustics* or the *scalpel*. *Caustics* are to be used here as recom-

added in the case of fungus, and they may be applied by second day till the callus is destroyed. The *scal-* will succeed wherever the caustic is not sufficiently powerful, or where the operation is wanted to be quick-performed.

CCLXV. The renewal of the morbid cause, again, be chiefly avoided by emollient applications to the in the form of poultice, which will even remove callosity where recent, and not extensive. When callosity is once removed, and the sore has assumed a healthy appearance, and the discharge acquired a silent state, it is then to be reduced to the first species of ulcer, and to be treated in a similar manner to it, in order to accomplish a cure, viz. by mild dressings, and a proper compression of the sides, either by a laced stocking or the flannel roller.

With Caries.

CCLXVI. When a local ulcer has penetrated so as to affect the contiguous bone, the state of the forms a morbid appearance termed Caries. This consists in the denuded bone gradually losing its natural whiteness of colour, and becoming pale, yellow, progressively deepening its shade, till it end in . This change begins in a few days after denudation, generally the end of the third or fourth, if good take place; and from its appearance within that of time, where conspicuous, an opinion of the future change is to be drawn.

CCLXVII. The discharge in cases of caries is variable. It has often a purulent appearance, though it possesses the qualities of pus, but it is most fre-

quently thin in consistence, and of a greasy appearance, discovering a disagreeable fætor and acrimony, which gradually increases till at last it acquires, even like the bone itself, a blackish tinge.

CCLXVIII. The change in the bone producing this vitiated discharge, is that of its acquiring a softness and sponginess, and being perforated with holes, which loosens its texture by degrees, till it become entirely spongy. The flesh of the sore is also soft and flabby, assuming a dark brown rather than a florid red hue. Where the process of healing proceeds, it displays granulations of a soft spongy kind, that form partially in clusters, rather than appear general over the whole of its surface, and the sore seldom closes entirely. On the introduction of a probe also, where the opening of the sore admits it so far, the surface of the bone is felt rough and irregular, a certain proof of the existence of the disease; and wherever an ulcer above a bone is once healed and breaks out again, such a state of the part below may be always suspected.

CCLXIX. The causes of caries are all those injuries that occasion wounds of the soft parts, and by their violence interrupt the circulation, or produce inflammation of the bone; though injuries of the soft parts and even of the periosteum and bone itself, are not very often attended with such effects, unless some of the larger vessels are destroyed. Acrid applications also to sores, may communicate their influence to the contiguous bone, and even the acrimony from sores themselves, independent of any applications, may operate in a similar way.

CCLXX. The prognosis to be formed in this spe

of ulcer is very uncertain. It must be regulated chiefly by the following considerations :

1. The situation of the affected bone, whether connected with a vital or important part, viz. the head, vertebrae, or opening into a joint. In these situations there is always much danger.

2. The consistence or compactness of the bone, and its greater or less tendency to exfoliation, which the softer ones more readily admit.

3. The violence of its original cause, with the extent of the injury produced. And

4. The constitution and age of the patient.

CCLXXI. In the cure of this affection, the indications pointed out are,

1. To remove whatever may interrupt the separation of the denuded bone. And

2. To assist nature in effecting this as quickly as possible.

CCLXXII. With respect to the first, in every case no re-union of the soft parts is to be permitted, but the state of the diseased bone always kept in view, which must separate before a cure ; and wherever no external opening has already taken place to admit air, and from the apparent symptoms caries of the bone below is suspected, the soft parts over it are to be divided by an incision, either longitudinal or cruciate, being regulated in its form by the seeming extent of the affection.

CCLXXIII. When the carious parts are thus detached, the second indication falls to be completed ; which consists in making, with a pin, or perforator, eight perforations through the outer layers of the bone

occasionally repeated at different parts of it, every third or fourth day, which exciting inflammation, will soon detach the whole of the diseased portion; but these perforations should proceed no farther than till they excite a sense of pain. The part, in the mean time, in order to correct the factor of its discharge, should be frequently bathed with some antiseptic lotion, as decoction of bark, of camomile flowers, of walnut leaves, solution of camphor in brandy, lime water, &c. and even compresses dipped in these applications, should be laid over it, while the soft parts, on the other hand, are to be simply treated, as directed in the case of the Benign Ulcer.

CCLXXIV. But in the more alarming states of caries, instead of such slight perforations, directed (cclxxiv.) nature being unable, from the extent, to remove the disease, the complete separation of the affected bone falls to be attempted, and that either by the use of the trepan or saw. In doing this, much attention must be paid to the protection of the soft parts, and such a previous division of them made, that they may sustain no injury. This removal, however, of the diseased bone must be circumscribed, and such an operation will be by no means admissible in caries of the joints, where amputation of the member, unless ankylosis take place, becomes unfortunately unavoidable.

CCLXXV. The constitutional management of this affection requires much attention. Strong symptoms of inflammation, wherever appearing, are to be removed by the antiphlogistic course, and the contrary state, which here oftenest prevails, counteracted by an oppo-

the regimen, or a nourishing diet, with the use of wine, bark, &c.

Wherever pain occurs, opiates are to be had recourse to.

Necrosis.

CCLXXVI. To this head of Carious Ulcer, may be referred the disease described under the term Necrosis.

It consists in the decay of a bone, or part of it, which is succeeded by a new osseous growth similar to the decayed one. The most common seat of it is the long bones, and of these the tibia and femur, then the lower jaw, &c.

CCLXXVII. Its first symptom is acute and deep seated pain, not aggravated by pressure; then the enlargement of the member through the whole course of the bone, which enlargement becomes soon stationary; external marks of inflammation next appear in the part, which end in suppuration, when matter is discharged by a small opening. This suppuration generally extends to different parts, and occasions so many openings or fistulous sores. The surface of the latter is small, with some prominence, and of a red healthy colour. The discharge from them has the appearance of real pus, thus differing from caries, and is at all times regular, not increased by pressure. No loose bone is discernable on examination. The progress also of the affection varies in different cases after the period of ulceration.

CCLXXVIII. This disease terminates in two ways; either, first, by the gradual healing of the sores, the limb

continuing enlarged, but without any marks of disease. In the second, the termination takes place by the ejection of the decayed bone (or sequestra); previous to which, from the increased inflammation, large suppurations form, that occasion much irritation and pain to the patient, and even suspension of the use of the member for the time.

CCLXXIX. The duration of this malady extends generally from a twelvemonth to two years, sometimes much longer; but in some of the smaller bones, its progress may be completed sooner.

CCLXXX. The period of attack is generally before the twentieth year in the long bones, though to this there may be some exceptions, and in the lower jaw after the thirtieth. In many cases it seems a constitutional disease, and attacks different parts at the same time, similar to scrophula.

CCLXXXI. Its causes would seem, for the most part, spontaneous, though external injuries may perhaps have some effect. The disease is almost never fatal, although often highly distressing.

CCLXXXII. The cure of this affection, where it can, should always be left to nature; but where the symptoms are too violent to admit of this, the removal of the decayed bone, or sequestra, is the only step to relieve the patient. For this purpose, an operation becomes requisite, which consists in first laying bare by an incision with a common scalpel, the soft parts, as directed in the Carious Ulcer, and then making small perforations with a perforator, or common drill, through the bone in different parts of it, to ascertain the state and extent of the disease. When the perfora-

is withdrawn, a probe may be even introduced into the openings, to ascertain still farther the situation of the internal cavity of the bone, and the progress of new growth.

CCCLXXXIII. This preliminary operation is attended with little pain or hemorrhage, nor is the removal of any skin necessary, unless the osseous part, to be separated, is considerable. The latter is best effected by the trepan making a number of different perforations, continued so as to form one opening, and regulated, in their extent, by the apparent state of the *questra* to be removed.

CCCLXXXIV. When the latter is finished, which will generally require half an hour, the part is to be treated as a recent wound, by the application of an emollient poultice, frequently renewed, till a suppuration is produced, and granulation form, when it gives place to very mild unctuous dressings. The cure, when it is in the tibia, is generally complete in from four to six months, and during its progress, much caution is required to avoid any exertion of the part.

CCCLXXXV. In regard to constitutional treatment, little is necessary, as the symptoms of fever are commonly mild; but if pain and irritation prevail, opiates are then pointed out, and may be occasionally employed with advantage.

4. *Issues.*

CCCLXXXVI. To this class of Local Ulcers may be added the *artificial ulcer*, or *Issue*, intended as a remedy in certain morbid affections, by producing a dis-

charge of purulent matter from different parts of the body.

CCLXXXVII. The effects of this ulcer or drain depend on the quantity, not the quality, of the discharge, and are useful wherever a morbid determination takes place to any particular part. Hence they are employed in a variety of diseases supposed to depend on a fullness of the system, as well as in local affections from which a long continued discharge has taken place.

CCLXXXVIII. The situations chosen for their discharge are numerous, and where employed against any general morbid state of the system, the ease of the patient only is to be consulted in the place of their application. Where, again, they are intended against any particular determination to a part, the nearer their drain can be made to the latter, the more successful will be its effect.

CCLXXXIX. In the situation of every Issue, the injury of the subjacent parts is to be avoided, and the places possessing a depth of cellular substance, as preventing this, chosen. These situations are chiefly the *nape* of the neck, or *space between the tendons*, the *middle of the humerus*, or *hollow of the deltoid muscle*, between the *shoulders or ribs*, and in the *inside above or below the knee*.

CCXC. In forming Issues, three different methods are practised, by *epispastics*; by *caustic*; and by *incision*.

By Epispastics.

CCXCI. The first is the most simple, and is formed by the application of a small blister or vesicant to the part,

continued till the scarf skin is destroyed; and the natural covering being thus removed, and the small vessels laid open, a discharge of their contents will take place, which may be promoted by milder applications of the same nature, with the vesicant. Thus the blister being removed, the part is to be dressed with mild issue ointment, or alternately with it and some soft liniment, according to the degree of the discharge required.

By Caustic.

CCCCXCII. The same effect is produced in a stronger degree, and a deeper opening, formed, instead of a simple vesicant, by the application of caustic. For this purpose a piece of adhesive plaister is first to be placed upon the part, with a small hole cut in its middle. This hole is to be filled with the caustic reduced to a paste, and over it another piece of plaister is to be applied to confine the application, and prevent it spreading to any of the contiguous parts. In ten or twelve hours an eschar will be formed, when the caustic may be removed. In three or four days the eschar, casting off a hole or opening, will be left sufficient for the intended issue, which is to be preserved open by the introduction of some hard substance into it, as peas, gentian root, or Amrassoa apple, covered with some mild ointment, and secured by a bandage.

By Incision.

CCCCXCIII. But the last method of forming an Issue, by incision, is preferable to the former, and is executed in two different ways.

The first is by raising the skin double with one hand, and passing a lancet through it with the other for such extent as is sufficient to procure a proper discharge, and the opening thus made is to be preserved, and its nature changed from that of a simple wound made by incision, to that of an ulcer, by the introduction of the substances as in the use of caustic.

The second mode of forming an issue by incision, is by raising the skin, held by an assistant, for a certain extent, and passing through it, at the points previously marked, a flat needle having a silk or cotton cord appended to it, which is to be brought out at another part also marked, at a small distance from the former. The needle past, the cord is allowed to remain in the wound to keep it open, while two or more inches of it are left to hang out. It is occasionally shifted every second or third day, and the discharge may be further promoted, if not sufficient, by smearing the part of it passing through the wound with basilicon or issue ointment.

CCXCIV. Each of these forms of Issue may be adapted to particular morbid circumstances. The last is best suited to a discharge from deep seated parts, and is therefore employed in the nape of the neck, or betwixt the ribs, while the others best suit more superficial situations.

CCXCV. Though these are now the different modes observed in the formation of Issues, yet to render their effects still stronger, and more sudden, in the older practice, they were frequently formed by means of the *actual cautery*, and at present, in some countries, by similar means, viz. the application of moxa set on fire on the part.

5. *Cutaneous Ulcer.*

CCCXCVI. Eruptions of the skin terminating in sores, form a species of ulcer termed the Cutaneous, though the sores can hardly be disjoined, from a consideration of the various affections that give rise to them. These affections were already treated in the former volume under the title of Cutaneous Diseases. (*Vide* I. page 220.) We shall therefore consider only the peculiar circumstances of their local treatment, that chiefly in their advanced stage.

CCCXCVII. The advanced stage of all herpetic eruptions, the most frequent source of the Cutaneous Ulcer, is marked by chronic solutions of surface, or sores of various appearance and extent, discharging either a tough viscid matter, or else a sharp thin serum, which is highly corrosive and depascent, and inducing epibolous inflammation to some extent.

CCCXCVIII. Different situations of the body are the seats of those herpetic eruptions, according to the peculiar species of the disease to which they belong. Thus the face, neck, arms, and wrists, are the seat of one species. The head, and back of the ears, are also the seat of another. The loins again are particularly attacked by a third. They are always, wherever seated, attended with more or less itchiness. Their attacks are usually in full and inflammatory habits, and they are generally, by contact, more or less contagious.

CCCXCIX. Our prognosis is determined much by the constitution of the patient, and by the mode of its attack. In

the old, such sores are always difficult to cure; but if received by contagion, they are less troublesome than where they arise naturally.

CCC. For the cure of such sores, two indications arise,

1. The first is to promote a general freedom of discharge by the skin. And

2. The second to induce and keep up that peculiar state of inflammation in the part necessary to reformation.

CCCI. The former is excited in a variety of ways;

By attention to cleanliness in the use of the warm bath, joined afterwards with friction.

By the exhibition of mild diaphoretics, as the guaiac and sarfa in decoction, the crude antimony in powder, sulphur, or some of the milder preparations of mercury.

CCCII. The second indication, however, forms the more essential one, and it is performed in the same manner as the former, by a variety of substances, either astringent or stimulant, each suited to particular circumstances of the disease, which experience can only ascertain.

Of these the most certain for the milder kinds, are the preparations of lead, lime water, and sulphur, such as the saturnine solution, antipsoric ointment, &c.

For the more obstinate cases, the preparations of mercury, zinc, and the vitriolic acid, such as the corrosive solution, solution of lunar caustic, precipitate citrine ointment, zinc ointment, &c.

CCCIII. Wherever such ulcers resist the means pointed out, or proceed slowly towards a cure, or are

of long continuance, the introduction of an issue in a convenient situation forms a necessary part of the treatment.

II. CONSTITUTIONAL ULCERS.

CCCIV. From the Local we proceed to the treatment of Constitutional Ulcers, which are chiefly distinguished from the former by the inefficacy of local means to effect their cure.

1. Venereal Ulcer.

CCCV. Constitutional Venereal Ulcers are those connected with an universal taint of the system, and are fully distinct from the primary ulcer, or chancre, the immediate or recent consequence of infection. (see which *Vide* vol. I. page 150.) They are distinguished by their succeeding general symptoms of the disease, or without this, by the information of the patient; they appear commonly in the throat, nose, or palate, on the surfaces immediately above the eyes of the cranium, tibia, and humerus, and on such parts as are thinly covered with muscles.

CCCVI. Their appearances on the external surface of the skin, is in the form of a diffused efflorescence, the papules of which ooze out an acid ferous discharge, which when passing into the ulcerous state, form a spread-sore of a conical shape, with callous edges, the inflammation of which extends beyond the part apparently affected. The matter displays a peculiar green-yellow colour, and is of a tough viscid consistence.

Such sores also have generally little sensibility, and therefore are seldom attended with much pain.

CCCVII. The prognosis to be formed of them depends on the *situation* they occupy ; for on the external surface there is little danger ; in the *length* of their *duration*, as marking the extent of the constitutional taint, and particularly on the state of the habit with respect to its capacity of bearing the action of the remedy.

CCCVIII. The cure, in general depends on the use of mercury ; or the late remedies, the nitrous acid, oxygenated muriate of potash, &c ; but these last require still the sanction of farther experience ; the method of exhibiting mercury constitutionally is fully directed in vol. I. page 156. It is only therefore necessary to consider what respects the local treatment here.

CCCIX. The topical application most commonly used to such sores has been the red precipitate in the form of ointment, and its strength must be suited to the state of the sore. Caustics are also occasionally of service, that the diseased parts, as a preliminary step, especially where connected with any hardened gland, may be thrown off, as the lunar caustic, aqua phagadenica, aluminosa, &c. But when such sores, as is often the case, if they are of long continuance, resist entirely the use of mercury, various changes become then necessary, in order to induce the healing process.

CCCX. These changes of treatment, though not reducible to any general principle, may be comprized under the three following heads :

1. Suspending entirely the action of mercury, and, instead of it, employing a full nourishing diet, change of air, and the use of the bark.

2. Substituting, in place of mercury, the use of opium, or other narcotics in large doses, both constitutionally and topically.

3. Having recourse to the various remedies, both external and internal, recommended in Scrophula, (*Wid. vol. I. page 186.*) on the supposition of the sore partaking of the nature of this last disease.

CCCXI. When all these means fail, the case becomes deplorable; the whole constitution becomes contaminated, and the patient sinks at last under the progress of the malady.

2. *Cancerous Ulcer.*

CCCXII. The Cancerous Ulcer, the most fatal of the whole, is commonly distinguished by a previous enlargement, or scirrhus tumour of the glands of the part, and where passing into the ulcerous state, by a elephascent or spreading sore of a peculiar appearance. Its edges are hard, ragged, and unequal. Its surface is irregular, attended with a spongy growth or excrescence. Its discharge is thin, dark, and foetid, frequently mixed with blood, and the feeling it communicates is either sharp lancinating pain, a gnawing in the part, or a diffused burning heat over it.

CCCXIII. From this definition, the distinguishing marks of the cancerous ulcer are,

1. The inequalities in the surface of the sore, which have caused it, from its risings and excavations, to be compared to a piece of mouldering ruins.

2. The peculiar factor of the discharge, which is so remarkable as to strike every practitioner at once.

3. Its uncommon pain, which is either of a sharp lancinating kind, or of a gnawing nature, or possesses a sense of burning heat, or at times a sort of shooting and pricking, like the thrust of needles. And

4. Its corrosion of vessels, displayed in its strong tendency to hemorrhage.

CCCXIV. The situation of the cancerous ulcer, from the previous tumour, is most frequently the conglomerate glands, particularly the breast and womb in women, and the lips, testicles, and penis in men, though it appears also in other parts of the body. Its consideration, in these different situations, occurs in the after divisions of this work, according to the parts of the body it occupies.

CCCXV. The causes of cancer are unknown; but its appearance we find favoured by external injuries, though not always. It is peculiar also to more advanced life in both sexes; and, in its occult state, it has been known to leave one part of the body and occupy another.

CCCXVI. The prognosis to be formed of it is always unfavourable, and though apparently but the effect of external injury, yet no dependence is to be placed on the removal of the diseased part, even in its earliest stage, for a cure of the malady.

CCCXVII. Its progress differs much in different cases. In some it terminates in a few months; in others; and most frequently, not for a period of years.

CCCXVIII. Under this disease, the pulse is always small and weak, and in its advanced stage it is attended with hectic. At first this fever is irregular, but in its progress it becomes constant and severe, and the

patient acquires a fallow leaden appearance, characteristic of the disease. The sweating stage is also wanting till towards the end. This fever also suffers considerable intermissions; but towards its termination, a remarkable irritability of stomach occurs, by which every thing is rejected.

Experiments are yet wanting to determine whether the virus of cancer is capable of conveying its peculiar form of disease, or of merely displaying marks of common acrimony.

CCCCXIX. The cure of cancer is attempted in two ways; either by medicine, or excision; and both hitherto have been equally ineffectual in its removal.

CCCCXX. The cure of cancer, by medicine, is either constitutional or local.

CCCCXXI. The first consists chiefly in the use of purgatives or narcotics.

Of the former the principal articles are mercury, arsenic, and the muriated barytes.

Of the latter the cicuta, belladonna, and aconite.

Each of these articles has been known to produce beneficial effects on the sore, but never of a permanent nature, and the progress of the disease has still continued to proceed. For farther information on their use, *Vide* vol. I. page 206.

CCCCXXII. The local treatment of cancer has been more varied than the constitutional, but may be reduced also to the application of stimulants, caustics, or narcotics; for the particular articles, *Vide* vol. I. page 206. Like the constitutional, it has generally produced only temporary effects, and seldom, for any

length of time, suspended the inevitable fatality of the disease.

CCCXXIII. Finding, then, the powers of medicine ineffectual, the aid of surgery has been generally preferred for the cure of cancer, and this from the earliest periods. In the greater number of cases, however, the disease has also recurred, after subjecting the patient to much pain, and proved equally unavailing.

CCCXXIV. The chief merit claimed by modern surgery over the ancient in removing this disease, rests on three circumstances,

1. The choice of the period for the operation.
2. The mode of operating. And
3. The conduct of the after treatment.

CCCXXV. With respect to the first, the earliest appearance of the disease is now preferred, while in its incipient state, and before its influence can extend to any other part.

In regard to the second, the excision or removal is extended, as far as can be done, to every glandular part any way near, or that may have the most distant chance of being connected with the diseased part.

On the third, it may be observed, the great point now aimed at, is the healing of the part by the first intention, and saving, for this purpose, the external teguments, as far as can be done, so as to afford afterward a firm covering to the former seat of the disease, and thus prevent any danger from exposure of the part to irritation from external causes.

CCCXXVI. In spite, however, of these boasted advantages of treatment, the records of every hospital

show the inefficacy of surgery, as well as medicine, in the cure of this form of disease.

CCCCXXVII. To prevent, however, its recurrence, where an operation has once been performed, an issue in a neighbouring part, as giving a different determination from the seat of the disease, has been recommended, and generally employed.

3. *Scrophulous Ulcer.*

CCCCXXVIII. Scrophulous Ulcers are distinguished at first by the discharge of a viscid glairy, or else whitish curdled matter, succeeded by a thin watery sanies. Their edges are often flat, at other times swelled and painful. Their continuance is various, often showing a change for a length of time, at other times healing, and breaking out in other parts. They are always preceded by soft colourless tumours, which vary in the time of their continuance, but are always particularly affected by changes of season during the whole of their progress.

CCCCXXIX. From this definition of the Scrophulous Ulcer, the chief morbid circumstances that distinguish it are,

1. Its state of inflammation. And
2. Its discharge.

The first is marked by little or no pain, and in no case the acute dolor pulsatilis, or strong action of vessels, which attends phlegmon.

The second consists either of simple serosity, or a curdled cheesy matter, showing a morbid separation of the parts of the fluids from each other.

CCCCXXX. The causes of scrophula are unknown.

Its seat appears evidently the lymphatic glands, and for the most part it is attended with a general debility of constitution, being marked by a peculiar softness of skin and delicacy of habit.

CCCXXXI. Our opinion of scrophulous sores must be much determined by the situation they occupy; by the apparent strength of the scrophulous disposition in the habit; and also by the period of life. Thus, with respect to the first, a simple glandular sore is easier treated than where attacking a joint, and combined with caries of the bone. In regard to the second, the chance of a cure is more certain where only one, and not several parts are affected. And lastly, external scrophulous sores generally heal up after the age of fourteen.

CCCXXXII. Though no radical cure of the scrophulous ulcer can be depended on, yet the use of tonics, particularly the bark, steel, and cold bathing, seems, in certain cases, to have been of much benefit, and are the best remedies to be employed. Gentle mercurials have also, in the first stage of swelling, been often of service, and saline minerals have at times palliated the progress of the disease. Along with the use of these remedies, a dry situation and mild climate should be preferred.

Of external applications to the sores themselves, the saturnine preparations are the most general, and also most effectual, when applied in the watery form. Cloths dipped in cold water itself are much recommended; greasy applications are always to be avoided. (*Walt.* vol. 1. p. 186.)

4. *Scorbutic Ulcer.*

CCCCXXXIII. Scorbutic Ulcers are marked by a thin fetid discharge mixed with blood, often caking, as it cures, the whole of their surface; by their tendency to a quick generation of soft putrid flesh, or bloody fungus, which, from pressure, gives a gangrenous disposition to the fore, or œdema of the member, and by the solid puffy appearance of their edges.

CCCCXXXIV. The cause of such ulcers is a peculiar state of habit connected with debility, but in which, along with the impaired tone of solids, a dissolution of the fluids more especially prevails. This state of habit is most prevalent at sea, and its causes, therefore, have been referred to exposure to a cold moist atmosphere, joined to a want of vegetable diet, and these causes favoured still farther in their effects, by inactivity and depressing passions.

CCCCXXXV. Our opinion in this disease must be regulated by the situation of the patients, with respect to the removal of the causes inducing it, and particularly their ability to procure a supply of vegetable diet; for such ulcers generally admit of cure where this can be obtained.

CCCCXXXVI. In high degrees of the disease, such ulcers as described generally appear without any exciting or immediate cause to produce them; but where the morbid disposition is slighter, as on land, it is only by any injury inducing a rupture of the teguments, that this particular state of the part is discovered.

CCCCXXXVII. The cure of scorbutic ulcers depends

on restoring the tone of solid, and correcting, at the same time, the putrid disposition of the fluids.

The first is accomplished by the use of the bark and the vitriolic acid, or the nitrous vinegar, with wine and a nourishing diet.

The second by a proper supply of vegetable acid in the use of fresh vegetables, milk, whey, fermented liquors, &c. and by opening the different secretions by means of remedies of a vegetable and acrescent nature. (*Vide* vol. I. page 178.

CCCXXXVIII. The local treatment of the sores, the chief object here, is to be conducted on the same principles, and consists of the use of strong antiseptics, as the ungt. ægyptiacum, mel rosarum, acidulated with vitriolic acid, strong decoctions of bark, the carrot, and fermenting poultices, &c. ; and when the scorbutic disposition of the sore is once corrected, the cure may be completed, and the sloughs removed by any gentle escharotic ointment, joined with proper compression of the part, as formerly directed.

CCCXXXIX. The same treatment will apply to all sores discovering a similar putrescent tendency, from whatever source they proceed.

* We have, on this division of Surgery, given a view of the subject consonant to the opinions at present entertained, and the modes of treatment commonly pursued. In no class of diseases, however, is the present mode of treatment so ineffectual, and Ulcers, in general, may be considered among the opprobria of the healing art. Thus the scrophulous is given up entirely by practitioners, and trusted, for the most part, to time; the cancerous are considered as totally incurable; and the venereal, under certain circumstances, in the ultimate stage of the disease, are declared also to

equally without remedy. All old ulcers, whatever their nature although cured, are known to be liable to a relapse. These observations are made here by the author, merely to show that the pathology of ulcers is at present in an uncertain state. Some attempts have been lately made, by the use of the nitrous and other acids, to remove this opprobrium of the art. That a temporary relief will be given by these remedies, we have no doubt; but a short time will generally show, that the relief is by no means permanent. At the same time we are clear, that one step is gained towards a cure by the introduction of this new chemical practice; but to lose sight of the pathology of the solid entirely will not do, and the principles must be extended equally to the solid as to the fluid, to derive real and permanent advantages in such cases.

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CLASS III.

TUMOURS.

CCCXL. **A** TUMOUR is a morbid enlargement of parts, varying in its *appearance*, *feel*, and *consistence*, according to the nature of its cause; but admitting a general division into *two species* of *acute* and *indolent*, according to the disposition it displays to assume inflammation.

I. ACUTE TUMOURS.

Inflammatory Tumour

CCXLI. The most frequent species of the first class, is the phlegmon, or common inflammatory tumour. It is marked by the symptoms of inflammation described (vi.) viz. heat, pain, redness, and swelling. The pain is of an acute throbbing kind. The swelling becomes gradually elevated above the surface, acquire

firmness to the feel, and shows a tendency to point in a particular place. The teguments there thin by degrees, and show a lividness of colour, which changes at last to a whitish yellow. In consequence of this, they lose their firmness, and give way, when pus is discharged from the opening in a quantity proportioned to the extent of the tumour, and the degree of inflammation. The morbid state of the part forms then what is termed an abscess, and the fore may be considered as a local benign ulcer. (ccxxxviii.)

CCCXLII. Inflammatory tumours arise from the common exciting causes of inflammation. The period of their termination varies according to the constitution attacked; but the formation of pus is generally marked by certain constitutional symptoms, viz. *irregular* and *frequent shiverings*, as well as the remission of heat, or its degenerating into a dull heavy weight of the affected part.

CCCXLIII. The treatment of abscesses is a subject of much importance, and various methods have been suggested by authors to render their termination as favorable for the constitution as possible. These consist either in *diminishing* the quantity of matter, or *suspending* immediate discharge.

CCCXLIV. The former is chiefly attempted in critical abscesses whose situation is peculiar, and their collection apt to be thrown in when breaking on internal vessels. They should therefore be opened at an early period, to prevent this taking place, even while the quantity of matter in them is small.

CCCXLV. The method of opening abscesses in such cases, is either by caustic or incision.

For the application of the former, there must be previously fixed on that part of the tumour, a piece of strong adhesive plaister, with a hole, sufficient for the opening intended, cut in the middle. This hole is to be filled with the caustic, or other escharotic, and then covered with a smaller piece of the same plaister, while, by this means, the caustic becomes pressed in on the teguments, and an opening through them by an artificial gangrene, completed in the space of a few hours.

CCCXLVI. From the indeterminate extent of the opening made by the caustic, and the troublesome inflammation it also induces, unless the timorousness of the patient should prevent it, the latter method, or incision, is to be preferred.

It is commonly made with a scalpel, longitudinally for two-thirds extent of the swelling, carried down to its most depending part, by which a complete discharge is afforded.

CCCXLVII. Both these methods should be entirely confined to abscesses that are small, and where, by the application, there is little danger of a large surface being exposed. In all other abscesses than those already described (cccxliv.) a full suppuration should be allowed to take place as a general rule, and it should be even promoted by the common means of inducing suppuration, detailed (xi. 2.) viz. increased heat in the form of fomentation or poultice. When this process has fully taken place, if the collection is great, the treatment must then be directed so as to suspend its speedy or entire evacuation at once, from the danger of exhausting the system, and inducing hectic, as well as from admitting the access of the external atm

here. For this purpose nature must be prevented from rupturing the teguments, which would endanger with an immediate discharge.

CCCCXLVIII. The methods of opening abscesses with this view, have been either by a *small puncture*, or by the *introduction of a seton*.

The latter has been generally preferred, and the method of doing it is by introducing a crooked trocar at the top of the tumour, the canula of which being pushed down to the bottom, is to be there cut upon, and, through the opening, which should be larger than the upper one, a probe with a seton introduced, when the trocar is to be withdrawn, and the seton allowed to remain, being shifted occasionally once a-day after the first twenty-four hours, and gradually lessened, by removing a ply of the cord, as the matter is discharged, till the surfaces of the opening come to approach.

When the matter is entirely gone, the seton is then to be withdrawn, and some degree of pressure being applied on the sides of the tumour by a roller, the process of healing will readily take place.

Erisipelatous Tumour, or Rose.

CCCCXLIX. The Rose (erisipelas) is a diffused inflammation without any prominence, attended with heat, and a remarkable florid redness, which disappears on pressure; but, in its advanced state, it sometimes changes to a copper colour, and is attended with effusion of an acrid yellowish matter.

CCCL. In the treatment of it, the chief point is to prevent its approaching to this stage of effusion, which is accomplished by the general antiphlogistic

course, particularly the use of laxatives, and even blood-letting, where the symptoms of inflammation are violent.

The topical remedies consist entirely in the use of dry mealy powders, as absorbents of acrimony, or exposing the part to the air, and wetting it with mild astringents.

CCCLI. When the last stage arrives, and effusion of an acrid matter actually appears, then astringents, particularly the preparations of lead, as goulards, or the saturnine ointment, are the most powerful applications. (*Vide* vol. I. page 39.)

Inflammation of the Ear.

CCCLII. Inflammation of the ear is marked by *acute throbbing pain* in it, and *noise*, sometimes *deafness*, and *general symptoms of fever*.

CCCLIII. In every attack of inflammation here, resolution is to be attempted, which is accomplished by subduing irritation in the part, and exciting a discharge from the contiguous vessels.

The first is performed by a few drops of laudanum dropped into the passage, or of any strong aromatic spirit, as lavender united with oil.

The second consists in the application of a small blister behind the ear, renewed where the symptoms do not immediately abate.

CCCLIV. But when, in spite of these means, suppuration seems unavoidable, marked by increased pain, and more general affection of the head, it is to be promoted by heat, either in the form of warm injections into it, bathing the part, or, what is preferable, receive

warm steams upon it. Poultices have been also used.

CCCCLV. When matter appears, the discharge is to be removed by bathing; and, if too profuse, it is to be checked by mild astringent injections.

CCCCLVI. Where the disease proceeds farther to affect the bones, their exfoliation must be left to nature.

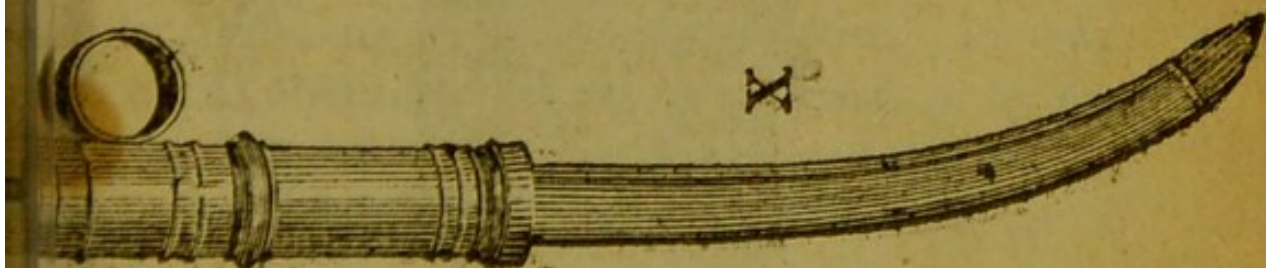
Inflammation of the Throat.

CCCCLVII. Inflammation of the throat consists in swelling of the tonsils, attended with heat, pain, difficult deglutition, and general symptoms of fever.

CCCCLVIII. The general remedies employed here are the same as in other cases of inflammation, viz. blood-letting, and the use of purgatives; but the topical means are commonly more depended on.

The most active topical means are the discharge of blood from the affected part, and the application of caustics externally to the throat.

The first is effected by the instrument (delineated)



which, scarifying the tonsils, relieves the turgescence of the vessels of the part. To these means may be added

the use of astringent gargles, and warm steams received into the throat, which are generally effectual in procuring resolution. Should suppuration, however, ensue, from the advanced state of the affection before their application, its termination is to be hastened by poultices, the inhaling of warm steams by the machine (here delineated), and when a fluctuation can be felt,



the part may be opened by the scarificator, (already delineated) *Vide* vol. I. page 13.

Hepatic Inflammation.

CCCLIX. Inflammation of the liver is marked by *or obtuse pain of the right side*, or its region, rising to *top of the shoulder*, attended with *considerable fever* and *inability of lying on the left side*, the skin displaying a *raw tinge*, and the *urine highly coloured*.

CCCLX. Those symptoms suffer an exacerbation as *suppuration* ensues, by the extension of the pain, and a *swelling* in the situation of the organ. A fluctuation or *softness* at last can often be felt, where the matter is *confined to the anterior part*.

CCCLXI. The most frequent cause of this disease is *excessive heat*, often external violence.

CCCLXII. The treatment of this affection is to be conducted in the same manner as in other cases of inflammation, viz. by blood-letting, the use of purgatives, blisters to the part, and every other remedy of antiphlogistic kind; but these will only prove successful where employed at its commencement.

When more advanced, it yields entirely to the power of mercury, and forms a peculiar practice. It may be introduced either by rubbing on the part, or by exhibiting it internally. It should be brought to the point of salivation, and continued at this rate for a considerable time.

On the same principle with mercury, the nitrous æreas has been used here, and the same success has attended its exhibition.

CCCLXIII. But when, in spite of this practice, suppuration forms, the early evacuation of the matter, by external opening, is the point to be aimed at.

CCCLXIV. The symptoms of suppuration here are difficult to ascertain, where it is not obvious to the feel. Those trusted to are frequent and irregular shiverings, an increased bulk in the region of the liver, the skin covering it soft and flabby, and the extension of pain on the shoulder.

CCCLXV. Where these symptoms appear, an attempt at an opening should be made, and an incision with a scalpel carried through the teguments at the most pointed part of the tumour, when the abscess appears, it may be entered with the point of a lancet, or pierced with a trocar, and the matter gradually discharged.

The lips of the wound in the teguments are to be preserved open, by the dressings placed betwixt them, till the bottom of the abscess heal up. Some degree of pressure round the body, by a roller, will promote the complete evacuation.

CCCLXVI. During the healing of the abscess, the bark may be properly exhibited.

CCCLXVII. The matter discharging internally, by the bursting of the abscess, into the chest or abdomen is generally fatal; but a chance for life may be given by an attempt at a discharge. (*Vide* vol. I. p. 26.)

Lactal Mammary Inflammation.

CCCLXVIII. Lactal inflammation of the female breasts is attended with pain, stiffness, and swelling, an obstruction to the flow of milk, and general fever marked by a quick full pulse, headach, much heat and restlessness.

CCCLXIX. The causes of this disease arise from

udden exposure to cold, passions of mind, the attack
weed, or ephemera, &c.

CCCLXX. The lacteal inflammations of the breasts
are rarely dangerous, and almost never degenerate
into schirrus, yet when long continued, and ending in
abscesses, they are apt to exhaust the patient, and lay the
foundation of a hectic state.

CCCLXXI. From its seat, this inflammation is pro-
perly divided into two kinds, the superficial and glan-
dular; the former is confined to the cellular substance,
the latter affects also the glandular part of the organ.

CCCLXXII. In the first species, the pain is mode-
rate, the progress rapid, and little fever attends.

In the latter, the pain is violent, the progress slow,
an acute fever is constantly present. It leaves also of-
ten a shrivelling of the breast, and a degree of hardness
which remains for long. A deficiency of milk takes
place in it from the first.

CCCLXXIII. From the pain and uneasiness attend-
ing suppuration, resolution is here the great object to
be aimed at in the cure, and this is to be attempted by
a vigorous antiphlogistic course; in the use of bleeding
and purgatives, and the regular removal of the fluid
from the breast, either by the child or by a glass. Cold
applications are to be used to the part itself, as cloths
dipped in a solution of sal ammoniac and vinegar, fo-
ments of lead, &c.; and, when drying, such applica-
tions are to be immediately renewed.

If much pain prevail, the use of opium is properly
to be resorted to.

CCCLXXIV. But when, from the continuance of
the disease before such applications, or its violence dis-

played by much tension and pain, a tendency to suppuration is obvious, this treatment will prove ineffectual, and the change taking place must, on the contrary, be promoted by the application of heat to the part, in the form of warm steams, fomentations, and poultices.

When matter appears, an opening is to be made in the teguments with the point of a lancet, at the thinnest or most dependent part, for its discharge; and what is peculiar to suppuration here is, that the skin appears the same a few hours before the rupture as it had done for some preceding days. The approaching rupture can only then be judged of, where allowed to take place of itself, by the increased pain and throbbing of the part.

CCCLXXV. In the second, or glandular species, after breaking, a succession of suppurations is apt to form, which lengthens out the disease for months, and highly exhausts the patient.

Inflammation of the Testicles.

CCCLXXVI. Inflammation of the testicles, although it may be induced by all the common causes that excite inflammation elsewhere, is most frequently the effect of venereal gonorrhœa, especially in its secondary stage.

CCCLXXVII. This affection is preceded by a sharp lancinating pain, and stiffness of the spermatic cord. The enlargement of the part itself then gradually ensues, with a sense of pain, heat, and weight, and the swelling attacking first the epididymis, extends next to the testicle.

Symptoms of acute fever prevail in a high degree, all general uneasiness over all the thighs and abdomen.

CCCCLXXVIII. It generally terminates in resolution, which is marked by the return of the gonorrhœal discharge, suspended during its progress; and the degree of inflammation is generally proportioned to the immediate or gradual departure of the discharge.

CCCCLXXIX. For its cure, the general means of mitigating inflammation are to be employed, particularly blood-letting, and that by leeches, from the part, which is the most effectual, to the number of ten or twelve at once. A proper suspension of the swelling should also be enjoined, and the use of saturnine solutions had recourse to. The return of the discharge allowing one means of promoting resolution, the latter may be solicited by every means of mild irritation of the penis, as bathing it with warm water, tepid injections into it, and even the use of the bougie.

CCCCLXXX. Though resolution is here the most frequent termination, two other terminations may occur; suppuration or schirrus. The former is very rare; and when occurring, and a fluctuation of matter is felt, it is to be opened, and treated as a common abscess. (cccxlili.) The latter termination is more frequent. It does not always, however, rise to the actual state of schirrus; but a degree of hardness is felt, which continues for a length of time.

The remedies employed against it are mercurial frictions, the use of cicuta externally and internally, or else combined with the former remedy. Bark also, sea bath-

ing, and such remedies as are suited to scrophulous tumours, are employed here. (*Vide* vol. I. page 140.)

Venercal Buboes.

CCCLXXXI. Glandular swellings, arising in any external part of the body from a venercal cause, particularly chancre, are termed Buboes; but their most frequent seat is in the groin, where they commence with some degree of tightness of the part, and the formation of a small tumour like a kidney bean. As this tumour enlarges, it occasions pain, and the part rises into a perceptible swelling, possessing in it a throbbing and pulsation similar to others of an inflammatory nature, in the end affecting the teguments, and terminating in abscess.

CCCLXXXII. Our opinion is regulated as the symptoms partake more or less of the real inflammatory tendency, which is always most favourable; and the termination of the swelling is in one of three ways, either by resolution, suppuration, or schirrus.

CCCLXXXIII. As the first termination is the most desirable, the treatment should be chiefly regulated with that view; and, in order to accomplish it, the antiphlogistic course is particularly proper. Along with it, the regular and continued use of mercurials through the diseased gland must be joined, which is the chief remedy to be depended on, and will always succeed if soon begun, and duly persisted in. The quantity to be rubbed in must depend on the constitution of the patient; and the surface of the thigh on which it is rubbed may be shifted from one part to another at success.

rubblings, though the more directly it is made to pass through the gland the better.

To the gland itself the best application is the saturated solution frequently renewed.

CCLXXXIV. When resolution does not seem to take place, and the symptoms, on the contrary, after a reasonable time, increase, the same use of mercury is to be persevered in, in order to produce a laudable suppuration; but along with it warm applications to the part, as poultices and fomentations, are to be joined.

The diet also must be changed to one of a more stimulating nature, and the former antiphlogistic plan reversed.

CCLXXXV. When a proper suppuration is formed, to be judged of by the feel of the part, if the tendons do not appear to give way, it may then be treated as a common abscess, by a puncture with a lancet at the most prominent part or centre, brought down to the most depending part, which will be sufficient to admit a full discharge. It is then reduced to the state of an abscess, and its after success in healing depends on two circumstances:

1. The proper exhibition of mercury. And
2. The state of constitution of the patient.

CCLXXXVI. If a sufficient quantity of mercury has not been already exhibited, it will be then proper to continue it so long as the abscess shows a disposition to heal, looks fresh, and granulates from the bottom.

But if these appearances change; the edges of the abscess become hard and livid; the matter thin and acrid; and, instead of healing, the ulceration spreads, and becomes more extensive, attended with much pain.

and general symptoms of hectic, then the mercury has been too long continued, or the morbid state of the fore is the effect of a constitutional taint of a different nature, which requires the use of other remedies.

CCCLXXXVII. In the first case, simply suspending the use of mercury, with a nourishing diet, change of air, and the occasional use of the bark, will be sufficient to effect a change.

In the latter it is more difficult, and no particular remedy can be entirely trusted to. The cicuta has here often succeeded, particularly when externally applied. The Lisbon diet drink has also been a favourite remedy. Opium in large doses has occasionally succeeded. The lunar caustic also, largely employed, has changed the state of the part, and it has often got well after every other remedy has failed.

Lumbar Abscess.

CCCLXXXVIII. Lumbar Abscess consists in a collection of matter formed at the superior part of the sacrum. It is denoted by acute pain and tension over the loins, or small of the back, shooting along the spine, and down the thighs; by considerable heat of the part; and by general fever. These symptoms are succeeded by a tumour, with fluctuation in the groin, or at the side of the anus, but without discolouration. This tumour being either opened, or bursting spontaneously, a collection of matter is discharged, which gradually turns thinner and more fetid, till the patient is cut off by the progress of the hectic state.

CCCLXXXIX. The situation of these symptoms renders this affection liable to be mistaken for some others, viz. lumbago and nephritic complaints, and towards its termination, for crural or femoral hernia.

The first, however, is not attended with the shivers; that occur here, and nephritic complaints are generally discoverable by attention to the state of the urine. The distinction from crural hernia is more difficult. In both a soft inelastic swelling is felt in the same situation; but in hernia it is attended with obstructed fæces, vomiting, &c. and its appearance is almost sudden, while the lumbar tumour is preceded by various complaints before its appearance in the thigh. In horizontal posture, the abscess also totally disappears, while the hernia does not.

CCCXC. The cause of lumbar abscess is ascribed to exertion, and straining or twisting of the part; while in women it is traced to a consequence of labour, fatigue, exposure to cold, &c.

CCCXCI. The prognosis here is generally unfavourable, and more particularly if it occur in a scrophulous constitution.

CCCXCII. Dissections of this disease show the lumbar vertetræ denuded of their cartilages and ligaments, and at times carious and partly dissolved.

CCCXCIII. In the treatment of this affection, where our power, resolution is the point to be aimed at, to accomplish this, as it is commonly the effect of local injury, inducing inflammation, blood-letting, particularly by leeches from the part, or the scarification should be immediately had recourse to, and suc-

ceeded by blisters, purgatives, and every other part of the antiphlogistic course.

But if the inguinal tumour has already formed, as is generally the case before being applied to, the cure then depends on giving as early a discharge as possible the collection.

CCCXCIV. This is best done either by a trocar or seton, as both prevent the access of the air to the cavity. Where the trocar is used, an assistant should first press down the matter to the most dependent part of the tumour, and retain it there, which will render the teguments firm, when the trocar may be easily entered. A small canula should afterwards be continued in the opening till the discharge cease; and, if not diminishing so soon as wished for, a slight astringent injection may be thrown up with a syringe, and repeated till it totally cease, though sometimes this never takes place entirely for life.

Where a seton is employed, the operation is more complex. An assistant having pressed down the tumour, a transverse cut is to be made through the teguments and cellular substance, and a flat trocar introduced till it enter the sac, when, being withdrawn, the discharge of the matter will take place, which may be interrupted occasionally, and not drawn off all at once. The assistant is then to withdraw his pressure, and putting his thumb upon the opening of the canula, he is to push it up to near the top of the tumour. When it is felt there, it is to be kept firm in that position, and the trocar being introduced into it, is to be brought out with the canula at this part, and, on withdrawing the trocar, a probe with a seton is next to be passed

ll, on removing it, with the canula, the seton is to be allowed to remain.

Both openings are to be covered with linen spread with liniment, and the seton is to be dressed as directed in cases of common abscess, (cccxlvi.) when a cure will, in a short time, be generally effected.

Whitlow.

CCCCXCV. The Whitlow is an inflammatory swelling of the fingers, confined generally to the last joint, particularly under the nail, attended with a sense of most acute burning heat.

CCCCXCVI. Though it varies in its seat and degree in different cases, yet every instance of it is marked by the following symptoms, viz. burning heat over the extremity of the finger, confined, as it were, to one joint, rendering it tender and painful to the touch, slight swelling, without discolouration of the skin, but ending in serous effusion, denoted by increased beating and shiverings.

CCCCXCVII. When more severe, the uneasiness of the finger described extends also to the hand, occasioning pain, stiffness, and swelling, and not confined here, it is known frequently to rise to the arm, and to induce swelling of the axillary glands. In this case the symptoms of fever are high, and even at times attended with delirium.

CCCCXCVIII. These various symptoms show the extent of the morbid action in the part; for when so severe, the disease is not confined to the soft parts, but affects also the bones, which are found, on dissection, various.

CCCXCIX. This operation is often induced by external violence, as the puncture of a pin, or contusion of the nail; but it most frequently takes place without any obvious cause.

CCCC. The treatment must be suited to the degree of morbid irritation and pain. Hence opiates are indicated in every stage of it; but, in order to effect resolution, nothing is so useful as gently astringent solutions to the part, as holding the finger in brandy or strong vinegar, in strong solution of sal ammoniac, &c. All emollients are here to be avoided, and when the effusion has fully taken place, a puncture of the teguments should be made with a lancet for its discharge.

In every case here, the loss of the nail ensues, which is soon repaired.

CCCCI. Where, again, the disease is farther advanced and deep seated, with no remission of symptoms, and yet with appearance of effusion having taken place, or matter formed, an incision should be made to the very bone for its discharge.

If the bone appear carious, the removal of the latter must next take place, and this is easily done, though with some pain, by extending the former incision along the whole diseased part, then separating the latter, and removing the bone with a pair of forceps.

The wound is to be dressed by interposing a slip of linen spread with ointment betwixt its edges, to prevent their coalescing before the parts fill up, and an additional hardness is acquired by the new parts, which makes up, in some sort, for the loss of the nail.

Chilblains.

CCCCII. Chilblains are inflammatory tumours of the extreme parts of the body on exposure to severe cold, and chiefly attack the fingers, heels, and toes.

CCCCIII. They are attended with heat, redness, stinging pain, and great itchiness. The skin also assumes a deep purple or leaden colour. It frequently goes away, and a thin serum is discharged, or it sloughs away when a fetid ulcer forms, difficult to heal.

CCCCIV. Those most liable to this disease are children below the age of puberty, and of that age the delicate and scrophulous are most subject to it. An attack of the disease always favours a recurrence, if exposed to its cause.

CCCCV. For the treatment of this affection, extremes of temperature are to be avoided, and a gradual change is always to be induced. The parts, therefore, should first be rubbed with snow, ice, or laid in the coldest water; then, as the change is brought about, we may apply a solution of sal ammoniac. When restored to their proper heat, rubbing with spirit of turpentine, camphorated oil, &c. will complete the cure.

CCCCVI. As a preventative, the cold bath should be used, and persevered in during the more temperate part of the season.

CCCCVII. Where ulcers form of a fetid nature, Amollients must be avoided, and their treatment added to the use of the lunar caustic, or else the red precipitate and verdigris ointment. When the skin is

merely cracked, the diachylon, or other adhesive plaister, will form a proper covering.

Sprains.

CCCCVIII. A sprain consists in pain and swelling of part of a tendon or ligament, attended with or without inflammation.

CCCCIX. This swelling arises from a serous effusion, the consequence of a rupture of vessels, and this effusion comes either to be absorbed, when the injury is slight, in the progress of the cure, or occasions an uneasy thickening of the parts, which continues for life, and produces, at particular times, on any exertion, a recurrence of pain, when the affection is seemingly gone.

CCCCX. In the treatment of sprains, where slight, the chief point is to give an instantaneous vigour to the solid, so as to prevent the increase of effusion, or occasion the latter to be quickly absorbed. Hence astringents and tonics of a stimulant nature are here immediately resorted to, as ardent spirits and vinegar, lees of wine, solution of sal ammoniac, suddenly plunging the part into cold water, &c.

CCCCXI. But when the injury is more severe, attended with general fever and most acute pain, or where the remedies (ccccx.) seem to fail, from the extent of the effusion, the usual means of obviating inflammation particularly by topical venesection, must be had recourse to; and for this purpose leeches are to be applied to the seat of the injury, in a number proportioned to the apparent degree of it, and its tendency to inflammation; and, in order to their being more effect-

the part should be previously immersed in warm water for a considerable time. The same practice is to be occasionally repeated, till the symptoms entirely disappear, employing, during the interval, the use of astringents of a cooling nature, as solutions of sea salt, sal ammoniac, &c. and preserving the patient in the easiest and most relaxed posture.

CCCCXII. But, though relieved, such accidents are not entirely removed for a considerable length of time, but pass, as it were, into a chronic state, which remains for life. In these cases friction, with emollients, cold bathing, &c. have at times proved highly serviceable. Some assistance may likewise be derived from this chronic state from pressure, by the use of a bandage or roller, to confine the swelling, and give a tendency to absorption, or at least to prevent the increase of effusion.

2. INDOLENT TUMOURS.

CCCCXIII. From acute we proceed to consider next what have been termed Indolent Tumours, or those which show no natural disposition to inflammation, but arise merely as the effect of accident, or the consequence of their ultimate progress.

Of these a considerable variety prevails, which we shall examine, first as they occupy the soft parts; secondly, the ligaments and joints; and lastly, the bones.

Anasarca.

CCCCXIV. Of the first is the serous swelling, or effusion within the teguments and cellular substance,

termed Anasarca and Œdema. The part affected by it is of a pale colour, retains, when pressed, the impression of the finger, or is inelastic, and feels always cold.

CCCCXV. This affection is either general or partial. In the former, it is merely symptomatic of some general or constitutional disease. In the latter, it is the consequence of some local injury. In both cases it derives relief from the aid of surgery.

CCCCXVI. In the former case, the relief obtained is by making small punctures with a lancet through the teguments and cellular substance, which will afford considerable ease, by giving vent to the effusion, and the smaller the punctures, the less danger there is of tendency to gangrene. (*Vide* vol. I. page 167.)

CCCCXVII. In the latter, or partial anasarca, where it is a consequence of sprains, or other injury, the part should be supported by a bandage till it recover its tone and for this purpose a roller or laced stocking should be worn, while the cure itself is trusted to friction, cold bathing, or other tonic remedies.

When anasarca is the effect of the destruction of lymphatics; relief is to be obtained by the puncture formerly directed, and no otherwise.

Wens.

CCCCXVIII. But of this division of tumours the most common is the encysted swelling, or wen, the seat of which is the cellular and adipose substance. It appears in different parts of the body, and the collection contained in it is either of a viscid or serous nature from the apparent consistence of which the various appellations have been given of hydatids, steatomas

œdema, meliceris, talpa, &c. Such appellations, however, are of no import, as marking no real distinction in their nature, and are improperly founded, as the existence of the same tumour is found very different in different parts of it.

CCCCXIX. These tumours are at first small, and generally increase slowly, though this depends somewhat on the part they occupy, as well as on external circumstances. In their increase, which is often to the extent of 14 or 15 lib. they assume different forms. They are never painful at first, but in their progress, from the extension of the teguments, inflammation is produced in them, especially at their most prominent part, which occasions uneasiness, and the veins of their surface become varicous. If the skin is fretted, or gives way, a bad ulcer forms, which is highly troublesome.

CCCCXX. The removal of such tumours is the only treatment that can be depended on, and the method of doing this must be directed by two circumstances; their state of attachment, and the nature of their contents.

CCCCXXI. With respect to the latter, where the tumour feels soft and fluctuates, the use of the seton, as directed in common abscesses, is here the most proper mode of proceeding, unless it is so small that a slight puncture with a lancet is sufficient to discharge the contents.

When passing the seton, it should be directed through the whole length of the swelling, and the opening should be sufficient to admit a free discharge.

Where, again, the contents of the tumour are more solid, the treatment must be different, and the tumour

either dissected out, if having but a slight attachment, first making a longitudinal incision, and emptying it of its contents ; or if its attachment is strong to the surrounding parts, it must be laid completely open through its whole extent, and the wound may then be either cured by *adhesion*, viz. drawing the divided edges together, and securing them, joining, along with this, moderate pressure to effect re-union, or by *suppuration*, viz. keeping the wound open till it fill up from the bottom.

But the dissection of the tumour, and cure by adhesion, is the easiest, where in our power.

CCCCXXII. In all cases of operation here, every vessel capable of continuing hemorrhage should be taken up, as directed (xii. xvi.) from the danger of after bleedings, and also as preventing a speedy re-union.

CCCCXXIII. Where the skin is diseased, part may be removed by a semilunar or crucial incision, but this will seldom be necessary, merely from extent of skin, as the latter will retract during the progress of the cure.

Original Marks.

CCCCXXIV. Original Marks consist either of brown flat appearances on the skin, or of small tumours, which last are properly a species of this class. They are various in their appearance, almost always of a red colour, from which, and their figure, they have been likened to different kinds of fruit. They are of a firm texture, and when protuberant and increasing in size, they require the aid of surgery to remove them.

When they are attached by a small base, this removal is easily made by a tight ligature stopping their cir-

lation. When their attachment, however, is broad, it is generally the case, an operation becomes then unavoidable, which is rendered chiefly troublesome from the hemorrhage, in consequence of the numerous vessels that supply them. For this reason the operation should be attempted as early as possible, and it consists in cutting away with a scalpel the swelling or protuberant mark, securing the vessels by ligature, and bringing the skin, as much as possible, over the wound, where it is to be secured by the dry and other futures, (xi. xxx.) best adapted to it, when it will unite by the first intention. Where the skin is insufficient for this complete union, what is left uncovered will heal as a common wound by suppuration. (xxxv.)

Fleshy Excrescences.

CCCCCXV. Besides original marks, fleshy excrescences are apt to appear in the progress of life in different parts of the body. They possess the same firmness of texture and red colour as the original marks, are seldom painful, but are apt to increase rapidly in size.

As their base is seldom so small as to admit of ligature, an operation becomes necessary for their removal, and, in doing it, care must be taken to extirpate the whole root, as the smallest remains endanger a new growth, more troublesome than the preceding one.

When removed, they are to be treated in the same manner as directed above.

Warts.

CCCCCXVI. Warts are rough hard tumours of the

skin. They are divided into two kinds; common and specific.

CCCCXXVII. The first are small excrescences, chiefly affecting the hands and fingers. They commonly attack youth, and are temporary in their duration, falling off or wasting away. When attended with inconvenience, they may be removed either by ligature or by caustic, according to the extent of their base.

In applying the caustic, care must be had not to allow it to spread over the sound surface; and the caustics commonly used for this purpose are the favine decoction, strong sal ammoniac, liquified tartar, &c.

CCCCXXVIII. The second species, or specific warts, are the effect of previous venereal irritation, and are confined to the penis; but they by no means yield to the specific for the disease. Their treatment is the same as in the former kind, though, in applying caustics here, more attention must be paid, to avoid inflaming the surrounding surface.

Corns.

CCCCXXIX. Corns are painful tubercles of various degrees of hardness, formed from the cuticle, particularly on parts thinly covered with flesh, and exposed to much pressure. Hence they chiefly affect the toes and soles of the feet.

CCCCXXX. As they are formed entirely from pressure, avoiding whatever may compress these parts too tightly is the best preventative. Hence the propriety of wide shoes.

Their treatment consists simply in paring off the diseased or hardened part of the cuticle, and afterwards

plying soft applications, as the gum plaister, or di-
 tion plaister, fresh leaves, &c. to the part. In doing
 this, however, we should avoid going deep, or making
 wounds, as they are apt to degenerate into trouble-
 some ulcerations.

Scrophulous Tumours.

CCCCXXI. Scrophulous Tumours chiefly affect
 glands of the neck, head, and jaws, occasionally the
 extremities. They appear at first loose and moveable,
 without discolouration, and without pain. At last
 symptoms of inflammation ensue. They increase in
 size, become red in the middle, and somewhat painful.
 The formation of matter in them takes place, and a
 maturation appears at last in the centre. This conti-
 nues long stationary, and the skin even shrivels before
 they break. An opening at last, like a pin hole, is
 conspicuous, and a thin serum is discharged, which is
 occasionally mixed with a whitish matter like curdled
 milk. The sore enlarges, and continues in a state of
 duration, often for years, without any tendency to
 heal; or, if healing, attacks some other gland in the
 same way, where the same process is renewed. When
 cured, a disagreeable puckering of the skin takes
 place.

CCCCXXII. These swellings are the effect of a
 scrophulous constitutional taint as yet unknown, and of
 which no certain opinion can be given.

CCCCXXIII. Though such tumours are seldom
 dangerous on the external surface, yet, if attacking se-
 veral places at once, and the ulcerations large, the pa-
 tient may be exhausted by the discharge.

CCCCXXXIV. The general treatment of this disease has been elsewhere treated of; (*Vide* vol. I. page 184.) what regards the topical management is the chief object here.

In the state of swelling, then, the general tonic remedies recommended, as the sea bathing, &c. are the only means to be used till the ulceration actually ensue, unless, from the situation of the swelling, or their neighbourhood to joints or cavities, there is danger of their breaking into them; in that case, an early opening is proper; but it should be done with as little rupture of the teguments as the case will admit, and therefore a trocar or seton should be preferred.

When the state of ulceration ensues, the applications are to be made formerly directed in the class of ulcers under this head. (cccxxxii.)

Swelling of the Throat.

CCCCXXXV. Under the general term Bronchocele is included every external swelling of the throat; but, in order to practice, a discrimination must be made, according to the particular nature of each.

CCCCXXXVI. The first and most frequent species of Bronchocele, to which the term also has been usually applied, is the enlargement of the thyroid gland, or at least of the parts lying contiguous to the trachea.

CCCCXXXVII. Such tumour is generally at first soft and compressible, without any sensible fluctuation and discolouration of surface. With its increase, an additional firmness, and even hardness is acquired, but still it retains some softness and elasticity. From its size, its veins become varicous; the breathing is affected.

by its pressure; turgescence of the head takes place; and the face assumes a livid colour. By the increase of these symptoms, the patient is cut off.

CCCCXXXVIII. A second species of this affection is the Goitre, or Alpine disease, which consists in a real enlargement of the thyroid gland itself. The symptoms of it are pretty much the same with those described; the size it acquires, however, is often enormous. The skin becomes of a copper colour, and at the same symptoms ensue as already described, joined to occasional stinging pains in the tumour itself.

CCCCXXXIX. From whatever cause these tumours proceed, they are evidently formed by effusion; and dissections show a viscid brown matter contained in a condensed cellular substance.

CCCCXL. The prognosis here is always to be considered as unfavourable, though life is often long protracted under them.

CCCCXLI. The only means of cure of this disease must be confined to the early stage, and then, perhaps, mercury and saponaceous plasters, friction, blisters, &c. may be of some service; but when any way advanced, these remedies will entirely fail, and an operation can never, from the size of the vessels, be attempted here without proving fatal, as the records of surgery fully confirm. It has been proposed, however, to remove a part, where the pressure on the trachea is extreme.

CCCCXLII. It is proper, however, to distinguish this, the proper Bronchocele, from some other diseases which may affect this situation.

1. Aneurism of one of the carotids is known by its

strong pulsation; by its situation over the artery; by its sudden appearance; and by its effect on the pulse.

2. Wens, if seated here, are characterized by the same symptoms as elsewhere, particularly the fluctuation of the swelling.

3. Scrophulous tumours are known here by the usual attendants of this disease, and particularly its appearances in other parts.

Ganglion.

CCCCXLIII. Ganglion is a moveable elastic tumour, attended with little or no pain, confined chiefly to the back part of the hand and wrist, or other situations of tendons.

CCCCXLIV. It is seldom large, shows no inflammation of the skin, and, when cut into, pours out a tough viscid fluid.

CCCCXLV. Its treatment consists in the application of moderate pressure, to which it generally yields; but if obstinate and enlarging, so as to prove troublesome, it may be dissected out from its cyst; or, if adhering strongly, after discharging its contents, the wound is to be healed, keeping it open till the part fills up.

Bursal Swellings.

CCCCXLVI. Similar to Ganglion, is the swelling of the Bursa Mucosæ, which may be defined a swelling of one part of a joint, or circumscribed, extending, in its progress, sometimes over the whole, elastic, without discolouration, and with little or no pain.

CCCCXLVII. The situation of this swelling is chiefly confined to the hip joint, knee, ankle, shoulder, el-

, and wrist. It is generally either the effect of inflammation or external violence, and therefore a frequent attendant of sprain or contusion. The matter contained is either of a ferous or concrete nature, according to its cause.

CCCCXLVIII. When of a ferous nature, the swelling will yield to friction, blisters, or bathing; but when from external violence, and long continued, it is of more firm consistence, and its removal can only be accomplished by discharging its contents.

CCCCXLIX. For this purpose an incision may be made, and the wound afterwards healed by suppuration; but where, from its neighbourhood, the incision may affect the tendons, a small opening may be made at each end, and a seton passed through to excite inflammation, which, when taking place, the seton may be withdrawn, and the cure trusted to moderate pressure and bandage.

CCCL. Stiffness of the joint after the cure will still to the usual treatment of friction, warm steams,

Capsular Swelling.

CCCLLI. Capsular swelling is formed by an effusion of blood, serum, or synovia, within the capsular ligament of a joint.

CCCLLII. It is known by its filling the whole ligament, and passing from one side to another, and not being circumscribed; by its occasioning considerable pain; and by its being confined to the joint, and not extending farther than the situation of the ligament.

CCCLLIII. The particular nature of the collection

is judged of from the preceding disease, as when, from external violence, it consists generally of blood, when from previous inflammation, of serum, or ill concocted pus; and when from a general rheumatic affection, of serum entirely.

CCCCCLIV. The treatment of this affection depends on the nature of the collection, and the tendency it may have to absorption. Where merely serous, it will generally yield to friction, the use of blisters, bathing, and the assistance of pressure by bandaging; and, if not yielding entirely, it will still be attended with little inconvenience; but where the collection is of a gross nature, it requires to be discharged, from the danger of its acting upon the joint itself.

CCCCCLV. This will be done when unavoidable, and necessity alone should urge an operation here, by making a small opening into the joint with a trocar; and previous to making it, the skin should be drawn up as much as possible, and, on withdrawing the canula, immediately brought down to cover the wound, and prevent the access of the air, which may be farther done by a covering of adhesive plaister, and the use of a bandage or roller.

Concrete Capsular Swellings.

CCCCCLVI. Concrete capsular swelling consists in the formation of certain bodies of various consistence within the capsule of the joint.

CCCCCLVII. Their presence is denoted by most exquisite pain, preventing almost entirely the motion of the limb. They either adhere to the cartilages of the joint, or else are loose in it.

CCCLVIII. The cause of their formation is uncertain. They have been known to succeed rheuma-

The attack of pain from them is sudden, and is attended with a feeling as if something were thrust into the joint.

The joint most subject to their attack is the knee.

CCCLIX. When they are attached they give less inconvenience; but when entirely loose, they are productive of the most serious pain.

CCCLX. The disease is luckily not frequent, and when the pain is at all moderate, it should be borne. When, however, it is intolerable, their removal becomes a matter of necessity; and the method of doing this, by making an opening into the joint, an operation which carries great danger.

CCCLXI. In doing this, after adjusting the position of the patient, which, if the disease is in the lower joints, should be in bed, the member is to be secured in the firmest manner by means of assistants; and the extraneous body being distinctly felt, it is to be fixed to one part, (viz. the upper part of the joint) the limb being previously drawn up as much as possible, before the intended incision is made. The latter is then to be directed through the teguments and capsular ligament immediately upon the body, for such extent as the size of the body seems to require, when the latter may be turned out with a probe. If any attachments be to the place, these may be removed by a pair of scissors, the body being held, in the mean time, by a pair of forceps, and the same mode of extraction is to be pursued where more bodies than one appear.

CCCLXII. When the substance is removed, the

skin should be instantly drawn over the ligament in the tightest manner, and secured in that situation by adhesive plaister, and the assistance of a bandage. The position also of the member should be changed as little as possible during the time, while a strict antiphlogistic regimen is, at the same time, observed.

White Swelling.

CCCCLXIII. White Swelling consists in acute pain, without any external inflammation, of a joint, attended with a gradual increase of its size.

CCCCLXIV. Though all the joints are occasionally subject to it, its chief effects are displayed in the joints of the knee and ankle.

CCCCLXV. The disease may be properly divided into two species, from the morbid appearances they exhibit; the rheumatic or scrophulous, and spina ventosa. These will be best distinguished by their history.

Rheumatic.

CCCCLXVI. The rheumatic or scrophulous, is attended with general diffused pain over the joint, particularly increased on motion, with a gradual stiffening of the tendons, and enlargement of the affected parts, which show at last a varicose state of the cuticular veins, and give, on pressure, a soft elastic feel and sense of fluctuation.

CCCCLXVII. By this state of the joint, the limb shrinks below, or becomes œdematous, and the tumour itself breaking, abscesses form, which discharge at first a somewhat purulent matter, afterwards degenerating into a thin sanies. These abscesses occasionally heal

, and give place to others, while, during this progress, the hectic state continues to advance, and the patient is at last cut off by it, unless its career is stopped by a timely removal of the member.

CCCCCLXVIII. The cause of this disease is evidently a constitutional taint, and that brought into action by external violence.

CCCCCLXIX. Our prognosis here must be determined by the duration, and many cases of the disease are recovered where active means are timely employed.

CCCCCLXX. Dissections of this species of the swelling show entirely a thickening of the ligaments, and contracted state of the tendons. This thickening is in proportion to the duration of the affection, and is also attended with the effusion of a thick glairy matter into the cellular substance. The cartilages and bones are never here affected but in the ultimate progress of the disease.

CCCCCLXXI. The treatment of this species is to be conducted on the general antiphlogistic principles, and the great point is, by their early application, to prevent the thickening of parts, and effusion from taking place. For this purpose topical blood letting should be employed, by leeches or the scarificator. The quantity taken should be considerable, equal to a full bleeding of the arm, or 10 or 12 oz. at a time, and even repeated.

This discharge is to be succeeded by blisters, and a cure again, as soon as the parts will admit, by other specifics, as the volatile liniment, with a large proportion of spirit of sul ammoniac.

If yielding to these remedies, the disease has not reached its first stage; but if the first stage has actually

terminated, and the effusion taken place, then other means must be resorted to. These consist in the use of mercury, friction, warm bathing, and emollients.

CCCCCLXXII. The first is to be conducted by unction, so as to pass through the diseased part, to be continued regularly, and often in the quantity of at least two drams at a time.

The second is also useful of itself, but particularly when conjoined with the former.

The third is chiefly calculated to relax the stiffened parts, or affection of the tendons. It should be poured from a height, and often repeated to be effectual.

The fourth, or emollients, although a tedious, is often an effectual remedy, and whether one emollient is preferable to another, is doubtful.

CCCCCLXXIII. But if the disease, in spite of these remedies, shall continue to advance, and matter form, terminating in the appearance of various abscesses, these should be opened as soon as they seem to point, by passing a seton through them, so as to prevent the matter collected acting upon the internal parts.

Spina Ventosa.

CCCCCLXXIV. The Spina Ventosa, or more alarming species of this swelling, is marked by acute circumscribed pain of the joint, little or no swelling of it for a long time; but both these symptoms increase in the progress of the disease. Stiffness of the tendons is here also conspicuous, and the same tendency to the formation of abscesses, and the same appearance of the discharge are displayed as in the former species, but with

the addition of small pieces of bone appearing here, mixed with the dressings.

CCCCCLXXV. The same state of hectic attends also its progress, and the same fatal termination succeeds, if not timely relieved, as in the former species.

CCCCCLXXVI. The cause of this species of tumour is a disease with which we are even less acquainted than that which produces the former.

CCCCCLXXVII. The prognosis here is always unfavourable, as no instance of recovery is known in this species of the malady.

CCCCCLXXVIII. Dissections here show, different from the former species, the bones, to be the chief seat of the morbid effects of the disease. Their ends are always enlarged, and part of their substance dissolved and carious, so that they come away in the course of the disease; very frequently the cartilages are not even touched, while the bones are in this state.

CCCCCLXXIX. No mode of cure can be proposed here which has been known to succeed. The same plan is to be followed out as directed for the former species; but when no relief is obtained, and the disease continues to proceed, if amputation is not made, the different narcotics may be had recourse to, if not to cure, at least to alleviate pain.

Spina Bifida.

CCCCCLXXX. Spina Bifida is a swelling of the under part of the spine appearing at birth, and having a sensible fluctuation in it, the contents of which can be pressed in upon the vertebrae.

CCCCCLXXXI. This tumour is at first small, but

increases very quick'y after birth. Its colour differs from the rest of the teguments in being brown, and though it is transparent at first, it inflames and ulcerates, becoming more opaque.

CCCCLXXXII. This affection is always fatal the moment the tumour bursts, though life has been protracted for two or three years under it.

CCCCLXXXIII. Dissections show the cause of it as arising from a deficient ossification of the vertebræ, admitting a collection of serum within the spinal medullary covering.

CCCCLXXXIV. The only treatment attempted here is gentle pressure by a compress and bandage.

CCCCLXXXV. A swelling in the adult in this situation of the spine, may here also be noticed. Its first symptoms are considerable heat and pain about the part before the swelling appear, and therefore it is often mistaken for a rheumatic affection. The pain at last extends, shooting very violently, down the thighs, and is found so acute as to occasion the person's lying for days without any motion; after which a palsy of the extremities takes place, and the pulse becoming quick and feeble, the patient soon dies.

CCCCLXXXVI. The cause of this affection is uncertain; but it has been referred to scrophula or lues, particularly the latter, as mercury is found to relieve it.

Bony Swellings. (Exostosis.)

CCCCLXXXVII. By Exostosis is understood a hard swelling or tumour of a bone, and this affection is commonly symptomatic of other diseases.

Local Exostosis.

CCCCLXXXVIII. The first, or what may be termed Local Exostosis, is that thickening which attends the rapid union of fractured bones in young subjects. As the growth generally terminates on acquiring a certain size, and it gives little or no uneasiness, no farther treatment is necessary; but should the reverse take place, and the swelling proceed to a troublesome height, attended, at the same time, with much pain, its removal then becomes the next object of attention.

CCCCLXXXIX. This is performed, after placing the patient on a table and securing him, by making an incision through the teguments for somewhat more than the extent of the swelling, and carrying it down to the bone, so that the latter may be laid bare. In conducting this, the tourniquet should be applied previous to the incision, so as to have the command of any vessels that present, which may be taken up, and, in carrying down the division, as little injury should be done as possible to the contiguous parts. The morbid tumour being then in view, if small, may be removed by a trepan, or, if too large for its application, by a common saw. When removed, the wound is to be cured by the first intention, for this purpose removing any splinters, and bringing the soft parts and skin over it, and securing them by the suture or adhesive plaisters.

CCCCXC. Where the exostosis occupies the circumference of the bone, if a large bone, the part of the bone must be entirely removed by the saw, and in doing it, to prevent injury to the contiguous parts, a piece of pasteboard must be passed beneath it. If this state of

the disease take place in a small bone, the bone itself may be entirely removed. The after treatment consists in simply dressing the sore as any other wound, and placing the member in a favourable position, avoiding afterwards, if in the extremities, moving it, and employing a bandage suited to this purpose, and guarding against a lodging of matter in the healing of the sore. If the diseased part is part of a single bone, the member must be retained afterwards in a position so as to prevent its shrinking.

The same treatment is to be pursued in other parts of the body where exostosis appear, as well as the extremities, so soon as they prove painful and increase in size.

Symptomatic Exostosis.

Spina Ventosa.

CCCCXCI. Spina Ventosa consists in a swelling or growth of certain parts of the extremities, or epiphyses of bones, with a dissolution and caries of other parts of them.

CCCCXCII. This affection is attended with a dull heavy deep seated pain, proceeding, as it were, from the centre of the bone. Swelling soon after appears in it, and this swelling makes various progress, according to the size of the bone it occupies, being quickest in the small ones, and slower in the larger ones. The swelling terminates at last in ulceration, and a thin foetid matter is discharged, the soft and internal parts of the bone being dissolved, and the external osseous shell only remaining.

CCCCXCIII. The treatment of this disease consists entirely in the general means of strengthening the system, by tonics, cold bathing, nourishing diet, &c.

With respect to the local management, little can be done here in removing the part, as the affection is commonly too general through the body, and the part of the bone too extensive, or else not in a proper situation to admit of it.

Mollities Ossium.

CCCCXCIV. Similar to this disease is the rickets, or mollities ossium, consisting chiefly in a preternatural softness, and consequent enlargement of the bones of the legs, which become crooked and distorted. This softness pervades also, in a great degree, the rest of the bones, and the disease is farther distinguished by an uncommon size of head especially, anteriorly swelling of the joints, flattened ribs, protuberant belly, and general emaciation of the other parts.

CCCCXCV. Its treatment proceeds on the same principles with the former, the further particulars of which are detailed at large in vol. I. page 187.

Nodes.

CCCCXCVI. Nodes are swellings of the bones from a venereal cause. Their seat is generally in the hardest and most compact bones, particularly the middle of the tibia and bones of the head. They are usually attended with shooting nocturnal pains, which depart towards morning, and are always preceded by an erosion or thickened state of the periosteum in the part.

CCCCXCVII. Their treatment must proceed on the

general plan of eradicating from the habit the original disease, as a consequence of which it is induced ; mercury therefore is to be exhibited under the restriction required in the cure of the venereal disease. (*Vide* vol. I. page 156.) The most effectual preparations however, in this case, are those of a saline nature ; and where much excruciating pain is felt in the night, they should be united with opium. Medicines of the deobstruent class have also been much recommended, especially where mercury has proved ineffectual.

CCCCXCVIII. With respect to topical applications they can never alone cure the disease, and are only to be employed where ulceration or caries has taken place ; yet many advise a different rule, and while the former remedies are internally exhibited, the local application of mercury by unction, blisters, or the early incision of the part, have been recommended.

CCCCXCIX. Wherever ulceration takes place, and the sore does not heal, they form a species of the carious ulcer, and exfoliation will be necessary.

PART II.

DISEASES

OF

PARTICULAR PARTS OF THE BODY.

I. **W**E have now examined the three general forms or classes of local disease, under each of which all affections of the soft parts, whatever their specific nature may be, must appear, we therefore proceed next to treat these forms still more minutely, as they affect the particular parts or divisions of the body, beginning, in a methodical manner, with injuries of the head, and omitting, in this detail, those affections which have been already noticed in the general classification.

Injuries of the Head.

II. Under injuries of the head we mean to comprehend every accident or mark of external violence ap-

plied to this part, which, though not actually rising to the height of fracture, has yet the effect of inducing morbid change of the brain, or its connecting appendages.

III. This morbid change consists in one of three states; either *simple concussion*, *compression*, or *inflammation* of these parts, which different states are occasionally combined.

IV. The symptoms that mark the *first*, or *concussion* are giddiness, stupefaction, and loss of sensibility, all which are here of a temporary nature, and soon disappear.

Those which attend *compression* and *fracture*, are more serious and permanent in their duration, and consist in an increased degree of the former symptoms, joined also with dimness of sight, loss of voluntary motion, vomiting, apoplectic stertor, convulsions, dilatation of the pupils of the eyes, palsy (generally of the opposite side to that injured) involuntary evacuations, oppressed irregular pulse, and often epistaxis.

V. The causes of these symptoms, as mentioned (iii.) are the different external injuries to which the part, in common with every other, is exposed; and so peculiar is the operation of such causes here, that even the slightest wounds of the head are at times attended with a fatal termination, while, at other times the brain itself has been known to suffer considerably and yet no bad symptom has arisen from it. Hence from this uncertainty, in no case, except where such morbid symptoms actually arise, is an operation to be thought of, or is danger from fracture to be apprehended.

VI. In the treatment of all injuries of the head, the first step is to know *their extent*; and if the symptoms of compression or fracture are strongly marked, as described (iv.) it is then proper, should the external teguments betray no evidence of injury, by tumour or otherwise, to endeavour to find out the situation of it, by a minute examination of every part of them.

VII. For this purpose the head should be properly moved, and the colour of the skin carefully inspected, to discover the marks of redness or inflammation in any particular spot. Failing this, pressure is next to be applied with the finger to ascertain if it communicates pain to any one part, as indicated by the moans, raising of the hands, or other expression of uneasiness by the patient, and even without pressure, if any one spot is frequently touched by the patient himself, the same regard is to be paid to it, and its state examined.

VIII. When, from these different indications, the injured spot is suspected, the examination of the subjacent state of the cranium becomes then necessary; and, in order to effect it, the teguments must be previously removed, by simple incision with a scalpel through their whole depth. This operation is to be conducted with different degrees of caution, according as the subjacent injured bone feels loose, or seems to yield to pressure, from the hazard of increasing the morbid symptoms by adding to the compression on the brain. When finished, the retraction of the divided parts will admit a sufficient examination of the bone, which may be extended, if necessary, according to the direction the injury appears to take; and previous to any examination, if the patient is weak, and there is much hemorr-

hage, any vessels that appear should, in the interim, be taken up by ligature, as directed. (xiii. xvi.)

IX. When the injury of the bone is once accurately discovered, and the hemorrhage from the wound abated, which takes place, in a great degree, on the ligature of the larger vessels; the means of relief fall next to be attempted, and these consist in the removing the compression from the brain.

X. This can only be safely performed by the *excision* not *simple elevation* of the depressed part, so that any loose portion of bone, or effused fluid beneath, may be also discharged by the same operation.

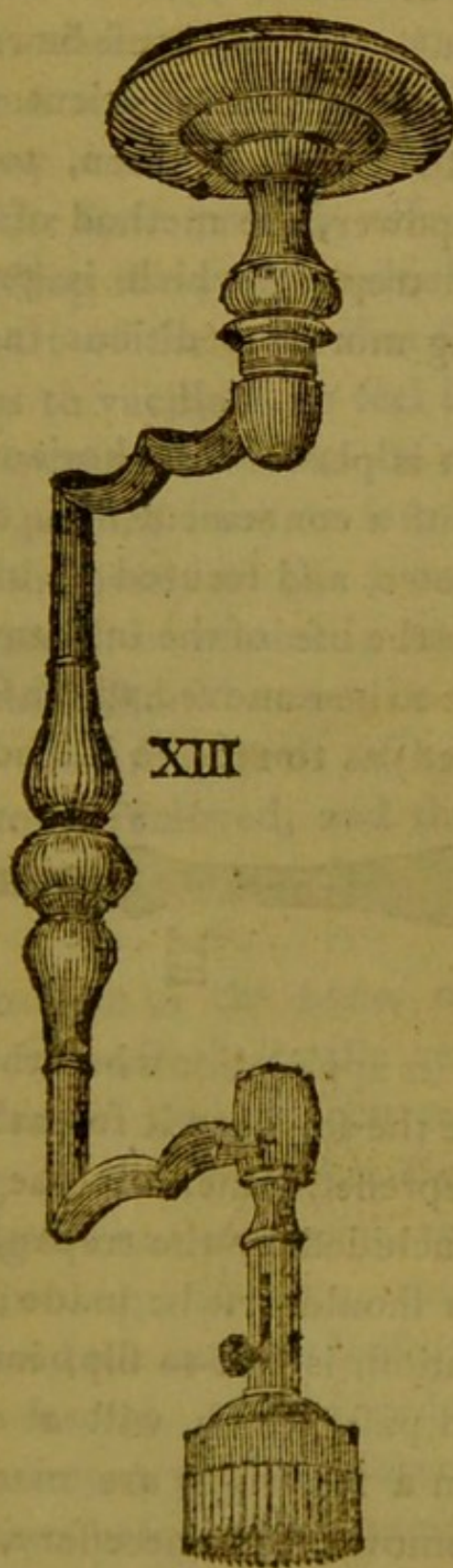
To accomplish this removal, or excision, the state of the fracture requires particular attention.

Where it consists of several loose bones, or small portions of bone, these may often be easily and simply removed by a pair of forceps; but where, on the other hand, the fracture is formed of one piece beat in, or of several pieces, and these not detached, in order to raise them and avoid, at the same time, the hazard of wounding the parts beneath, an opening must first be made through a contiguous sound part, and an instrument then introduced for the special purpose of effecting this, or raising the fractured parts to their usual level.

XI. The first part of the operation is performed either by the trepan, or trephine; and, before applying either, certain cautions are to be observed, as far as the urgency of circumstances will admit, in choosing those situations of the head where they can be employed with most safety.

XII. The situations of the head directed to be avoided

used in the use of the trepan, (here delineated) are the



different parts where the sinuses run, viz. the under
parts of the temporal and parietal bones, the same of
the occipital bone, the inferior portion of the frontal

bone, and the course of the longitudinal sinus; but these limitations are only to be understood where a choice is left, as every risk must be run, in case of extremity, to save the life of the patient.

XIII. With attention, then, to these limitations, where in our power, the method of applying the cylindrical saw or trepan, which is preferred to the trephine, as being more expeditious in its action, is thus conducted:

The patient is placed in a horizontal posture in bed, or on a table of a convenient size, the head being supported by pillows, and secured by assistants.

Previous to the use of the instrument, so much of the pericranium is to be removed with a scalpel or raspatory, (here delineated) as to receive it, and that situation is to

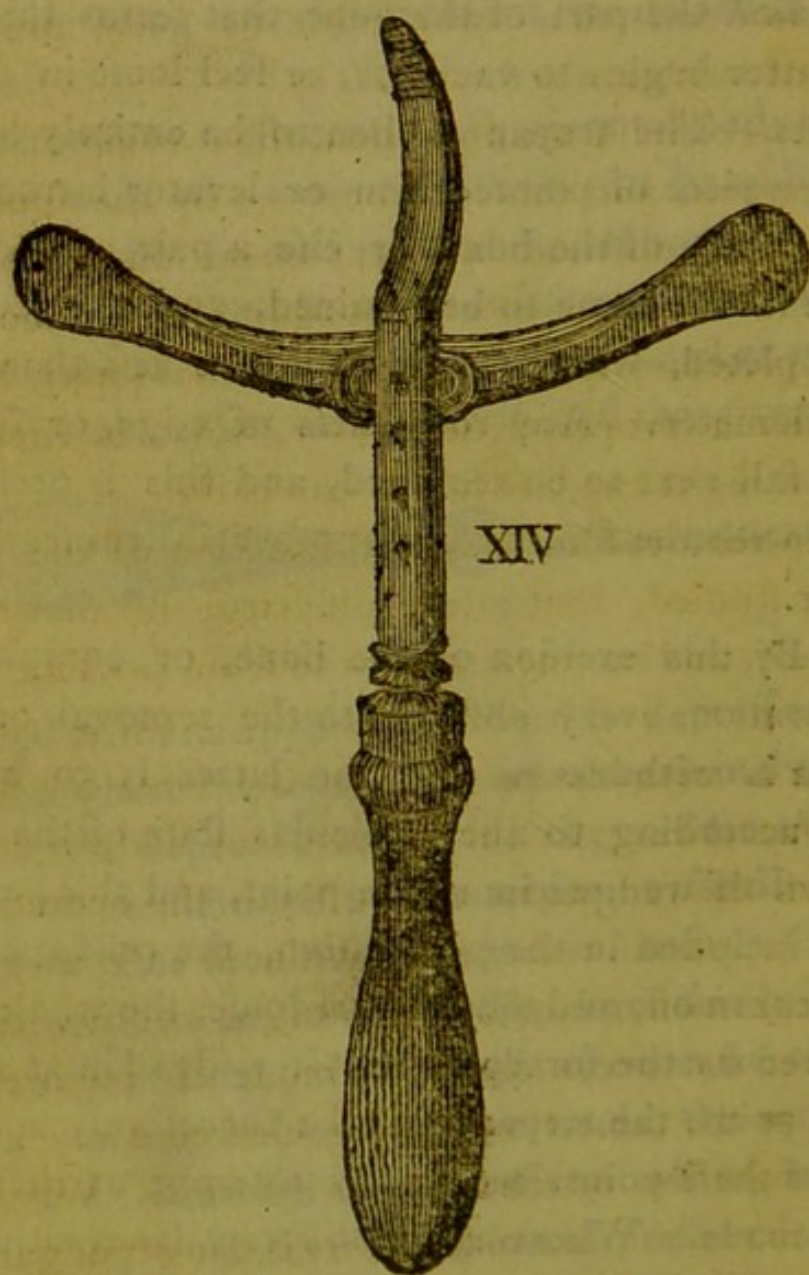


be fixed on for its application where the depression is greatest, and where the segment it forms may include even a part of the depressed bone. In the middle of this segment, to be included by the trepan, a small hole with the perforator should first be made; and as the trepan on its application, is apt to slip, into this hole its center pin should pass, which will at once fix the instrument. When a few turns are made, the center pin is then to be removed as unnecessary, while, in working the trepan, a moderate and equal pressure is to be observed, proceeding with slowness and caution, the chief point in this operation. The instrument, however, requires to be frequently brought out, its motion being

prevented by the filling of the teeth with particles of bone, when the depth of its perforation will be examined with a probe or other instrument, and the teeth of the trepan, in the mean time, brushed clean. It is then dipped in oil, or any unctuous substance, before it is entered anew, and the same process, when again entered, continued, directing the pressure chiefly, in its progress, against the part of the bone that seems thickest, till the latter begins to vacillate, or feel loose in different points. The trepan is then to be entirely laid aside, and a piece of pointed iron or levator introduced under each side of the bone, or else a pair of forceps, by which it will come to be retained, and the perforation completed, which should never be less than one inch in diameter. Any roughness of edge, or splinters of bone, fall next to be removed, and this is performed either with the forceps, or another instrument, the sequester.

XIV. By this excision of the bone, or completing the perforation, every obstacle to the removal of the depression is withdrawn, and the latter is to be attempted according to the particular state of the fractured part. If wedged in at one point, and this portion has been included in the perforation, the resistance being now taken off, and the fracture loose, the whole will be removed by the forceps. But if wedged in at more than one point, the trepan must be successively applied to each of these points before any attempt at their removal is made. Where again, different from either of the former, little or no separation of bone attends the depression, as all attempts here at removal would be improper, the simple elevation of the part must be at-

tempted. This is performed by the point of a levator, introduced at the opening made, and pushed below the edge of the depressed bone, while, by pressing down the other end of the instrument then acting as a lever, a considerable force may be applied, and the depressed part raised to a level, or the instrument (as here delineated) may be formed with a particular support, so as to



act more powerfully as a lever, by pressing on the sound parts. The same process of successive perforations in

different places, and of successive applications of the levator to raise the depression, may be made according to the extent of the depression; for the great point is, that all the depression be removed, so that the operation performed may not fail in its effects.

XV. Along with the removal of depression, the surface of the brain is next to be examined, and any extravasated collection, or extraneous body proving a source of irritation removed.

XVI. To finish the operation, the dressing of the fore then remains, and this is to be done by the application of some mild unctuous liniment spread on charpee, and applied over the part. The addition of a compress will be necessary above it, and the whole may be supported by a proper bandage, or, what is simpler, a common night cap tied under the chin.

When removed to bed, the situation of the patient must be studied, that a free discharge of matter may take place, and no uneasiness arise from pressure on the fore.

XVI. During the progress of the cure, the state of the fore requires particular attention; and, in order to a relief of the symptoms arising from the operation, as quick a suppuration should be induced in it as possible, by the common means of fomentation and poultice applied over the dressings, and frequently renewed, the matter, at the same time, being cleared away at each dressing with lint or charpee as it forms. Where suppuration does not take place, there is danger of gangrene occurring, an event always to be guarded against; but a suppuration being once induced, the process of healing rapidly proceeds, frequently so much so, that in-

stead of merely filling up the void, and then stopping the granulations, push beyond the opening, and form tumours of various size and various degrees of sensibility. These tumours are at last cut off, as it were, spontaneously by the new process of ossification in the part; but if their earlier removal is desired, they may be touched with some gentle escharotic, or a ligature applied to their base where small; but, in every case, compression, from their situation, is to be avoided.

XVII. The constitutional treatment after the operation, where relief of symptoms is obtained, must proceed on the general antiphlogistic plan, particularly in attention to a cool situation, the exclusion of light, the use of diluents, and the mildest diet.

XVIII. The performance of the operation thus described, (xiii.) generally produces, in a short time, some mitigation of the symptoms formerly enumerated, (iv.) when compression alone exists, and where this relief happens, the treatment detailed above is to be observed. But where no change appears, which is unfortunately too often the case, the continuance of the morbid state depends then either on the inflammation of the part previously induced, the concussion of the organ, or extravasation upon it.

XIX. This morbid state then requires a more special treatment than that recommended, (xvi. xvii.) and the operation is to be considered here merely as the removal of a permanent morbid cause which would otherwise obstruct the proper means of cure.

XX. The symptoms which specially mark concussion or extravasation in this secondary stage, after the operation, are the continuance of the oppressed state

pulse, viz *slow* and *soft*, and *no change* on the *degree of sensibility*.

Those which denote inflammation, are the pulse acquiring the *inflammatory feel*, viz. *firm*, *full*, and *quick*, with some of the *marks of Phrenitis*, (*Vide* vol. I. p. 9.) increased sensibility, intolerance of light, and rather hurried respiration. An attention to these opposite symptoms is particularly necessary, as, in a great measure, regulating the future treatment.

XXI. Where, from the presence of the former, concussion seems to have produced the morbid state, counteracting debility as its natural effect, forms the principal indication; and to ascertain it with still more precision than from the apparent symptoms, venesection could be once performed, which, aggravating the disease, determines the real nature of its cause. When thus ascertained, cordials have been advised in liberal quantity. Blisters to the whole surface of the head, except the part externally injured, and the occasional prohibition of opiates and antimonials. In the way of evacuation, the use only of laxatives is admissible. When the disease is somewhat abated, a tonic regimen, with the use of bark and steel, and occasional emetics, is to be pursued.

XXII. With respect to extravasation, its symptoms being the same with those which mark concussion, it is difficult to ascertain it, except where its seat is at the injured part, and it is detected and removed by the operation as formerly mentioned. But where its situation is distant from the seat of the injury, and no external symptom can lead to it, however desirable, and even salutary, its evacuation might be, it certainly

would be rash and imprudent to apply the trepan at random, in order to endeavour to hit upon it, as in such cases it is too often within the brain, and the operation even if performed, would no way avail.

XXIII. But, on the other hand, where real inflammation of the organ, or its membranes, appears, the treatment very opposite from that employed against simple concussion is requisite.

XXIV. The symptoms arising from inflammation here are often not very conspicuous; but what tends particularly to mark them is, that they are preceded by a general uneasiness over the head, especially at the injured part, with a sense of fulness and stricture. Fits of giddiness and reaching also come on, and a general restlessness prevails, attended with inflammatory pulse, flushed face, redness of eyes, and impatience of light. When not relieved by the means employed, these symptoms of fever increase, and are attended with strong and frequent rigors, delirium even takes place, succeeded by coma, and a fatal termination of the disease follows.

But previous to this, in the seat of the injury, the local symptoms of inflammation increase and extend to the form of a diffused erisipelatous swelling over the greater part of the face, especially the eyes and eyelids.

XXV. To counteract this termination then, blood-letting, both general and topical, should be employed, and the use of purgatives forms a useful auxiliary to these more powerful means. Mild sudorifics have been also recommended, and will be some assistance when preceded by the former applications.

XXVI. Such is the general management of injuries of the head, where the external accident is slight, and even difficult to detect; it is now proper to consider more particularly the external injury itself, where, on the contrary, it is severe, and requires a special treatment.

XXVII. Contusions of the head, then, the chief cause of fracture, are the same as contusions in other parts; but they are here, from their situation, peculiarly dangerous. They are either attended with a division of the teguments, forming a contused wound, (pl. lvi. lvi.) or they appear in the form of tumour without any external separation of the teguments.

XXVIII. When in the last state, unless the swelling is considerable, they are little regarded, and the immediate symptoms of the accident, or its first effect on the brain, in the giddiness and stupor that ensues wear off, it is no farther thought of for some time, till its extent is displayed by acute symptoms of inflammation, which have been known to supervene so late as from some days to the distance of several months.

XXIX. The chief indication then pointed out is, however, slight, the first appearances may be to resist the effects of the supervening inflammation, or check its progress by effecting resolution. For this purpose blood-letting, both general and topical, particularly the latter, by leeches or the scarificator near the part, is to be performed, succeeded by the use of laxatives, mild sudorifics, and every other part of the antiphlogistic regimen. To the part itself cold applications, especially saturnine and sal ammoniac solutions, are useful.

But where, from the violence of the first symptoms, the inflammation passes on to the second stage, and matter forms, as felt by pressure of the tumour, the means then pointed out, are to give it a free vent as soon as possible, and afterwards dress the wound with some emollient liniment, and the application of poultices to solicit a proper discharge from it.

Where again, from the increase of fever, and particularly from strong rigors, matter seems also to have collected within the cranium, the discharge of it must be immediately attempted by the operation of the trepan, as formerly directed, and even the membranes, if full and tense, perforated till the collection is removed. But where, instead of matter having formed, a tendency to gangrene appears, the obviating this can only be attempted by general means, not local remedies; for, with respect to the latter, simply dressing the fore, as formerly directed, and giving a free discharge to the matter, is all that is in our power. The constitution, therefore, is to be attacked with bark, acids, and wine, as formerly directed on the subject of gangrene. (xi. 3.)

DISEASES

OF THE

EYES AND EYE-LIDS.

XXX. **N**EXT to injuries of the head, or superior part of the cavity, fall to be considered diseases of the eye and its appendages, which are both very numerous, and require many of them much nicety in their treatment, as to have formed the particular profession of the oculist.

Diseases of the Eye.

XXXI. All of these diseases are more or less the consequence of previous inflammation, and we shall therefore begin this division of our subject by examining its particular modification when affecting this organ.

Ophthalmic Inflammation.

XXXII. Ophthalmia, or inflammation of the eyes, was formerly considered in vol. 1. page 11. as a general disease. It is distinguished, along with heat, pain,

and the common symptoms of inflammation, (vi.) by a *sense of some extraneous body* irritating the part: by a *plentiful effusion of tears*, generally acrid, and excoriating the surfaces they touch; in the progress of the disease also, by a *mixture of purulent or viscid matter* along with them, which frequently glues the lids together.

XXXIII. The *seat* and *extent* of this inflammation varies in different cases, and produces therefore a greater or less variety in its symptoms. When confined solely to the eye-ball, the symptoms are generally local; but when pain extends deep, affecting the head, and is much increased on motion of the part, or its exposure to light, general symptoms of fever then attend, and the inflammation is found to affect also the more internal parts.

XXXIV. The causes of this disease are all such as excite inflammation elsewhere, and are detailed in vol. I. page 11; but of these causes the peculiar office of the organ exposes it to be more immediately acted upon by *acrid fumes, light, and colours*, which, under certain circumstances, very frequently produce it.

XXXV. The circumstances under which these causes are *peculiarly active*, are the existence of a *scrophulous habit*, or a *venereal taint* in the system, and it is in these constitutions that the *local consequences* of this affection are chiefly to be dreaded.

XXXVI. The disease generally terminates in one of three ways; either in *resolution, suppuration, or opacity of the cornea*, very rarely in gangrene.

The first is always to be aimed at, and where the inflammation is not far advanced, and no fault of constitution, it will commonly take place.

The second is to be dreaded ; for, if general, it induces blindness.

The third is also attended with the same effect, though partial specks or films often wear off.

Gangrene, if occurring here, from its vicinity to the brain, must prove very quickly fatal.

XXXVII. The treatment of ophthalmic inflammation, as of inflammation elsewhere, (xi.) must be conducted on the strictest antiphlogistic principles ; and the first step, where arising from an external cause, or extraneous irritation, consists in removing this as quickly as possible from the part. For this purpose the ball of the eye should be narrowly inspected, which is done by first placing the patient in a chair in a proper light, when the surgeon opens the under lid by pulling it out and downwards with the fore finger and thumb of the left hand. By causing the patient then move or roll the eye, it will be seen if any extraneous body is present in it, which may next be removed by means of a blunt probe, armed with a bit of fine lint or rag wrapped round it. If not discovered by this inspection, the same thing may be done with the upper lid, by pulling it upwards and outwards, and causing the eye be moved downwards, when the irritation will be seen and removed. Should it prove of a sharp pointed nature, instead of the probe, a pair of small forceps, or a bit of quill gently moved upon it till the body is loosened, will remove it.

XXXVIII. But though this removal take place, the cause of irritation will still, for some time, continue ; and, in order to subdue it farther, the eye may be next bathed, by injecting into it milk and water with a

syringe or elastic bottle, first separating the lids as in the examination, or holding the eye immersed in the fluid by means of an eye-glass.

XXXIX. If the morbid effect, however, should still continue to survive the cause, other more powerful remedies must next be employed. When the pain, therefore, is considerable, saturnine poultices may be applied over the eye. The general symptoms of fever are to be abated by saline purgatives, repeated every second or third day, while light and heat are carefully excluded from the situation of the patient.

XL. But should these applications prove still ineffectual, to check the progress of the affection, blood-letting must then be had recourse to, and the discharge may be drawn either from the eye itself, or from the adjacent parts.

XLI. From the latter it is done either by opening the jugular vein, (cxcii.) or temporal artery (cxcvi.) or, what practitioners in general prefer, by the application of leeches, (cxcix.) or the scarificator, (cci.) to the temples, and 10 or 12 oz. should be taken at once by either of these means. But should the disease suffer still little mitigation from the discharge in this way, it must next be attempted from the eye itself.

XLII. This operation, or scarification, consists in cutting through the most turgid vessels on the surface of the adnata; and, in order to do it, the hands of the patient must be held by an assistant, while another behind secures his head. Then the surgeon, standing or sitting before, with his fore and middle finger extends the lids so as to expose, as completely as possible, the ball of the eye, and, with the point of the instrument

(here delineated) passed below the turgid vessels, he di-



vides them, cutting upwards, and avoiding in this division, as much as possible, the transparent cornea.

XLIII. Instead, however, of any discharge in this way, the external application of opiates has, in some cases, been found preferable, viz. a few drops of a solution of opium in wine, inserted betwixt the lids. The several means of blistering, issues, and cold bathing of the head, have also succeeded under particular circumstances of the disease, as detailed in vol. I. page 11. and for one symptom, ulceration of the lids gluing them together, nothing is so effectual as the use of ointments with mercury.

XLIV. In the progress of the cure, a gradual approach or exposure to light must be made; and for this purpose a bandage of silk worn, while the recurrence of the disease is best prevented by cold bathing and the use of the bark, the former being particularly applied to the head and affected part.

XLV. After this view of ophthalmic inflammation, we proceed next to trace its various morbid consequences on the part, where the treatment detailed has not succeeded.

Abscess.

XLVI. The first of these is the formation of *abscess*, and where ophthalmic inflammation continues long without any remission, a deposition of matter, as it

consequence, must naturally take place betwixt one or other of the coats of the eye, varying, no doubt, in its quantity and extent in different cases, and changing the natural humours, as well as the external appearance of the organ, the ball of which becomes irregular and full of protuberances. This deposition comes to be discharged either naturally, or by the assistance of art.

XLVII. The formation of this matter or abscess, is marked, as in other cases, with the usual symptoms of fever, and, in its progress, is attended with severe pain through the head, as well as total blindness; the lids being also more or less impeded in their motion, and a sense of tightness prevailing over the globe of the eye.

XLVIII. The simplest of these ocular abscesses, is that which forms towards the internal angle, and is generally small. When detected, its termination should be hastened by the application of poultices, and, on its discharge, the parts should be washed with a saturnine solution till their tone is recovered.

XLIX. But in the more extended suppurations which affect the whole eye, from the pain and uneasiness they occasion, delay is here inadmissible, and the first step, as the loss of sight is unavoidable, is the abatement of these symptoms by a discharge of their collection, and this discharge is to be made at the most dependent part of the tumour.

L. In order to make it, the patient's head being secured by an assistant, and the surgeon placed before him, the eye-lids are to be separated for a sufficient length with the fingers of one hand, while the point of the knife (delineated xlii.) is entered with the other hand into the tumour, and carried across in a straight

line to the opposite side, where it is to be pushed out, thus dividing the whole under part of the cornea, and making an opening sufficiently large for the discharge of the contents of the tumour.

When this discharge takes place, the parts are to be slightly covered with a compress wetted in a saturnine solution, and the antiphlogistic regimen strictly adhered to in the treatment of the patient.

LII. Should excrescences arise from the wound in the progress of the healing, gentle caustics are the proper application.

Excrescence.

LIII. Another consequence of ophthalmic inflammation, is the formation of a fleshy excrescence, or membranous expansion over the surface of the eye, and this expansion seems an elongation of vessels during the inflammatory state, which once begun, continues to proceed by the force of its own circulation, and frequently has spread over a great part of the cornea.

LIII. During the state of inflammation, this expansion appears highly red or vascular; but as the inflammation decreases, it becomes pale, and frequently tends to a yellow colour.

LIV. The opinion to be formed of this affection is uncertain. It is generally got the better of, though, in some cases, it is apt to affect vision, and in others to terminate in cancer.

LV. Its treatment consists in the use of gentle caustics or excision.

The first is applied in the form of solution or powder, and in either form the strength of the application must be determined by the feelings of the part. The

caustics used are calcined alum, white and blue vitriol, corrosive sublimate, &c. and they may be combined or applied in different forms, according to their apparent progress on the disease.

LVI. The second, or excision, is only to be employed when the former means prove ineffectual; and it is to be done here, as a complete and sudden excision might prove dangerous, by scarifications, so as to divide the vessels which supply nourishment or circulation to the membrane.

This is done by seating the patient on the floor, with his head betwixt the thighs of the surgeon, and his face raised, so as to give a full command of the eye. His hands being then secured, the under eye-lid is to be drawn down by an assistant, and the upper one raised by the left hand of the surgeon himself, so that he is enabled, with the knife, to cut the vessels that supply the membrane, passing the flat side of it below each vessel. When the operation is finished, the vessels are to be allowed to bleed freely. The eye is to be bathed daily, oftener than once, with a weak saturnine solution.

LVII. This operation, if not effectual at once, may be repeated; but should the disease under it appear to increase or spread, it must then be entirely laid aside, and the use of astringent solutions alone trusted to in order to prevent its increase.

When of a cancerous tendency, as sometimes happens, the extirpation of the eye itself may, in the end, become unavoidable.

Ulcers of the Eye.

LVIII. Ulcers of the eye are the effect either of pre-

vious inflammation, or of accidental injury, but most commonly of the former.

LIX. Ulcers here are generally attended with much pain and inflammation, and produce frequently general symptoms of fever.

LX. Our opinion of such ulcers with respect to vision, the chief point in the prognosis, is determined by three circumstances; their situation, their extent, and their depth.

With respect to the first, ulcers, if not affecting the transparent part of the eye, may be healed without any bad effect on vision.

With regard to the second, or their extent, though not immediately affecting the transparent part, yet, in the process of healing, they may come to injure it, by the extensive cicatrix they form, or by producing spongy excrescences attended with the same effect.

On the last, or their depth, much depends; for if penetrating the coats of the eye, the humours may come to be discharged, and vision totally destroyed.

LXI. In the treatment of such ulcers, two circumstances require attention.

1. The first is to obviate the prevailing symptoms.
2. The second to determine their local or constitutional nature.

LXII. The chief symptom requiring alleviation here is pain, the consequence of inflammation; and this is to be most effectually done by scarification, as formerly directed, and which will also promote the healing of the sore. When removed or abated, the healing of the sore becomes then the sole object; and if of a local nature, it will readily heal up by detergent stimu-

lating applications in the form of solution or ointment, as the verdigris, white vitriol, corrosive sublimate, &c. If excrescences arise in the progress of healing, they must be removed as directed under that head; and should the cicatrization appear slow after the sore is filled up, it may be hastened by astringent washes, as the solution of alum, infusion of galls or oak bark, and the application of absorbent powders, as the calamy or crabs eyes sprinkled upon it.

LXIII. Where excrescences arise from the sore, they are to be treated either by caustics or excision, according to their particular form or degree of adhesion.

Where not pointed, the application of caustic forms, if large, the most successful treatment. In applying it, which should be daily, or every other day, the eye is to be first secured by a speculum, to prevent the remedy spreading, and after being applied, the part is to be carefully washed with warm milk before the speculum is removed.

Where the excrescence, again, is somewhat pendulous, and its root not apparently deep, it may be best removed by the scalpel. For this purpose, the patient being seated in a clear light, and the surgeon standing before him, the eye-lids are to be separated, in the manner frequently directed; by an assistant supporting his head, and standing behind him. When separated, a needle with a waxed ligature is to be passed through the middle of the excrescence to secure it, and raise it from the eye, and this ligature being held by the operator, he, with the scalpel in the other hand, slowly and cautiously dissects the tumour. The sore is to be dressed with charpee, soaked in a weak saturnine solu-

on, and the cure completed by the use of astringents.

LLXIV. Where ulcers in this situation, instead of a local, are of a constitutional nature, they must be either treated with mercury, or the remedies recommended in cases of scrophula, particularly the bark, cold bathing, and the use of an issue. (*Vide* vol. I. 184.)

Films or Specks.

LLXV. Another consequence of ophthalmic inflammation, is the production of films or specks on the eye without an erosion of substance attending them, as in the two preceding affections.

LLXVI. These films are found in two situations, either affecting the white part of the eye, or else the transparent cornea, and thus they vary both in their form and extent. It is only, however, in the latter situation, or when obstructing vision, they become an object of surgery.

LLXVII. They are always, as observed, the consequence of previous inflammation, and they arise as the effect of effusion during its progress.

LLXVIII. In treating this affection, our applications must be regulated by the quantity of effusion, or as it produces more or less a morbid prominence of the part. Where this prominence or detachment does not take place in some degree, the cure can be alone trusted to time, or the general effects of a stimulus producing absorption, without any local remedy to the part. Thus a slight mercurial course has sometimes succeeded, frequent purging has been also useful, and even the insertion of an issue near the part. But where the prominence or effusion appears strictly partial or local, ap-

plications may be made to produce the separation of the thickened cuticle, and these applications consist either in escharotics or excision.

LXIX. The escharotics used here are the same as have been already mentioned, (lxii.) viz. verdigris, red precipitate, alum, white vitriol, &c. they are either applied in the form of powder ointment, or solution being inserted betwixt the eye-lids, and thus carried over the whole surface of the eye. Of these forms the solution is preferable; and, to be successful, such remedies must be long continued and frequently repeated, and that even in different forms.

LXX. Where excision is preferred here, it requires to be very cautiously done; and for this purpose the patient being placed in a clear light, and the surgeon seated before him, he secures the eye by the speculum, and then makes slight incisions with the knife delineated, (xlii.) so as to remove all the prominent or thickened points of the cornea; and, in order to be successful, the whole of it must be renewed.

When removed, a pledgit dipped in a weak saturnine solution, is the best dressing.

Cataract.

LXXI. We shall next examine a more formidable and more frequent disease than the former, and what may be perhaps termed an internal film of the eye, this is cataract.

LXXII. By cataract is understood a loss of vision arising from a thickening, or opaque state of the crystalline lens, or its membrane.

LXXIII. This disease is preceded by a gradual

weakness or dimness of sight, conveying a sense of some external body, as it were, floating before the eye, and impeding vision. On inspection, there is an evident affection of the lens, which is dusky, not clear and diaphanous, and this change of structure advances till it is found entirely white, or of a slight milky hue, or of a light grey or pearly colour.

During this progress, the vision becomes more and more lost, till the patient is unable to distinguish either sight or colour. The pupils, however, continue to contract and dilate according to the degree of vision or light received, by which it is distinguished from the *mutta serena*, or affection of the optic nerve. (*Vide* vol. I. page 218.) It is also unattended with pain, except in particular cases.

LXXIV. The cause of this disease is often uncertain; indeed more frequently unknown than accounted for from external injury. It occurs in women most frequently on the cessation of the menses.

LXXV. To form a prognosis in this disease, two circumstances require attention; the first is to distinguish its extent; and the second its degree of induration.

The first is ascertained by the effect of a strong application of light or colour on the eye; for if the action of the parts seems to continue unimpaired, a favourable opinion may be formed; but if this application has little effect, or, in many cases, none at all, a doubtful and unfavourable prognosis is accordingly to be drawn.

The second circumstance, or degree of induration, is determined much by the colour of the cataract, and

also by the degree of contraction of the parts. Thus when of a brown colour, it is of a firm consistence; when fluid or soft, it is of a cream colour, and the eye, to appearance, somewhat prominent, and less apt to contract, on the application of light, to the same degree as where harder.

LXXVI. In the cure of cataract, two methods are employed; the constitutional and local.

LXXVII. The first is confined to its early stage and consists in the use of antiphlogistic remedies, supposing it connected with inflammation, particularly topical venesection, blisters, brisk purging, &c. or else in a slight exhibition of mercury, particularly calome combined with narcotics; but as the effect of these remedies has often, from experience, proved very uncertain, the local treatment is now most generally adopted.

LXXVIII. This consists either in the depression or entire removal of the opake body, and is performed by one of two operations, termed *couching* and *extraction*; but previous to having recourse to either of these, it is to be observed, that as an operation is only necessary in order to restore vision, till vision is totally impeded by the progress of the disease, no operation from the uncertainty of its success, should ever be attempted; and when unavoidable, in order to its success, every precaution, by a previous antiphlogistic treatment, should be adopted. For this purpose a low diet should be enjoined for at least ten days before it, venesection should be once performed, and the use of cooling laxatives occasionally had recourse to.

Couching.

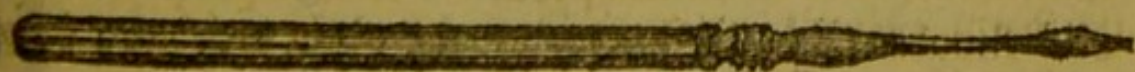
LXXIX. The first, or couching, is the simplest operation, and also the most successful; and, in order to perform it properly, four circumstances require attention:

1. The situation of the patient while performing it.
2. His position.
3. The proper fixing of the part during the operation. And
4. The steady site of the surgeon's hand, and his dexterity in the use of the instrument.

LXXX. In regard to these, the operation must be performed in a situation excluded from a glare of light, and therefore having no sunshine. Hence a room having a light to the north is preferred.

The patient must then be placed on a chair of a proper height, and his head supported on the breast of an assistant standing behind, whose left hand is placed on the patient's forehead to secure it, while his right secures the eye by means of the elevator or speculum applied to it. In the mean time, the patient's hands are held asunder by two assistants, one placed on each side. The surgeon then, standing before the patient, takes the needle (here delineated) like a pen in his

XVI.



right hand, with his elbow resting on the hollow of his side, or supported on a table, or on his knee, raised to a con-

venient height, and his two last fingers steadily supported on the patient's cheek bone. His left hand is then employed in securing the under lid, which he draws down with the fore and middle finger, after which, causing the patient to look towards the nose, and pressing the eye upwards against the elevator, he begins his operation, and pushes the instrument, brought in contact with the middle of the sclerotica, or a little behind the centre of the eye, firmly and quickly through the coat of the eye, with its flat side towards the iris, behind which it is to be carried to the centre of the lens. When discernible through the pupil, it is to be fixed, as it were, in the body of the lens, which last is to be pushed downwards and backwards (the object of the operation) to the back part or bottom of the eye, or into the vitreous humour, by depressing, for this purpose, the point of the instrument, and raising its handle.

When this is accomplished, and the patient will know it by the appearance of light, or disappearance of the cataract, the instrument is to be withdrawn; the pressure on the eye removed; and the operation being finished, the eye should be covered up with a compress, wet in a saturnine solution, and a bandage or napkin applied over all.

LXXXI. After the operation, much attention is requisite to obviate the effects of inflammation, as frustrating the success of the cure. For this purpose a strict antiphlogistic course is to be observed, and venesection, if necessary, performed either from the temporal artery, jugular vein, or by leeches, and the eye, though occasionally inspected, is especially to be kept from the access of the light.

LXXXII. The success of the operation is often uncertain for a time, even the distance of months; but, in general, a few days determines it; and, if failing, it may be again repeated after the effects of the present operation have subsided, which will require at least three months. Indeed it should not be undertaken a second time sooner.

LXXXIII. Where the operation is to be performed on the right eye, the operator must be placed behind the patient, in order to enter the needle as in the left, if he cannot use the left hand with the same ease; or instead of this, it may be entered from the internal side or canthus of the eye, by a particular needle invented by some surgeons, and delineated by several authors.

Extraction.

LXXXIV. The second operation, or extraction, is more precarious in its effects than the former. It consists in making an opening in the transparent cornea, so as to remove the opaque body or lens entirely from its situation, and in performing it, three circumstances require attention.

1. The position of the eye for the operation.
2. The incision of the cornea with regard to its extent. And
3. The degree of pressure on the ball to accomplish the extraction.

LXXXV. The patient then, and surgeon, being both placed as in the former operation, if on the left eye, the speculum is to be applied with more firmness than

in couching. The knife or hasta (here delineated) taken

XVII.



between the thumb and fore and middle fingers of the surgeon's right hand, and having an inch of projection of its blade beyond his middle finger, is to have its point brought in contact with the cornea, and entered into it at about one-sixteenth of an inch distance from the iris; during this time, the patient is particularly directed to look in a steady manner straight forward. On the knife being entered, it is to be carried in a line with the iris across the eye to the opposite side, till its point project one inch through it. When in this situation, if moved downwards, a semilunar cut will be formed in the cornea, so as to divide all its under part, and make an opening sufficiently large to admit the passage of the lens. While this cut is making, the pressure on the eye should be gradually lessened, and when completed, the knife is to be laid aside. The flap of the cornea is then to be raised with a blunt pointed probe, which is to be farther introduced with much caution through the pupil, to scratch next an opening in the capsule. When this is effected, and the probe withdrawn, the cataract or lens must be forced out by a moderate and equal pressure of the speculum applied to the whole globe, and the eye kept somewhat darkened during this part of the operation, to prevent any contraction of it. By this effect the lens will be found to move from its place, and to fall down on the cheek.

If the cut in the cornea is sufficient, very little pressure will be necessary to effect this; but if it is not, it should be enlarged with a pair of small forceps, rather than use force.

Where the capsule also appears opaque, its cure should rather be left to time, than the rest of the eye endangered by attempting its removal.

LXXXVI. When the operation is finished, the eye is to be covered with a compress dipped in a saturnine solution, and a bandage applied over it; and as the success of the cure depends in counteracting inflammation, the most rigid antiphlogistic treatment must be observed.

LXXXVII. The incision is generally healed in fourteen or fifteen days, sometimes not till the distance of several weeks; and though part of the vitreous humour is lost in the operation, the eye generally, in a short time, regains its usual fulness.

LXXXVIII. In operating upon the right eye, the knife must be entered from the opposite direction from the left one, or from its internal canthus or angle; or the surgeon must use his left hand.

LXXXIX. From this view of the two operations, the former, or couching, is by most practitioners now preferred;

1. As producing, for the most part, as complete a cure as the other, and in an easier manner. And

2. If failing, as not endangering the entire loss of the eye.

XC. Extraction, on the contrary, is attended with the following morbid effects:

1. With much pain and violent inflammation, often difficult to remove.

2. Often also with blindness, from the opacity of the wounded cornea.

3. Frequently with shrinking of the eye, from loss of the vitreous humour. And

4. From the restoration of vision being merely temporary, and oftener failing than in the other case.

Cancer of the Eye.

XCI. Cancer of the eye is sometimes a consequence of previous inflammation, especially when it ends in abscess with a thickening of parts, as in ophthalmia.

XCII. Its appearance under this form is that of the enlargement and protrusion of the ball beyond the socket, which acquires a hard consistence and red fleshy appearance, with a total loss of vision. A discharge of glutinous or acrid matter appears from its surface, and the same sense of burning heat and shooting pain pervades it, extending over the head as in cancer in other situations.

XCIII. Our opinion here must be highly unfavourable, and though antiphlogistic remedies may be tried, these, as well as the removal of the part, will all be equally ineffectual.

XCIV. Where, however, extirpation is resolved on, the method of proceeding is this: The patient being placed on a table, with his head supported and resting on a pillow, the eye lids are to be separated by the hands of an assistant, or an instrument applied for the purpose; and if the ball is not sufficiently protruded for being laid hold of in the operation, a flat ligature

should be passed through its centre to secure it, and direct the operator, who, holding it with one hand, endeavours to separate the tumour from all its connections by means of a common scalpel with the other; and in doing it, the whole of the disease must be removed, and even part of the lids, if much affected.

When the eye is removed, if the hemorrhage is great, the use of sponge and pressure becomes necessary, and the whole socket may be filled with charpee, and secured by a bandage or napkin.

When a full suppuration ensues, this is to be removed, and the part treated as in other cases of recent wound. But the severity of this operation renders it liable to be seldom performed.

Protrusion of the Eye.

XCV. Protrusion of the ball of the eye is also a frequent effect of disease, or else of accidental injury.

XCVI. Its appearance is both disagreeable, and for the most part terminates in loss of vision.

XCVII. Where this protrusion is the effect of a contained fluid, as in some of the preceding diseases, the discharge of this, by the means recommended, will be sufficient to restore the situation of the part. Where from accidental injury, the replacement of the part, and obviating the effects of inflammation by the usual means, is all that can be attempted. But where the protrusion arises from tumours in different situations of the orbit, or adjacent parts pressing on the ball, the conduct to be observed must be regulated by the actual state of protrusion, and the progress the morbid cause seems to make.

If the protrusion is small, and the increase of the tumour, at the same time, slow, no step should be taken to precipitate its removal; but where the reverse is the case, an operation, though doubtful, must be hazarded, to ward off, if possible, the certain fatality which the progress of the disease will unavoidably produce.

The apparent nature of the tumour also will tend to influence our prognosis.

Dropsy of the Eye.

XCVIII. But protrusion of the eye may be occasioned by another cause, which requires a separate consideration, viz. dropsy.

XCIX. Dropsy here is distinguished at first by a gradual and increasing sense of fulness, without any perceptible turgescence. As it proceeds, the motion of the eye-lids becomes impeded, and vision rendered gradually more imperfect, till total blindness ensue; previous to which, actual protrusion of the orbit appears, thus marking the disease, and it proceeds, if left to itself, till the coats of the cornea give way.

C. The absence of inflammation, and the power of vision retained for a certain time, distinguish this affection from those others already noticed, attended also with protrusion.

CI. The preservation of sight is the chief object to be aimed at in the treatment of this malady; and for this purpose, in its early stage, an incision of the cornea, to discharge the superabundant serosity, should be made, or a small trocar may be passed with this view into the most prominent part for a proper depth, the patient's head being supported, and the eye-lids se-

perated by an assistant, as directed in doing the other operations in these parts.

When a sufficient discharge has been made, the tone of the parts is to be afterwards restored by the use of astringent solutions.

But in the advanced stage of this affection, when vision is already lost, preventing deformity from the protrusion of parts, is all that can be attempted; and with this view an incision should be made to evacuate the humours.

CII. When the malady is removed by these means, and the parts are again completely healed, a shrinking of the ball is apt to take place as a consequence of the previous operation. To remedy this defect, an eye of glass may be fitted to the part, which being introduced within the palpebræ, and properly smoothed on the surface, will give no pain, and answer the end.

DISEASES OF THE EYE-LIDS.

CIII. We have hitherto considered the diseases of the eye itself; those which affect its appendages fall next to be examined.

Tumours.

CIV. The first and principal affection of the lids, is the various swellings to which they are subject. Of these the most common is the inflammatory tumour, or sty.

Stye.

CV. Its situation is most frequently the under lid, producing a sense of uneasy fulness over the internal

canthus of the eye. The skin where it is seated assumes the various shades of inflammation till it bursts, when a thick yellow matter is discharged as in common abscess. But the inflammation here proceeds more slowly than in other cases, from the more minute circulation of the part.

Steatom.

CVI. Another affection is the steatom of the eye, or that soft tumour which rolls under the skin, and is distinguished by the name of steatom, in other parts consisting of a soft white matter.

CVII. Its treatment is the same here as elsewhere, (III. cccxx.) The skin being divided, an attempt is to be made to dissect the cyst from the parts beneath, entire if possible, when the teguments being laid together, the cure will proceed by adhesion (xxx.) But where the contents of the tumour are too fluid for this, they are to be evacuated on dividing the skin, and the cyst cautiously separated from the parts beneath.

Warts and Excrescences.

CVIII. Besides this species of tumour, warts also, and even cancerous excrescences are apt to form here.

CIX. Where the base of such tumours is small, a ligature will remove them; but when the reverse is the case, excision is here, in every respect, preferable to caustic.

CX. In order to assist the operator in removing them, a ligature may be either passed round them, or through them, with a needle, in order to raise the tumour, and allow the dissection to proceed more easily.

When removed, the sore is to be dressed with char-
 pee, and secured by adhesive plaister.

Inversion of the Cilia.

CXI. Another affection of the lids producing, from
 its irritation upon it, even inflammation of the eye it-
 self, is the inversion of the cilia, or eye-lids.

CXII. This affection proceeds from various causes,
 as natural derangement, muscular spasm, previous in-
 jury, compression from tumours, relaxation of tegu-
 ments, &c.

CXIII. With respect to the first, or natural derange-
 ment, the cure consists in a total removal of the hairs,
 and giving another direction to the new growth. For
 this purpose they are to be drawn out by a pair of
 small pliers or forceps, and when the new ones have
 attained a certain length, a different direction is to be
 given them by means of strong glue or mucilage ap-
 plied by a pencil.

When arising from spasm, or unequal contraction of
 the part, the fibres of it thus affected, and producing
 the inversion, may be divided.

When from the pressure of tumours, the removal of
 these will accomplish a cure.

When from cicatrix, the consequence of previous in-
 jury, the cicatrix must be removed, and the sore heal-
 ed anew, so as to prevent this effect.

When from relaxation, the application of astringents
 to the part will succeed.

The same treatment applies to the inversion of the
 cilia of both lids.

Concretion of Lids.

CXIV. But a more formidable affection than this last, is concretion of the lids themselves, and which is very apt to occur during the progress of inflammation.

CXV. It takes place in different degrees, forming adhesion even to the ball, as well as betwixt the lids, and different modes of treatment become accordingly necessary.

When slight and partial, the adhesion may be removed by the end of a blunt probe passed betwixt the lids; but when more general and firm, dissection only can afford relief; and for this purpose the head being firmly secured by an assistant, and the upper eye-lid elevated, the surgeon endeavours, with small forceps in one hand, to separate the under palpebræ, dividing, with a scalpel in the other, every apparent adhesion, but proceeding with much caution.

The eye is then covered with charpee spread with soft liniment, and some of the latter occasionally insinuated betwixt the lids, while their own motion will prevent any after adhesion.

Gaping of the Lids.

CXVI. An opposite morbid state from the former, or the gaping of the lids from their internal membrane, being turned outwards, is a very frequent malady, and, in its various degrees, produces deformity, and also at times much pain.

CXVII. The causes of this affection are equally various as those of the inversion of the cilia, particularly morbid tumours, dropical swellings, previous inflam-

mation, or cicatrix from fores, and this variety of cause produces also an equal variety of treatment.

CXVIII. From the first cause, or tumours, the treatment consists in their removal, as formerly directed, ((civ.).

When from dropfy, the local turgescence may be removed by puncture, or, if failing, by scarifications carried to a sufficient depth, or the length of the internal membrane, after which the parts are to be bathed with astringent solutions.

Where connected with inflammation, it will yield to the general antiphlogistic plan, but where surviving the cause, scarifications will effect a cure.

Where from the last cause, or the cicatrix of previous fores, as in confluent small pox, &c. the removal of the cicatrix by incision, so as to replace the eye-lid in its natural situation, is the only mode of relief, and this will be more or less difficult according to the extent of the cicatrix, or the contraction consisting of one or more points. When removed, and the eye-lid replaced, it is to be retained by slips of adhesive plaster over the usual dressings, as in other cases of fore.

Fistula Lacrymalis.

CXIX. Connected with the diseases of the eyes, falls to be here noticed the affection of the lacrymal sac, or, as it is termed, *fistula lacrymalis*.

CXX. This affection consists in an obstruction of the passage of the tears into the nose, and this obstruction is considerably varied according to the special morbid circumstances that attend it.

CXXI. The first and simplest species of the disease

is the inflammation of the ducts from an external cause, which occasions a flow of tears on the cheek, without any other inconvenience, and is termed epiphora.

CXXII. The second and more permanent species, is where obstruction exists in the under part of the sac or passage, distinguished by slight tumefaction of the internal canthus or angle of the eye removed on pressure, by disappearance of its contents into the eye. This is termed dropsey of the eye.

CXXIII. The third species is formed by increase of this obstruction, till it end in suppuration and rupture of the teguments, the successive repetition of which process unavoidably occasions a callous ulcer (ccxli.) to be formed, that properly constitutes the fistula lacrymalis.

In this state of the disease, from the corrosion of the discharge, the bones come to be affected, and caries ensues. Frequently, however, it is connected with a constitutional taint, and the caries is dependent on that cause. Hence this affection is at times an attendant on lues and scrophula.

CXXIV. The opinion to be formed of this disease is, whether it be of an accidental or constitutional nature, and the particular stage also to which, in either case, it has attained. In the first and second species, the cure is always in our power; but in the subsequent one it is more uncertain, and where from a constitutional cause, is seldom entirely complete.

CXXV. In the first, or accidental species, the cure must proceed on the principles of obviating inflammation, by topical venesection, the use of saturnine applications, &c.; and the inflammation being removed,

Should adhesion of the passage appear to have taken place, a small probe is to be inserted into each puncture, and passed along the course of the ducts into the sac. The opening being then made, is to be preserved by weak astringent injections occasionally thrown in by means of a syringe, or by leaden probes constantly worn till the sides of the passage become callous.

CXXVI. In the second species, as the tumefaction or obstruction is generally removed by pressure, its constant application, so as to palliate the inconveniencies of the disease, may be attempted by an instrument, (delineated for that purpose by authors) as more permanent than the occasional use of the finger.

CXXVII. But in the third species, these more gentle means are entirely ineffectual; and, in order to a cure, two steps are necessary.

1. The first is the removal of the tumour. And

2. The second is the forming a new passage instead of the natural one, destroyed by the disease, into the nose.

CXXVIII. The first consists in opening the tumour at its most dependent part, like every other abscess, (see cccxli.) with the point of a lancet, and this opening should be made so soon as a softness and sensible fluctuation in it can be felt; and on being opened, the matter is to be pressed out. The sore is then dressed with mild applications as a common wound. In a day or two, however, the parts must be preserved open by the introduction of a small bit of sponge into the wound, in order that the parts being more in view, the second step, or the formation of a new passage, may be more easily completed. Previous, however, to any such at-

tempt, the restoration of the natural passage should be aimed at : and for this purpose a round pointed probe inserted at the bottom of the lacrymal sac, and its point carried forward, so as to be inserted into the nasal duct, moderate pressure should be employed, and, if once passing, it may afterwards be kept pervious by the introduction of a bougie or catgut.

CXXIX. But when this attempt is found fruitless, the formation of a new passage is then unavoidable ; and, in executing it, two methods have been had recourse to, either by the cautery, or the use of the trocar and canula.

The first is now laid aside, from the pain and uncertainty attending the extent of its action. The latter is therefore preferred ; and, in employing it, the hands of the patient should be held by an assistant, when the surgeon, standing before him, introduces the canula of the trocar into the opening of the tumour, and carrying it to the under and back part of the sac, he keeps it firm with one hand, while with the other he inserts the stilette into it, which is to be pushed slowly forward in an oblique direction, downwards into the nostril, which is perceived, immediately on its entrance, by a discharge of blood, when giving it a rotatory motion will sufficiently round the opening made. The stilette being then withdrawn, a leaden probe is to be introduced, to preserve the opening, and the canula removed. The probe must pass into the nose, and be curved at the other end, so as not to slip in.

The sore is then to be dressed in the usual manner, and covered with adhesive plaster.

CXXX. For a considerable time the probe must be

worn, though occasionally removed, and cleaned every second or third day, while the parts are washed with an astringent injection by means of a syringe, and the same practice is to be followed where, instead of a new passage, the natural one is only restored.

CXXXI. When the passage is sufficiently callous, the parts are then to be healed up, and the sides of the wound touched with caustic, if necessary, while moderate pressure will restore the tone of the parts, and expedite the cure.

CXXXII. But in spite of the preceding practice detailed, this operation is often unsuccessful, and the disease is apt to return, in consequence, most probably, of being connected with a constitutional taint. To obviate this, two methods are proposed,

1. To prevent the healing of the external parts, in case of caries, till exfoliation has ensued, and then repeat it anew. Or,

2. Without regard to constitutional causes in performing the operation, to introduce, instead of the leaden probe directed (cxxxix.) a small canula of gold or silver, which is to be constantly worn, and to heal the skin over it. In order to succeed with this, the length of the canula should be studied, so as merely to pass through the opening, and no more.

CXXXIII. In case of ulceration and caries of these parts, attention to their cure must be considered as a previous step to removing the morbid inconvenience, attempting any operation.

DISEASES OF THE EARS.

CXXXIV. **T**HE diseases of the ear form the next division of surgery that claims our attention; and though their treatment has given rise to the appellation of the aurist, yet their number is too confined to form a particular profession distinct from the other parts of surgery; and when exercised in this way, it has only been by itinerant quacks.

CXXXV. From the time of Duverney, the diseases of the ear have been better understood, and the importance of this organ in our intercourse with society, renders its maladies, if not always dangerous, at least serious evils both to the sufferers themselves, as well as to those with whom they have connection.

CXXXVI. The principal morbid effect of the diseases of this organ, is the production of deafness, and this effect will either arise from obstruction of the passages to the organ, or the state of the organ itself.

CXXXVII. The passages of the organ consist of two either the external or internal.

The morbid state of the former, or meatus externus, is the most frequent cause of deafness, and this state may depend on one of four causes: either its original imperforation; the impaction of extraneous bodies into it; viscosity of its natural excretion; or lastly, by the formation of morbid tumours or excrescences.

The morbid state of the latter, or tuba eustachiana, is always a consequence of diseases of the contiguous parts of the throat, and is therefore little under the direction of the surgeon.

CXXXVIII. Imperforation of the passage is not a frequent cause of deafness. It may, however, occur, and in such cases it consists either of a real imperfection of the passage, or its mere occlusion from a membranous expansion.

In either case, the morbid cause is only to be removed by an operation; and for this purpose, after placing the patient in a favourable position, and securing the head, an incision should be carried with a small bistoury, in the direction of the passage, for such extent that the resistance may be taken off, which will readily, in case of a membranous expansion, take place, or to the bottom of the tympanum, when, if not successful in finding a passage, it should be carried no farther, but the wound kept open by the introduction of a small tent or bougie, which should be also occasionally removed and cleaned.

CXXXIX. The period of performing this must, no doubt, depend on circumstances; but it should not be postponed beyond the age of youth.

CXL. The second cause of deafness, or the impaction of the passage by extraneous bodies, occurs chief-

ly in childhood, or from insects getting admission at a more advanced period.

The first, if they consist of any hard substance, as cherry stones, peas, &c. are easily removed by first smearing the passage with oil, and then introducing into it a pair of small forceps, or a blunt probe, past them to turn them out.

The second, or insects, may be easily destroyed by injecting oil, and then forcing them out by injecting warm water with a syringe.

The third cause, or accumulation of wax, is easily known by inspection, and when ascertained, is best removed by warm water injected with a syringe into the passage, and continued till removed.

The fourth cause, or the presence of morbid tumours, is more serious. Their existence will be ascertained by inspection; and when ascertained, two different methods will be necessary for their removal, according to their situation and extent. If near the extremity, and adhering by a small neck, they may be laid hold of by forceps, and removed by a cut or two of a small bistoury. If more internal, a ligature may be applied on the root by means of a canula, as recommended in polypus of the nose. But when of a more extended nature, and seeming to occupy the whole surface of the passage, their removal must then be trusted to a proper and gradual use of the bougie.

CXLI. But besides these affections of the passage only, the tympanum itself may be the seat of the disease. Thus it is liable to two different affections producing a discharge from it, the one specific, or the effect of scrophula, the other the effect of common inflammation.

Specific or Scrophulous.

CXLII. The scrophulous discharge proceeds generally from the more internal parts, and the very bones of the tympanum are apt to suffer by it. The discharge is corrosive and highly foetid, and shews the presence of ulceration.

Common.

The second is the effect of common inflammation, and is the same disease in the ear as the gonorrhœa benigna in the urethra. (*Vide* vol. I. p. 137.) It is the consequence of common inflammation on a secreting surface, but it may also, in some cases, end in an ulceration or fore.

In both cases the treatment is much the same, viz. keeping the parts clean by attentive injection of warm water with a syringe, and afterwards of some mild astringent to restore the tone of the parts.

CXLIII. To assist the hearing in these cases, a common horn may be used, which collecting the sound, will make a stronger impression.

CXLIV. Instead of discharge, the surface of the ear also is subject, at times, to preternatural dryness, and till the natural secretion return, its place may be supplied by the use of oil of almonds, or some stimulant mixed with an oily matter, as soft soap, strained galbanum in oil, and the use of this should be daily continued so long as is necessary.

DISEASES

OF THE

NOSE AND THROAT.

CXLV. **N**EXT to the eyes, follow the diseases of the nose, and the internal cavity connected with it, the throat.

These diseases, besides imperforation of the passage, consist of hemorrhage, tumours, and ulceration.

Hemorrhage.

CXLVI. Hemorrhage is the most common accident to which this part is subject, and often, from its progress, of a very alarming nature. We already considered it under the head of General Diseases, in vol. I. page 51. and it is chiefly, therefore, what respects its local treatment we are to detail here.

CXLVII. The local treatment of nasal hemorrhage

consists in the application of cold and pressure to the seat of it.

The first is employed by bathing the face with cold water or oxycrate; by applying compresses dipped in it to the nose; and by filling the mouth with cold astringent solutions, as of alum, &c. and retaining them there some time.

The second, however, or pressure, is more effectual, and, where the former fails, is here made in three ways,

1. Either by the simple application of a doffel to the bleeding vessel, where it can be done.

2. By pushing up a bit of small gut, tied at its extremity, the whole extent of the nostril; then filling it, by means of a syringe, with cold water from the other extremity, till its size is sufficient to compress the passage, and stop the discharge.

3. If still ineffectual, a bit of catgut or waxed thread is to be conveyed by means of an instrument from each nostril into the throat. The ligatures, thus conveyed, are then laid hold of with a pair of forceps, (the instrument in the nostril being removed) and to them a doffel or plug tied as they hang out at the mouth, while, on drawing their other ends into the nostrils, this plug will be carried forward, and lodged in the upper part of the pharynx. Another doffel is then applied to the extremity of each nostril, when the nasal passages become completely obstructed, and thus the hemorrhage restrained. But, in order to succeed, the doffils should fit the passage, and be continued for a sufficient time.

*Tumours.**Polypi.*

CXLVIII. Polypi are tumours formed by the lining of the internal membrane of the nose, the first effect of which is a sensation of fullness and loss of smell; soon after which the tumour of one or both nostrils is conspicuous, particularly on elevating the head, and it gradually increases and descends till protruded externally upon the upper lip, or backwards into the throat.

CXLIX. These tumours differ much in their *consistence*, which varies from a soft pulpy matter to the hardness of cartilage; in their *colour*, which is from a transparent pale to a bloody red: and in the *degree of pain* they communicate, which, though trifling in the pale kind, is often in the red very considerable and acute.

CL. The size of such tumours, especially the soft kind, is much influenced by the state of weather, and their protrusion greatest when hazy and damp.

CLI. Their causes may, in general, be ascribed to local injury acting upon a peculiar morbid state of constitution, supposed scrophulous or venereal.

CLII. In forming our prognosis of polypi, we are directed chiefly by their consistence and size.

With respect to their consistence, those of the soft kind are attended with little hazard; but those of a firm texture are dangerous, both from their tendency to degenerate into cancer, and also from their rapid growth after being removed.

CLIII. The treatment of polypi is either palliative, or radical.

The first is confined in its application to the softer kinds, and consists of astringent solutions, to prevent their increase, and give them a tendency to shrivel, as of alum, white vitriol, oak bark, &c. or of pressure, by a bougie, fitted to the part, and worn as often as circumstances will admit.

The second, or the radical cure, consists in the entire removal of the tumours; and, of all the methods of doing this, the most successful is that by ligature or forceps, excision being here, from the high situation of the tumours, seldom in our power.

CLIV. The application of the ligature is made by means of a flexible silver wire, and a canula; and it is employed differently, according as the polypi push into the throat, or project anteriorly.

In the first situation, to apply a ligature to the polypus, the flexible wire must be taken from the canula, and the doubled end of it slowly insinuated through the nostril, till it pass into the throat. The finger of the operator introduced into the mouth, will then catch hold of it, and opening its doubling, it is to be made to pass over, or include the polypus at its root, and to be retained in this situation, while the two ends of the ligature, at the nostril, must be again passed through the canula, and the latter pushed up, till it meet the root of the polypus, when the ends of the wire are to be fixed on the wings of the canula, so as to tighten it, and there kept till next day, at which time it is to be again tightened, and so on daily till the tumour fall off.

In this way will every tumour be removed, the situation of which admits a similar treatment, or application of a ligature on its base; and when much affecting respiration, and deeply situated, in order to admit time for its complete removal, Bronchotomy, as a preliminary step, may be performed.

In the second situation, or anteriorly, the same application of the ligature may be made in a different way: The doubling of the wire is here to be passed over the most depending part of the tumour on one side, and pushed up to its root on a slit probe, being there retained by an assistant, while the two ends are passed through the canula, and the latter pushed up on the opposite side, till it meet its root. The ligature now applied, is to be tightened by fixing the ends of the wire on the wings of the canula, and the after treatment conducted as when in the throat.

The removal of polypi by the forceps, is seldom so complete as by ligature: It is performed by placing the patient on a chair, and securing his head by an assistant, taking, at the same time, the advantage of a clear light. The forceps are then to be introduced, with a blade on each side of the tumour, carrying them as high as possible, to its root. When thus grasped, an attempt is to be made, by twisting the root, to remove it.

Where the tumour is anteriorly situate, forceps will answer best. Where, towards the pharynx, crooked ones are directed. Where the space is so confined by the tumour, as hardly to admit them, they may be formed with separate blades, so as to introduce one at a time, and then lock them when applied. If

the tumour is so confined, as not even to admit this, an attempt may be made to lessen it, by peircing it with a hot wire, passed through a canula, or by a trocar. In removing the tumour in this way, should part of the root remain, when in our power to inspect it, an escharotic may be applied till removed; but this requires much caution.

In all cases where a ligature can be used, it should be preferred to the forceps, as more complete in its effects; less painful in its application; and as inducing no alarming symptoms of hemorrhage.

Enlarged Tonsils.

CLV. Enlarged tonsils are of two kinds, the acute and chronic.

1. Acute.

CLVI. The first is that which occurs in cynanche, and is relieved in the first stage by scarification, which is performed by the instrument delineated, *vide* vol. I. p. 13. (p. 127.); and in the second stage, or suppuration, by opening the abscess or tumour, with the same instrument.

2. Chronic.

The second species, or the chronic, is a consequence of the first, or the effect of repeated acute inflammations, so enlarging the size of the tonsils, as to prevent both respiration and deglutition.

CLVII. This species is seldom attended with pain, and is only troublesome from its effects taken notice of.

CLVIII. Its removal is accomplished by the use of

a ligature ; and it is used here, as already directed for polypus : A double flexible wire, or piece of catgut, is to be insinuated through one nostril, and brought out at the pharynx, into the throat. This doubling being opened, is to be passed over the root of the tumour, by the hand of the operator in the mouth, and there retained, while the ends of the wire, at the nostril, are to be passed through a canula somewhat crooked, and the latter pushed up, till it reach the root of the tonsil or ligature, in the throat, where it is tightened, by fixing the ends of the wire on the wings of the canula.

The same treatment then takes place as in case of polypus, and the tumour generally in a short time drops off.

On the removal of one tonsil, the same operation may be applied to the other, if the morbid symptoms still require it, so soon as any uneasiness departs, (xvi.)

Enlarged Uvula.

CLIX. As well as the tonsils, the uvula becomes subject to a morbid enlargement or elongation, producing difficult deglutition, and other uneasy symptoms.

The treatment in this case is either palliative or radical.

The former consists in the use of astringent gargles, as formerly detailed (CLIII.)

The latter, in the removal of the part, by excision or ligature.

The excision of the uvula is performed by first securing the mouth by a speculum oris, an instrument

well known, then fixing the part itself with a pair of small forceps or hook, when it may be easily removed by a pair of sharp forceps, either strait or crooked.

If much hemorrhage succeed, it may be restrained by the application of astringents, or caustic, though this is seldom necessary.

CLX. Where a ligature is employed for this operation, and it is preferable where there is much enlargement or swelling of the part, it is executed as directed for the tonsils, by passing the canula through one nostril, or it may be applied simply from the mouth itself.

Ulcer of the Nostrils.

CLXI. Every ulcer of this part has been distinguished by the particular appellation of ozæna; but, from the difference observable in the affection, in different cases, it may be considered as either local or constitutional.

CLXII. The local ulcer is that which succeeds catarrh, or is the consequence of any external injury, and yields to the use of astringent washes, 3 or 4 times a day, or ointments applied to the part, particularly during the night.

CLXIII. The constitutional ulcer, again, is marked by the extreme fetor of its discharge, giving evidence of a carious state of the part, which can be detected at once by the use of the probe.

CLXIV. The treatment then will depend on the use of constitutional remedies, particularly the exhibition of mercury to the part itself. The same means may be applied to hasten the separation of the disca-

ed bone, as the precipitate or verdegris ointment, suited in strength to the texture of the part.

When the separation is completed, which is generally slow, the cure will speedily take place.

Imperforated Nostrils.

CLXV. Imperforation occurs here, either as an original defect, or as the consequence of disease. The latter is more frequent than the former, either from accidental injury, as in burns, or some general disease, as in small pox and lues.

CLXVI. The treatment in both cases is either to form a new passage in the proper direction, or to enlarge the natural one to its due size.

To execute the last, an attempt to detect the nostril by small scratches with a scalpel should first be made, and when detected, a small director is to be inserted into it, and on this director a bistoury introduced to enlarge the opening. This opening is then to be preserved by dossils of lint or charpee, fitted to its size, and occasionally removed, or introduced anew; or, in place of these, metal tubes, covered with some soft substance will answer better.

Both may be retained by means of adhesive plaster, attaching them to the contiguous parts.

The same operation will be successful in cases of malconformation, taking care to make the opening in the direction betwixt the septum and external cartilage.

DISEASES OF THE LIPS.

CLXVII. **D**ISEASES of the lips, the next part of the body, are few in number, chiefly two, viz. the harelip, and cancerous affections of the lips.

I. *Harelip.*

CLXVIII. Harelip, or fissure of this part, is one of the most frequent natural deficiencies that occurs. It is oftenest in the upper lip, and is of two kinds, the simple and complicated.

CLXIX. In the first, the division is confined to the lip itself.—In the second, the same deficiency extends through the palate bone to the throat.

In both cases it is attended with deformity and inconvenience; but in the second species, this last is particularly increased, on the exercise of every function these parts perform.

CLXX. To remove this deficiency, the aid of surgery is required; and, where left to choice, it should be done when the period of weaning is over, and the child has

recovered its strength, though no period even much earlier, prevents it when called for, (as in the second species,) by much inconvenience arising from it.

CLXXI. The operation consists merely in producing a union of the divided parts, and for this purpose their edges must be reduced to a raw or inosculating state, and then brought into, and retained in contact with each other, first removing every impediment to it.

CLXXII. In doing it the child must be laid on a table, and kept in a proper posture by assistants.

The connexion of the lip with the contiguous parts or gums, particularly the frænum must be separated, and any projection either of the teeth or part of the palate bone must be removed, the former by extraction, the latter by a pair of pliers or forceps. The surgeon then standing on one side, takes hold of one side of the lip with his thumb and forefinger of the left hand, while an assistant does the same on the other side, so as to stretch the lip, a necessary point; or this may be done by a pair of curved forceps instead of the hand.

In this state with a scalpel in the other hand, he carries an incision from the under to the upper part of the lip, including the whole fissure and part of the sound surface of that side. He then does the same on the opposite side, thus producing a raw edge or wound, when the parts removed by incision, should shew the form of a V inverted; instead of a scalpel in doing this, with many surgeons a pair of scissars is preferred.

After the hemorrhage, which should be allowed to take place pretty freely, the union of the divided parts the principal end of the operation, is to be attempted.

For its success the edges of the wound are to be brought into contact, and a nice apposition of the two sides for the whole extent made. In this state, the pins are to be passed as directed in the twisted future, (p. 19.) beginning with the one at the under extremity or edge; next at the centre; and the last at the upper extremity; three being sufficient in most cases, passing each about half an inch from the edge, and bringing it out at an equal distance, which is of consequence in restraining the hemorrhage. When the pins are thus passed, and the cheeks pushed forward to approximate still more the contact of the edges of the sore, the ligatures are next to be applied as formerly directed, (p. 19.) beginning them over the under pin, and so proceeding upwards. The parts are last to be dressed with a piece of charpee spread with mucilage. The diet should be liquid, or of a soft kind, to prevent action of the parts during the cure, and the pins may be removed in four or five days, not later, when adhesion will have taken place.

CLXXIII. If this deformity is in both lips, the same operation is to be successively performed in each. In accidental wounds also of these parts, the same mode of treatment will be most successful.

2. *Cancerous Lip.*

CLXXIV. As the former disease is most frequent in the upper, so the present is most frequent in the under lip, and where an operation is resolved on, the whole of the diseased parts must be removed in order to give a chance of success in the cure.

CLXXV. The removal of the diseased parts is effect-

ed as in harelip, (clxxii.) by the scalpel or scissars dividing them. The vessels are then to be secured when necessary, and the parts are to be united by means of the twisted suture, as formerly directed. (p. 19.)

When the disease extends farther than the lip into the cheek, a division of it is to be also made, and the same treatment employed.

DISEASES

OF THE

MOUTH AND TEETH.

CLXXVI. **T**HE next division of surgery, in the order of arrangement, is the diseases of the mouth, the morbid affections of which are frequent and numerous, as to form a distinct profession, under the title of the Dentist.

CCLXXVII. At first this department was exercised by itinerant quacks; but, of late years, it has been cultivated by many surgeons of eminence, and hence these diseases have been better understood.

CCLXXVIII. The principal diseases of this part arise from two causes, the *formation*, and *decay* of the teeth; in treating this subject, we shall consider the morbid affections that are produced by each.

Dentition.

CLXXIX. The regular evolution of the teeth, or dentition, may be divided into three, sometimes four distinct stages.

The 1st, or infantine dentition, extends generally from 6 months to 3 years.

The 2^d, or the puerile, from the 7th or 8th year, to the 14th or 15th.

The 3^d, or the adult, from the 16th year to the 25th or later. And

The 4th, or senile, is a rare occurrence, when a complete set of teeth has appeared after the 60th year.

Infantine.

CLXXX. The first, or infantine dentition, forms the most critical period of infancy; and its ease, or difficulty, marks the state of constitution; for, during this period, at least one-tenth of the human race is cut off, and it extends from 6 months to 3 years, when it is complete.

CLXXXI. The morbid symptoms that attend infantine dentition, are either local or general.

The first consist of heat, pain, and swelling of the gum, accompanied with an increased salivary discharge, frequently aphthæ covering the whole surface of the mouth.

The latter of fever and convulsions.

CLXXXII. This fever is distinguished by general oppression, particular heaviness of eyes, teasing cough, vomiting, diarrhœa, and sometimes eruption on the head.

The convulsions are preceded by uncommon starting in sleep, and are confined in their distortions more to the muscles of the face than to those of the extremities, sometimes they are preceded by a hoop or catch in the breath.

CLXXXIII. Strong children are more liable to fever, delicate children to convulsions.

CLXXXIV. The violence of these general symptoms enumerated, (cxxxii.) depends on several circumstances, as the irritability of the child, the state of ossification, and the number and figure of the teeth protruding at once.

Hence all children, whose parents are subject to hereditary diseases, that produce an irritability of system have always difficult dentition.

The process of ossification is, in many, quicker than in others, consequently a longer irritation will be continued on the gum when slower.

The figure of the teeth, the more it departs from the incisivi or acute wedge like form, will increase the difficulty of dentition. Thus the canini always occasion much pain.

The number also protruding at once by extending the surface of irritation, will produce the same effect.

CLXXXV. From the morbid symptoms detailed, (clxxxi) two indications come to be formed.

1st, The first is to relieve the state of the part.

2^d, The second is to counteract the general irritation of the system.

CLXXXVI. The first is performed by scarification or a complete division of the gum, so as to suspend, if not entirely remove, the action of the morbid cause.

The operation is performed, after securing the child, by the surgeon opening the mouth with one hand, while, with the forefinger of the other, he introduces the fleam or instrument, and makes a crucial incision along the gums, for it must extend so as to relieve every tooth immediately advancing, and for such depth as to lay the tooth or teeth bare.

Little hemorrhage will attend this operation.

CLXXXVII. Where relief is thus obtained, if the symptoms should in some time after recur, the same thing may be repeatedly performed.

CLXXXVIII. The second indication or counteracting the general irritation of the system, is next executed by promoting a gentle diarrhœa by the occasional exhibition of opiates; the warm bath, and at times the use of blisters. But the local remedy will in all cases prove the most effectual.

Puerile Dentition.

CLXXXIX. Puerile dentition differs from the former, in being attended with little or no pain or dangerous symptoms, and the chief morbid effect that marks it, if such deserves the appellation, is the derangement or irregular protrusion of teeth.

CXC. It extends, as observed, from the 8th to the 14th or 15th year. During this period the incisivi, canini and small molares fall successively in the same order in which they were received, while, previous to their falling, the bodies of the first or milk teeth detach themselves from their root, which is then totally absorbed by the pressure of the second set; it is during this time the particular attention of the dentist is required.

CXCI. The causes of derangement or irregular protrusion may be referred to either confinedness of socket, retention of the first set, or improper conformation of the teeth themselves.

CXCII. With respect to the first, where the socket does not extend so quickly, there will at times not be sufficient room for the whole of the second set that are protruding, and one will accordingly be irregularly placed, or out of the circle.

To rectify this, a tooth must be removed; either the irregular one, or one in the circle, according to their situation and appearance. The irregular one, if the best and soundest, should be allowed to remain while a regular one is extracted to give it room to advance into the circle. If not readily falling in, it may be assisted by passing a ligature round it and the contiguous teeth, to be gradually tightened according to its effect; or, in place of a ligature, a thin plate of gold will answer the same purpose.

CXCIII. Retention of the first set is a more frequent cause of derangement than the former, and it is rectified in the same way. This even is known by the appearance of the tooth in fault, for the first set, or milk teeth, are distinguished by their peculiar whiteness, by their greater smoothness and polish, and, when retained, by their gradual loss of this superior colour. It is chiefly when the second set are weak and stunted in their growth that this retention is apt to take place; and, in such cases, a milk tooth has often been retained for life, and even outlived the decay of the second teeth.

CXCIV. Improper conformation of the teeth, is not

a frequent cause of derangement, though the inversion of a tooth has been known, and the crown has grown in the place of the root. A tooth in the palate is also a frequent deviation.

CXCV. All derangement of the teeth is confined to the incisivi and canini. Wherever the eye teeth are long of appearing, their space being occupied, derangement takes place.

Adult Dentition.

CXCVI. ADULT dentition the third period, extends as observed, (clxxix.) from 16 to 25, sometimes later, when the teeth may be considered as out of danger. It is during this period the dentes sapientiæ, or last molares, protrude. Their protrusion is generally attended with pain, the glands of the neck swell, and often their protrusion is so slow as to require months before they appear.

Wherever the pain is severe, and the inflammation extensive, the same operation may be performed as in infantine dentition, and the same relief will be obtained.

Where the dentes sapientiæ are long of appearing beyond their natural period, as at times happens with some, even so late as 35, there may not be room in the jaw for their protrusion; in this case, in order to give relief, extraction will be necessary.

Senile Dentition.

CXCVII. THIS is a very rare occurrence, rather a lusus naturæ, but instances have occasionally occurred.

of the teeth being renewed after the age of 60, and a new set appearing in place of the former ones.

CXCVIII. Such is the general progress, and chief morbid circumstances, that attend the formation of the teeth from which we are led to examine those that mark their decay.

CXCIX. The teeth possess the peculiarity of being less affected by constitutional diseases than the other bones of the body; yet, from their situation and uses, they are more exposed to the action of external causes. Hence their texture sooner suffers decay, while this decay is more observable in the under than the upper jaw.

Toothach.

CC. The principal morbid affection of the teeth, is tooth-ach, perhaps the most frequent disease to which the body is subjected.

The chief symptom of this affection is pain, commencing with a sensation of a certain thrilling tremor, changing soon to acute uneasiness more or less diffused, but chiefly towards the root, sometimes along the gum and one side of the jaw. This pain has been known so exquisite as to deprive the person of reason, and its consequences, when rising to a height, are inflammation of all the neighbouring parts, particularly the ear and cheek of that side.

CCI. The causes of toothach may be referred to three heads: Caries of the part; simple inflammation; or morbid sensibility.

CCII. The first is the most general. It begins externally with a small black spot on the crown, superfi-

cial, but which soon spreads, and enters the substance of the teeth. From one tooth it spreads to another, and seems in some degree to be contagious. Frequently it is stationary; at other times its progress is very rapid. It occurs chiefly from 25 to 50.

CCIII. The cause of this caries is uncertain. From observation, however, of those living in a natural state, or the Negroes, whose teeth are commonly sound, it must be connected with the mode of life, or external causes.

CCIV. The second, or simple inflammation, is a very frequent cause of toothach, where the part has been exposed to a stream of air, or the person is confined to a damp situation; and, in these cases, the inflammation is generally extended to the neighbouring parts, and affects more than one tooth.

CCV. The third cause, or morbid sensibility of the part, is also very frequent; and arises either from the practice of too often rubbing, thus thinning the enamel; from the use of saline substances, producing tooth-edge; or from certain constitutional diseases, as hypochondriasis, rheumatism, gout, &c. It is also an occasional symptom of pregnancy.

CCVI. The radical cure of the toothach has been considered as depending on extraction; but previous to this, it will be proper to examine the different palliatives employed, as suited to its different causes, before having recourse to this operation.

PALLIATIVE TREATMENT.

In Carious Toothach.

CCVII. Where toothach arises from caries, it consists properly in irritation of a denuded nerve; and the treatment pointed out is either preventing the exposure of the nerve to the action of the morbid cause, or else rendering it insensible to its operation.

The *first* is done by filling up the corroded part, where confined to one part, either with a soft substance, as bees wax, or some of the gums, or with a metallic matter, particularly tinfoil; and, in doing this, much accuracy is required to have effect, and it must be renewed as often as it wears away, and care should be used to avoid hard substances in mastication. Where properly done, it has been known to last for years.

The *second* mode of treatment, or rendering the nerve insensible, is performed in three ways: either by allaying pain by the use of anodynes, as liquid laudanum, camphor, or some of the essential oils dropt into the tooth; 2^{dly}, by rendering it callous by caustics, as the concentrated acids, or lunar caustic, applied in the same way; or 3^{dly}, by destroying the nerve by means of the actual cautery, applied by a hot wire perforating the carious part, which is successful where there is only one root; or, which has the same effect, by separating the connection of the tooth with the socket, by the operation of luxation, viz. pulling the tooth to the extent of separating its connections in the jaw, and then immediately replacing it.

In Inflammatory Toothach.

CCVIII. Inflammatory toothach is chiefly discovered by the permanence of the pain; by the apparent soundness of the tooth; and by other general marks of inflammation.

CCVIX. The treatment here consists in the same means as employed to abate inflammation in other parts, viz. Topical blood-letting; by scarification of the gum, or by leeches; the application of a blister near the part, as on the cheek, or behind the ear; and the use of anodynes, particularly those promoting diaphoresis.

In Nervous Toothach.

CCX. Nervous toothach is that which occurs without any evident cause in the seat of the disease, and may be divided into the partial and sympathetic.

CCXI. By the *first* is understood a general morbid sensibility of the teeth. This, as observed (ccv.) is commonly the effect of frequent rubbing thinning the enamel, by which they are liable to pain from the slightest impressions, or what is termed toothedge. It is very frequent in children from the use of acid fruits; and in adults from a course of mercury. It is particularly severe at times in chewing.

The treatment consists in children, in removing the acid. Keeping warm water in the mouth will alleviate pain.

CCXII. The *second* species, or sympathetic, is the frequent attendant of stomach complaints; and when

er this can be judged of from inspection of the tongue, or an acquaintance with the patient's habit, anæsthetic will be the most successful remedy. If arising from gout or rheumatism, anodynes given so as to excite diaphoresis, will be highly useful.

In pregnancy, however, this complaint, though symptomatic, requires to be treated as an inflammatory affection.

CCCXIII. Having thus employed the palliative treatment without effect, or with not so much effect as to satisfy the patient, extraction becomes at last the sole and sure resource, and the easiest method of doing this ought to be pursued.

Radical Treatment.

CCCXIV. In extracting the teeth, the two circumstances deserving attention are,

1st, The previous separation of the part from its connection with the gum; and

2d, The proper hold or rest, obtained by the instrument, in order to act.

CCCXV. The instrument long preferred for extraction, termed the key, as known to every surgeon; and in order to apply it properly, different postures must be chosen, according to the different situations of the tooth to be removed.—Hence two applications of it fall to be described, as directed to the upper, and to the lower jaw, and the back and fore part of each.

CCCXVI. Previous to its application in these situations, the first step, as observed, is to loosen the connection of the tooth with the gum, or soft parts; and for this purpose the scarificator is to be passed betwixt the

gum and tooth, for a certain depth in each side, till the separation is made.

1. *Under Jaw Back Teeth.*

CCXVII. The patient then being seated, and an assistant supporting his head, if in the under jaw, while the surgeon stands a little to the opposite side of the situation of the tooth, he applies the instrument, by pressing down the point of the claw on one side, the side being immaterial,) as low as possible, betwixt the gum and root of the tooth, which he then secures with the fore finger of the left hand, while on the other side he presses down the fulcrum, covered with a piece of linen to soften its pressure, equally low. The instrument thus placed, is then to be turned round with such force as to loose the tooth, which, by continuing it, will come to be entirely removed; but, should the force required to remove it, be thought by the surgeon too great, by applying the instrument anew, in an opposite manner, and placing the claw on the opposite side to that it occupied, it will easily give way.

Upper Jaw Back Teeth.

CCXVIII. The only difference here from the former application is in the posture of the patient, which instead of being seated, requires his being placed on the ground, and his head turned back, and supported betwixt the knees of the operator.

CCXIX. Though the side to which the claw is applied is immaterial, yet in the two last molares of each jaw, it is preferred on the inside, so as to turn the tooth inwards; and wherever the tooth is carious it

great degree, the claw is placed on the opposite side, giving a surer hold.

Fore Teeth of each Jaw.

CCCXX. This then forms the first mode of application as directed to the back teeth of each jaw, but to the fore teeth, instead of the key, a pair of forceps, with moveable claws, is commonly preferred, though the key may be also employed. In using the forceps, the hold should be taken as far down upon the tooth as possible, and the extraction conducted by twisting from side to side, till it is loosened from its situation.

CCCXXI. Various instruments have been invented for perpendicular extraction, but none of these have as yet arrived at perfection, and the confined situation of the mouth prevents the freedom of their application.

CCCXXII. But where, instead of being entire, a great portion of the tooth is destroyed by the progress of caries, and the remainder of it is buried in the socket, a different mode of extraction becomes necessary than that hitherto described.

This state of a tooth does not admit the application of the key, and can only be removed after free scarification of the jaw by the forceps or punch. Wherever it can be laid hold of the forceps will succeed, as the firmness of its connection with the socket, when it is in this state, is greatly destroyed. Where, however, this cannot be got, the punch will bring it out, and in applying this last instrument, it should go no deeper in its hold than to have a proper rest for the action of its fulcrum and the stump being once raised from its situation, may be laid hold of with the forceps.

CCXXIII. Though the operation of extraction is generally easy and successful, yet certain accidents have been known to attend it, which render a particular after treatment necessary. These are hemorrhage and inflammation.

Accidents from Extraction.

CCXXIV. Hemorrhage here where violent or long continued, that is above half an hour, for a certain degree of it is always useful, is to be restrained by the use of astringents or compression; and, failing these, by the application of the actual cautery. Such hemorrhage is more frequent in the last molares.

Inflammation, or the effect of simple contusion, is to be relieved by warm emollient fomentations, as in other cases; and, if shewing a tendency to suppuration this process is to be promoted by the same application of heat, in the form of cataplasm, by a roasted fig onion. Where the inflammation again is the effect of the laceration of parts, particularly splinters of bone the removal of these, as soon as possible, is a necessary step to assist the other means already detailed.

CCXXV. In all cases after the removal of a tooth the socket continues very sensible for some days. The gum is not united till the apertures of the parts, and consequences of the operation are removed. The thickening of the jaw takes place at the part where a tooth has been extracted and it is more elevated.

MORBID CONSEQUENCES OF TOOTHACH.

Gum Boil.

CCXXVI. One of the most frequent consequences of toothach is gum boil, or the formation of an abscess in the vicinity of the diseased tooth.

CCXXVII. Its usual symptoms are pain, inflammation, and swelling, proceeding to a certain extent, and enlarging the cheek, and sometimes the whole face. On the formation of matter, which may be hastened by the application of a roasted fig or onion, the tumour points, generally opposite to the diseased tooth, and bursting betwixt the gum and tooth, for the most part, the matter comes to be discharged of a disagreeable taste, with alleviation of all the symptoms. This affection is most common in cold damp situations.

CCXXVIII. The continuance of the discharge is then determined by the state of the part, and where no caries exists, it heals up as a common wound ; but where the latter takes place, the same process is renewed, and either extraction of the tooth, or exfoliation of the jaw becomes necessary to complete a cure.

CCXXIX. To promote the latter, should simple stimulant injections fail, as lime water, ardent spirits, tincture of myrrh, or bark, the parts are to be laid open by incision, and a free vent given to the discharge of the matter : a circumstance which, wherever confined or deep seated, requires particular attention.

CCXXX. The constitutional treatment is here also of much importance, as such morbid symptoms are fre-

quently connected with a taint of habit, particularly of a scrophulous kind.

Abscess of Antrum Maxillare.

CCXXXI. Another consequence of toothach is the same formation of matter in the antrum maxillare; though this may also be the effect of other causes.

CCXXXII. The symptoms that mark this affection, are severe continued pain of the cheek, for a considerable time before any apparent swelling, gradually diffusing over the surrounding parts, and terminating in a hard extensive tumour of the cheek. This tumour, in process of time, comes to be discharged either by pointing at the cheek, procuring vent by the roots of the teeth, or at the nose. The first of these, however, is the most frequent termination.

CCXXXIII. Whenever ascertained, the cure of this affection consists in giving a free vent to the discharge, and that at the most dependent and convenient part, which is the situation of the second last molaris tooth. It is, therefore, to be extracted; and if no communication with the antrum, by the discharge of matter, then appears, the head of the patient being laid back on the knee of the surgeon, a small trocar may be put up through the socket of the tooth, till it meet no resistance, when a discharge will immediately follow its being withdrawn; and after the matter is removed, the opening is to be preserved by inserting a plug into it, by means of which an injection may be occasionally thrown up to wash away the matter that forms, and dispose the parts to heal. Should the parts be carious, which is ascertained by the thin discharge, and foetid

smell, the cure will then be more tedious, and not completed till exfoliation ensue.

CCXXXIV. This place is also occasionally the seat of worms, when the same operation may be necessary for their removal; and their presence can only be judged of by severe pain affecting this part, without any other obvious cause.

CCXXXV. The injections here must be such as are known to destroy animalcules, particularly the injection of tobacco, oil, or asa foetida.

CCXXXVI. Besides abscesses of the antrum, indolent swelling of these parts, connected with scrophula, or spina ventosa, is apt to be formed.

Its symptoms are an equal diffused swelling of the cheek, acquiring in its progress an elastic feel, and continuing colourless till towards its end.

CCXXXVII. When opened, the affected bones display a cartilaginous state, and in time acquire a soft gelatinous consistence.

No remedy is hitherto known for this affection.

Excrescence of Gum.

CCXXXVIII. Excrescences here are small red tumours of various consistence, rising generally with a circumscribed base, often to a great height, and differently attached to the gum, in regard to their degree of adhesion.

CCXXXIX. The cause of such excrescences is caries of the subjacent parts, either the teeth or socket.

CCXL. Their progress varies in different cases, but the removal of the caries terminates their growth.

CCXLI. Where the removal of this caries, from its

particular situation, cannot take place, or if in the tooth it is not submitted to, the extirpation of the tumour, from the inconveniences arising from it, becomes a necessary step; and this is done either by the ligature or excision.

CCXLII. The application of the first is confined to these kinds, where the attachment is made by a narrow neck, and the ligature being passed over it, and properly tightened, it will soon fall off; but, where the attachment is made by a broad base, excision becomes then unavoidable.

CCXLIII. The mouth being secured by a speculum oris, if necessary, after seating the patient properly, and opposite to a clear light, the tumour is to be dissected away with a scalpel or curved knife, according to its situation, being first raised from the subjacent parts, by means of a hook, if necessary; but the incision is not to be carried so deep as to injure, or lay bare, the subjacent parts. The hemorrhage succeeding, if violent, may be restrained by filling the mouth with an astringent solution, as spirit of wine, solution of alum, &c. or lunar caustic, applied to the part.

The healing of the wound will be promoted afterwards, by astringent washes occasionally used.

Looseness of Teeth.

CCXLIV. The teeth, as formerly observed, (cxcix) from their use and situation, are particularly exposed to a premature decay. Hence they are found to fall when every other part of the system continues sound and entire.

CCXLV. This decay proceeds either in a gradual manner, as noticed (ccii.) by caries, or it takes

place at once; either from external violence, or from the connexion being dissolved between the teeth and the retaining parts.

CCXLVI. The former case is not so frequent; and, where happening, an attempt may be made to replace the loosened teeth, by pressing them into their place, and keeping them firm in their situation, by passing ligatures of Indian weed, or waxed silk, between them and the contiguous sound ones, which will support them, in the meantime preventing their being used by a fluid diet till adhesion takes place.

CCXLVII. But where the teeth are loosened from the second cause, the case is more difficult; and may depend on:

1st, Concretions upon them, loosening them from the gum.

2^d, From the morbid state of the gum itself; and

3^d, From annihilation of socket.

CCXLVIII. The *first* is a very common cause, especially where cleaning the teeth is neglected; and the first teeth suffering in this way, are the incisors of the under jaw. It seems also peculiar to some constitutions, in whom a preternatural collection of tartar, in this part, is conspicuous, and very frequently also it forms a cause of toothach.

CCXLIX. In order to avoid this cause, the cleaning of the teeth should regularly take place. This subject was already treated in vol. I. p. 212. to which we refer. What respects the operation is only necessary here.

In doing it the patient should be placed on a low seat, his head supported by an assistant, and his situa-

tion opposite to a clear light. The surgeon either stands or sits before him. The fore finger of his left hand being wrapt in a wet cloth, is then to be fixed firmly upon the point of the tooth to be scaled, and the back of the scaling instrument will form a point of resistance to the thumb. The tooth being thus supported, the instrument is to be applied to the under part of the incrustation, and pushed with firmness from below, to the upper part of the tooth, being continued in its application till all foulness or crust is removed. The same process is to be successively repeated to all the teeth, after which a tooth powder is to be rubbed over them, by means of a brush or sponge, till they are sufficiently whitened.

CCXL. Where the foulness of the teeth is not removed in this way, chymical preparations must be tried, particularly the mineral acids; but this must be cautiously done, for the reasons detailed in vol. I. p. 214.

CCLI. The *second* cause of looseness of teeth, or morbid state of the gum, is very frequent, and is general or partial.

CCLII. The first is known under the term of scurvy of the gums, denoted by their tendency to bleed on the slightest occasion, and by a discharge of matter, from their union with the teeth and gum. It seems a peculiar affection of these parts, and is often no way connected with any constitutional disease, occurring in the stoutest people. Its progress is different, in different persons; in some the whole teeth are loosened in three or four months, though in others this does not happen for years. From the gum the morbid softness ex-

tends to the socket, and then the teeth loosen ; but what is remarkable, when the teeth are lost, there is no more appearance of scurvy. The same state also occurs from the use of mercury.

CCLIII. The best remedy for this disease is frequent scarification, which exciting inflammation, produces a tendency to adhesion. This, with frequent washing with cold water, and afterwards with astringent solutions, will in general remove it.

CCLIV. Partial morbid state of the gum is also frequent, as already noticed in gum boil, abscess, &c.

CCLV. The *third* cause of looseness, annihilation, or absorption of the socket, occurs chiefly in old age ; but it has been known at times to take place at an earlier period. Where it happens in old age, the gum is found united in 24 hours after the loss of the tooth.

CCLVI. From this circumstance of the premature decay of this part of the body, various methods have been attempted to supply the loss of the teeth, and these consist either in the art of transplanting, or the insertion of artificial teeth.

Transplanting of Teeth.

CCLVI. Transplanting of teeth is entirely a modern improvement. It is chiefly confined to the incisores and canini ; and, in order to its success, several circumstances require attention in conducting the operation.

CCVII. The first is the sound state of the socket, and on this its whole success depends. 2d. The root of the diseased tooth being unaffected by disease itself ; hence it can never take place in case of a stump. 3d. The mode of extracting the diseased tooth so as to prevent

injury of the socket, which should be in a perpendicular direction, or with the forceps.

CCLVIII. With respect to the last, the tooth to be inserted should be somewhat smaller and shorter than that removed, and the shape of its root, the chief point, should correspond as nearly as possible to that of the extracted one, though the root may be shortened a little with the file, if too long, without any injury. The person from whom the tooth is taken, should have passed 14, and not exceed 24, and the patient should never, if in our power, be above 40.

CCLIX. The operation succeeds best when immediately performed, both in the extraction and insertion, tho' some allege, that in this operation, even a dead tooth has succeeded as well as one immediately removed and inserted. The gums should cover part of the enamel of the transplanted tooth, and, in inserting it, they should be slightly pressed round it. The transplanted one must be secured to the neighbouring teeth by a ligature of sea weed, or fine waxed silk. In this state it is allowed to remain for 20 or 30 days, washing the part occasionally with astringents, and a diet of a fluid nature, is strictly enjoined. As soon as the tooth appears firm the ligature is generally taken away, but for this there is no certain time, as a tooth will often fasten in 8 or 10 days, and at other times require some months. With some, the fever and pain that attends the operation is often very considerable, and requires the antiplogistic regimen to be very strictly put in practice.

CCLX. Where the operation succeeds, the transplanted tooth has been known to continue sound and preserve its colour for 20 or 30 years; but, in general,

According to the experience of most Dentists, they decay in 6 or 8 years, and give, therefore, but a very temporary ornament and use.

CCLXI. Though by this operation, we are clear no constitutional disease can be introduced, whatever has been alleged, yet at times, from the irritation attending it, a peculiar ulceration of the part itself, or socket, has taken place, the specific nature of which we are still unacquainted with; and, as this ulceration has resisted the usual remedies employed against the different constitutional diseases, for which it was suspected, and frequently got well of itself, we are therefore warranted in the conclusion made.

CCLXII. From the uncertain success of transplanting, joined with these morbid consequences, which, though rare, occasionally ensue, instead of this operation, the use of artificial teeth are now generally preferred; and, such is the dexterity of modern mechanics, as to give the deception every appearance of reality.

Artificial Teeth.

CCLXIII. Artificial teeth are made in three ways :

1st, By fixing a new crown to the natural root.

2^d, By forming a complete tooth or teeth, and fixing them to the contiguous ones.

And 3^d, By forming, as well as the teeth, an artificial socket fitted to the jaw.

CCLXIV. The first is most employed in young people, the crown of the carious tooth is to be filed down to the gum, or within it, and a human tooth of a proper size is to be artfully fitted over the natural stump. This is done by drilling a hole in the stump, which must be firm, and introducing a gold wire screw, to

which the new crown or artificial tooth is fixed. If it is not sufficient to keep it firm, it may be connected in the same way by drilling a hole in the neighbouring teeth.

CCLXV. The second is used where one or more teeth are entirely removed, and its success depends on the ingenuity of the dentist in forming the shape accurately to the socket, and afterwards fixing it in a sufficient manner to the contiguous teeth, and in this is the chief art of the dentist displayed; these teeth are made of soft bone, ivory, or sea horse tooth, as capable of taking the finest polish.

CCLXVI. The third, or forming a complete socket adapted to the jaw, is a great convenience to age, and in order to its fitting, the mould must be taken in in plaister of Paris of each rising and depression of the jaw, so as most accurately to correspond. When properly made, it is worn with great ease; but it should be frequently taken out and washed, and all red liquors should be avoided for staining it.

Tumours of the Tongue.

CCLXVII. Tumours of the tongue are distinguished by the term of *ranula*. Their situation is generally on either side of it, and when large, they are productive of much inconvenience and pain.

CCLXVIII. Their collection is generally of a fluid, sometimes of a fatty, often of a calculous nature. When rising to a certain size, it bursts, terminating in an ulcer of difficult treatment.

The treatment of such tumours consists in laying them open, which will most effectually remove the

collection of a fluid or calculous nature; and, where of a fatty kind, the extirpation of the latter altogether, if not deeply seated, may be performed; where deep, a pair of small forceps, catching hold of the tumour, will assist the operation.

The fore is to be afterwards washed with astringent solutions.

In performing the operation, should there arise much hemorrhage, it may be stopped by dilute spirit of vitriol, or alcohol, or if failing, by the actual cautery.

Ulcers of the Mouth and Tongue.

CCLXIX. Ulcers of the mouth and tongue, are equally common as in other parts of the body; and they are generally either of a venereal, cancerous, scrophulous, or scorbutic nature, (p. 111. &c.)

CCLXX. When their nature is once determined, the treatment is then pointed out; and the constitutional remedies must be seconded by local applications.

CCLXXI. One source of all such ulcerations here, not common in other parts, is irritation, or fretting of the contiguous surface, from a pointed or ragged tooth.

As a preliminary step, the removal of this cause, by smoothing its surface, or removing the tartar, covering it must be attempted.

CCLXXII. In spite of this operation, should the ulceration still proceed, with ragged and unequal edges, and assume appearances of a cancerous nature, by a thin foetid discharge, little is to be expected in the way of cure.

CCLXXIII. Extirpation has been here proposed as else where ; but there is so much hazard, and so little certainty of success, that few practitioners will be bold enough, either to remove part of the cheek or the tongue.

Morbid Adhesion of Tongue.

CCLXXIV. The extension of the frænum beyond its proper limits, in new born children, is attended with such inconvenience, as to require its incision.

CCLXXV. This is performed, though not frequently necessary, by laying the child across the nurse's knee when the surgeon, introducing his fore and middle finger into its mouth, raises the tongue on them, and with a pair of scissors in the other hand, removes the adhesion for such length as is necessary, carefully avoiding any vessels in the operation.

Division of the Salivary Duct.

CCLXXVI. In external accidents, as well as in particular operations, on this part of the cheek, the parotid, or salivary duct, is apt to be divided. To prevent therefore, the discharge of its secretion by the wound, a new conveyance requires to be made for it, that it may pass as formerly into the mouth.

CCLXXVII. If taken at first, the two ends of the duct may be made to adhere, by ligature ; but this being omitted, or impracticable, from the circumstance of the case, an artificial opening must be formed, and this opening made to connect with the upper part of the duct.

CCLXXVIII. To make this opening, a perforation

should be passed obliquely through the opposite side of the fore, to the end of the duct, into the mouth ; and, when withdrawn, a leaden probe past into it, and continued there till its sides are rendered callous. The probe is then to be withdrawn, and the opening connected with the end of the duct, betwixt which adhesion will soon take place, if kept in contact, especially if the extremity of the opening is first made raw by a slight scarification with a lancet.

DISEASES

OF THE

NECK AND THROAT.

CCLXXIX. **T**HE diseases of these parts, that admit the aid of surgery, are not numerous.

The first to be considered, is a species of deformity termed the *wry neck*.

1. *Wry Neck.*

CCLXXX. The causes of this deformity may depend on an affection either of the soft or bony parts.

In the former case, it is placed either in a simple contraction of the teguments, or else of the muscles on that side.

CCLXXXI. Where the teguments alone are affected, the relief is easily obtained. Where the muscles are the seat of the contraction, the same relief may also be expected. The former situation, however, is the most frequent, and the indications pointed out are,

- 1st, The removal of the morbid state; and
- 2^d, Preserving the parts in that extension, as to prevent the recurrence of the same deformity.

CCLXXXII. In executing the former, the incision should be made with great caution, and by scratches, as it were, so as to avoid the situation of the vessels; but, at the same time, it should be carried so deep as to remove entirely the defect.

For accomplishing the second, the support of a bandage is necessary, that the head may be preserved equally elevated on each side, during the progress of the cure.

CCLXXXIII. Where this affection proceeds from the state of the bony parts, as depending on original malconformation, nothing can be attempted in the way of its removal.

2. *Bronchotomy.*

CCLXXXIV. But the most frequent morbid affections of these parts, are internal tumours, obstructing respiration and deglutition, some of which were formerly considered (p. 216. 219. 220. ;) and, previous to employing the aid of surgery, as then pointed out, in a radical cure, it becomes frequently necessary, from the urgency of alarming symptoms induced by them, to attempt immediate relief to the patient, by means of an operation.

CCLXXXV. Where affecting solely respiration, this operation is termed *bronchotomy*; and the principal causes rendering it unavoidable, as enumerated by authors, may be reduced to the following heads:

1st, Occlusion of the glottis, so strong as to threaten suffocation, and occasioned by

- a. Permanent spasm as in asthma.
- b. Preternatural adhesion from inflammation, as in croup.
- c. External accident, inducing violent irritation, as from bits of bread, feathers, bone, &c.
- d. Pressure, as from large substances swallowed, and sticking in the throat.

2. Internal tumours, already noticed, so large as to press on the glottis, as polypus, enlarged tonsils, or uvula, or even the tongue tumified by salivation.

3. External tumours, as noticed under the head of bronchocele (p. 150.) though this cause is not so frequent.

CCLXXXVI. When from one of these causes, such morbid symptoms arise, as to threaten existence, the operation should be at once performed; and, in order to do it, the patient should be secured on a table, and his head being drawn back, an incision, should be made for about an inch in the inferior part of the trachea, and carried in a longitudinal direction through the teguments and cellular substances, afterwards through the inferior part of the thyroid cartilage, dividing next the muscles that intervene, till the thyroid gland itself, is laid in view. When laid in view, the farther incision through it is to be conducted with much caution, so as avoiding any vessels, which the eye and feel will in some measure direct. If any are divided, they must immediately be secured by ligature, and when this is finished, the opening into the trachea is to be made by a small trocar, penetrating the membrane between two of the cartilages, the perforator of which being

next withdrawn, the canula is allowed to remain, and is to be secured by a tape tied to the back of the neck.

CCLXXXVII. The chief circumstances necessary for the success of this operation are

- 1st, The length and form of the canula; and
- 2^d, The time of its being continued.

The canula should be so long as to be in no danger of being thrown out by the after swelling and tumefaction of the parts, and on this account, by some it is preferred curved. It should also have its opening either so large as not to be easily stopp'd up with mucus, or else it should be made double to guard against this.

It should be worn, likewise, so long as any symptoms requiring its use continue.

When withdrawn, the skin brought over the wound, and retained by adhesive plaister, the opening will immediately close.

3. *Oesophagotomy.*

CCLXXXVIII. The pressure of substances obstructing deglutition, is not so easily relieved as respiration by bronchotomy.

CCLXXXIX. It is attempted, however, when arising from extraneous bodies, by forcing them into the stomach, by a probang, or by the action of vomiting, though the latter is more employed in case of pointed or sharp substances sticking in this part; and lastly, where these means are ineffectual, or rather, where the morbid effect is produced by a tumour of the part, as the last resource, an operation has been advised, or

an opening to be made into the passage itself, termed *œsophagotomy*.

CCXC. This hazardous operation, however, though mentioned by authors, it is needless to describe, as it has very rarely, if ever, been put in practice; and, if performed, by the temerity of surgeons, we believe there are no instances of recovery.

DISEASES OF THE BREASTS.

CCXCI. **T**HE only two diseases of the female breasts, besides lacteal inflammation, already treated (p. 130.), requiring surgical aid, are schirrus of breasts and affection of nipples.

Schirrus of Breasts.

CCXCII. With respect to the first, our observations on the general subject of cancer, (p. 113.) will apply here. It is only, therefore, when the operation is resolved on, that the mode of conducting the latter requires here a special detail.

CCXCIII. In order to conduct it with success, three circumstances, as formerly observed, (p. 116.) are essentially necessary.

- 1st, The early performance of the operation.
- 2^d, The full excision of the diseased part; and
- 3^d, The complete apposition and adhesion of the external teguments to the fore.

CCXCIV. With attention then always, to these circumstances, as far as in our power, the steps of the operation are conducted in the following manner:

CCXCV. The patient being placed either in a sitting posture, with the head reclined, and supported by an assistant, and the hands secured, or else being laid on a table, and the surgeon seated, an incision is to be carried for the full extent of the tumour, or morbid part, with a scalpel, through the skin and cellular substance, avoiding in its direction the nipple, by carrying it a little to a side, though the form of this incision must be regulated somewhat by the extent, and seat of the diseased part. By means of this incision, the skin and cellular substance should next be separated from their connection with the breast, and when finished, the teguments thus separated should be held asunder by an assistant, while the removal of the breast itself takes place; and, in dissecting the latter, the pectoral muscle is to be carefully avoided, by a due extension of the arm of that side, unless adhesions have formed betwixt it and the disease, when its injury must be disregarded. The removal of the breast, which must be complete, must be next followed by a minute inspection of the state of parts, and every glandular follicle attended to, that may endanger a recurrence of the schirrous affection. When this is finished, the hemorrhage claims the same regard, and every artery should be secured by the tenaculum, that appears; the fore being carefully cleaned with a wet sponge, to discern them, and the circulation invigorated, by some cordial given to the patient.

CCXCVI. When the hemorrhage is fully restrained by the ligature of the vessels, and the surface of the fore cleaned, the divided teguments are to be brought into close contact, and secured in that situation by pro-

per ligatures, at due distances, taking care, however, that the ends of the arterial ligatures be left out. The parts are then to be covered with charpee, spread with any emollient liniment, a compress laid above, and the whole secured by the pressure of a napkin and scapular bandage.

CCXCVII. Where part of the skin requires to be removed in the operation, as happens in the more advanced stage of the disease, the external incision should be made so as to remove it along with the schirrus, and for this purpose the form of the incision should be studied, and the sound skin separated from it by a second external incision of a crucial or oblong form.

CCXCVIII. When this takes place, the after treatment must be more tedious, and the sore in proportion to the removal of skin must be left to be healed by the process of suppuration : and, for this purpose, it should be dressed with the mildest liniments.

CCXCIX. But, besides the breast, when the disease has extended also to the adjacent glands of the axilla or clavicle, these parts require likewise a separate operation. This is to be conducted by making an external incision into them, terminating in that of the breast, and so as to lay the diseased glands in view. They are then cautiously and separately to be dissected out with the scalpel, passing a ligature through the principal one, to assist the dissection and avoiding the situation of any large vessels, with which they are connected. When finished, the skin is to be brought into close contact and secured as formerly directed, and an attempt thus made to heal as much as possible by the first intention.

Affections of Nipples.

CCC. The next disease of these parts taken notice of, was the various affections of the nipples which are entirely confined to the puerperal state.

Retraction of Nipple.

CCCI. The first to be noticed is the retraction of this part, or the nipple wanting its due elongation, and sunk in the breast. This is attended with much inconvenience, and to remove it various modes of drawing it out by glasses, &c. are had recourse to. The best of them, however, is a large elastic bottle fitted to the part, and exhausted of its air before application. By continuing this, the complaint will generally be removed.

*Inflammation and Ulceration of Nipple.**Common.*

CCCII. From the irritation of the child's mouth and the natural delicacy of the nipple, it is much exposed to inflame and pass into ulceration. This often proceeds to that length as to cause nursing be given up; and it is only to be cured by preventing the breast, (if confined to one,) being used for some time and applying astringent solutions to the sore, as the saturnine lotion, diluted brandy, &c. at the same time dressing the sore with an emollient or gently astringent liniment, as the ungent nutritum, Gowlard's cerate, &c.

CCCIII. If both nipples are affected, then the child should be applied as seldom as possible. A cover also should be worn over them for their defence.

Specific.

CCCIV. Besides this ulceration, the nipples are frequently the seat of venereal infection, and a most inveterate species of lues is produced by the introduction of the virus in this way. It is easily known by the appearance of the child and also by its effects which are not confined to the nipple, but soon extend over the whole breast. For the treatment of this species, *vide* Vol. I. p. 159.

DISEASES OF THE CHEST.

CCCV. **T**HE diseases of the chest that admit the relief of surgery, are few in number. Oppression, however, of the heart and lungs when depending on extravasation of any kind in the pulmonary cavity, impeding their action, permits an attempt to remove the cause by an opening into it, and this operation is known by the term of paracentesis.

CCCVI. The effect of all extravasation, in this situation, is to impede the functions of the parts, and from the state of the latter, the necessity of the operation is to be judged of.

CCCVII. The extravasation to which this cavity is liable is that of all fluids, which may be poured out either as the effect of *injury* or *inflammation*; of the former the chief are *blood* and *air*, of the latter *serum* and *pus*.

Blood.

CCCVIII. The symptoms that denote blood are uncommon oppression of breathing and ir-

regular feeble pulse, blood also, in part, coughed up.

CCCIX. The causes of this may arise from over exertion ; from the erosion of matter in an abscess ; from an wound ; or, from the fracture of a rib beat in.

CCCX. To give relief in this case, an opening should be made, betwixt the 7th and 8th ribs, with a trocar, unless in case of a wound or fracture, when the situation of these injuries should be preferred ; and, instead of a new opening, the one already made, merely enlarged ; but, where no injury occurs, the situation mentioned is preferable. In doing it, the external skin being first drawn up by an assistant, an incision is to be made with a scalpel for two inches, half way between the sternum and back, avoiding the vessels in the groove, or lower edge of the superior rib, and gradually lessening the extent of the incision, as it passes through the muscles and internal parts. On the appearance of the pleura, the latter is to be cautiously entered, to avoid danger of touching the contained viscera, in case of adhesion, a frequent circumstance. If no adhesion prevail, and the fluid is not coagulated, it will now flow out ; but, if its delay proceed from coagulation, the injection of warm milk and water will remove this, and promote the discharge. When discharged, the skin is to be brought closely over the wound, and the effects of the external air prevented as much as possible, by the application of a compress and bandage.

Air.

CCCXI. Next to blood, air, as mentioned, is a fluid

occasionally effused in the cavity of the thorax. The symptoms attending it are,

1st, Sudden oppression, or straitness of breast, after the occurrence of an accident.

2^d, No blood at the same time thrown from the trachea.

3^d, Flushed and swelled face, with coldness of the extremities.

4th, Incapacity to bear a horizontal posture.

5th, A sort of crackling sensation in the part, on the pressure of the hand, and emphysema, more or less diffused.

CCCXII. The causes of this effusion are generally ascribed to any sudden effort or exertion; the fracture of a rib, the extremity of which is beat in; or an ulcer of the lungs, forming abscess into their cavity, when it is joined with suppuration; and sometimes, also, an wound here produces the same effect.

CCCXIII. To give relief here, two methods are followed: the one consisting of simple scarification; the other in the introduction of the trocar.

The scarifications are made, by carrying several incisions along the course of the swelling, so deep as to pass through the cellular substance.

The introduction of the trocar, the other mode, is after dividing the skin, to pass it obliquely till it enter the cavity of the thorax, when the discharge of the air will immediately take place. In withdrawing it, the same precautions are to be observed, as formerly directed in excluding the external air from entering the cavity.

Water.

But the most frequent collection here is water, or a serous fluid; and when local or unconnected, as sometimes happens with general symptoms of dropfy elsewhere, it admits of relief by an operation.

CCCXIV. The symptoms of such a collection here are chiefly the following:

1st, The constitution shews something of a dropfical cast; or having been weakened by some previous disease, discovers a pale bloated look.

2^d, Pain is felt for some time in the thorax, without any appearance of suppuration, after its commencement.

3^d, The urine is lessened considerably in its quantity, while the water is collecting, and its colour is at the same time highly increased.

4th, Difficulty of respiration next commences, which is most experienced in ascending any height, attended with a teasing cough, but ejecting little or no spittle; accompanied with palpitation, and numbness of the right arm and fingers.

5th, By the pressure of the water, in process of time, sleep comes to be disturbed, and the patient suddenly starts from it with a sense of suffocation. He is also unable to stoop much forward, or to lift any thing from the ground.

6th, During the progress of the disease, the pulse is very variable; and at this period, though not always, an intermission of it occurs.

7th, The undulation of the fluid may also in some cases be heard by the patient himself, when suddenly

rising up. An enlarged size of the thorax of that side is likewise conspicuous at times. Moving the body by sudden jerks, will also help to discover it.

CCCXV. Having ascertained the existence of the disease, for a particular account of which, (*vide* vol. I. p. 171.) the only step that is necessary to consider here, is the mode of giving relief by means of surgery.

CCCXVI. The patient being laid in a horizontal posture, and the diseased side brought over the edge of the bed, the skin of which is pulled up, and retained in that posture by an assistant, an incision is then made with a scalpel, betwixt the 6th and 7th ribs, half way betwixt the back and sternum, for two inches long, externally and gradually lessened, as it passes through the muscles, till it reach the pleura, while the blood-vessels in the under border of the superior rib, are cautiously avoided. The pleura is then to be slowly and cautiously entered, from the danger of adhesion of the viscera, and where no adhesion prevails, the fluid will rush out on making the perforation. Where adhesion occurs, the place of perforation must be changed higher or lower, till the fluid appear; then a canula is to be introduced, and secured by a ribbon, and the discharge regulated in the time of its progress by the feelings of the patient. If in too great quantity for evacuation at once, it may be drawn off at the distance of a day or two; and the wound in the mean time dressed in the usual manner with liniment, and secured by a bandage.

Instead of the above method, the operation may also, after the external incision with a scalpel, be performed by the trocar.

CCCXVII. When water is found in both sides of the chest, the operation is to be performed at successive times, with a proper interval betwixt them; and in all cases after the operation, the access of the air should be prevented as much as possible, and any quantity collected, expelled by the patient's attempting to fill his lungs, or otherwise discharge it.

CCCXVIII. Water in the pericardium, is discharged by the same operation, and the incision must be made for this purpose within 5 or 6 inches of the sternum; where, if distended, on making the opening, it will appear, and the trocar can be past into it.

CCCXIX. Water here is chiefly distinguished, along with the general symptoms already enumerated, on the pressure of the hand between the 4th, 5th, and 6th ribs, by a firm undulatory motion being felt at every stroke of the heart; and the pain of chest being also more confined to its middle or left side.—It is generally combined with water in the other cavities of the thorax, and varies in quantity, from 2 oz. to a pound. Its appearance, as the other species is most frequent, is in advanced life; but it may occasionally appear at an earlier period.

Matter.

CCCXX. The last extravasation occurring in the thorax, was observed to be matter or pus.

A collection of pus in the thorax, termed *empyema*, is marked by the following symptoms:

1st, The common symptoms that attend suppuration elsewhere, (ix.) viz. *frequent irregular shiverings*, with other marks of symptomatic fever.

2d, *Fixed pain in the chest*, with difficult respiration, and strong desire of an erect posture.

3d, *A constant and teasing cough*, most severe when lying on the sound side.

4th, *Enlarged puffy feel of the side itself*, or where the pain was originally felt; or an evident fluctuation discerned, by placing the patient in a sitting posture, and shaking or otherwise agitating the thorax.

CCCXXI. The causes of this disease are all those that are enumerated, as producing peripneumony and pleurisy, (*vide* vol. I. p. 16. and 20.) as a consequence of which diseases, we find this affection occur; and also they are all such as produce pulmonary consumption, during the progress of which it frequently appears (*vide* vol. p. 125.) It is even at times an effect of external injury, or wounds of this part, (lxxxvii.) Whatever its cause be, it is an affection attended with much danger; and, where no full discharge takes place by the mouth, an operation becomes then a necessary, though from the nature of the part, doubtful remedy.

CCCXXII. The steps of this operation, are the same with these already described in case of serous effusion (cccxi.), and the situation for performing it is also the same; unless determined elsewhere by the external feel of matter, or the long continuence of fixed pain, when a preference is to be given to this situation for the incision.

CCCXXIII. When the operation is performed, though relief from the present oppression is experienced, the issue of it is generally doubtful; and the disease either goes on in a different part of the lungs,

from the peculiar causes producing it, or the external sore healing up, a new collection forms.

CCCXXIV. The external opening should therefore be preserved so, if possible, to prevent this reappearance, at least when connected with phthisis, till the dangerous or phthical period of life is over.

DISEASES OF THE BELLY.

CCCXXV. **T**HE diseases of the belly that require the aid of surgery, consist chiefly of tumours, of various kinds, the contents of which are formed either by a fluid or solid collection or both.

I. FLUID COLLECTIONS.

Ascites.

The first, and simplest, to be noticed in this view is the serous effusion into the abdomen, termed *ascites*; and it oftener occurs in the male than the female.

CCCXXVI. This disease was already considered in (vol. I. p. 273.) It is chiefly denoted along with the general symptoms of dropy, viz. thirst, diminished urine, dry skin, emaciation and paleness; by a tense abdominal swelling, equal in every part, and discovering a fluctuation to the feel.—For this purpose, the patient should be laid in his bed, with his shoulders raised, when a hand being placed on one side, and the other struck with one or more fingers, the undulation will be heard.

The umbilicus is at the same time generally pressed outwards, where the distension arises from this cause.

CCCXXVII. On determining the nature of the affection, the operation is next to be performed; previous to which, as pressure is necessary, not only after, but during the time of the operation, a roller of flannel should be applied round the body, made with belts, so as to be occasionally shifted, and an opening left in it at the part where the puncture into the abdomen is intended, which should be the middle, between the umbilicus and the centre of the spine of the ilium, and this part may be previously marked with ink. The bandage being tightened, and the patient laid in a horizontal posture, with his side over the edge of the bed, the surgeon, with the trocar in his right hand, and fixing the head of the stilette in the palm of his left hand, and directing the instrument with his fore finger, placed near its extremity, pushes it forward into the abdomen, which he knows it has entered, on the resistance to the stilette being removed. The latter then being withdrawn, and the canula allowed to remain, the water will flow off. During its progress, the feelings of the patient are to be studied, and the bandage tightened, when faintness comes on; and if this is not sufficient, the operation suspended entirely for some hours.

When in its progress the discharge suddenly stops from the obstruction of part of the omentum or intestine intervening, a blunt probe or one bent at its point to prevent danger, may be introduced to push it back.

CCCXXVIII. On finishing the operation, the wound is to be treated by the application of a bit of plaster

and every caution employed to exclude the admission of the external air.

CCCXXIX. The fluid discharged in ascites, differs in its nature and appearance, according to the state of the internal viscera. Where the latter are not diseased, it resembles pure serum, where schirrus prevails it is of a yellowish or greenish cast, at times also, it is of a chocolate or coffee colour.

CCCXXX. Where no water flows on the operation being performed, the contents may be of a viscid or gelatinous nature, in which case the operation may be again performed in another part, in order to give a chance of success.

Dropfy of the Ovarium.

CCCXXXI. But without being viscid, the fluid also instead of being diffused, may be contained in cysts as happens in dropfy of the ovarium as well as hydatids.

In dropfy of the ovarium, the operation may be performed, but this disease is generally slow in its progress, and the health little affected by it.

Tympan.

CCCXXXII. The same situation of the abdomen is occasionally occupied with an elastic fluid or air which requires also to be discharged. This disease is termed tympany, and is treated in (Vol. I. p. 219.)

It is distinguished by the same symptoms as ascites, and especially by a greater tenseness of swelling.

These symptoms admit relief by a similar operation, though the opening may be here smaller, and

the same precautions in the application of pressure are necessary previous to the operation.

CCCXXXIII. After such diseases the tone of the parts or relaxation of the teguments is to be gradually restored by the occasional use of stimulants and friction, as the camphorated liniment, opodeldoc balsam, &c. and for this purpose, after a proper interval of two or three days, the bandage may be removed for a time.

Hydrocele.

CCCXXXIV. The next situation occupied by a fluid collection, is the scrotum and spermatic cord, forming what is termed the Hydrocele.

Of this disease there are several species, varying in their particular site and extent, the principal of which are the anasarca and vaginal hydrocele of the testes, and the same of the spermatic cord.

Anasarca Hydrocele of the Testes.

CCCXXXV. This affection is distinguished by a soft inelastic tumour, of a white shining colour, pitting on pressure of the finger, attended with disappearance of the rugæ of the scrotum, enlargement of all the contiguous parts and frequently distortion of the penis.

CCCXXXVI. The causes of this affection are either a general dropical habit, when it is combined with general anasarca, or local injury, producing merely dropsy of the part.

CCCXXXVII. The first is most frequent and while the constitution is attacked by medicine for relief of the general disease (*vide* Vol. I. p. 167.) surgery af-

fords a more immediate relief for the immediate discharge of the morbid collection.

CCCXXXVIII. This discharge may be made in different ways, by the seton, trocar, incision or puncture; of these methods, the last is commonly preferred.

CCCXXXIX. In making them, two circumstances require attention; first the place and number of them, and 2d, their after treatment.

With respect to the first, they should be made at the most prominent part, and 6 or 8 are sufficient at a time according to the size of the tumor, to be occasionally repeated when healing up, or when the collection is not fully evacuated.

In regard to their treatment, the parts are to be kept dry, by frequent changing of their coverings, and their inflammation, when coming on, subdued by the application of cold astringent solutions, particularly the saturnine.

Gangrene, when appearing, is to be counteracted by the constitutional and local treatment, recommended (p. 7. & 8.), and the pain obviated by opiates.

CCCXL. When this affection arises from local injury, or a cause connected entirely with a morbid state of these parts, as tumor, ulcer of urethra, &c. the removal of this cause, if practicable, must first be attempted, and the part laid open by incision for this purpose; but, if not admitting this radical relief, a palliative treatment is to be aimed at, by suspension of the scrotum, and a supine posture with the use of astringent solutions to the part.

Vaginal Hydrocele.

CCCXLI. The vaginal hydrocele is marked by the same pellucid appearance of the scrotum, and alteration of its rugæ, as in the former disease. Its bag is of a pyramidal form, and approaches, according to its size, more or less towards the ring of the abdominal muscle, while its tumour continues the same, on any alteration of posture, and shews an evident fluctuation.

Hence the leading marks that distinguish it from other affections are,

1st, The place of its commencement, the under part of the scrotum.

2^d, No actual recession of its tumour on pressure.

3^d, It's evident fluctuation and pellucid appearance.

4th, The disappearance of the testicle, which can hardly ever be felt, and distortion of the penis, from the size of the swelling.

5th, The smoothness and equality of its surface, yielding to the finger.

6th, The lightness of its weight, proportioned to its size, when raised on the hand; and

7th, No sensation of pain in its progress.

CCCXLII. The causes of this disease are the same as of dropfy elsewhere, viz. increased exhalation, or diminished absorption of the vessels of the part, (*vide* vol. i. p. 165.)

CCCXLIII. The prognosis to be formed of it, depends on three circumstances: The locality of its na-

ture; the soundness of the patient's constitution; and the degree of inflammation excited by the mode of cure.

CCCLXIV. With regard to the *first*, where it is not connected with any other disease, there is every chance of success.

In regard to the *second*, in the old and infirm, it would be improper to attempt any thing but simple palliation;—and the radical cure could hardly be expected to succeed.

On the *last* circumstance, it is to be observed, that the extent of the inflammation may be too great; and where the constitution is prone to inflammation, the radical cure may on that account not succeed.

CCCXLV. Whenever, therefore, the inconvenience of the disease demands relief, in this affection two methods of cure prevail; the palliative and radical; the former merely affecting a present discharge, the latter preventing likewise a return of the disorder.

Palliative Treatment.

CCCXLVI. In order to accomplish the *first*, let the patient be laid supine, with his feet over the edge of the bed, and some soft substance as a pillow, placed under the scrotum to support it, or he may be seated on a chair or a table, with the scrotum hanging over it. The latter, where the tumour is, being then grasped behind, an attempt is to be made to push forward the fluid as much as possible, with a view, in the perforation, to avoid injuring the testicle; while the most prominent and anterior part being next chosen, a small portion of the skin is to be divided with a lancet, after which, if no vessel present, the surgeon, taking the

trocar in his right hand, with the fore finger near its extremity, allowing only a sufficient length for its entering the scrotum, introduces it, as directed in case of ascites, till a want of resistance denote its having passed; when the perforator being withdrawn, the canula is to be pushed in, and the discharge promoted by pressure on the tumour. If coming too quickly, it may be occasionally stopped; or, if the reverse, and stopping before the size of the part has properly subsided, a probe may be introduced to keep back any part of the testicle. As soon as finished, putting the hand to the part, let the canula be withdrawn, when a compress, wet in some astringent or spiritous solution is applied, or simply a bit of adhesive plaister, supported by a T. bandage or suspensory, and the patient enjoined a horizontal posture for some days, with a cooling regimen; as much depends on this for the easy healing of the part, after the operation; for, in some cases, where the constitution is faulty, instances have occurred, of its degenerating into gangrene.

CCCXLVII. The fluid discharged in this affection, is of a yellowish, greenish, or brown colour, and resembles in its properties, the serum of the blood.

Radical Treatment.

CCCXLVIII. The radical treatment of this affection, is conducted in a variety of ways, which may be all reduced in their action to two heads; either the simple *obliteration*, or actual *destruction* of the cavity forming the seat of the disease.

CCCXLIX. The *first*, and simplest of these methods, is the use of external stimulants to the scrotum, after

the palliative treatment. This has at times succeeded, as a strong solution of sal ammoniac, volatile liniment, tincture of cantharides, &c. ; but as it more frequently fails, the other methods are then resorted to, which consist either in making an incision into the cavity; the introduction of a seton through both its extremities; the application of caustic to destroy a part of it; or the injection of stimulating liquors, to produce adhesion of its sides.

By Incision.

CCCL. In employing the *first* of these, the patient being properly placed on a table, and secured, with the scrotum over its edge, the tumour is to be grasped from behind with one hand of the surgeon, so as to push it out on the anterior part, when, with a common scalpel in the other hand, a division is made of the teguments, from the upper extremity of the tumour, down to its most depending part, by which the vaginal cyst will come in view. An opening into the latter at its upper part is then to be made with a lancet, so as to admit the finger, and on the latter serving it, as a director, a probe pointed bistoury is to be conducted to divide the whole sac, down to its under extremity. By this incision the operation is completed, when the testicle protrudes. The latter is to be immediately replaced; and, if no part of the sac is diseased to require excision, the operation is finished.

CCCLI. The dressings are to be conducted by inserting a pledgit, moistened with liniment, betwixt each side of the testicle and sac, leaving part of it hanging out for removal, then by drawing the parts,

close together, and securing them by a ligature or two, passed through the skin and vaginal coat, or else by strong adhesive plaster. The scrotum is next covered over with a large pledgit, spread with liniment, a cushion of tow is to be applied over this, and the whole secured by a T. bandage or suspensory; after which the patient is removed to bed, an opiate given, and attention to avoid motion enjoined.

CCCLII. The removal of the external dressings may be made on the second day; that of the more internal at a later period, replacing them, and gradually lessening their size, till a gradual adhesion of the internal parts take place.

CCCLIII. The morbid symptoms requiring attention during the cure, are excess of inflammation and pain.

These are diminished by the usual antiphlogistic means, and particularly by warm fomentations and poultices to the part.

By the Seton.

CCCLIV. To employ the *second* mode of cure in hydrocele, or by the seton, it is only necessary to make an opening with a lancet or scalpel, in the upper part of the tumour, to admit a director, armed with the seton, which being introduced, and pushed down to the bottom, is to be there cut upon with a bistoury, the director brought out, and the seton allowed to remain. The parts are then dressed with a pledgit on each side, and so soon as symptoms of strong inflammation appear, about the 3d day, they are to be abated by fomentations, and an emollient poultice, and, as the symptoms subside, the thickness of the seton is to

be gradually lessened, by the daily removal of some folds of cord.

By Caustic.

CCCLV. In order to employ the *third* method, or by caustic, the scrotum must be shaved, and a small piece of caustic, about the size of a shilling, placed on the under and anterior part of the tumour, and prevented from spreading by the application of adhesive plaster, as directed in forming an issue (p. 107.) In five or six hours its effect is complete, when it may be removed; and if not penetrating the cyst, the latter may be opened by a lancet. The part is then to be dressed with liniment, and an emollient poultice over all, secured by a bandage. The inflammatory symptoms which supervene, are to be abated by the antiphlogistic course. The eschar separates in a dressing or two, and the whole vaginal coat comes off, in the course of the cure; when the parts heal up, and the disease is removed.

By Injection.

CCCLVI. The *last* method of cure, or by the introduction of stimulant liquors into the vaginal cavity, though the simplest, is not much to be depended on, consists on finishing the palliative operation, in the introduction of a quantity of diluted port wine, from 3 or 4 oz. to 7 or 8, according to the quantity of fluid discharged, having about one fourth water, which is preferred, into the cavity of the tumour, by means of the pipe of an elastic bottle, inserted through the cannula. It should give some pain on its introduction.

which should extend to every part. It should be retained 3 or 4 minutes to produce its full effect, and care should be taken that none of it insinuate betwixt the cellular substance of the scrotum. On withdrawing the bottle, it is to be entirely discharged by the cannula before the removal of the latter; the parts are then to be dressed with a pledgit and compress, a suspensory applied, and a horizontal posture enjoined for some days. The symptoms succeeding it vary in different cases.—They are to be treated according to circumstances of inflammation or pain, by the usual means; and the nice point is to prevent the formation of matter, which, if forming, baffles the effect of the operation.

CCCLVII. Each of these different methods is favoured by different practitioners, and a nice attention to the after treatment may produce success with all; but the cure by the seton and injection are least to be depended on;—and particularly, as not giving access to know the state of the internal parts in performing the operation.

CCCLVIII. From hydrocele of the testicle, now considered, we proceed next to that of the spermatic cord.

Anasarca of the Cord.

CCCLIX. The anasarca of the spermatic cord, is known by a colourless, soft, inelastic swelling in its situation, changing its shape and size somewhat according to the posture of the body, and the application of pressure, and varying in its extent in different cases.

CCCLX. When unconnected with general dropſy, and depending for its origin in a local cauſe, the diſcharge of the collection may be made by carrying a free incision into it, from one end to the other, ſo deep as to evacuate its contents, which are commonly viſcid; but taking care to avoid injuring the cord itſelf.

When finiſhed, it is to be dreſſed as a common ſore, by pledgits inſerted betwixt the lips of the wound; pain and inflammation obviated by the uſual means; and an attempt made to heal it up by firm granulations.

Encyſted Hydrocele of the Cord.

CCCLXI. The encyſted affection of the ſame part, is diſtinguiſhed by the progreſs of the tumour, which commences aboye the ſituation of the teſticle, which can at all periods of the diſeaſe be felt, and by the ſmall diſtorſion of penis. In other reſpects its ſhape is pyramidal; it contains a ſenſible fluctuation, with a ſort of ſpringy feel, and it is not affected by preſſure. Where combined with hydrocele of the teſticle, a ſlight diviſion or line of diſtinction can ſtill be traced betwixt the two.

CCCLXII. This diſeaſe is frequent in early life, and often yields to aſtringent applications, as ſolutions of alum, ſal ammoniac, &c.; but, at an advanced period, theſe methods are ineffectual, and the ſame treatment is then neceſſary, as in the ſame affection of the teſticle.

In the palliative method, the trocar muſt be introduced at the moſt dependent part; and, in the radical

cure, incision, as showing the nature of it, by exposure of the parts, and as preventing mistakes, is preferable.

HEMATOCELE.

Vaginal.

CCCLXIII. Besides such ferous collections, as we have hitherto examined, blood is also frequently effused in these parts, forming a disease termed *hematocele*.

CCCLXIV. Its situation is either in the vaginal coat of the testicle, or spermatic cord. It is distinguished by two peculiar symptoms: Its sudden appearance; and the greater weight of its tumour, compared with hydrocele.

CCCLXV. Its causes are injury by accidental wounds in this part; by the cutting of vessels in the use of the trocar; or by their rupture from sudden depletion, on evacuating hydrocele.

CCCLXVI. Whatever its causes may be, if not yielding to the use of external stimulants, the collection must be discharged by incision, and care taken to restrain any vessels that pour it out, by ligature; or, failing this, by the use of strong stimulants, as ardent spirits, æther, &c. applied to the part, and frequently renewed, on pledgits, till it take place.

Albugineal.

CCCLXVII. A more internal collection, from the vessels of the testicle itself, also occurs here, contained within the albuginea. It is known by the same symptoms as hematocele; but, as it yields to no treatment, suspension and care are the only palliatives.

Varicocele, &c.

CCCLXVIII. The veins of all these parts are frequently found to acquire a varicose state, and to produce appearances of tumour, distinguished by the appellations of *viricocele*, *circoccele*, &c.

CCCLXIX. The cause of these swellings is either relaxation or pressure, most frequently the former; joined to their natural dependent situation.

CCCLXX. Their symptoms are a knotty unequal swelling, attended with no pain.

CCCLXXI. The cure depends, when arising from pressure, on removing its cause, when in our power; and when from relaxation, on the use of astringents, as solutions of alum, oak bark, &c. joined with a proper suspension of the part.

• *Solid Collections.*

CCCLXXII. From fluid, we consider, next, tumours of a solid nature. The first of these to be examined, the cure of which has frequently formed a distinct profession, is the rupture or *hernia*; being a protrusion of part of the contents of the abdominal cavity, through some part of the abdominal coverings.

Rupture or Hernia.

CCCLXXIII. The situations of this protrusion are the groin, scrotum, and labia pudenda, the upper and fore part of the thigh, the umbilicus, and different points between the interstices of the abdominal muscles.

CCCLXXIV. The causes of this protrusion are ascribed either to a sudden exertion, producing violent

action of the abdominal muscles, as in laughing, crying, falls, &c.; or to a relaxed state of the abdominal muscles themselves, either from natural habit, or the use of particular food, especially much oil; or to both combined.

CCCLXXV. The symptoms of this affection are chiefly marked; by its sudden appearance; by its effect on the alimentary canal, in its obstruction and pain, along with nausea, and other morbid affections of the stomach; and, by its disappearance on pressure, more or less into the abdomen.

CCCLXXVI. In every dissection of hernia, two parts are conspicuous: The protruded part, forming the disease; and its sac or covering.

CCCLXXVII. The protruded part consists chiefly of some portion of intestine, or omentum, or both. The covering or sac is always part of the peritonæum, when of long standing, thickened in its texture, and consisting of several layers.

CCCLXXVIII. The alarming symptoms in this disease, depend either on obstruction of the intestines, or suspended circulation of vessels; and, the danger of these symptoms occurring in such cases, will be in proportion to the narrowness of the opening, and the extent of the parts which have fallen down.

CCLXXIX. The consequence of this state is the production of inflammation and its effects, and these effects are marked by nausea and vomiting, followed by tension of belly, acute pain, and general fever. This fever suffers an intermission, as gangrene comes on, the tension of parts decreases, and the obstruction appears to be removed as the fatal event ensues.

CCCLXXVII. In every case of hernia, then, the removal of stricture is the chief and sole indication, and this is accomplished either by simple replacement of the protrusion, or else a division of parts to effect it.

CCCLXXVIII. In order to render the first successful, several circumstances require attention, viz.

- 1st, The proper position or posture of the part.
- 2^d, Its full relaxation; and lastly,
- 3^d, Its mode of replacement.

With respect to the first, the elevation of the lower parts of the body should take place, and the thighs and legs be higher than the trunk.

With respect to the second, the general relaxation of the system should be attempted by copious venesection the part itself, lessened by injections of tobacco smoke, to take off tension, but if merely acting as a laxative, by opiates, provided the stomach retain them; the use of the warm bath will also induce the same effect or assist these means, while cold applications, as saturnine solutions, ice and snow, to the part itself, are proper.

With respect to the third, or replacement, this is attempted by a proper application of pressure, grasping the swelling with one hand, from the bottom upwards, while, with the fingers of the other, an attempt is made to push forward its contents at the superior part of the tumor.

CCCLXXXII. Where the replacement succeeds, the part is to be retained by the assistance of a bandage or truss fitted to it, and constantly worn, which will prevent a relapse; but should it not succeed, so long as the disease remains in an indolent state, little else will

be necessary than this assistance to prevent its increase, joined with attention to the state of the bowels.

CCCLXXXIII. Where, again, none of the means now detailed succeed, and the morbid symptoms increase, a division of parts to remove the stricture becomes unavoidable; and the period for performing it should not exceed 3 or 4 hours after the former attempts fail.—But the method of doing it varies according to the particular species of the disease.

Scrotal Rupture or Hernia.

CCCLXXXIV. The *first*, and most frequent species of the affection to be considered, is the bubonocoele, or inguinal hernia, which may be defined a soft swelling, somewhat elastic and tense, beginning in the groin, and descending into the scrotum or labia in women, attended for the most part with morbid symptoms of stomach and bowels.

CCCLXXXV. In order to remove the stricture here, the patient is to be laid horizontally on a table, with a pillow under his shoulders; his thighs being raised, and held asunder by assistants, while his legs hang over the edge of the table. The surgeon then places himself betwixt his knees, beginning his incision with a scalpel, about an inch above the ring, or the superior extremity of the swelling, and continuing it for the whole length of the hernial tumour, or to the most depending part of the scrotum, through the teguments only. He next cautiously divides the cellular substance, avoiding any vessels that may present, by which the sac appears, and, if the disease is recent, without opening it, the stricture at the ring is

to be removed by slow scratches, after which the intestines may be replaced. But if, from long descent, their being entangled with the omentum is suspected, or water collected in the sac, the latter, on appearing, is to be opened, and the most proper place for it, is the under part, where there is least risk of injury to the parts within, dividing it slowly, fibre after fibre, with the same scalpel, till it is cut through, which may be known by the introduction of a blunt probe. When passing in, the opening is to be enlarged on a director, till the fore finger is admitted, which, guarding the knife, will allow the sac to be divided its whole length, up to the ring, when the protruded parts are laid in view. The intestines are then to be examined, which is done by turning them gently over, with the finger anointed with axunge, and till this is done, the stricture is not to be removed. The stricture is best removed, by simply enlarging the separation of the tendinous fibres of the muscles, through which the parts have protruded; and, in doing it, the knife, directed by the fore finger, kept a little beyond it, must be carried obliquely upwards, where the ring may be divided to any extent. The reduction is then effected, by pushing up the protruded parts, the last descending parts first; and in doing it by applying the finger chiefly to that part of the gut connected with the mesentery, as least apt to be injured; while the assistance of posture is also taken, in a still farther elevation of the thighs and loins, during the operation.

CCCLXXXVI. When the reduction is finished, the parts are then brought together by some stitches of a ligature, a pledgit spread with liniment ap-

plied over all, and supported by dry charpee. The T. bandage then secures the whole.

The removal of the patient to bed is the next step, an opiate being exhibited, and the antiphlogistic course strictly enjoined; though the extent of this must be regulated by the state of his constitution, and the attending circumstances of the case. Attention, however, to the state of the bowels, is always a chief indication.

CCCLXXXVII. But though reduction is thus easy where the protruded parts are not in a morbid state, yet, where from the long continuance of the disease, or other causes, effects of inflammation are induced in them, the obviating these effects, previous to their reduction, is necessary.

CCCLXXXVIII. These effects of inflammation, consist either of adhesions or gangrene.

CCCLXXXIX. With respect to the *first*, or adhesions, they are formed either among the protruded parts themselves, or else they are formed to the contiguous parts.

CCCXC. Adhesions among the parts themselves, are generally formed by long filaments, easily separated. It should be done by scissars or a scalpel, before they are returned. Where the adhesions are to the contiguous parts, if the omentum or sac, part of them, should the adhesion be very strong, may be removed, or dissected off, in the same way, by a scalpel or scissars.

CCCXCI. In case of gangrene of the omentum, the mortified part may be removed, on spreading it out,

by scissars, and the hemorrhage of any vessel restrained, previous to its reduction.

The same may be done with any thickening, or lumpy state of the same membrane, and also of the hernial sac, where necessary.

CCCXCII. But, where gangrene of the intestines is discerned, that part of it diseased, if not extensive, is to be retained by ligature at the opening, till a separation takes place; or, if continued round the whole circumference of the intestine, it is to be removed by excision, and the cord or ligature being left at the ring, through the latter, the fæces will continue to be passed for life, (*vide* p. 51.)

CCCXCIII. The operation being then completed, and the parts dressed, their daily inspection will be necessary. In the space of 6 or 7 days the ligatures may be removed; and, so soon as a firm connection appears, and the parts are cicatrized, a truss or bandage may be worn. These are of various kinds, but for ease and convenience, the elastic ones should be preferred.

CCCXCIV. This affection in the female is to be treated in a similar manner, as soon as we are acquainted with it, which is often concealed; but, from the abdominal affections alone, or the symptoms of stomach and bowels, we are often enabled to detect it.

Hernia Congenita.

CCCXCV. A peculiar species of this affection comes next to be mentioned, which has been termed the *congenital hernia*. The sac is here formed by the vaginal coat of the testicle itself; and it requires there-

fore more caution, both in the last steps of the operation, and in the after treatment. It is known by its early attack in childhood; and when in the adult, by tracing the history of its first appearance to that period, or soon after birth.

Femoral Rupture or Hernia.

CCCXCVI. This affection may be defined a tumour on the upper and anterior part of the thigh, having the same appearance and feel as the inguinal hernia, described (p. 289.)

CCCXCVII. It is distinguished from venereal bubo (134.) which occupies the same situation, by

1st, Its appearance; the tumour of the bubo being oblong, and that of the hernia round: and

2^d, By its sudden occurrence, and the costiveness, and other symptoms of disorder in the *primæ viæ*, which attend it.

CCCXCVIII. This disease oftener occurs in the female than in the male; and in the general mode of treatment, there is little difference from the former. In attempting its replacement, however, the parts should be pushed directly upwards.

In conducting also the operation, the external incision should be here extensive, or somewhat beyond the bounds of the tumour. The reduction may be likewise attempted before division of the ligament, taking advantage of posture to assist it.

CCCXCIX. Where failing in the reduction, as the parts pass either immediately over the femoral artery and vein, in others on their outside, but more frequently on the inside, between them and the pubes;

in dividing the ring, it must be done with the utmost caution on the outside, by continuing several scratches through its thickness, but not so entirely as to separate it, by which means the vessels will not be injured.

When the parts are dressed, the fore is to be retained by strong adhesive plaister, and lastly the usual bandage.

Umbilical Rupture or Hernia.

CCCC. The umbilical hernia consists of a similar tumor to that in the other situations described, (289. 293.) It is most common to childhood; to corpulent habits; and to women in the last months of pregnancy.

The parts protruded are various, but most frequently the omentum alone; and hence there is less danger from this than the other species of hernia.

CCCCI. Where an operation, from the alarming symptoms described (287.) becomes here unavoidable, a free external incision should be made, the sac cautiously opened, and the finger then introduced, to divide it to the necessary extent. In this division it should be carried on the left side, a little upwards and outwards.

In the reduction, the state of the parts, and the after treatment, the same directions apply as in the other species.

CCCCII. Every other species of hernia that may appear in any part of the abdomen, termed *ventral*, is to be treated as the last, or umbilical.

Sarcocoele.

CCCCIII. The next tumour of a solid nature to be

considered after hernia, is the *sarcocoele*, or schirrus of the testicle. This affection shews great variety in its appearance ; but its leading symptoms are, 1st, An enlargement and induration of the body of the testicle, in one point gradually advancing without marks of inflammation or pain. With its increase it acquires additional hardness.—Its surface, at first smooth, turns by degrees unequal and ragged. The parts are affected with severe darting pain ; extravasation of serum or matter takes place ; the spermatic cord becomes enlarged ; and external symptoms of inflammation coming on, the teguments give way, and the ulcerous state commences, exhibiting a fetid sore, with ragged edges, and thrusting out a painful gleety fungus. In this state the hectic symptoms rapidly proceed, and the patient is cut off in much pain.

CCCCIV. This disease is common to every age, but is most frequent in advanced life. The period of its progress varies in different cases, and also the particular parts of the testicle first affected.

CCCCV. The causes of this affection are equally unknown, as schirrus elsewhere. It has at times succeeded a venereal affection, but this is by no means common ; and it is also frequently combined with hydrocele, though by no means depending on it as a cause.

CCCCVI. The prognosis to be formed in this disease, though generally unfavourable, must yet be regulated by circumstances ; and these are, the progress of the disease, and predisposition of the patient.

CCCCVII. With respect to the *first*, the operation may succeed, wherever the spermatic cord, though

somewhat full, is yet unaffected by the disease, and no matter extravasated, or formed, in the tumour itself, to occasion absorption, and where the cause, also, is evidently external injury.

In regard to the *second*, a sound, firm constitution has a greater chance than the pale, weakly, or jaundiced habit; and the disease making slow progress, marks a more favourable state than its rapid increase.

CCCCVIII. When the operation is thought of, however uncertain, as a remedy, the circumstances then to be attended to, are the period and mode of its performance.

CCCCIX. The period of its performance should be so soon as the usual remedies, viz. mercury, cicuta, and a continued antiphlogistic course fail, and if the disease is making at the sametime rapid progress; for while indolent, the operation may still be delayed.

CCCCX. To perform the operation, the patient is laid on a table or bed; on his back, with his legs hanging down, and held aside by two assistants. Having steadied the tumor with his hand, an incision is then to be carried by the operator through the teguments and cellular substance for its whole extent, when the testicle and cord come into view, and the incision is to be made from a little above where it is intended the cord should be divided. Round the latter, a ligature is then to be passed and drawn as tight as possible, so as to prevent the danger of hemorrhage, and in order to pass the ligature easily, the cord should be raised up by the surgeon from the parts beneath, before attempting it. When the ligature is fixed, the cord may be then divided about two inches below it, and by push-

ing the finger behind the cord and testicle, the latter may be turned out of its seat, being easily separated from the thin sheath with a scalpel. Any vessels of the scrotum that present, which, are often pretty numerous in this disease, and much enlarged, may be then taken up by the tenaculum, The spermatic vessels are to be separated from the nerve, and a fresh ligature passed over them; the former ligature should be then untied and allowed to remain as a tourniquet for eight or ten days.

CCCCXI. This finishes the operation, when the ends of the cut should be laid together, and secured by adhesive plaister, or the interrupted future, leaving the ends of the ligatures without. The parts are to be covered with a pledgit moistened with liniment, a cushion of tow placed above, and the whole supported by the T. bandage. The dressings may be opened in two or three days, and a daily removal of them made. The ligatures will fall in eight or ten days, and the cure not exceed the 15th.

CCCCXII. This is the progress of the treatment in a favourable state of the disease; but, a farther complication of morbid circumstances occasionally produces some alteration.

CCCCXIII. These circumstances are the state of the cord; the disease of the teguments; and adhesion of the tumor to the opposite side.

CCCCXIV. With respect to the first, where the cord is to be divided high up or near the abdomen, retraction must be guarded against by the previous application of a ligature, as far above the part to be divided as possible.

In regard to the state of the teguments, wherever partaking of the internal disease, the diseased part of them should be removed, and this may be done either by dissecting it by itself, or an incision may be brought down on each side during the operation, so as to leave it adhering to the testicle. When the latter is removed, the remaining skin, from its flaccidity, may be still brought to cover the fore.

The last circumstance, or adhesion of the tumor to the opposite side, occasions sometimes the testicle of that side to be opened; this requires more attention to the after treatment, in avoiding the effects of inflammation.

CCCCXV. Where the two diseases of hydrocele and scrotocele are united, (as often occurs,) on the discharge of the fluid, as directed (219.), there is then no difference in the subsequent steps of the treatment.

Peculiar Species.

CCCCXVI. Two peculiar species of this disease prevail, which have been taken notice of by authors, and these may be termed the external species.

CCCCXVII. The first is common to all workers in foot, the irritation of which produces on the upper part of the scrotum a wart, termed the foot-wart, which degenerates into a sore of a cancerous nature, and communicates in time to the testicle and other parts, till it reach the abdomen, when it proves fatal. In its early state, therefore, the operation should be performed.

CCCCXVIII. The other species is peculiar to warm

climates, and to the African constitution; it consists of a uniform firm swelling, affecting the teguments of the scrotum, and communicating to the testicle, which acquires, in time, an enormous size; it is slow in its progress, and always without pain. In other cases, it begins in the testicle itself, which has been known, in its ultimate progress, to weigh 50 lib.

Mercury sometimes succeeds, and astringents externally applied, but, in the advanced state, these are ineffectual, and suspension and opiates prove the only relief.

DISEASES
OF THE
PENIS AND URINARY ORGANS.

CCCCXIX. **D**ISEASES of these parts, include a considerable variety ; and many of them have afforded such a field as to be exercised as distinct professions, we shall consider, 1st, these affections which attack the external member ; and 2dly, those that are peculiar to the more internal parts.

Phymosis.

CCCCXX. The first affection to be noticed is the *phymosis*, or contraction of the skin, or preputium over the glans.

CCCCXXI. This is the common attendant of inflammation of these parts, and particularly from a venereal cause ; when occurring from simple irritation, it is only in those who are subject to a cuticular discharge here.

CCCCXXII. It generally yields to simple fomentations, joined with an antiphlogistic course, as directed in Vol. I. p. 149. When more severe venesection, and the other means there mentioned may be employed; but, failing these, where matter is confined from venereal fores, under the glans, and acting upon this part, an operation for its division becomes then necessary.

CCCCXXIII. It is generally done, either with a pair of scissars, or a particular instrument, consisting of a bistoury concealed in a director for the purpose; the division should be made on one side, so as to avoid the large veins. When finished, the parts are to be bathed with a warm fomentation; the fore then covered with charpee, a compress laid above, and the part retained by a bandage. In the subsequent treatment, adhesion is to be prevented between the prepuce and glans, by the insertion of charpee betwixt them, and and where the fore does not readily heal, the use of mercury should take place.

CCCCXXIV. If the prepuce should be very much elongated along with this contraction, instead of its division, as recommended, circumcision itself may be performed.

Paraphymosis.

CCCCXXV. As the former affection is a retraction of the prepuce before, so this, or paraphymosis, is a retraction of it behind the glans, and proceeds generally from venereal irritation, or whatever occasions a fullness and swelling of the glans.

CCCCXXVI. When the prepuce cannot be brought over the glans by the common attempt of pulling, and

does not also yield to the use of saturnine solutions, to venesection, and the other parts of the antiphlogistic course, as there is danger of gangrene of the glans taking place, an operation for the removal of the stricture becomes unavoidable.

CCCCXXVII. It is easily accomplished, by making a cut with a lancet on each side the penis, behind the glans about half an inch long, and so deep as to divide the prepuce.

CCCCXXVIII. After the parts have freely bled they are to be dressed with liniment, and a poultice applied to cover the whole. When necessary, the same operation may be repeated. If it proceed from a venereal cause, mercury is also to be exhibited here.

Amputation of Penis.

CCCCXXIX. This operation, the most direful that can be proposed to a patient, becomes necessary from two causes, gangrene and cancer, particularly the latter.

CCCCXXX. The symptoms from which we expect its success, are the disease not having spread within the symphysis pubis, and there being no affection of the inguinal glands. It is performed by making an incision in the sound part of the member, beyond the discoloured hard circle, marking the extent of the disease. Before beginning it, an assistant should grasp the penis below the scrotum, and push it forwards as much as possible, retaining it in that position, while the surgeon draws forward the skin as far as he can, and secures it from slipping, by passing a ligature three or four times round it. The incision is then to be made,

and may be completed at one or two strokes, as the operator pleases : If at two, which is preferable, he first divides the Corpora Cavernosa, and then stops, till the blood vessels, which are often in an enlarged state, are secured by ligatures, employing the tenaculum, as best suited for this purpose. The number of the vessels requiring ligature, will seldom exceed three, and one or two in the teguments. On securing the vessels, he then divides the urethra, and finishes the operation. It will seldom be necessary to introduce a canula into the urethra, unless for the hemorrhage, if the operation is performed with proper attention to the excision of the external skin ; and even if the orifice, which is seldom the case, should tend to close, the use of the bougie, can easily restore it. The oozing which occurs, will be restrained with pieces of charpee, sprinkled with starch or gum arabic. The wound is to be dressed in the usual manner, it afterwards requires no particular management, and the testicles should be suspended all the time of the cure.

Division of Frænum.

CCCCXXXI. Where the frænum is tight and troublesome in erection, it may be divided with scissars, and the wound dressed with charpee.

Imperforation of Urethra.

CCCCXXXII. Imperforation or improper direction of the urethra in children, where occurring, may be altered by the use of the trocar ; a small trocar being pushed in for this purpose, and the parts kept open by a bougie.

Calculous Affections.

CCCCXXXIII. The seat of these affections, tho' calculi are occasionally found in every part of the body, is chiefly the cavities concerned in the separation and discharge of the urine, and so frequent is their occurrence here, that they formed, in the earlier periods of surgery a distinct profession under the title of lithotomist. As the improvements, however, of the art advanced, the difficulty of the operations attending these affections, naturally lessened, and they are now practised in common with the other branches of the science.

CCCCXXXIV. By our improved knowledge of chemistry, the cause of these affections is more fully ascertained, to depend on a peculiar acid, existing in the fluids, termed the *lithic acid*, the existence of which, or rather its *morbid excess*, is favoured in certain habits, by a number of occasional circumstances.

CCCCXXXV. The circumstances observed to favour the generation of calculi, or this *morbid excess of lithic acid* are,

1st, *Particular diet*. Hence it is more frequent in children than adults; and thus it has been considered as a hereditary disease.

2^d, *Sedentary life* favouring retention of the urinary discharge, and consequently deposition from it.

3^d, *Certain positions of body*, as lying on the back with the head low, producing retention in the kidneys. Soldiers who lie with their heads elevated, are seldom subject to these affections.

4th, *Peculiar morbid states*, as gout, dyspepsia,

ague, &c. which all give strong tendency to deposition in the urine.

5th, *Accidents supplying nuclei* to favour a deposition and form the calculi, as particles of sand, of blood, of lymph, &c.; and often of larger extraneous substances forced into the urinary cavities, as hairs, bullets, bougies, &c. which have all been known as the foundation of calculi.

6th, *The water of certain countries* favouring this generation or *excess of lithic acid*, as the waters of the Seine, &c.

CCCCXXXVI. From all of these causes favouring a morbid excess of the calculous principle, the existence of this disease may arise, and the situations of it requiring the aid of surgery are three, the kidneys, the bladder of urine, and the urethra.

Stone in the Kidneys.

CCCCXXXVII. Of all others, the kidneys are the most frequent seat of calculi, and they are generally lodged in its substance or the pelvi of the ureter. Such calculi vary in their colour, consistence, and surface. When remaining in the ureter, they gradually increase by new accessions of lithic matter taking the shape of the cavity they occupy, and assuming of course an arboresecent form. In consequence of their *obstructing* the discharge, the urine is accumulated behind the cavity, and the kidney comes to be enlarged, and its form altered from its natural shape, though still its natural secretion appears to go on.

CCCCXXXVIII. This disease is generally fatal in the end; and the symptoms which attend it are acute.

or obtuse pain in the region of the kidneys, attended with a bloody or purulent discharge of urine, sickness, and vomiting.

CCCCXXXIX. The general treatment of this disease, we considered in vol. I. p. 30. both in its acute and chronic state; what respects the local treatment, is only to be noticed here.

CCCCXL. Its removal in this situation, by an operation, has been proposed; but the uncertainty of its existence, and the nature of the parts to be divided, preclude the attempt. It is only where an abscess forms, and points externally, that any relief by surgery is admissible. In that case, nature may be assisted, and the opening hastened, when the stone will be discharged, or come off during the healing of the sore.

Stone in the Bladder of Urine.

CCCCXLI. It is chiefly in the *second* situation, or the bladder of urine, that the removal of calculi, by an operation, can take place; and this is considered as one of the most frequent and formidable operations in surgery.

CCCCXLII. The appearance of calculi, in this situation, is very various; and the progress, also, observed in the period of their growth. Where there is only one, it is generally of an oval form; where more, they acquire flat sides and angles. Their surface is often smooth; but more frequently granulated. When divided, these calculi exhibit a laminated structure, differing in the thickness of the layers: Sometimes their structure is entirely porous. Their colour is generally brown, and that of various shades: At times they are white or yellowish. Their specific gravity is also uncertain.

CCCCXLIII. Their presence in the bladder is denoted by the symptoms enumerated (vol. I. p. 207.) viz.

1st, A constant sense of pain and uneasiness on motion, which, when carried to any excess, occasions blood to be mixed with the urine.

2^d, Frequent inclination to discharge it, which flows in a small quantity, of a limpid appearance, often suddenly interrupted, while the last drops are always attended with pain, and a sort of itchiness in the glans penis.

3^d, Pain and irritation of the contiguous parts, affected by the state of the bladder, as tenesmus, diarrhœa, pain in the perinæum, or striking in a direction down the thighs, &c.

CCCCXLIV. The severity of these symptoms is generally connected with the size of the stone, and the inequality of its surface; the largest stones giving the most pain.

CCCCXLV. Though these symptoms mark strongly the presence of the disease, yet, as they may also originate with some other affections of the bladder, as tumour or ulceration, when the usual lithontriptic remedies fail, as detailed (vol. I. p. 209.) and no particles of stone are at the same time passed by urine, if an operation is resolved on, previous to performing it, a more special examination is still necessary to detect its existence, with certainty.

Sounding.

CCCCXLVI. This examination consists in sounding, or the introduction of a probe of hard metal, which is preferable, or a catheter, in order to feel it. For

this purpose the instrument for the male should be formed with a considerable curvature, and much depends on the degree of this curvature, for its passing easily through the urethra. The patient, during this operation, is laid on a table on his back, his shoulders being somewhat raised, to give relaxation to the parts, and to advance the stone forward to the orifice of the bladder; while the operator stands betwixt his knees, and inclines to either side, according to the hand he employs in directing the instrument. The instrument being previously warmed and anointed with some oily substance, is taken in one hand, while the penis is grasped by the other; it is then advanced by bringing forward the skin of the penis over it, with the left hand, till it reaches the neck of the bladder. Here a contraction prevailing, from the muscles of the sphincter, and the size of the prostate gland, it is somewhat stopped; but the handle of the instrument being depressed, and the hand which grasps the penis introduced into the rectum, so as to draw down the sphincter of the anus, by which the urethra is rendered pretty straight, it easily slips into the bladder.

CCCCXLVII. When thus introduced, it is to be turned in a variety of directions, and particularly backwards; for part of the bladder being below the urethra, the stone is often concealed there, and, if missed by the instrument, a finger may be introduced into the rectum, to push it up; though even with this assistance, the situation of the patient, before ascertaining it, often requires to be changed to a variety of postures. When touched, a peculiar tremor or sensation, which every surgeon well knows, is communicated to the hand by

by the instrument, while by shifting the latter, some opinion, also, of its size, may be formed.

CCCCXLVIII. When the presence of the stone has been thus determined, (and where failing several trials, at different times should be made), before proceeding to its extraction, some cautions are to be observed with regard to the time of performing it; the extremes of heat and cold should be avoided, and, by an exhibition of relaxing medicines, an opportunity given for the descent of any calculi remaining in the kidneys, if there first formed, and which might afterwards prove future nuclei into the bladder. This operation, it is to be observed, is most dangerous at the prime of life, and less so, both in children, and from the 50th to the 70th year.

CCCCIX. The methods of accomplishing the extraction have been various; arising from the situation of the bladder in the pelvis, which is to be either reached below or above, at the junction of the ossa pubis, above which it is felt, when extended. These various methods may be distinguished from the parts of the bladder opened by the appellations of

The perinæal operation; or on the gripe.

The cervical; or division of its neck.

The pubes-icular; or high operation; and

The lateral; or low operation.

And, previous to employing either of them, the proper method of securing the patient is to be considered.

In the Male.

CCCL. This is best done by passing a ligature round his hands and feet, which may be formed by

putting his wrists through the noose of a broad tape, of a proper length, at least five or six feet long, after which he is desired to take a firm hold of each ankle, on the outside, with his hands, and in this position, by bringing the tape round the ankles, feet, and hands, on each side, he will be sufficiently secured.

Perineal Operation.

CCCCLI. The perineal operation, or as it is termed, with the lesser apparatus, or on the gripe, is then performed, by the surgeon first introducing his fore and middle fingers, well oiled, into the rectum, feeling for the stone, and pushing it forward towards the perinaeum, where he retains it, while in this he is aided by an assistant, pressing on the pubes, to bring it to the under part of the bladder. Thus fixed, he makes a semilunar incision upon it in the centre, where it pushes out through the skin and muscles, till the stone is laid in view. He then, by a lateral incision, divides that part of the bladder where the stone is, and brings it out by pressure of the hand from behind, or by the forceps.

CCCCCLII. But the objections to this method, though simple, are the incision of the vesiculæ seminales, and other principal parts, which cannot be avoided; not unfrequently, also, the urethra, on which account it was laid aside, and gave place to the second method, or the

Cervical Operation.

CCCCCLIII. The cervical operation, or as it is termed, by the greater apparatus, consists in the opening a passage, by cutting into the urethra at its bulb. For

this purpose, a grooved staff is passed through the urethra, into the bladder, the handle of which, placed over the right groin, with its convex point pushes out the urethra on the left side of the perinæum. The staff thus fixed, is retained by an assistant, and the scrotum supported; while the surgeon, with a scalpel, makes an incision from the bottom of the scrotum, on the left side of the perinæum, to within a little of the anus, and by this division the urethra is laid in view. It is next opened at its bulb, by cutting into the groove of the staff, and carrying it to the length of the prostate gland, either by incision or dilatation. The parts being thus opened, the forceps are to be introduced for extraction of the stone.

CCCCLIV. The objections to this mode of extraction, consist in the laceration the parts must suffer, and the larger incision of the urethra than what is necessary. It therefore gave place to the third method, or the

Pubes-icular Operation.

CCCCLV. The pubes-icular, or high operation, consists in making an opening into the bladder, immediately above the pubes; and, to do it properly, the organ must be in a state of distension, which is effected by accustoming the patient for some time to the daily retention of his urine as long as possible, till a sufficient distension is accomplished.

CCCCLVI. In performing the operation, the patient is secured in the usual way, (105.) a ligature having been passed on the penis, for some time before and the incision is then begun with

a common scalpel, on one side of the linea, about two inches above the pubes, terminating it at the symphysis, when the muscles come in view. Through them the incision is next directed; and, when finished, a sufficient external opening will be made. The bladder is then to be sought for, immediately above the pubes; and the surgeon, pressing back the peritonæum and intestines with his other hand, the incision is directed into its most prominent part, making an opening for the admission of two fingers, when the ligature in the penis is to be untied; and, on the introduction of the fingers, the incision should be enlarged for 3 inches down, towards one side of the neck. The stone searched for, may then be extracted, simply with the fingers, or by forceps. The upper part of the wound is next to be united with adhesive plaister, or the twisted suture, leaving an opening below for the discharge of the urine, which is to be favoured by the after posture, or the elevation of the upper parts, during the cure.

CCCCLVII. The objections to this operation are, that it is circumscribed in its effects, and dangerous in its consequences.

With respect to the *first*, it is confined to those under 30 years of age; and, in regard to the *second*, the consequences of inflammation are more dangerous here than below, rendering any fault of constitution also more active. Its chief advantage is the ease of extraction, whatever the size of the stone be. The objections against it, therefore, have occasioned its giving place to the

Lateral Operation.

CCCCLVIII. In the lateral, or approved operation, the previous circumstances to be attended to are,

The state of the intestines and bladder.

The *first* should be cleared by some laxative, the preceding day, and an emollient injection before the operation.

The bladder should be somewhat distended during the time of the operation, by a previous retention of the urine; and, where not easily retained, from its irritability, the latter taken off by an opiate.

CCCCLIX. The first step in the operation, consists in securing the patient, which is done by placing him in the same manner as in the former operation, (105.) and passing a ligature round his hands and feet, which are brought together in the same way, and then founding him (101.) On withdrawing the instrument, and farther adjusting his position, by a proper elevation of the head and buttocks, a furrowed probe, or a staff of a proper length, is to be introduced, adapted to the size and shape of the urethra, and having its groove open at the point. This is given to an assistant, who makes its handle pass over the right groin, so as to distinguish its convex part in the left side of the perinæum, where he keeps it firm, supporting, with his other hand, the scrotum.

The surgeon then begins the external incision, thro' the skin and cellular substance, an inch below the scrotum, on the left side of the rapha, continuing it for 4 inches, so as to be a little beyond the anus. The muscles being then laid in view, are to be freely divided;

and, if necessary, any vessels secured by ligature, before proceeding. When completed, the fore finger of the left hand is to be introduced at the wound; the staff felt for; and, along its course, the finger pushed till it reach the bulb of the urethra; from which, to the prostate, the division of the urethra should be made by the edge of the knife turned to the groove, so as not to injure the rectum. The division of the prostate itself, then follows; when, the knife being laid aside, instead of it the gorget is next employed. In order to do it, the nail, or point of the operator's fore finger, of the same hand, should be introduced into the groove of the staff, and form the conductor to the beak of the gorget; and having accordingly passed the point of it along his finger, into the groove, the staff, taken from the assistant, by the surgeon (still sitting) in his left hand, is to be raised from the patient's groin, and held firm, while, with his other hand, (as he rises) he pushes on the gorget, till it pass into the bladder, when the urine flows out.

CCCCCLX. From this description, the chief points for the success of the operation, in this preceding part, are,

- 1st, The due extent of the external incision; and
- 2^d, The proper raising up of the staff; the fitting of the gorget to the groove; and its entrance into the bladder.

CCCCCLXI. When the operation is finished, by withdrawing the staff, the stone is next to be felt for by the finger introduced, and afterwards extracted by the forceps. In doing it, the forceps are to be introduced shut, on the gorget, and the latter afterwards

withdrawn, in the same line of direction in which it entered the bladder. The forceps then expanded, are to search for, and grasp the stone, generally found in the under and back part of the bladder. When grasped, which may be assisted by the finger in the rectum, and afterwards found when properly fixed in the forceps, which may be felt by the finger, the extraction is to be made by grasping the handle high up with one hand, and drawing with the other, in a direction downwards, according to the incision or space opened.

CCCCLXII. The difficulty to extraction arises generally from three causes,

1st, Improper hold, or size of the stone itself.

2^d, Imperfect division of parts.

3^d, State of the calculus in the bladder.

The *first* is obviated by altering the hold, or breaking the stone, if still impossible, from its size, it can pass.

The *second*, by dividing any parts that have been omitted in the operation, which are parts of the muscles.

The *third*, if contained in a cyst, by opening the latter in order that extraction may be effected.

CCCCLXIII. The extraction being completed, and no more stones found in the bladder, by a proper examination both with the finger and forceps, or if found, being extracted, the after treatment is the remaining object; the hemorrhage being over, and the lips of the wound laid together, and covered with charpee, the patient should be carried to bed. The circumstances then requiring attention, or the subsequent conduct in the cure, are to prevent the effects of hemorrhage and inflammation.

CCCCLXIV. The first is done by ligature, where necessary ; or, if this fail, by pressure made with a hollow tube, introduced into the wound, covered with some soft substance ; and, to prevent accumulation in the internal cavity, the pelvis should be kept low, and the superior parts of the body raised.

CCCCLXV. Where symptoms of strong inflammation supervene, as indicated by hard swelling of abdomen, and full quick pulse, they are to be relieved by warm fomentations and injections, and even the warm bath, and they are to be farther aided by venesection, and the use of opiates. When these symptoms do not remit, gangrene comes on ; but, if their abatement takes place, the sore assumes a healthy appearance ; the urine in two or three days passes by the urethra ; and the cure is generally completed, according to circumstances, in from three to eight weeks, though frequently a fistulous sore continues.

CCCCLXVI. Where excoriation of the parts arises from pressure and irritation during the cure, astringent solutions, as diluted brandy and lime water, are most useful.

CCCCLXVII. An incontinence of urine succeeding is to be treated by tonics ; and its present effects obviated by a jugum penis, or else by a vessel fitted to receive the discharge.

In the Female.

CCCCLXVIII. In females this operation of lithotomy is more simple than in the male. The staff is to be introduced into the bladder, and there held with one hand, the surgeon, with the other, introducing the beak of

the gorget into the groove of the staff, passes it on. When it has entered, the staff is withdrawn, and the operation finished.

Stone in Urethra.

CCCCLXIX. The third situation of calculi, requiring the aid of surgery, we mentioned (p. 305) to be the urethra. The symptoms that distinguish a stone here, are pain, inflammation, and swelling, attended with an obstruction or suppression of urine;—and previous to extraction, these symptoms of irritation should be somewhat abated, to facilitate the operation.

CCCCLXX. This is best performed by venesection and opiates; the former either general or topical, and joined with the use of the warm bath. When by these means an abatement of the symptoms takes place, an attempt at extraction may be made, by pushing the stone forward with the finger, and continuing the attempt so long as any progress is made; but when this fails, excision, or cutting upon it, remains the only resource, and this must be regulated by the circumstances of its situation.

CCCCLXXI. When near the neck of the bladder, the patient being secured as in the previous operations, and an assistant suspending the scrotum, a finger is to be introduced into the anus by the surgeon, to fix it, and it is to be then cut upon and turned out, as in the operation by the gripe.

CCCCLXXII. When farther advanced into the urethra, the skin is to be first drawn forward, as far as possible, and then an incision made upon it, and the stone turned out. The skin will cover the wound, and

the parts generally heal by the first intention. When in the glans, or near the extremity, a stone may be often extracted with small forceps, or the glans dilated by incision, and the parts healed on a bougie.

CCCCCLXXIII. Openings of the urethra, from operations or disease, frequently occasion calculi to be formed here, as well as in the bladder. Wherever this arises, such calculi are to be removed; the healing of the internal parts attended to; and the external openings preserved, till this take place.

Suppression of Urine.

CCCCCLXXIV. Suppression of urine, depending on its retention in the bladder, from a variety of causes, is a complaint of the most alarming nature.

CCCCCLXXV. These causes may be reduced to acute inflammation of its neck; general paralytic state of the bladder, or merely of its neck; and local pressure.

CCCCCLXXVI. The first of these is the most dangerous; and, from the violence of pain, and extent of swelling, requires the most active means to be employed.

CCCCCLXXVII. This consequence is frequently induced by gonorrhœa, (vol. I. p. 132.) and other active causes of irritation. The most powerful antiphlogistic course should be here employed by venesection, both general and topical, in the latter case by leeches to the perinæum. Opiates should be largely exhibited, and emollient injections thrown up, and the warm bath never omitted. When these means fail, the catheter should next be introduced; but in this case, as it frequently fails, puncture of the bladder itself becomes then the last resource.

Puncture of Bladder.

CCCCLXXVIII. This puncture may be made in different ways, from the different situations where the bladder may be reached ; but that from the pubes is both the easiest and the most successful. A trocar, having its canula an inch and a half long, may be entered half an inch on either side of the linea, about half an inch above the pubes, in a horizontal direction, till it reach the bladder, when withdrawing the stillette, the urine will flow. The canula is secured by a ribbon or tape, connected with a circular bandage round the body, and is retained till the cause of the disease cease, being occasionally withdrawn to be cleaned, by means of a probe passed through it.

CCCCLXXIX. In the female, the puncture is best made from the vagina, at that part where the bladder is discerned tense and full, on introducing the finger ; and on this finger the trocar is to be passed to make the opening. When made, and the urine discharged, the canula is to be retained, and should be of such a length as to pass without the vagina, having a ribbon appended to it, which is to be attached by a T. bandage.

CCCCLXXX. The second cause, of this affection taken notice of, was general paralytic state of the bladder ; and then relief is obtained by the catheter, which should never in such a case be long delayed.

CCCCLXXXI. The third cause, or local pressure, depends either on swelled prostate ; morbid tumours ; or pregnancy.

When from any of these causes, the introduction of the catheter proves the only remedy, till the means

adapted to the original disease, of which this affection is a consequence, prove successful.

Obstructions of the Urethra.

In the Male.

CCCCLXXXII. Of these morbid tumours producing suppression, the most frequent, in the male, is obstructions in the urethra. They require, therefore, a separate consideration, with respect to their special treatment.

CCCCLXXXIII. All the causes which are considered as producing obstructions here, may be referred to four heads, (*vide* vol. I. p. 145.) To the existence of excrescences; to previous ulceration of parts of the passage; to its general or partial contracted state; and lastly, to a morbid fullness of the spongy bodies of the urethra, which is the most frequent.

CCCCLXXXIV. With respect to warty excrescences, they are rare, and confined to near the external glans; and they may therefore be extirpated by the forceps, or a ligature, if reached.

CCCCLXXXV. All the other causes enumerated, are only to be relieved by the use of the bougie, or a mechanical power, producing dilatation of the part; and in order to do it easily, the surface of the bougie should be smooth and uniform, and its composition of the mildest nature. Hence the elastic resin is preferable to every thing else. For the manner of using the bougie, and a more full account of this disease, we shall refer to vol. I. p. 145. where, treating of venereal obstructions, the rules are detailed at considerable length.

In the Female.

CCCCLXXXVI. Obstructions in the female urethra, when arising from tumours, may be removed by extirpation or ligature. When depending on simple stricture, the bougie may be also used here, as well as in the male.

Sinus Ulcer of the Perinæum, or Fistula Perinæi.

CCCCLXXXVII. A consequence often of the last disease described; or obstruction in the urethra, is the formation of the fistula perinæi.

CCCCLXXXVIII. This consists in a sinuoy ulcer of the perinæum, communicating with the bladder or urethra, and arises also from a variety of causes which act, by forming a new passage for the urine from the bladder, as well as from those which oppose its exit by the old one.

CCCCLXXXIX. Of the first are all causes producing injury and abscess of these parts; of the second all obstructions, as mentioned, of the urethra itself.

CCCCXC. For the treatment of the first, the chief point is to give a free opening to the matter where collected, or if not sufficiently collected, to assist it by fomentations and poultices. If the edges of the ulcer are callous, these should also be removed, and the different sinuses laid by incision into one, when a disposition will thus be given to heal.

CCCCXCI. For the treatment of the second, or obstructions, the bougie must be previously used till the obstruction is removed, and the urine flow freely, if the sores then shew no disposition to heal, their hardened parts should be all removed by an operation, and

for this purpose, the patient should be placed as in the operation for the stone, and the staff being introduced into the urethra, is made to pass the opening at which the urine is discharged. It is then held firm by an assistant, while the surgeon introduces a director at the opening of the fore, and cutting upon it in the direction of the sinus, lays it open, and where there are more than one sinus, they are to be all laid open in the same manner. If the parts are much diseased, besides this operation, of simply laying open the sinus, part of them may be also removed.

CCCCXCII. When the operation is finished, the staff should be withdrawn, and dressings inserted gently into the openings, and then the whole covered with emollient liniment. In 24 hours, this last may be removed, and an emollient poultice laid over the whole, and when suppuration has fully ensued, proper dressings must be regularly and duly continued as the best treatment in order to dispose the parts to heal.

CCCCXCIII. In this way is the disease to be healed, when arising from injury, abscess, or obstruction in the passage, but when the cause is connected immediately with the bladder, and the discharge passes off directly from it, the treatment is then more difficult. In this case, the urine insensibly passes off at all times, and in order to do the operation here, a staff must be passed into the bladder, and the same attempt made to lay the parts open and dispose them to heal.

CCCCXCIV. In all cases of this affection, it is proper also to ascertain, as a preliminary point, whether it is connected with a constitutional taint, and in that case, always to apply the general means of cure along with the local treatment.

Incontinence of Urine.

CCCCXCV. Incontinence of urine is a frequent complaint in both sexes, and it arises either from irritation or debility in the neck of the bladder.

CCCCXCVI. In the first case, it is a common symptom of calculi and other irritations of the organ. It is to be treated chiefly by mucilages and anodynes, and till these are effectual, an instrument for receiving the urine should be employed and worn.

CCCCXCVII. In the latter case, where debility is the cause, either from injury of the parts, in consequence of operations, or paralytic state of the organ, it is to be retained chiefly by pressure with a jugum penis or yoke, in the male, and in women by a pessary introduced and placed across the vagina, so as to press on the urethra.

CCCCXCVIII. The paralytic state of the bladder may be also attempted to be removed by the use of tonics, viz. bark, steel, and cold bathing. The latter is best applied to the loins and perinæum. Cloths also wet in oxycrate, or saturnine solutions, may be used to the part itself.

DISEASES

OF THE

ANUS AND GUT.

Hemorrhoids or Piles.

CCCCXCIX. **P**ILES are soft tumors, commonly situated round the verge of the anus, and also within the cavity of the rectum, occasionally pouring out considerable quantities of blood. They are covered with a fine skin, and appear as the mouths of enlarged veins. In process of time, however, effusion into the cellular membrane takes place, when they increase to a considerable size; and, on bursting, though their contents are discharged, their size continues, assuming a livid appearance, with a firm fleshy feel.

D. This disease we already considered in Vol. I. p. 54. to which we refer. It is therefore what regards the local treatment we are chiefly to examine here.

DI. The general treatment of piles, consists in abating the present state of inflammation or the fit, and preventing its recurrence.

DII. In the first case, when there is much pain and inflammation, topical venesection with leeches should be employed, astringent solutions and emollients should be applied to the part, and a strict antiphlogistic regimen prescribed.

DIII. The recurrence of the fit should be prevented by obviating its cause. When from the pressure of tumours, these, if possible, should be removed; when from pregnancy, clearing the intestines, and a recumbent posture will give relief till the period of gestation is over; and when from habitual costiveness, a regular use of laxatives, of a mild kind, as the castor oil, cream of tartar, &c. should take place.

DIV. In its advanced stages, however, these means prove often ineffectual; and it is then that the aid of surgery is required to give relief.

The two morbid circumstances particularly requiring it, are excess of hemorrhage, and enlarged size of the tumour.

DV. The excess of hemorrhage is attempted to be restrained either by *injection* or *pressure*, joined at the same time with the use of astringents internally, as the gum kino, alum, &c.

DVI. The injections consist of astringent infusions and solutions, thrown up into the rectum, as of oak bark, walnut leaves, alum, and even sacchar. saturni, which frequently succeed.

DVII. The pressure, again, is made by a small tube, covered with some soft substance, as linen or charpee, passed into the rectum, or by a sheep's gut tied at one extremity, and pushed two or three inches within the rectum, while by distending it with water from the o-

ther end, and tying it, any necessary pressure may be made. A ligature would be proper here, if it could be applied by the tenaculum; but the vessel is generally beyond reach.

DVIII. The *second* circumstance, or the size of the tumour, requires the interference of surgery, whenever an obstruction occurs to the passage of the fæces; but this interference can only take place, when the situation of the tumor is at the verge, or an inch or two within the rectum. The tumor may then be removed as in other cases, either by ligature or excision.

DIX. The ligature is applied to those tumors that are extensive; and, where there is danger of much hemorrhage. Thus a needle, with two threads, is to be passed through the middle of the tumour at its base, each of which threads, on withdrawing the needle, is to be tied round one half of the tumor, when, if properly applied, the tumor will drop off in a few days. Where, on the contrary, the neck of the tumor is narrow, excision will be preferable; and the parts are then to be dressed with emollient liniment, till healed.

Excrescences.

DX. The verge of the anus is the frequent seat of excrescences, termed condylomanta, fici cristæ, &c.

DXI. These excrescences vary in their number, colour and consistence.—Thus from a single one, they in other cases cover the whole surface round the anus; from pale, they are found, of various shades, till entirely red; and from soft cuticle, they acquire the stage of real schirrus.

DXII. Their symptoms also vary; in some they

give no uneasiness; while in others they excite exquisite pain.

DXIII. When this occurs, they are to be removed; and, as their adhesion is generally slight, it may be attempted by the use of mild escharotics, by caustic, or excision.

DXIV. The escharotics most successful, are solutions of strong alkaline salts, as the sal ammoniac, sal C. C. also savine powder, red precipitate, burnt alum, &c.; and where their consistence is soft, they yield to these applications; when they fail, the other means must then be employed. In applying the caustic, caution should be used to prevent it spreading. Where the knife is used, a complete removal should take place, after which charpee is applied, and the part reduced to a common fore.

Falling Down of the Gut, or Prolapsus Ani.

DXV. The protrusion of the rectum externally, for a greater or less extent, beyond the sphincter, is termed *prolapsus ani*, a very frequent and troublesome complaint.

DXVI. It is produced either by debility of the sphincter, or violent exertion of these parts. This exertion arises frequently from the use of aloetic purgatives, from worms, costiveness, &c.

DXVII. The cure depends on its reduction, and retaining it in its natural position.

To effect its reduction, the patient being laid on his face in bed, with his buttocks raised above the rest of his body, the under part of the protruded gut is to be firmly pressed up by the surgeon, and by continuing

the pressure, it will be effected, or if it should not, it may be done partially, by pushing up first the superior part, and supporting the inferior till this is done. Where much inflammation and swelling take place, they should be abated previous to the attempt, by general blood-letting, fomentation of the part by warm astringent solutions, &c.

DXVIII. From the constant danger of a relapse, where there is much weakness of the part, on every evacuation, a compress and T. bandage should be worn, or a truss, as invented for the purpose.

The parts should be strengthened by general constitutional remedies, viz. steel, tonics, and cold bathing applied partially, or to the under part of the trunk, and astringent injections, with opium, should be thrown into the rectum with the same view.

Imperforation of Anus.

DXIX. An original imperforation, or want of anus, is a circumstance occurring at times; and different states of it have been met with, which admit various degrees of relief from surgery.

DXX. The *first*, or simple occlusion of the passage, is the easiest. The parts here being merely covered with skin, and the fæces generally pushing out, all that is necessary, is to make an opening through it with a lancet or scalpel.

DXXI. In the other kinds, where the rectum terminates from within an inch or so of the anus, without any external vestige of passage to a considerable depth, an incision should be made on the spot where the anus ought to be; and if not met with, the incision is to be

carried on by slow scratches, in the direction of the finger along the coccyx, for a sufficient depth, till the scalpel has reached the whole length of the finger, rather than fail. A long trocar may next be pushed on the finger, in the same direction.

DXXII. If successful, by the discharge of fæces, much care is necessary afterwards, to preserve the passage open; which can only be done by large doffils, covered with emollients, kept properly distending it, and, which for long, (perhaps eight or ten months,) should never be omitted.

Sinus Ulcer of the Anus, or Fistula in Ano.

DXXIII. By this disease is understood, every ulcer affecting this situation; but it should be confined alone to that species having a connection with the internal parts.

DXXIV. It may be therefore divided into two species, the simple and complicated.

DXXV. The *first* is the effect of matter confined, and spreading along the cellular substance. Whatever, therefore, produces matter here, forms a cause of this disease; and, on the appearance of any tumour, in order to prevent its spreading, suppuration should be induced as speedily as possible; by the usual means of fomentation and poultice; and, when formed, it should be discharged by a free incision of the parts, and the fore treated as a common wound.

DXXVI. The *second*, or complicated, however, where a communication takes place with the gut, or where sinuses are formed in various directions, is the most common state in which this disease becomes an

object of practice; and the first point here is to ascertain its progress and extent.

DXXVII. To do this, a probe should be introduced into the different sinuses, which will detect their course; and, if penetrating the gut, the fore finger, oiled and introduced into the rectum, will for the most part detect the probe, and ascertain the extent of the erosion; but if not succeeding at once, by persevering it will take place. The discharge, also, by the sinuses, will in some cases determine whether it has penetrated the gut; and injections with warm water will assist this.

DXXVIII. Having ascertained the extent of the disease, and its connection with the gut, its treatment becomes the next object; and this depends on such an incision of the parts, as may reduce them to the state of a simple wound.

DXXIX. To execute it, the course of the different sinuses must first be discovered. The operation is then performed, by placing the patient in the same position on a table, as in the operation of lithotomy, with his legs bent, and kept asunder, and securing him. The fore finger of the left hand, oiled, is then to be introduced into the rectum, as high as possible, while the right hand enters the instrument, or probe pointed bistoury, at the external opening of the fore, that sinus, (where there are several) being preferred, which communicates with the gut. The instrument is then carried through its whole length, till it passes the opening in the gut, and meets the finger. The point of it is now to be pushed in upon this finger, thus guarding the other parts, and the sinus is to be laid open from the one end to the other.

DXXIX. The same is to be done with each separate sinus, till the whole is laid open ; and where no communication takes place with the gut, the point of the instrument being felt by the finger is to be carried through the gut, and the operation conducted in the same manner as if there were a communication.

DXXX. The after treatment consists in dressing the fore with soft dressings, well moistened with liniment to prevent irritation, covering the whole with a soft cushion, supported by a T. bandage, and these dressings are to be removed after every evacuation, or at latest every 24 hours, when the progress of healing will be seen.

DXXXI. Wherever the fistula extends so high in the gut, as to be above the reach of the finger, the incision must be confined to laying open the external sinus ; trusting to this alone, and the after treatment, to effect a cure.

DXXXII. But as the cure sometimes fails, the morbid circumstances to which its failure may be ascribed, are either the *incomplete state of the operation*, or a *fault of constitution*.

In the *former* case, if any sinus has been omitted, and matter is found collected, the operation must be repeated anew.

In the *latter* case, where the matter is thin and foetid, and the fore looks unhealthy, the particular constitutional taint should be enquired into, and discovered, and proper remedies conjoined with the local treatment. Where simple weakness exists, tonics will repair it.

DXXXIII. But besides this treatment merely of the part itself, we must next attend to its consequences on the adjacent parts.

DXXXIV. These are separation of their connection with each other, by the matter diffusing itself along the cellular substance. Where this separation consists of the gut from the adjacent parts, an incision should be carried through it, to discharge the matter, and promote adhesion. Where the separation is of the teguments, the same incision should be made of them; and where one incision is not sufficient, it should be repeated at a different place, in both cases.

DXXXV. But instead of an external opening through the teguments, hitherto considered, in many cases of fistula, the opening takes place into the gut alone, and is only detected by the matter being passed with the fæces, and by the pain, hardness, and swelling, near the anus.

DXXXVI. The treatment here consists, after fixing on the seat of the disease from the symptoms enumerated, in plunging a lancet into it, and wherever a discharge of matter appears, it is then reduced to a common fistula, and to be treated as already directed.

DXXXVII. By the treatment detailed, though the disease has even existed long, and extensive callus is formed this morbid state of the parts will in time yield to the effects of suppuration, and for the most part melt down, when the sores readily heal up. But, besides this state of callus, from its long continuance, some other symptoms also arise, which are more difficult to remove.

DXXXIX. These are affections of the contiguous bones and communications with the bladder of urine.

DXL. The former can only be palliated by giving a free discharge to the matter, and supporting the state of the constitution. If exfoliation take place, and the caries is thrown off, a cure will be accomplished.

DXLI. The latter, or a communication with the bladder, is always fatal. Its symptoms are a dark brown urinary sediment, gradually deepening, with a foetid smell, and discharge of air by the bladder, succeeded by difficulty in the discharge of urine.

DXLII. No remedy can be applied here, and the patient seldom outlives two years of misery.

PART III.

CLASS IV.

FRACTURES.

I. **F**ROM the particular modifications of local disease in the softer parts, appearing under one of three forms, viz. wound, ulcer, or tumor, now detailed at considerable length, (Parts I. II.) we return to consider affections of the more solid parts, or bone; the first of these, from external injury, is fracture, or a lesion of its substance, corresponding to an wound of the softer parts, which last is generally, tho' not always combined with it.

II. Fractures are divided into two kinds, simple and compound; the first is applied to a division of the bone in one or more places, or a division of two contiguous bones, the latter comprehends every such accident, accompanied with an injury of the soft parts.

III. In the latter species, the symptoms of fracture

are obvious on examination, and in the former, those enumerated as attending it, are,

1st, Acute pain about the place suspected, with considerable swelling, tension, and inflammation.

2^d, Inability to move the part below the fracture.

3^d, A sort of grating of the ends of the bone on each other, when the limb is moved, termed crepitation, with an yielding of it there in the form of a joint, and,

4th, An evident shortness of the fractured limb, when compared with the other.

IV. From these symptoms, in the first or simple fracture species, is this accident easily detected, where there is but *one bone* in the member, or where the injury extends to both, in case of two; but, when *only one* of them is the seat of the injury, it becomes then a matter of more difficulty; and, in order to discover it, the various attending circumstances must be conjoined.

V. These are, the violence of the cause applied, the habit of the patient, and the site of the member on receiving the injury, when these are conjoined with the attending symptoms of pain, swelling, tension, and ecchymosis, a detection may be easily made.

VI. The prognosis to be formed in fractures; depends,

1st, On its particular species.

2^d, On the situation of the fracture.

3^d, On the patient's habit; and,

4th, On the extent, and degree of the morbid symptoms.

VII. With respect to the first, there is little danger in the treatment of small bones, but it is more considerable

in the large ones. Simple fractures also are seldom dangerous when compared with the compound. In regard to the situation, the vicinity of joints is always dangerous, and the parts of the bone which are hardest unite most easily.

The soundness of the habit has a considerable influence, and any constitutional taint, particularly lues and scurvy, is apt to prevent a cure.

The extent of the morbid symptoms or state of the soft parts, is of much consequence. When the symptoms are mild, the prognosis may be always favourable; but, when on the contrary, the tension and swelling are considerable, and the inflammation of the parts extensive, a more guarded judgment must be formed.

VIII. The general cure of fracture is accomplished by,

1st, The proper replacement of the parts.

2^d, Their retention in that state.

3^d, Obviating the attending morbid symptoms; and,

4th, Preventing or removing any imperfection in the function of the part, consequent to the injury.

IX. The *first* is performed by first relaxing the member as completely as possible, so as by its position to prevent any action of its muscles, and then in placing the ends of the bone in their proper situation. For this purpose a slight extension of the upper part of the member may be made, by an assistant keeping it firm with his hand placed between the seat of the injury and the joint, while the surgeon replaces the bones, which should be done with the utmost exactness, by compa-

ring the injured with the sound limb, to prevent distortion, or the repetition of the operation afterwards.

X. The *second* indication, or their retention in this state, is completed by splints and bandages, suited to the particular circumstances of the fracture, and, in applying them, unnecessary tightness is always to be avoided.

XI. The obviating the attending morbid symptoms is the next and most important indication. These are pain, tension, and inflammation. To counteract them, astringent and cooling applications should be made to the part, as solutions of sal ammoniac, of sugar of lead, of spirit. Mindereri, and if not relieved, topical venesection, with leeches, may be necessary.

XII. The period of the cure of fracture is generally uncertain; but that of the thigh or leg, where simple, is commonly completed in two months; of the humerus and bones of the arm in six weeks; and of the smaller bones in three weeks;—but the time of life, and other circumstances, have considerable influence in determining this.

The circumstances preventing the reunion of bones, are a *constitutional taint*, as from lues, scurvy, and also pregnancy, which is found always unfavourable to this accident.

XIII. The *fourth* indication, or obviating the consequences of fracture, is often troublesome to practitioners. These consequences consist of immobility of joints; distortion of the limbs; and frequently imperfection of reunion.

XIV. The 1st of them is removed by frictions with emollients; warm steams; warm sea-bathing; or with mineral waters.

The 2d, proceeding commonly from excess of callus, is not much in our power, though where a tendency to it appears, topical venesection, in the time of the cure, and the use of astringents to moderate it, and afterwards pressure, by means of a thin plate of lead adapted to the part, and retained by a bandage, may be all employed.

But the 3d circumstance, or imperfection of reunion, is the most perplexing event. It may depend on four causes ; on the want of the apposition of the ends of the bone during the cure ; from small detached pieces, preventing their adhesion ; from some of the soft parts intervening betwixt *the ends* ; from accumulation of blood injuring the bone, and preventing the formation of callus ; or from the constitutional taint already taken notice of, (xii.)

XV. In the *first* case, the ends of the bone should be accurately replaced ; and, if no progress is made in a certain time, and the use of the member is destroyed, an incision should be made through the surrounding soft parts, the ends of the bone laid bare, and a bit sawn off each end, to reduce them to a recent or healing state. When replaced, and properly retained, if depending on this cause, the cure will succeed.

Wherever there are small detached pieces, as in compound fractures, they should be removed, and the void trusted to nature. In simple ones, the cure should first be attempted without removing them, in the usual way.

When the cure is prevented by any intervention of the soft parts, as known by the excessive pain and twitches of the muscles, joined to this circumstance of

want of reunion; and where the removal of this cannot be effected, by different changes of position to induce it, an incision should be made as already directed, and the ends of the bone at the same time removed, or made raw, to produce the recent or healthy state.

An accumulation of blood, where any vessels are burst, in some cases will also prevent the formation of callus, and an incision for its removal will therefore be necessary. That part also of the bone which may be denuded, and from its influence diseased, should be removed.

SIMPLE FRACTURES.

*Fractures of Face.**Nose.*

XVI. The nose is frequently exposed to fracture, which is dangerous from its particular situation, and also from its effect on the organs of speech and smell.

XVII. It is liable to be succeeded by the morbid affections of this part, detailed in (p. 216. 221.) viz. polypus and œzena.

XVIII. The treatment of this species of fracture, when fully ascertained, must be regulated by circumstances, and these are the separation of the loose parts; the elevation with a spatula, or other instrument, of these that are depressed, and the bringing to their proper situation or level, by pressure, those that may be raised out of it.

XIX. When thus replaced, the parts are to be dressed as a common wound, and inflammation obviated by the usual saturnine applications, and other means.

XX. The retention of the parts, when replaced, may be assisted, if apt to fall in, by the introduction of tubes covered with linen, into the nostril, and retained there; and, instead of this state, if starting above the level, they may be kept down by the pressure of a roller.

When so much injury to the bones takes place, as to prevent this treatment, the detached pieces must then be removed.

Cheek Bones.

Superior.

XXI. Fractures here are attended with inflammation of the eyes, and opening into the antrum; the consequence of which last, is much deformity.

XXII. Their treatment consists in obviating inflammation; an accurate replacement of the parts; and attention to the wound.

The first is done with the finger, or a pair of forceps, or a spatula, and the wound, when dressed, is generally retained by adhesive plaister.

When abscess of the antrum forms, in consequence of the wound; an opening is to be made, as directed in p. 242.

Inferior.

XXIII. Fracture of the lower jaw frequently occurs in consequence of injury; and the symptoms of it are the crackling of the bone; inability to move the jaw; violent pain; and apparent deformity.

XXIV. When ascertained, the tooth included in the

fracture is to be removed ; any other loose ones replaced, and fixed to the neighbouring ones ; and the fracture last of all replaced, by the patient's head being secured, when, by the fingers of one hand pressing on the inside of the jaw, and those of the other on the outside, any inequality of the bone is removed. Thus replaced, it is to be kept firm, and secured by a compress over the chin, extending from ear to ear, and then supported by a four headed roller, firmly applied.

XXV. The patient should be kept on liquid diet, and no motion of the part permitted, not even frequent dressing, unless an wound or ulceration attend. The cure will be completed in three weeks.

XXVI. The fracture in both jaws is similar in treatment, though a longer time is necessary for their cure.

Fracture of Clavicle.

XXVII. Fracture of clavicle is a frequent injury. It is easily distinguished on the quick motion of the arm, by the grating sound it occasions ; by the separation of the ends of the bone when examined ; by some swelling and pain ; and by an impediment to the free motion of the shoulder or humerus.

The replacement consists in raising the arm to a proper level, so as to unite the ends to each other, and in retaining them in a sling. Symptoms of inflammation and pain are to be obviated by astringent solutions, and venesection, if necessary. If there is an external wound, it is to be treated in the usual way ; and, if the bone is shattered, the parts are to be cautiously removed. The cure in common cases will be completed in a fortnight.

Fracture of Ribs.

XXVIII. Fractures of the ribs are known by pain in their situation, and by pressure of the part.

XXIX. They are either simple, without any other symptoms than the pain described ; or compound, when the fractured part being beat in, they are attended with fever, oppressed breathing, cough, spitting of blood, and severe pain.

XXX. Their treatment should be to prevent inflammation by venesection ; to replace the ends of the bone by moderate pressure ; and to retain them in this state by a broad belt, drawn as tight as possible, and continued for some weeks.

Where the severe symptoms enumerated appear, the treatment must then be conducted as directed in paracentesis (p. 270.) ; but, where a portion of the rib is merely depressed, an incision should be made to lay it bare, and the depressed portion raised by the fingers or forceps.

Fracture of Sternum.

XXXI. This accident rarely occurs, or if simply fractured, it readily unites ; but, at times, from extreme violence, part of it has been displaced and beat in. The treatment here is to be attempted by a strict antiphlogistic course ; but, if the same symptoms as in compound fracture of the ribs occur, an attempt at replacing it will be necessary. It may be done by making an incision, and using the trepan or levator, as in fractures of the cranium.

Fracture of Vertebrae, and Lumbar Bones.

XXXII. Fractures of the vertebrae are most frequently the effect of gun-shot injuries.

XXXIII. The symptoms are severe pain in their situation, and palsy of the parts below.

XXXIV. Their termination is fatal, though protracted and lingering. Where the parts, however, are loose, they may be replaced, and supported by a bandage, and even an incision may be made to effect this replacement, where the depression is evident.

XXXV. Fractures of the *os sacrum* can admit also little treatment. The end of it, or coccyx, may indeed be replaced by a finger in the anus, while the hand is applied externally.

XXXVI. Fractures of the *ossa innominata* admit nothing but ease of posture, and a strict antiphlogistic course.

Part of the ilium, indeed, may admit of being replaced, and supported by a bandage round the pelvis.

Fracture of Scapula.

XXXVII. Fracture of the scapula is distinguished by the situation of the pain, by the stiffness and immobility of that arm, and by the feel of the fractured part.

XXXVIII. To replace the bone here, the head and shoulders must be raised, and also the humerus supported, and in this relaxed state of the muscles, the parts will be easily replaced. Their retention must be effected by a long roller, joined as much as possible,

as on the replacement by a continuance of the same position of the head and shoulders.

XXXIX. Inflammation is to be obviated by topical venesection, by leeches or scarification, and the antiphlogistic course strictly adhered to.

XL. A consequence of this injury is generally a stiffness of that arm during life.

Fracture of Humerus.

XLI. Fracture of the humerus is easily discovered by examination.

XLII. Its replacement is effected by bending the elbow, and raising the arm nearly horizontal, when the surgeon placing the patient in a proper situation, will be able to return the ends of the bone, or if failing, it may be done by one assistant grasping the arm between the fracture and shoulder, and another above the joint of the elbow.

When replaced, it is retained by one splint laid along the whole outside, and another along the whole inside of the arm, each covered with flannel; and, while they are held in this situation, a flannel roller is applied sufficiently tight to support them. The forearm should then be placed in a sling, which being gently pulled down, will retain the ends of the bone in their position.

If no morbid symptoms arise, any inspection may be deferred for seven or eight days, and the cure will be complete in a month.

Fracture of Fore Arm.

XLIII. Fractures of the fore arm are known by pain

in that situation, and the grating of the ends of the bones on each other. But where the fracture only extends through one bone, in order to detect it an accurate examination is requisite.

XLIV. To replace the bones here, after seating the patient, the joints of the wrist and elbow must be bent, while the fore arm is extended as far as is sufficient to replace it, one assistant grasping above, the other below, the fracture. A long broad splint must then be laid along the arm, reaching from the elbow to the fingers, and another narrower and not so long along the radius; taking care that the palm of the hand be towards the wrist. A flannel roller or the twelve tailed bandage must, last of all, secure the whole with some tightness, while the arm is placed in a sling.

XLV. This fracture is often conjoined with partial dislocation of the wrist, the consequence of which is permanent stiffness for life.

Fracture of Olecranon.

XLVI. This is a frequent accident without any other injury of the arm, and the parts are kept in contact, when replaced, by extending the arm and applying on its fore part a long splint, from the humerus to the fingers, hanging the arm and keeping it fixed to the side. This splint is to be occasionally removed after 10 or 12 days, some motion of the joint cautiously permitted, and the dressings again replaced.

Fracture of the Small Bones.

XLVII. Fractures of the wrist are the effect of gun-

shot injuries, and when replaced, stiffness of the joint succeeds.

XLVIII. Their treatment consists in counteracting the effects of inflammation by topical venesection, and applying the splints as already directed.

XLIX. Metacarpal fractures when replaced, should be firmly secured by splints over the whole palm and inside of the arm, and farther to prevent all motion above these long splints reaching to the humerus, should be added.

L. Fractures of the fingers are frequent, and their treatment simple. When replaced, the splint is to be first wetted to adapt it to their shape, extending the whole length of the finger, and secured by a roller. Above this, longer splints should be applied, including the whole hand, to prevent motion of the part.

The dressings should be occasionally removed after the first fortnight, to allow some motion of the joints, and then replaced and daily removed for the same purpose. In three weeks the cure will be found complete.

Fracture of Thigh.

LI. Fracture of the femur is distinguished by the grating of the ends of the bone, by the shortening of the member, by its inability to support the body, and by the tension and pain attending the accident.

LII. Fracture here is apt to occur in two places, its middle and neck.

Fracture of its Middle.

LIII. The treatment of the middle is easiest, and the replacement is made by making the thigh form an ob-

truse angle with the body, while the knee joint is bent ; in which state, an assistant secures the upper end of the bone, while the under part is supported by another, and the surgeon is employed in making the exact apposition of the fractured ends.

LIV. Their retention in this state, is a more complex operation. The patient being previously laid firm on a mattress that does not sink with the knee bent, and the bones replaced, under the member is laid a pillow, having on it the twelve tailed bandage, and a long splint to reach from the hip joint to the knee, which is placed along the outside of the thigh, the body of the patient being turned somewhat towards the injured side to favour it. Another splint reaching from the groin to below the knee, is then laid along the inside of the thigh, and the two are secured by a tight application of the twelve tailed bandage, making an equal pressure. To preserve the dressings in this firm state, a board of wood should be previously laid below the pillow, and two straps connected with it brought to buckle on the upper part of the limb. The pillow also should be fixed to the bed, and a frame of hoops brought over the whole to take off the weight of the bed clothes.

LV. Where no violent symptoms occur, there will be little necessity for undoing this apparatus. Where swelling and inflammation supervenes, the bandage may be unloosed, and the upper splint removed, so that leeches, saturnine applications, &c. may be used to remove this morbid state; when removed, the bandage is then to be replaced. In general the cure is completed in six or eight weeks, and during the cure,

in simple cases, some alteration of posture may occasionally be made with caution to prevent stiffness of the member.

LVI. But, in spite of every attention, the success of the cure here is frequently imperfect, and the ends of the bones slipping past each other, shortness of the limb continues for life. Various methods have been tried to prevent this, by the use of machines, but hitherto without effect.

Fracture of its Neck.

LVII. Fractures of the neck of the femur are known by the symptoms of pain and swelling, by shortness of the member, by the fractured part being pushed upwards, and by the knee and toe turned inwards.

LVIII. In order to replace the bone, the body is to be secured by an assistant, while moderate extension is made by another to the under part of the thigh.

LIX. The bones being replaced, the same treatment proceeds here as in fractures of its middle.

Fracture of Patella.

LX. Fractures of the patella are a frequent injury and easily discerned on examination. They are most commonly transverse; frequently the bone is broken in pieces. For their treatment, the patient should be laid on a feather bed, and the leg extended; a long firm timber splint, well lined with wool, should be placed under the leg, reaching from the top of the thigh to the extremity of the leg, and secured by one strap about the limb at the ankle, and another at the knee. The parts of the bone being then replaced, the effects

of inflammation are to be obviated by topical venesection, and saturnine applications. When the effects of inflammation are past, the joint may be covered with a large plaister, and a hooped frame placed over the limb. If a separation of the bones is afterwards found, on examination, they are to be replaced as near as possible, and retained by the uniting bandage, or slips of plaister, but much pressure should never be made to retain them, as the cure will be completed even with a little separation.

LXI. If the symptoms continue favourable, about the 12th or 14th day, the joint may be moderately bent, and some motion continue to be made occasionally, to prevent stiffness ensuing.

Fracture of the Leg.

LXII. Fractures of the leg, where both bones suffer, are easily detected on examination. Where one only, it is more difficult.

LXIII. The most common seat of fracture here, is above the ankle joint.

LXIV. To replace the bones, the knee should be bent, and the foot slightly extended; when one assistant extending the upper end of the limb, and another at the ankle, the ends of the bone are reinstated. Beneath the injured leg, laid on its outside, with the knee somewhat bent, but not too much, a twelve tailed bandage and splint, reaching from above the knee to below the ankle is to be placed, and another splint of the same size is then to be laid above, and the bandage tightened. To secure all, an additional splint of wood should be under the whole, and straps from it brought round to buckle round the limb and retain the dressings.

The foot also should be supported by a turn or two of a roller, to increase the relaxation of the parts.

When instead of the side, the patient prefers lying on his back, the same posture of the limb may be kept by raising the member to a height above the body.

LXV. When the replacement of the bones in the leg is not accurate, inequalities are apt to arise, and this should be particularly attended to.

No change should take place in the state of the parts for the first fortnight, and then the posture of the body should be cautiously changed, but that of the leg still preserved.

Fractures of the Foot and Toes.

LXVI. Fractures of the foot and toes are to be treated as those of the other small bones (p. 346.) by replacing them in their situation, and retaining them by splints and a bandage fitted to the part.

In fracture of the foot, one splint should extend over all the sole, and no motion of any kind be permitted during the cure.

Compound Fractures.

LXVII. We have hitherto considered fractures in their simple state, without much lesion or external injury of the soft parts. This complication, under the name of compound fracture falls next to be noticed, where the injury of the bone particularly affects that of the parts above.

LXVIII. This affection of the soft parts produces inflammation and all its consequences; and in order to its treatment, the previous circumstances to be attended to are, the immediate restraint of hemorrhage, and the ascertaining the extent of the injury.

LXIX. The *first* is performed by the application of the Tourniquet, and afterwards on enlarging the wound by the use of ligatures.

With respect to the *second*, whatever the extent of the injury, or its unfavourable appearance, till called for by the urgency of circumstances, no removal of the limb by amputation should take place.

LXX. This conduct being resolved on, the treatment here, as in simple fractures, depends on replacement of the bones, and their retention until a cure.

LXXI. The *first* is performed by removing every obstacle to replacement, and this obstacle depends on either the presence of extraneous bodies, or the state of the bones themselves.

LXXII. The *1st* is executed by enlarging the wound by an incision, if too small, and removing them as directed in (p. 22.)

The *2^d* consists in removing any loose bones, or sawing off any sharp pieces which stick out or project thro' the teguments, and do not admit of being easily replaced; and, in doing it, a piece of pasteboard, or thin lead, should be inserted betwixt the bones and the teguments, to preserve them. Where, again, the bone protruded, is capable of reunion, the opening should be cautiously enlarged to replace it.

LXXIII. This preliminary part being finished, by the removal of such obstacles, and by the ligature of any vessels opened in executing it, the fracture is to be replaced as in other cases, by relaxing the parts, and extension of the member, as far as is necessary. When finished, the wound is to be dressed in the usual manner, and a twelve tailed bandage, with a splint placed below

the limb, which will support it, its posture being carefully preserved.

LXXIV. The after treatment consists in guarding against the consequences of inflammation; and, for this purpose, repeated general bleedings should take place, and also topical venesection from the part. The antiphlogistic regimen should be rigorously enjoined, and the dressings, spread always with emollient liniment, should be removed and renewed twice or thrice a-day, to prevent lodgement of matter.

LXXV. If, in spite of these means, the supervening inflammation should disappoint healing by the first intention, the great object then is, that suppuration should be induced, as quickly as possible, by the use of poultices. When induced, they are to be laid aside, and excess of matter prevented by the use of astringent solutions, and a nourishing diet; giving, at the same time, a free vent to what matter is formed, either by absorbent dressings, or a counter opening at a dependent part; and carefully examining with the finger or a probe, if the excess of discharge is kept up by loose bones, in which case the latter are to be removed.

LXXVI. With attention to these circumstances, the cure will often be successful, but it also frequently fails, when amputation becomes the only remedy; and the morbid circumstances (p. 61.) here, rendering this step unavoidable are,

1st, Tendency to gangrene instead of suppuration.
2^d, Profuse hemorrhage in the progress of the cure, where the vessels cannot be reached.

3^d, No tendency in the parts to a reunion, while the patient is sinking under the effects of the injury.

CLASS V.

LUXATIONS.

LXXVII. **I**N the joints, on the application of the same causes which produce fracture of the bones, a more common accident, that occurs from the difference of their situation, is luxation. Luxation consists in the protrusion of a bone beyond its natural situation; and according to the degree of this protrusion, it is divided into two kinds, the complete and incomplete.

LXXVIII. A luxation is for the most part easily known by a swelling on one side, or a degree of protuberance, equalled by a corresponding hollow on the other; most apparent on comparing the joint of the same member injured with its fellow; by inability, also, to move the injured limb; by pain and tension, accompanied sometimes by general symptoms of inflammation and fever.

LXXIX. The causes of luxation were mentioned to be the same that induce fracture of the bones, particularly external violence, suddenly and strongly applied,

as in leaping, falling, blows, twists, &c. It may be produced also, though more rarely, by diseases, occasioning weakness and relaxation, as chronic rheumatism and palsy.

LXXX. The opinion in luxation is to be drawn from the difficulty of reduction; from the extent of the luxation; from the attending circumstances; and from the duration of the affection.

LXXXI. With respect to the *first*, where the luxation is complete, and the part removed even to some distance from the joint, the reduction is more difficult than when it is incomplete, and part of it still within the joint.

With respect to the *second*, the injury the joint has suffered, and the fracture also of part of the bone, will increase the difficulty of the cure, and the uncertainty of our prognosis.

In regard to the attending circumstances, much swelling or inflammation, and general symptoms of fever, with subfultus tendinum, are always to be dreaded, and the patient's age and habit are in all cases to be taken into account.

On the *last*, or the duration, we may observe, that the sooner the reduction, the easier the cure; and the distance of some weeks often prevents almost the possibility of reduction, from the cavity itself filling up.

LXXXII. For the treatment of luxation, as well as fractures, four indications present:

- 1st, The first is to replace the protruded bone.
- 2^d, The second to retain it in this state.
- 3^d, The third to obviate the attending morbid symptoms; and

4th, The fourth to remove any imperfection consequent to the injury.

LXXXIII. The *first* is performed by a firm position of the upper part of the joint, and a complete relaxation of the muscles, which have any influence in its motion. A sufficient force is then to be applied, in a slow gradual manner to replace it, either by the hand or a machine, and this force should be confined in its application to the bone only. In doing it, such extension should take place, as to secure the bone from any impediment or projection from part of a contiguous bone, before its passing into its situation is attempted. When this is attended to, the reduction will be easily accomplished.

LXXXIV. When reduced, the retention will best take place by a complete relaxation of the muscles, and the application of a bandage.

LXXXV. The *third*, or the treatment of the attending symptoms, follows the reduction; and where much pain, swelling, and inflammation, still continue after it, topical venesection, and the other parts of the antiphlogistic course are to be employed.

LXXXVI. The *fourth* indication, or the imperfection consequent to the injury, consists chiefly in stiffness and chronic pain. These are relieved in the same manner as mentioned under the head of fracture, (p. 337.) by emollients, warm steams, warm sea-bathing, and with mineral waters, &c.

LXXXVII. Where luxation and fracture near the joint are combined, the healing of the fracture must first take place, before any attempt at reduction can be made. The fracture here is to be treated as already directed, according to its particular species.

LXXXVIII. Where luxation is the effect of disease in the joint, or relaxation, from fault of constitution, its cure is not in our power. In the last case, however, it may be replaced, and retained by a bandage, while the constitution is strengthened by tonics and cold bathing.

Luxation of Cranium.

LXXXIX Luxation of the cranium never almost occurs, and if the bones are parted by disease, no remedy is in our power, unless the cause is removed. Pressure, indeed, by a bandage, may be attempted.

Luxation of Nose.

XC. Luxations of nose can hardly occur without fracture; and, where it does, the same rules for the replacement will apply, (p. 339.)

Luxation of Lower Jaw.

XCI. The lower jaw admits dislocation, from its structure, forward and downward. It is apt to happen in yawning, and is discovered by the mouth remaining fixed open, and along with that state, by much pain and difficulty in speaking and swallowing; or where only one side is dislocated, by the jaw being fixed somewhat oblique.

XCII. In order to replace it, the patient being seated low, and his head supported by an assistant, the thumbs of the surgeon are to be pushed as far as possible between the teeth of the two jaws, and their flat part applied to the surface of the under jaw. The

palms of the hand are to act on the outside, while, with the fingers, a firm hold is taken of the angles of the jaw. Thus applied, the under jaw is to be pulled forward, till it move somewhat, when the jaw is to be pressed firmly downwards, and thus the ends of the bone will slip into their situation, feeling which, the thumbs are to be instantly withdrawn, for fear of being bit.

Where one side only is luxated, more force in the operation should be applied to that side.

XCIII. After the operation, every exertion of the parts should be avoided, as much as possible, for some time.

Luxation of Head.

XCIV. Dislocation of head arises in consequence of severe falls from horse-back, or a height.

XCV. Its symptoms are the falling of the head on the breast, and instant deprivation of all sensibility.

XCVI. The termination is generally fatal, unless immediate relief is obtained.

XCVII. The injury here lies in the twist or rupture of the ligament of the second vertebra of the neck; and, in order to reduce it, the patient being placed on the ground, and an assistant supporting him behind, the head is to be raised from the breast, while the shoulders are pushed down, and if not replaced, it is to be farther moved from side to side. Its reduction is attended with an instantaneous crack or noise, and the return of the patient's senses, if not too far gone.

XCVIII. The after treatment consists in putting the patient to bed; retaining the head in its position.

by a bandage; and, in order to prevent effects of inflammation, in enjoining a strict antiphlogistic course.

Luxation of the Spine and Lumbar Bones.

XCIX. Luxation of any part of the spine is known by the apparent distortion, by palsy of the lower parts, and involuntary discharge, or suppression of the urine and fæces.

C. Luxation here can be only partial in consequence of severe falls or blows, and that generally either forward or to a side. Its reduction may be attempted by bending the body slowly forward, or somewhat to a side, over a cask or cylinder of a proper size, which may be repeated when necessary.

The same is to be done with the *os sacrum*.

CI. The coccyx is a frequent subject of luxation, and it takes place either outwardly or inwardly.

CII. In the former case it is the effect of parturition, and it is known by examination, by pain over the loins, and particularly at its junction with the *os sacrum*.

CIII. It is easily replaced by external pressure, and is to be retained, though somewhat difficult, by compresses and the T. bandage.

CIV. In the inward luxation, which arises from blows or falls, it is marked by much pain in that part, and by the sensation of a tumor pressing on the under part of the rectum.

It is to be replaced by a finger put up the rectum, as far as possible, and pushing it into its situation, while the other hand is applied externally.

CV. The after treatment of all these accidents con-

sists in a proper posture, topical venesection, and a strict antiphlogistic course.

Luxation of Clavicles.

CVI. Luxation of the clavicles is discovered by stiffness and immobility of the shoulder joint, and by examination of the part. It commonly takes place where connected with the sternum.

It is easily replaced by pressure with the fingers, at the same time drawing back the arms and shoulders.

CVII. When replaced, it is to be retained by pressure on the end of the bone, by giving some support to the fore-arm, and to the head and shoulders. This is effected by a long roller describing a figure of 8, or by a machine for the purpose, delineated by several authors.

Luxation of Ribs.

CVIII. Dislocation of ribs, though a rare circumstance, may occur inwards, where connected with the vertebrae. The symptoms will be severe pain at the articulation, difficult respiration, and no part yielding to pressure but here.

When not returning to its place, on the removal of the cause of the injury, the reduction may be made by bending the body forward over a cask or cylinder, while the vertebrae above and below are prest inwards.

The retention will take place by applying thick compresses over these vertebrae and the rib, when, by a broad roller round the body, a sufficient pressure may be made to retain it in its place. The roller may be then connected to a scapular bandage, to prevent its shift-

ing. The effects of inflammation are here to be obviated in the usual way.

Luxation of the Humerus.

CIX. Luxation of the humerus from the loose connection of its parts, is the one most frequently met with, and generally downwards.

CX. Its symptoms are, inability to move the arm, pain excited on every attempt, difference of its length from the other, hollow or vacuity on comparison of the injured shoulder, and when long in this state, dema of the arm, and also its insensibility.

CXI. The prognosis here is generally favourable, unless of long duration, when a new socket is formed by the bone, and here its reduction often fails.

CXII. The treatment of this dislocation consists in a proper fixing of the body, and a due extension of the part.

CXIII. The first is the most important in order to give effect to the second. The patient, therefore, being seated in a chair, his body is secured by a belt or towel round it, fastened to a post or fixed point.

The extension of the part is then made by fixing a band above the elbow, the ends of which are given to assistants. The arm is then to be placed in a relaxed position by bending the elbow, and raising the arm itself nearly horizontal with the body, while the scapula is kept firm. In this state, the extension is to be begun, the surgeon standing on the outside and directing it. It is continued by pulling forwards and a little downwards, till the head of the bone is beyond the

brim of the socket, when relaxing a little in the efforts and pulling at the same time the scapula backwards, reduction will easily take place. On its being completed, a crack or noise is heard, with immediate relief, and the parts of the shoulder acquire their usual prominent form.

CXIV. When cases occur of long duration, and the former method is insufficient, different machines may be employed to effect the extension, the best of which is Mr Freke's.

CXV. In recent cases, the simple relaxation of the parts by bending the elbow and raising it horizontally, while pressure is applied to the scapula, will often be sufficient to effect reduction.

CXVI. The morbid symptoms succeeding reduction and requiring a special treatment, are, swelling, pain, and inflammation. These are relieved by topical venesection; and if stiffness is afterwards induced, the state of the muscles should be examined, and frequent motion made to relieve this.

A return of the luxation from weakness of parts is to be obviated by blisters and the cold bath.

Luxation of the Elbow.

CXVII. Luxation of the elbow is frequent upwards and backwards, it is easily distinguished by examination, and by the stiffness and immobility, of the joint, where the morbid symptoms of inflammation and swelling conceal this.

CXVIII. The reduction is made after seating the patient and securing the arm by an assistant, by moderately bending the fore arm so as to relax it, when in this position, it may be gradually extended, by grasping it

above the wrist, and increasing the curvature of the elbow till the reduction is made. Where the olecranon is broken off, the extension must be made with the arm in a straight position, and carried so far till the bones are past the lowest point of the humerus, when reduction will take place.

CXIX. Lateral luxation is to be treated in the same way.

CXX. The luxation of the two arm bones from each other, is also known to take place. It is marked by the usual symptoms of impaired motion and distortion of the joint, with swelling and inflammation.

The treatment, on reduction, consists in the application of splints, as in fracture, reaching on each side from the elbow to the fingers, secured by a roller and suspending the arm in a sling.

Luxation of Wrist.

CXXI. Luxations of the wrist, which are generally outward, are easily known by examination, except in case of a single bone, which requires more narrow inspection.

CXXII. They are replaced by placing the hand on a table, and kept in their situation by the application of splints, obviating, at the same time, any symptoms of inflammation which attend.

Luxation of Small Bones.

CXXIII. The luxation of the metacarpal and finger bones, is easily known by the distortion produced.

CXXIV. In replacing them, the bone should be pulled till it is raised or elevated from the contiguous ones, so that no impediment may arise from any pro-

jection, as happens when extended in a straight direction.

CXXV. The same after treatment applies as in the wrist.

Luxation of the Femur.

CXXVI. The most frequent dislocation of the hip-joint is downward and forward.

Its symptoms are known by pain and tension, joined with an increased length of the leg, an outward position of the knee and toes; and, on examination, the head of the femur itself in the groin.

CXXVII. The opinion to be formed here of reduction is uncertain; for, if the case has been of long duration, we frequently fail in our attempts.

CXXVIII. The method of attempting it is, by first raising the head of the bone above any projecting obstacles, and not till then beginning its extension.

For this purpose, the patient being laid on his back, across a bed, two broad straps are passed, one between each thigh, over the groin, the ends of these are given to assistants, each taking hold of the strap on the opposite side to himself, a third strap is then passed round the under part of the thigh, and the end of it given also to an assistant, while the knee, with the leg somewhat bent, is supported by another. Thus situated, the operation is begun, by the assistants below, moderately stretching the thigh, till the head of the bone is drawn to the under part of the foramen ovale, their exertions being then suspended, the assistants at the upper part are to draw the thigh by their efforts up-

ward and inward till the bone is raised from the situation in which it was placed, when an assistant at the knee with one hand on it, and the other at the foot, moving the knee somewhat inward, should push the thigh upward and obliquely outward. In this way, the reduction will take place; and, if failing, the attempt is to be repeated, and in order to its success, a proper co-operation of the different assistants in raising the bone from its situation must be attended to.

CXXIX. In cases of long duration, where farther force is necessary, machines may be employed and many other kinds of apparatus invented for the purpose, as delineated by most authors.

CXXX. When reduction is accomplished, the after treatment requires much attention to obviate the effects of inflammation, and the most active means, therefore by venesection are to be used.

Luxation of Patella.

CXXXI. Luxation of the patella takes place in various directions, and is easily known by examination, unless much swelling attend. It is accompanied with much pain and lameness of the joint on motion.

CXXXII. Its reduction is effected, after placing the patient in bed, with his leg stretched out, by first raising the bone somewhat by pressure on its under extremity, and when raised at the one end, attempting then to push it into its place.

CXXXIII. When conjoined with a luxation of the leg bones, their reduction must first be made.

*Luxation of the Leg Bones.**Knee Joint.*

CXXXIV. The luxation of the knee joint is rare, and will be readily known by examination, besides the lameness and pain occasioned by it.

CXXXV. Its reduction takes place, by first firmly securing the thigh, and then extending the leg, till the bones are clear, when replacement will be readily effected.

CXXXVI. The consequences of inflammation are particularly to be guarded against after luxations here, and the antiphlogistic remedies should be therefore rigorously employed.

CXXXVII. Where the two bones themselves are separated from each other, it can be easily detected, and they should then be replaced.

Ankle Joint.

CXXXVIII. Luxations of the ankle are known by the pain, lameness, and also deformity of the foot, which varies in shape, according to the particular luxation.

CXXXIX. In the reduction of all luxations here, the patient being placed in bed, and the leg, with the knee bent, secured by an assistant, the foot is to be put in its most relaxed situation, and then extended by an assistant in that direction, till the astragalus passes the extremity of the tibia, when the bone may be forced into its place.

CXL. The chief part of the after treatment consists in a proper attention to rest; and if stiffness or weak-

ness succeed the cure, Mr. Gooch's instrument must be applied to remove it.

Luxation of Foot.

CXLI. Luxation of the *os calcis* is discovered by the shape of the foot, as well as lameness and pain.

CXLII. It is reduced by relaxing the leg and foot, and extending the latter, then forcing the bone into its place.

CXLIII. The smaller bones, where luxation occurs, are treated as those of the hand, (p. 345.)

CLASS VI.

DISTORTIONS.

CXLIV. **D**ISTORTIONS of the bones are a frequent occurrence, either from malconformation or disease, and they are chiefly confined to three situations, the spine, joints, and extremities.

Spine.

CXLV. Distortions of the spine are found in all directions; and though at times the effect of external injury, they are most frequently produced by a weakly constitution, especially where confined much to a particular posture, as girls often are. It generally appears about the age of puberty.

CXLVI. The patient first complains of weakness of the extremities, and paralysis gradually ensues.

CXLVII. The consequence of these distortions, are a compressed state of the thoracic and abdominal viscera producing a variety of uneasy symptoms.

CXLVIII. In most cases a displacement of one or more of the vertebræ occurs, attended with thickening of the ligaments in that situation. The displacement

of one vertebra is always more quickly fatal than that of several.

CXLIX. For the cure of this disease, tonics are chiefly indicated, as the bark and cold bathing; and to alleviate the morbid symptoms in the mean time, a proper support of the head is necessary by a collar, in order to prevent any inequality of pressure from the weight of the superior parts, and the opening also of a drain on each side of the displaced vertebræ, to prevent accumulation in the part itself.

Joints.

CXLIX. Stiffness or distortion of the joints and stiffness of the limbs themselves, is a frequent effect of disease, particularly of scrophula and rheumatism.

CL. Whatever its cause, it has been often known to yield to a frequent and long continued use of emollients, as animal fats, or the grease of fowls, neats oil, &c. In their application they should be used three or four times daily, for half an hour at once. They should be applied so as to affect the muscles and parts concerned, from their origin to their insertion; and the joint or limb, during their use, should be retained as much as possible in an extended state. During the intermission, an emollient covering should be spread also over the part, and an instrument applied to preserve the extension acquired, while the acquiring this extension should not be hurried but gradual.

Limbs.

CLI. Real distortion of the limbs, from malconformation or disease, often occurs. In the former, the feet

are turned inwards; and outwards in the latter, the distortion proceeds from softness of the bones, the effect of rickets.

CLII. The *first* is relieved by pressure alone, by means of a machine for the purpose, as delineated by most authors.

The latter is often cured by the same means, joined also with the use of tonics: for the removal of the original disease, *vide* vol. I. p. 187. of which it is a consequence.

CLASS VII.

AMPUTATIONS.

CLIII. **T**HE varieties of local disease to which the aid of surgery is applied, become in the several ways directed in the preceding parts of this work according to their particular nature, and the circumstances attending them, either palliated or removed but when affecting the extremities and the modes of practice recommended all fail, as the last means of preserving existence, a total separation of the part itself from the body by amputation becomes necessary.

CLIV. The morbid situations particularized, in which such an operation becomes unavoidable, are,

I. *In the class of wounds* (p. 61.)

1. Injury of the large joints, particularly shattering and splinters of their bones.
2. General fracture of a large bone through its whole extent, with corresponding laceration of soft parts.
3. Contusion and laceration of the soft parts to that degree as to destroy their circulation.
4. Cases of aneurism where the operation does not

succeed, particularly in the thigh and limb, or where the parts are so diseased as not to admit of it.

III. *In the class of ulcers* (p. 102.)

1. Extensive caries not admitting of a partial removal of bone.

2. Necrosis, attended with the same state of parts.

3. Ulcers of a cancerous and phagedenic nature, where much destruction has taken place, and there is no chance of stopping their progress, while the patient is sinking under their effects.

III. *In the class of tumours* (p. 159.)

1. White swelling in its ultimate stage, which generally requires this operation.

2. Extensive exostosis, which has been also mentioned.

IV. *In the class of fractures* (p. 334.)

1. Tendency to gangrene, instead of suppuration, in which the operation should take place so soon as the gangrene appears to be stopped without waiting the period of suppuration.

2. Profuse hemorrhage in the progress of the cure of a compound fracture, where the vessels cannot be tied or ligatures applied.

3. No tendency in the parts to re-union, while the patient is sinking under its effects.

LV. Such are the different morbid states considered as rendering this operation unavoidable; and, in order to do it with success, four circumstances require special attention; these are,

1. The prevention of hemorrhage.

2. The separation of the nerves, from the other

3. The proportion of the stump; and,
4. The conduct of the after treatment.

CLVII. With respect to the *first*, the proper use of the Tourniquet will always prevent hemorrhage in the time of the operation, and a due attention to take up, by the tenaculum, every vessel, however small, that appears, will also prevent it after.

With regard to the nerves, whatever time the ligation of the vessels requires, it should be made a settled point always to separate the nerves from their connection with the vessels, to prevent the consequences of pain and spasm, which commonly ensue where this separation is neglected.

On the *3d*, or the proportion of the stump, the whole depends for the rapidity of the cure, and so much of the teguments must be saved in the excision, as completely to cover the denuded parts, when, by this mode, a union, not new growth, is the only thing wanted to effect a cure.

With respect to the after treatment, obviating inflammation, and checking excess of discharge, are the chief points to be studied.

CLVIII. In performing amputation, two methods are employed, the *common* and the *flap operation*. The former is the most frequent mode, and we shall therefore detail the steps of it first.

In the Thigh.

CLIX. The patient being placed on a table with the leg secured, by an assistant before him, (all the other extremities being also held by assistants), the circulation to the under part of the limb is to be stopped by the applica-

tion of the tourniquet, as directed (p. 13. and 14.) as high as possible. The skin and teguments are then to be pulled up by an assistant as much as he can, and the place of incision should be as low as the disease will admit. In this situation, the operator on the outside makes a circular incision with the amputating knife, to the depth of the muscles, at one or two strokes, as he inclines; and while the assistant draws up the teguments after this incision, they are next to be separated from the cellular substance, for such extent as will form a flap after covering to the stump.

In this state, with the skin retracted upwards as much as possible, the muscles are next to be divided to the bone, by a perpendicular incision through them begun on the inside, and continued round till it meet again, the operator in doing it following the direction with his eye, and avoiding to injure the retracted skin; when finished, their separation from the bone must still take place, by carrying the knife also round it. The divided parts must then be retracted as far as possible by means of a piece of slit leather, or the iron retractors. The periosteum is to be divided preparatory to the use of the saw, by carrying the knife round it, and the bone is then to be cut through with the saw, attending in the time of using it, to a strong and firm position of the member and its proper elevation. When removed, any splinters are to be taken off with nippers, which finishes the operation.

CLX. The retractors being withdrawn, the ligation of the vessels must next take place, and the conspicuous size of the femoral artery will at once enable the operator to take it up with the tenaculum;

but, in order to discover the situation of the others, the screw of the tourniquet must be unloosened, the blood wiped from the stump with a wet sponge, and then the hemorrhage will detect each separate branch, which must be all carefully taken up, an assistant regulating the tourniquet during the progress of this part of the operation, and when finished, the ends of the threads must hang without the lips of the wound.

CLXI. The hemorrhage being entirely stopt, and the surface of the wound clean, the tourniquet is to be taken off, when the muscles and skin are to be drawn down, till they completely cover the stump. To retain them firm in this state, a roller past first round the body, is next to make two or three turns round the top of the thigh, and then to be continued down with spiral turns, with a moderate degree of tightness, to near the end of the stump, when it is pinned, a small part of it still remaining unapplied. The stump is then to be attended to, the ends of the muscles are first to be laid over the bone, the teguments are next to be laid exactly together, and the ends of the ligatures, if numerous, are to be divided over the opening, and not brought out all at one place. The apposition of every part being thus completed, and an assistant retaining the parts in that state, two or three slips of adhesive plaister are to be laid across the stump, after which, the whole surface is to be covered with an emollient plaister; above it is to be laid a cushion of tow, supported with a linen compress, and above this a slip of linen laid across, fixed by the remainder of the roller brought down round the stump, and to

which the piece of linen laid across is to be fixt by pins, in order to make the necessary pressure.

CLXII. When the stump is dress'd, the tourniquet is again loosely replaced, and retained as a safeguard against hemorrhage. The patient is carried to bed, and the stump placed with a gentle declivity. It is next secured to the bed with a strap or two at the upper part of the thigh, connected to the circular roller, and fixt also to the bed. A hoop frame is placed above it, to prevent its being injured, and an anodyne being exhibited, the patient is left to rest.

CLXIII. The morbid consequences that result from the operation are next to be considered, and these are of two kinds, the more *immediate* and *secondary*.

CLXIV. The *first* consist of hemorrhage and spasm, the latter of fever inflammation, and its consequences.

CLXV. The *1st*, or hemorrhage, is troublesome as well as dangerous, and, in order to prevent its going any length, much attention is necessary on the part of the attendant, to observe frequently the state of the stump, and the moment such appearances take place, to employ the pressure of the tourniquet, till assistance is procured to undo the dressings, and take up the vessel that has been omitted. A slight oozing will frequently occur without any danger, though even in debilitated habits this oozing has been known to go very great lengths, and to require the additional treatment directed in (p. 17.) Where attention, however, is paid in the operation to the ligature of the vessels, hemorrhage will seldom occur.

CLXIV. The *2d* symptom, or spasm, is chiefly to

be obviated by studying an easy posture of the limb, and the use of opiates. Where the nerve is not included in the ligature, it is seldom permanent.

CLXV. The consequences of inflammation, however, are more serious. Where much tension and inflammation prevail, and general symptoms of fever, the antiphlogistic course must be strictly enjoined and venesection, if indicated, performed. This state of tension is not of long continuance, and gives place to the suppurative process, which generally comes on about the end of the second day, when a small quantity of matter appears about the surface of the stump. At this time the first inspection of the sore should take place, and for this purpose, the stump being supported by an assistant, the dressings are removed so far as is necessary to view it. New dressings, the same as at first, after this inspection, are to be applied, and the same renewal of dressings should afterwards take place daily. The ligatures may be removed about the seventh or eighth day, or an attempt made at it, which, if not immediate, will succeed at twice or thrice; the roller itself is not to be continued beyond the 4th week, and previous to this, if much sullied, a new one may be applied. Wherever the sore appears firm and granulating, with abatement of tension and pain, the edges of the wound should be united with adhesive plaister, in order to complete the cure, which will not exceed three or four weeks. But if, from mismanagement, instead of this adhesion of parts, formation of matter has taken place, the cure will be proportionally retarded, a point of much consequence to guard against.

CLXVI. From this view of the progress of the cure, the circumstances ensuring its success are,

1. The proper extent of the parts of the stump regulated by the incision ; and,
2. The manner of healing these distinct parts afterwards.

CLXVII. With respect to the first, no more of the muscles should be saved, than just sufficient to cover the bone, and the division of them above that of the bone for *one inch* will be sufficient. No more also of the teguments should be saved, than what is proper to cover the stump.

CLXVIII. In regard to the *second*, the muscles or parts covering the bone may be healed by the first intention, but the external wound should not, and a slight suppuration be rather permitted, till the ligatures come away, when the completion of the cure is then to be attempted by the union of the edges.

Leg.

CLXIX. The next seat of amputation is the leg, and, according to the extent of the disease requiring it, it is performed in three different situations above the ankle, below the knee joint, or else a little above it.

CLXX. The first and last situations are now generally preferred, and the intermediate one is objected to, from the difficulty of the cure, and its affording no better support than when done above the knee.

CLXXI. In performing the operation above the ankle, the place chosen, if left to choice, should be about 9 inches below the knee. The position of the pa-

tient, and mode of securing him, are the same as described for the thigh. The tourniquet should be applied a little above the knee, with its cushion pressing upon the artery in the ham. The teguments are then drawn up towards the knee, and the under part of the member being properly supported, a circular incision is to be carried by the surgeon placed on the inside, through the skin and cellular substance, till the muscles are laid bare; so much of the teguments are next to be preserved as to cover the stump, folding them over on separating them from the cellular substance on the sound skin, and so much of the muscles is afterwards to be preserved as to cover the bones; this being done, the interosseous parts are to be divided; the retractors applied, and the bones sawn through. The full restraint of the hemorrhage being accomplished, the teguments are drawn over the stump, its dressings applied as directed in the thigh, and the roller begun with a turn or two above the knee. The cure is generally completed in three or four weeks.

Arm and Fore-arm.

The operation is here to be conducted in the same manner as in the former situation, and, in order to preserve the use of the member, as much of it should always be saved as the circumstances of the disease will admit. Attention to the covering of the stump is here early from the thickness of the fleshy parts.

Hip Joint and Shoulder.

CLXXIII. Besides the situations of amputation already described, the seat of the injury frequently requires that this operation should be performed both at

the hip and shoulder joint and the modes of doing it in these two places differ somewhat from those hitherto detailed.

Hip Joint.

CLXIV. The *first* is the most formidable operation. Its cause is generally injuries from gunshot wounds, or caries of the part; and, in order to its successful issue, four circumstances are necessary to be attended to,

1. A full command of the circulation to the limb.
2. The easy separation of the joint from its socket without injuring the soft parts.
3. A proper saving and retention of the soft parts; and,
4. Their adhesion or union by the first intention.

CLXXV. The patient being placed, as in other cases, on a table, laid on his sound side, is secured in the usual manner by assistants, one having the command of the limb. A small cushion is next placed on the femoral artery, immediately as it passes from beneath the groin into the thigh, and the tourniquet is applied as high as possible, with its screw placed over the cushion, so as to stop entirely the circulation to the part. A circular incision is then to be made five or six inches from the top of the thigh, or some inches below the tourniquet, through the skin and cellular substance, dividing also the tendinous fascia. The divided parts are to be pulled up as usual, for an inch or more, and at this part, when pulled up, the muscles are to be divided to the bone. This being done, the arteries are to be secured, both the fe-

moral and its different branches. When finished, a deep incision is to be made with a large scalpel down to the bone, begun on the posterior part of the thigh, at the upper edge of the former circular cut, and carried so high as to get into the joint. The same is to be done on the opposite side of the limb, and equally deep, avoiding, at the same time, the femoral artery, and taking up any vessels that are divided. The flaps thus formed are to be managed by the assistants while the joint now laid bare, with its muscles, if possible, all detached, is next to be disengaged by turning it in different directions, especially inwards, till its ligament can be reached with a scalpel and separated, when the head of the bone can be turned out.

CLXXVI. The parts being thus removed, and the state of the socket favourable, the after treatment consists in cleaning the sore, replacing the muscles in their natural state, and drawing the flaps together, which are to be secured by so many sutures as are necessary, with the addition of adhesive plaister. The compress and roller are then applied as directed in other cases, and attention also paid to the ends of the ligatures of the arteries.

CLXXVII. The patient being carried to bed, a strict antiphlogistic treatment is to be preserved, the dressings are removed at the usual time, and in the usual manner, not excepting that of the ligatures; after which, any opening of the sore is to be drawn together and secured by plaister, till a full re-union is effected.

Shoulder.

CLXXX. The shoulder joint when exposed to the same injury with the former, may be also removed. For this purpose, the patient secured by assistants, should be laid on a table on his back, and brought to one side of it, while the diseased shoulder is made to project somewhat over it, and the arm is supported as usual by an assistant. The circulation of the member is to be stopped, either by a tourniquet applied here, proportionally high, as directed in the former case, or it may be commanded simply by the hand of an assistant compressing the artery by means of a cushion immediately above the clavicle. The circulation thus stopped, a circular incision is to be carried through the teguments and cellular substance, at the insertion of the deltoid muscle. The teguments having retracted, at this place of their retraction a similar incision is to be carried through the muscles to the bone, taking up any arteries that are divided. When finished, a perpendicular incision, with a scalpel, begun from the acromion is next to be brought down into the circular incision, terminating above or on the outside of the brachial artery. The same is done on the back part of the arm, and brought to terminate in the same way. Two flaps being thus formed, they are next to be separated from the bone, avoiding the large artery in that part of the dissection, and an assistant supporting them, the joint with its ligament is brought into view. When opened, and the arm drawn backwards, dislocation will take place, which finishes the operation.

CLXXXI. The parts being replaced, after re-

straining any hemorrhage and closing the wound, they are to be retained by futures. A pledgit, moistened with liniment, is then applied, supported by a cushion of tow, and over all a compress and roller brought with sufficient tightness to retain the contact of the parts.

CLXXXII. The danger of hemorrhage requires here the attendance of an assistant for some days, and if appearing, it can easily be restrained by pressure above the clavicle till a ligature is applied. The ligatures may be removed at the usual time as in other cases.

Knee and Elbow.

CLXXXIII. But in cases of joints where amputation becomes necessary, arising not from *injury* but *disease*, instead of this operation described, or the entire removal of the limb, the amputation *only of the diseased part or head of the joint* has been proposed, and this operation is considered as particularly applicable to the joints of the knee and elbow.

CLXXXIV. The operation for the former consists in making an incision above the patella about two inches, and continuing it down as far below its under part. This incision is to be crossed by another above the patella, (while the leg is kept in an extended state,) carried half round the limb, into the bone, and on raising the flaps or lower angles of these incisions, the capsular ligament is laid bare. The patella is next taken out, and the head of the femur denuded by raising the upper angles of the diseased parts, when a small catline is admitted to pass across the posterior flat part of the

bones immediately above the condyles, keeping its point quite close to the bone all the way. On withdrawing it, an elastic spatula is introduced in its place, as a guard to the soft parts, during the sawing off the diseased part of the bone, and this separation of the femur allows the head of the tibia to be turned out with ease and also sawn off along with the excision of the capsular ligament, except its posterior part to which the vessels adhere, though this excision is an unnecessary step of the operation.

CLXXXV. The operation being finished, and the parts replaced, in order to preserve their apposition, a few stitches must be passed through the skin both transversely and longitudinally, light dressings are then applied and the limb laid in a tin case, reaching from the ankle to the glutæus muscle.

CLXXXVIII. The after consequences of this operation are so precarious, that it will never become general, and even the morbid state of the soft parts which commonly attends these affections of the joints, that admit its application, will put it out of our power almost ever to perform it.

Foot, Toes, and Fingers.

Foot.

CLXXXIX. Amputation of the foot should only take place where partially diseased; for, if general, the former situation in the leg (p. 377.) should be preferred.

In case of partial disease, it is performed by first applying the tourniquet above the knee, and making the compression on the artery in the ham. The limb is to be firmly secured by assistants, and in the

operation proper care taken to preserve a sufficient extent of flap, in sawing also the bone, a thin splint should be inserted betwixt it and the contiguous sound bone to preserve the latter from injury by the instrument.

On removing the part the vessels are to be secured, the flap applied as close as possible to the fore, and there retained either by futures or adhesive plaister, above which a compress and flannel roller are applied.

Fingers.

CLXXXVIII. In amputating the fingers it is preferred to be done at the joints. The hand being placed on a table and the limb properly secured, the flap is first marked out of a sufficient length for covering the fore, and then dissected from the bone, and afterwards held by an assistant, while a circular incision is carried through the rest of the soft parts a little below the joint. When finished, the lateral ligament, on the patient or assistant moving the finger to direct it, is cut through, and then dislocation readily takes place.

The tenaculum is employed to any vessels that present, the flap applied to the fore, and the whole secured by adhesive plaister, and the pressure of a roller.

Flap Operation.

CLXXXIX. We have hitherto detailed the steps of amputation on the different members, as performed according to the common method, but a different one, or the *flap operation*, as observed, (p. 372.) has been practised. This method has never come into general use. The

only advantage proposed by it is, the greater covering to the stump, which is counter balanced by the additional trouble in the operation, and still more by the tediousness of the cure; while even this additional covering has been found of no superior advantage to the member in executing its functions afterwards.

Leg.

CXC. In the leg the difference in performing the flap operation from the common, consists in this: After making the circular incision through the teguments and cellular substance, and dissecting back the latter for such extent as will afterwards cover the stump, the second incision, or that of the muscles, instead of being circular, is to be begun about three inches in the leg below the place where the amputation is intended and carried obliquely up, being first marked with a pen (if necessary), and to perform this part of the operation using a long straight edged scalpel. This incision is to be made but on one side, and the remaining muscular substance, when the flap is completed, is to be divided in the common way, the vessels are then to be taken up, and the retractor afterwards applied as usual.

CXCI. In dressing the stump, care is to be taken to keep the flap from being united to the bone, till a proper suppuration has commenced, which is generally not till 12 days; and, till this period, the stump and flap are to be considered and treated as two separate wounds, for on this the success of their future adhesion depends, and in almost no case a cure by the first

intention is to be expected, being attended with much fruitless trouble where attempted.

Thigh, Arm, &c.

CXII. The chief point in conducting this mode of amputation, in all cases, is to ascertain the due extent of flap requisite, before making the incision of it, and the situation from which it should be taken.

Thus, in the thigh, it should be formed from its anterior part and be above five inches long. In the arm it should be formed from its external part.

But this method is now little employed, and only confined to amputation of the members at the joints, as already detailed.

A
SURGICAL PHARMACOPŒIA;

DIVIDED INTO

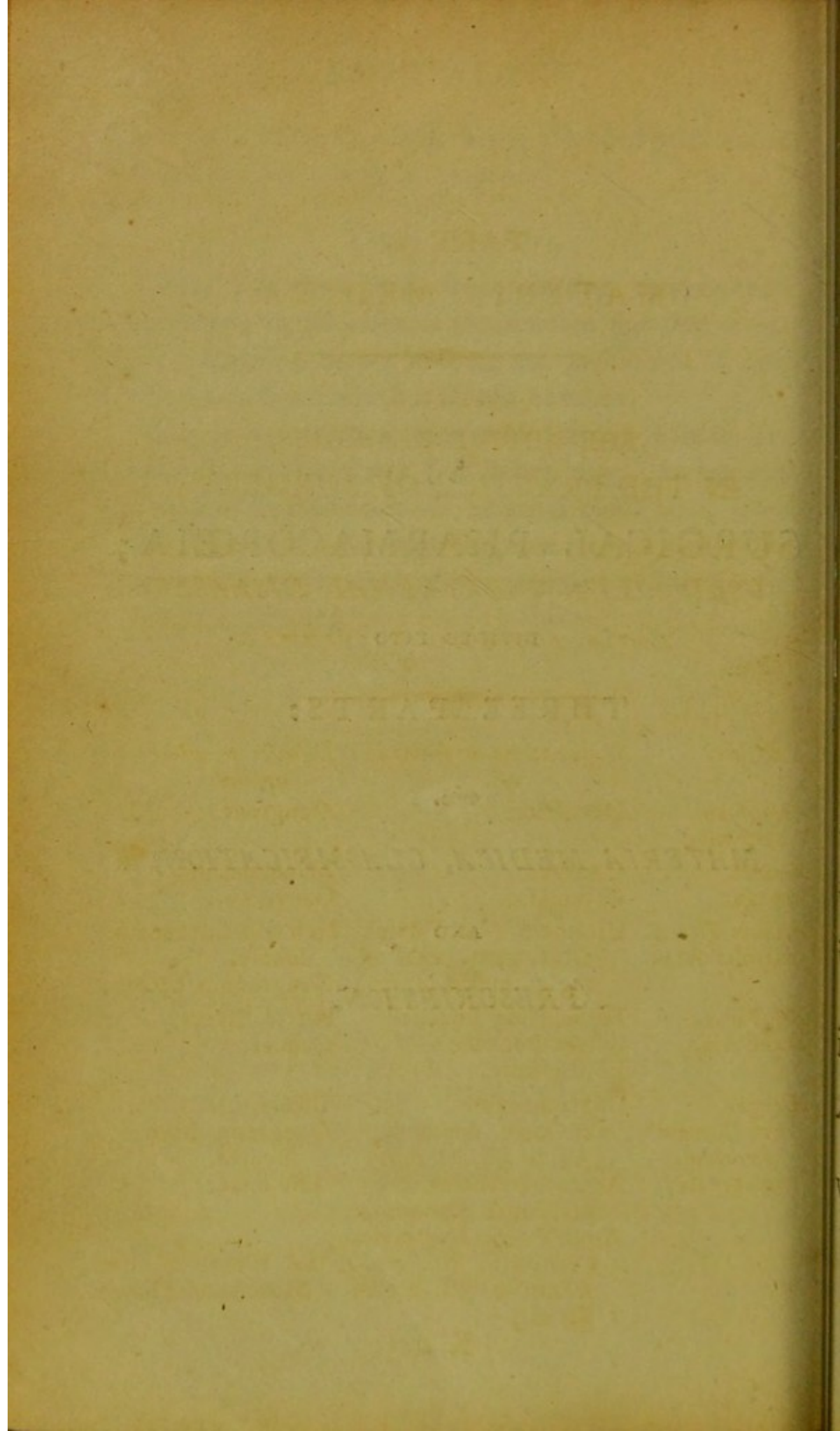
THREE PARTS:

viz.

MATERIA MEDICA, CLASSIFICATION,

AND

PRESCRIPTION.



PART I. MATERIA MEDICA.

CONTAINING,
THE ACTIVE REMEDIES,
IN THE PRACTICE OF SURGERY;

OR
USED AGAINST EXTERNAL DISEASES,
SIMPLE, COMPOUND, & CHEMICAL.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>Abſinthium.</i> Wormwood	Decoction.	Gangrene.
<i>Acetum.</i> Winegar.	Oxycrate. Cataplaſm.	Inflammation. Gangrene.
<i>Acidum Vitriol.</i> Vitriolic Acid.	Ointment (ſp. Vitriol. dilut. gutt. xxx. ad aq. et mellis <i>a</i> ʒi.)	Itch and Cutaneous diſeaſes. Gangrenous Ulcers.
<i>Aer Fixus.</i> Fixed Air.	Fermenting Poultice. Carrot Poultice. Elaſtic ſtate.	Putrid Ulcers. Cancer.
<i>Ærugo.</i> <i>vel Cuprum</i> <i>Acetatum.</i> Verdigreaſe.	Ungt. ærugini. <i>vel Cupri. Ammon.</i> (ʒſſ. to ʒii. Axung.) Aqua Sappharina. <i>vel Cupri. Ammoniat.</i> Aqua Viridis Hartmanni. (Vin. alb. lbii. ærug. Alum. <i>a</i> ʒſſ. mellis ʒi. m.)	Ulcers. Gangrene from Bedrid. The ſame. To Ulcers of the Mouth and Throat.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>Allium.</i> Garlic.	Sinapism. ex Allio. Ungt. ex Allio.	Lethargy and Apoplexy.
<i>Aloe.</i> Aloes.	Powder and Tincture.	Herpes & Deafness. Carious Ulcers.
<i>Alumen.</i> Alum.	Pulv. Styptic. Alum. Ust.	Hemorrhage. Ulcers.
<i>Amygdal. Dulc.</i> Sweet Almonds.	Oil.	Rigid parts.
<i>Amylum.</i> Starch.	Mucilag. Inj. Pulv.	Inflammation. Excoriation.
<i>Alcohol Vini.</i> Spt. of Wine.	Sp. Vitriol. Dulc. vel ætheris Vitriol. Idem dilut. vel Aqua. Thedian.	Hemorrhage from small vessels. Ulcers and Excessive Suppuration.
<i>Albumen Ovi.</i> Whites of Eggs.	Coagulum Alum. Linim. album. cum Spt. Vini.	Ophthalmia. Excoriation.
<i>Agaricus.</i> Agarie.	Pulv.	Hemorrhage from small vessels.
<i>Anchusa.</i> Alkanet.	Ungt. ad Labia, and as a Colorant to ointments and plaisters.	Excoriations.
<i>Ammoniacum.</i> G. Ammoniac.	Ungt. ex Ammon. Emplast. ex Am.	White Swelling. Sprains.
<i>Antimonium.</i> Antimony.	Crude to give consistence to bougies. Solut Croci Metall. vel Antimonii. Aqua benedict. Rulandi pro Enem.	Ophthalmia and Sup- purating wounds. Hernia.
<i>Arabicum.</i> Gum Arabic.	Mucilag. pro Inject. (3i. to Aq. lbi.) Pulv.	Gonorrhœa. Excoriations.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>Argentum.</i> Silver.	Lapis Infernalis, vel Caustic. Argentum Nitratum.	Opening Abscesses, Destroying Chan- cres, and Callous edges of Sores.
<i>Aristolochia</i> <i>longa.</i> Long Birthwort.	Decoction.	Carious Ulcers.
<i>Arsenicum.</i> Arsenic.	Ungt. Arsenic. (gr. $\frac{1}{8}$ ad axung $\mathfrak{z}$ i.) Solut Arsenic. (gr. i. ad aq. lib. ii.)	Cancer and Phaga- denic Ulcers.
<i>Asa Fætida</i> Devil's dung.	Powder. Emplastr Antihyfteric	Carious Ulcers. Inguinal Vermin. Fixed Nervous Pain.
<i>Axung. Porcina.</i> Hog's Lard.	The basis of all Oint- ments and Plaisters.	
<i>Balsam Copaibæ.</i> Balsam of Capivi.		Wounds.
<i>Balsam Toletan.</i> Balsam of Tolu.		The same.
<i>Balsam Peruvian.</i> Balsam of Peru.		Ditto of Nerves.
<i>Belladonna.</i> Deadly Night- shade.	Poultice. Plaister.	Cancer. Schirrus.
<i>Benzoe.</i> Benjamin.	Elixr. Traumat, vel Tinct. Benzoes comp. Lac Virginis.	Wounds and Ulcers. Defecations of Skin.
<i>Bolus Armena.</i> Bolar Earth.	Powder. Infusion.	Gleety Sores.
<i>Borax.</i> Tincal.	Collyrium. (Borac $\mathfrak{z}$ ss. sacchar alb. $\mathfrak{z}$ i. aq. rosar. $\mathfrak{z}$ i. m.)	Ophthalmia.
<i>Butyrum.</i> Butter.	An Ingredient in most Cataplasms and Injec- tions.	

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied..</i>
<i>Calor.</i> <i>Heat.</i>	Applied by Additional Coverings to the Parts. by Steams. Fomentations. Poultices. Actual Cautery. Moxa. Burning Cylinders. Burning Glafs.	Inflammations. Swellings. Pains. Hemorrhage and Fixed Pains. Ditto. Cancerous Ulcers.
<i>Calx Viva.</i>	Aqua Calcis.	Ulcers, Scrophulous and Cutaneous.
<i>Quicklime.</i>	Cataplasma cum melle. Liniment. ad Nævos. Pasta Depilatoria. Liniment. Aq. Calcis.	Rheumatism. Tinea. Burns.
<i>Camphora.</i> <i>Camphire.</i>	Ol. Ammoniat. Liniment. Saponae. vel Balsam. Opodeldoch. Ol. Camphor. Caustic. (i. e. solut. in Acid Nitros.) Aq. Vitriol. Camphor. vel Zinc. Vitriol. cum Camphora.	Chronic Swellings. Ditto. Warts and Excrecences. Gonorrhœa.
<i>Cantharis.</i> <i>Spanish Fly.</i>	Tinct. Cantharid. Emplastr. Epispast. vel Cantharidis. Ungt. Epispast. vel Canthar. fort. et mitis.	Indolent Swellings, Rheumatism, Palsy. Internal Inflammation. The same.
<i>Carbon.</i> <i>Charcoal.</i>	Pulv. Cataplasma.	Hemorrhage. Irritable Ulcers.
<i>Centaur. minus</i> <i>Lesser Centaury.</i>	Decoct. Cataplasma.	Ulcers. Inflammatory Swelling.
<i>Cepa.</i> <i>Leek.</i>	Bulb. cum Melle.	Cutaneous Diseases. Buboes and Callous Warts.
<i>Cera alba et flava.</i> <i>White and yellow Wax.</i>	An Ingredient in Cerates, Plaisters, and Bougies. Ceromel.	Wounds and Ulcers.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>foamemelum.</i>	Decoct. Cois.	Inflammatory Swell-
<i>hamomile.</i>	pro foment.	ings.
<i>cicuta.</i>	Powder simple, or with	
<i>hemlock.</i>	Honey.	Cancer.
	Liniment.	Ditto.
	Emplastr.	Ditto.
	Foment, cum Aq. Calcis.	Scrophula.
	Cataplasma.	Cutaneous Diseases.
<i>ochlearia.</i>	Succ. cum	Foul Ulcers.
<i>curvy Glafs.</i>	Alum et Melle.	Scorbutic.
<i>olumbo.</i>	Pulv.	Ulcers.
<i>olumb.</i>		
<i>ortex Peruvian.</i>	Pulv.	Chro. Inflammation.
<i>Peruvian Bark.</i>	Cataplasma.	Ulcers.
	Foment.	Gangrene.
	(Decoct. C. P. Saturat.	
	℔i. Aq. Thed. ʒiv.	
	Camphor. Sal Ammon.	
	a ʒi. Extract. Saturn.	
	ʒi. m.)	
	Collyrium.	Chronic Ophthalmia.
<i>reta alba.</i>	An Absorbent Powder.	Gleety Sores.
<i>hnalk.</i>		
<i>umpresso.</i>	Applied by Instruments,	To all Local Dis-
<i>cessure.</i>	Plaisters,	eases the objects of
	Bandages.	Surgery.
<i>orallium.</i>	Pulv. Dentifric.	
<i>coral.</i>	Collyrium.	
<i>memor Lactis.</i>		Burns of Mouth and
<i>ream.</i>		Throat.
<i>uprum Vitriol.</i>	Ungt. varia.	Ulcers.
<i>blue Vitriol.</i>	Aqua Styptic.	Hemorrhage.
<i>maucus.</i>	Cataplasma simplex.	Foul Ulcers.
<i>marrot.</i>	Idem cum Cicuta.	Cancer.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>Digitalis.</i> Fox-glove.	Ungt. Infus. et foment.	Scrophulous. Ulcers.
<i>Electricitas.</i> Electricity.	Applied by Sparks or Shocks.	Inflammations, Tu- mors, Contractions, Palsy of Parts.
<i>Faba.</i>	Cataplasin.	Inflammatory Swell- ings.
Bean.	Pulv.	Erisipelas.
<i>Fæces Vini.</i> Wine Dregs.	Solut. cum Aq. Vinum rubr. dilut. pro Inj.	Sprains. Hydrocele.
<i>Ferment. Panis.</i> Yeast.	Cataplasin Efferves.	Foul Ulcers. Cutaneous Diseases.
<i>Ferrum.</i>	Solut. Ferri. in Oxycrat.	Inflammatory Swell- ings & Contusions.
Iron.	Solut. Vitriol. virid. vel Ferri. Vitriolat.	Ulcers.
<i>Frigus.</i> Cold.	Applied by Snow. By Pounded Ice. Cold Bath gen. & par. Affusion, &c.	Hemorrhage. Burns and Hernia. Tumors, Inflamma- tions, &c.
<i>Fuligo Ligni.</i> Woodfoot.	Aqua Vulneraria. (Fulig. ℥i. Cerussæ ℥ss. coque in Aq. Calcis. per dimid. horæ et adde Myrrhæ ℥i. m.)	Spreading Ulcers. Indolent Swellings. Herpes.
<i>Galbanum.</i> Gum Galban.	Ungt. Emplast.	Milk Swellings. Ditto.
<i>Glacies.</i> Ice.	Powdered.	Burns, Hemorrhage, and Hernia.
<i>Gallæ.</i> Galls.	Infus. Ungt.	Gleety Sores. Piles.
<i>Granatum.</i> Pomegranate.	Infus.	Gleety Sores.
<i>G. Guaiac.</i> Gum Guaiac.	Tincture. Pulv. Decoct.	Toothach. Venereal Ulcers.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>Cordeum.</i>	Pulv.	Erisipelas.
<i>Barley.</i>		
<i>Pyppsum vel Calx Vitriolat.</i>	Cataplasma. ex Pulv. et Aq.	Irritable Ulcers.
<i>Maister of Paris.</i>		
<i>Hydrargyrus.</i>	Ungt. Mercurial. vel Hydrargyr.	Venereal Sores and Swellings.
<i>Mercury.</i>	Emplastr. Mer.	
	Am. cum Mer.	
	Foment. Mer. Gummos. cum Lacte.	
	Gargarism. ejusdem.	
	Pulv. Mer. Alcalifat.	
	(Mer. part iii. ad Cret part v.)	
	(Spread on sores.)	
	Cerat. Calomel.	
	Ungt. Calc. Hydrarg. alb.	
	Ungt. Norford ad Cancr.	Cancerous Ulcers.
	(Succ. Inspissat. Sem. Ricini. plumb. ust. Mer. alb. ex Aq Calcis precipit. a ʒi.)	
	Ungt. Hydrar. Nitr.	Venereal and Indolent Ulcers.
	rubr.	
	Balsam. Mer.	
	(Ungt. Basilic. ʒi. Ungt. Mer. ʒss. Mer. Precip. rubr. ʒii.)	
	Solut. Hydrar. Muriat.	
	Ungt. ejusdem.	
	Aqua Phagadenica.	Cancer of Face,
	(Mer. corrosiv. ʒss. Aq. Calcis lbi.)	
	Aqua Aluminos.	
	(Mer. Corrosiv. ʒi. Alum. ʒss. Aq. Rosar lbi.)	
	Liquor Bellost.	Cancer,
	(Aq. Calc. ʒi. Liq. Mer. Nitr. gutt. vi. i. e. Solut. Mer. in Acid Nitr. part i. Mer. ad part ii. Acid.)	

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
	Solut. Hydrargyr. cum Plumbo. (Mer. ℥ii. Plumbi. ℥iſſ. Acid Nitros. ℥i.) Cinnabar Fumigations. Hydrarg. cum Sulphure, (Spread on fores.)	Warts and Excrecences.
<i>Hyosciamus Niger.</i>	Ungt. Hyosciami.	Cancer.
<i>Henbane.</i>	Emplastr ejusdem. Tinct. Odont. Hoff.	Schirrus.
<i>Ichthyocolla.</i> <i>Ifinglals.</i>	Emplastr adhesiv.	Wounds.
<i>Ipecacubana.</i> <i>Ipecacuhan.</i>	Pulv.	Ulcers.
<i>Lac Vaccinum.</i> <i>Cow Milk.</i>	The basis of all emollient Cataplasms and Fomentations.	
<i>Lapis Calamin.</i> <i>Calamy.</i>	Prepared Powder. Ungt. Cerat. Turner. vel Cerat Lap. Calamin.	Gleety Sores.
<i>Lilium album.</i> <i>White Lilly.</i>	Cataplasma.	Inflammatory Swellings.
<i>Liquoritia.</i> <i>Liquorice.</i>	Ungt.	Excoriations.
<i>Linum.</i> <i>Lintseed.</i>	Cataplasma ex Placent.	Inflammatory Swellings.
<i>Malva.</i> <i>Mallows.</i>	Foment. Cataplasma.	Inflammations.
<i>Mastiche.</i> <i>Mastic.</i>	Essen. cum Mer. Corros. Solut in oleo.	Venereal Ulcers. Toothach.
<i>Mandragora.</i>	Pulv. cum melle.	Schirrus.
<i>Mentha.</i> <i>Mint.</i>	Foment.	Effused Fluid.
<i>Mel.</i>	Mel Rosar.	Ulcers, Inflammations, Swellings.
<i>Honey.</i>	Ennema Mellitum. Liniment Mellis. cum Bile vel Vitriol alb. vel Spt. Vini.	Caries of Bones.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>Mezereon.</i>	Pulv.	Venereal Ulcers.
<i>Mica Panis.</i>	Cataplasma Emollient.	Inflammations.
Crumb of bread.	vel Farinac.	
	— Antiphlogistic.	
<i>Myrrha.</i>	Pulv. cum P. C. P.	Gangrene.
Myrrh.	Tinct.	Caries.
<i>Minium.</i>	The basis of many plaisters.	
Red Lead.		
<i>Nicotiana.</i>	Ennema Fumor.	Hernia.
Tobacco.	Infus. fol.	Ulcers.
	Foment.	Paraphymosis.
<i>Nitrum.</i>	Foment.	Gangrene.
Nitre.	(Aq. font. ℥i . Acet. ℥vi . Nitri ℥iii . Sal Ammon. ℥i . m.)	Contusions.
<i>Nix.</i>		Burns.
Snow.		
<i>Olibanum.</i>	Pulv. cum album. Ovi.	Specks and Scars.
Frankincense.		
<i>Opium.</i>	Caustic. Opiat.	Abcesses.
	Ungt. Opiat.	Painful Ulcers.
	Emplastr Opiat.	Rheuma. Swellings.
	Infus. vel Tinct. Opii.	Painful Ulcers.
	Infus. Opii in Vino.	Ophthalmia.
<i>Papaver.</i>	Cataplasma Papaver.	Inflammatory Swellings.
Poppy.	Foment. Papaver.	
<i>Petreolum.</i>	Aqua Petreoli.	Ulcers.
Rock Oil.	(℥i . to gong. ℥ii .)	
<i>Pix Liquida.</i>	Ungt. e pice.	Ulcers.
Tar.	cum Sev. Ovill.	Cutaneous Diseases.
	vel cum Sulphure.	
	Lotio ejusdem.	
<i>Pyrethrum.</i>	Decoct.	Ulcers and Palsy of Tongue.
Pellitory.	Gargarism.	
<i>Plumbum.</i>	Plates of Lead.	Fungous Ulcers and Schirrus.
Lead.	Amalga Plumbi.	Buboes.
	Lithargyrus.	Erisipelas.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
	Lithargyr. Acetat vel Sacchar. Saturn.	Chancre.
	Aq. Litharg. Acet. vel Vegeto. Mineral.	Wounds, Contu- sions, and Inflam- matory Swell- ings.
	Eadem cum Camphora.	
	Ungt. Litharg. Acet.	
	Emplastr Lithargyr.	
	Cerussa.	
	Ungt. Cerussæ.	
	Acet.	
	Emplastr Cerussæ.	
<i>Quercus.</i> Oak.	Infus. Cort.	Ulcers.
<i>Quercus Marina.</i> Sea Wreck.	Lotio. Cataplasma. Æthiops Vegetal. (Powder spread on fores.)	Scrophula.
<i>Rheum.</i> Rhubarb.	Pulv. Rhei. (Spread on fores.)	
<i>Resina Vulgaris.</i> Rosin.	Emplastr.	Tinea.
<i>Rosmarinus.</i> Rosemary.	Foment Vinos.	Gangrene.
<i>Ruta.</i> Rue.	Decoct.	Ulcers of Ear.
<i>Sabina.</i>	Pulv. cum melle.	Warts and Carious Ulcers.
<i>Savine.</i>	Decoction & Fomentation.	The same.
<i>Sal Ammoniac.</i>	Oxycrate. (℥i. to 3℥.)	Contusions.
<i>Ammoniac Salt.</i>	Solut. Simpl.	Gangrene.
	Foment. cum Camphor.	The same.
	(Foment. cois ℥ii. Am- mon. Muriat. ʒi. Spt. Camphorat. ʒii. m.)	
	Spt. Mindereri vel Aq. Ammon. Acet.	
	Emplastr. Ammon.	Indolent Tumours.
	(Sapon. ʒii. Emplastr. Litharg. ʒss. Ammon. Muriat ʒi.)	

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>Sagapenum.</i> Sagapen.	Emplastr.	Tumors.
<i>Sal Marin.</i> Sea Salt.	Brine. Sea water. An ingredient in injections. Spt. Sal Dulc. cum melle.	Palsy. Scrophulous fores. Ulcers of Mouth.
<i>Saccharum.</i> Sugar.	Pulv.	Ulcers and Specks of the Eye.
<i>Sapo alb. Hispan.</i> Castile Soap.	Solut. in Lacte. Liniment Sapon. vel Balsam. Opodel. Emplastr. Saponac.	Indurations and Ganglia.
<i>Sal Sodæ vel</i> <i>Natron.</i>		Scrophula. Calculus.
Mineral Alkali.	Cataplas. Natr. Vitriolat. (Natr. Vitriolat. $\mathfrak{z}$ i. Aq. fervent. $\mathfrak{lb}$ ss. Mic. pan. q. f.)	Chronic Ophthalmia.
<i>Sarsaparilla.</i>	Pulv. Decoct pro Lotione.	Venereal Ulcers.
<i>Serpentaria.</i> Snakeroot.	The leaves. Decoction.	Bites of Serpents. Gangrene.
<i>Secale.</i>	Cataplas. cum Cervis.	Sore Throat.
<i>Semen Cydonior.</i> Quince Seed.	Mucilag.	Ophthalmia.
<i>Semen Lini.</i> Linseed.	Cataplas. — cum Lacte. — Aq. Vegeto. Mineral. vel Ceruss. Acetat.	Inflammations.
<i>Spermaceti.</i>	An ingredient in Ointments.	
<i>Sanguis Draconis.</i> Dragon's Blood.	Balsam. Locatelli.	Wounds and Ulcers.
<i>Styrax Liquida.</i> Liquid Storax.	Ungt. e Styraçe. vel cum Camphora.	Wounds, Ulcers, and Gangrene.
<i>Succinum.</i> Amber.	Essence.	Wounds of Tendons.

<i>Article.</i>	<i>Preparations or forms in use.</i>	<i>Diseases to which applied.</i>
<i>Stannum.</i> Tin.	Pulv. ad Maculas. (Sacchar. $\mathfrak{z}\text{ii}$ Pulv. Li- matur. Stanni $\mathfrak{z}\text{i}$. Vitri- ol. alb. gr. v. m.)	
<i>Sinapi.</i> Mustard.	Cataplasma. vel Epithem. cum Acet.	Comatose States.
<i>Sulphur.</i> Brimstone.	Ungt. e Sulphur. vel cum Succ. Citrin. Balsam Sulphur.	Itch and Cutaneous Diseases. Ulcers, &c.
<i>Terebinthina.</i> Turpentine.	Ol. Terebenth. Ungt. Digestiv. (ex Terebinth. cum Vi- tell Ovi.) Gerat. Mellis cum Tere- binth.	Wounds of Nerves and Tendons. Wounds requiring Suppuration.
<i>Triticum.</i> Wheat.	Pulv. Cataplasma. Emolliens. Cataplasma. Antiphlogis. Cataplasma. Ferment.	Erysipelas. Inflammations. Gangrene and Ulcers.
<i>Tutia.</i> Tutty.	Pulv. An Ingredient also in Ointments and Collyria.	Excoriations.
<i>Vitellum Ovi.</i> Yolk of Egg.	To divide Resins and Oils.	
<i>Vitrum.</i> Glass.	Pulv. Ophthalmic. (Vitri. $\mathfrak{z}\text{ss}$. $\varnothing$ $\mathfrak{z}\text{ii}$. Sac- char. $\mathfrak{z}\text{ss}$. tere donee ft. Pulv. Subtil.	Specks.
<i>Zincum.</i> Zinc.	Calx. vel Flor. Zinci. Solut. Zinci vel Vitriol. alb. (gr. i. vel ii. ad aq. $\mathfrak{z}\text{i}$.) Ungt. Zinci. Vitriolat. Camphorata.	Wounds and Ulcers.

PART II.

CLASSIFICATION.

OF THE

PRINCIPAL ARTICLES OF THE MATERIA MEDICA,

(ENUMERATED IN PART FIRST.)

ACCORDING TO THEIR SPECIFIC QUALITIES,

APPLIED TO LOCAL DISEASE.

CLASS I.

EMOLLIENTS, *as*,

Warm water,
in the form of
Steams or
Fomentations.
Oils, *as*
Linseed oil
Olive oil.
Butts, *as*
Hog's Lard
Butter.
Milks, *as*
Cow Milk
Cream.
Mucilages, *as*
Infusion of Linseed
Decoction of Althæa
Decoction of Mallows.
Starches, *as*
Wheat flower
Barley flower
Oat flower.

EMOLLIENTIA, *ut*,

Aqua Calida,
forma
Vaporum vel
Fomentationum.
Olea, ut
Ol. Lini
Ol. Olivæ
Pinguia, ut
Axungia vel adeps Suillæ
Butyrum.
Lac, ut
Lac Vaccin.
Cremor Lactis.
Mucilagines, ut
Infusum Lini
Decoct Althææ
Decoct Malvæ.
Amylacea, ut
Pulv. Tritici
Hordei
Avenæ.

CLASS II.

ASTRINGENTS.

1. VEGETABLE, *as*

Infusion of Granate Bark.
 Infusion of Oak Bark
 Infusion of Red Rose leaves.

2. MINERAL, *as*

Solution of White Vitriol
 Solution of Green Vitriol
 Solution of Blue Vitriol
 Solution of Sugar of Lead, and
 its Compositions.
 Solution of Iron in Oxycrate
 Solution of Flowers of Zinc
 Spirit of Vitriol diluted
 Spirit of Salt diluted
 Solution of Alum
 Cold Water
 Lime Water
 Ice
 Snow

ASTRINGENTIA.

1. VEGETABLIA, *ut*

Infus. Cort. Granat.
Infus. Cort. Querci
Infus. Flor. Rosar rubr.

2. MINERALIA, *ut*

Solut Vitriol alb. vel. Zinci Vi-
triolat
Solut Vitriol. virid. vel Ferri
Vitriolat.
Solut Vitriol cærul. vel Cupri
Vitriolat
Solut Sacchar. Saturn et compos.
vel Cerussæ Acetat
Solut Ferri in Oxycrat.
Solut Flor. vel Calc Zinci
Spt. Vitriol. dilut. vel Acid Vi-
triol. dilut.
Spt. Salis dilut. vel Acid Muri-
at dilut.
Solut Aluminis
Aqua Frigida
Aqua Calcis
Glacies
Nix.

CLASS III.

TONICS.

1. AROMATICS, *as*

Peppermint Water
 Infusion of Rosemary
 Lavander Water
 Infusion of Chamomile.

2. BITTERS, *as*

Decoction of Wormwood
 Decoction of Rue

TONICA.

1. AROMATICA, *ut*

Aqua Menth. Piperit.
Infus. Rosmarin.
Aqua Lavendulæ
Infus. Chamæmel.

2. AMARA, *ut*

Decoct. Absinthii
Decoct. Rutæ

Decoction of Lesser Centuary	<i>Decoct. Centaur. Minor.</i>
Decoction of Holy Thistle	<i>Decoct. Cardui Benedict.</i>
Decoction of Bark.	<i>Decoct. Cort. Peruvian.</i>

3. SPIRITS, *as*3. SPIRITUOSA, *ut*

Spirit of Wine diluted	<i>Spt. Vini vel Alcohol dilut.</i>
(Camphorated ditto	<i>Spt. Vini Camphorat. vel Spt. Camphorat.</i>
White Wine diluted	<i>Vin. alb. dilut.</i>
Red Wine diluted.	<i>Vin. rubr. dilut.</i>

4. COLD WATER.

4. AQUA FRIGIDA.

CLASS IV.

CONSOLIDANTS.

CONSOLIDANTIA.

1. BALSAMS, *as*1. BALSAMA, *ut*

Balsam of Peru.	<i>Balsam. Peruvian.</i>
Storax Ointment.	<i>Ungt. e Styrace.</i>

2. DETERGENTS.
(*vide* Class xvii.)2. DETERGENTIA.
(*vide* Class xvii.)

CLASS V.

CICATRIZERS.

CICATRIZANTIA.

1. ABSORBENTS, *as*1. ABSORBENTIA, *ut*

Armenian and the other Bo- lar Earths	<i>Bolus Armena et alia</i>
Dry Cadis.	<i>Linteum Carptum.</i>

2. ASTRINGENTS.
(*vide* Class II.)2. ASTRINGENTIA.
(*vide* Class II.)

Calces of Lead, (Red and White.)	<i>Calces Plumbi (Min. et Ceruss.)</i>
Flowers of Zinc	<i>Flor. vel Cal. Zinci</i>
Lunar Caustic.	<i>Caustic. Lunar. vel Argentum Nitratum.</i>

CLASS VI.

ANODYNES.

1. NARCOTICS, *as*.

Leaves of Henbane
 Poppy Heads
 Opium
 Liquid Laudanum.

2. EMOLLIENTS.
*(vide Class I.)*3. SEDATIVES, *as*.

Preparations of Lead.

ANODYNA.

1. NARCOTICA, *ut*.

Flores Hyosciam.
Capit Papaver.
Opium
Laudan. Liquid. vel Tinct. Opii.

2. EMOLIENTIA.
*(vide Class I.)*3. SEDATIVA, *ut*.

Preparat. Plumbi.

CLASS VII.

ADHESIVES, *as*.

Pitch
 Rosin
 Calx of Lead in Oil
 Wax.

ADHESIVA, *ut*.

Pix
Resina.
Calx Plumbi Oleo Soluta.
Cera.

CLASS VIII.

IRRITANTS or ACRIDS, IRRITANTIA *vel* A-
as, CRUA, *ut*.

Rue
 Mustard
 Sal Ammoniac
 Tincture of Cantharides
 Arum.

Ruta
Sinapi
Sal Ammoniac
Tinct. Cantharid.
Arum.

CLASS IX.

RUBEFACIENTS, *as* RUBEFACIENTIA, *ut*.

Garlic
 Pepper
 Mustard

Allium
Piper
Sinapi

me
 Illitory
 Cast
 Galbanum.

Ruta
Pyrethrum
Fermentum Panis
Galbanum.

CLASS X.

VESICANTS, as

powder of Cantharides.
 Ranunculus.

VESICANTIA, ut

Pulv. Cantharid.
Ranunculus.

CLASS XI.

CAUSTICS.

I. MINERAL ACIDS, as

Oil of Vitriol
 concentrated Spirit of Salt
 Smoking Spirit of Nitre
 Woulstone's Liquor
 Caustic Oil of Camphor
 Burnt Alum
 Arsenic.

2. ALKALIES, as

Caustic Stone
 Caustic Spirit of Sal Am-
 moniac
 Soap Lye
 Liqified Tartar.

3. METALS, as

Butter of Antimony
 Blue Vitriol
 Verdigrease
 Green Vitriol
 Infernal Stone

CAUSTICA.

I. ACIDA MINERALIA, ut

Ol. Vitriol. vel Acid. Vitriol.
Spt. Sal. Concentr. vel Acid.
Muriat.
Spt. Nitr. Fum. vel Acid Nitros.
Liquor Bellost. vel Solut. Mer.
Nitros. in Aq. Calcis
Ol. Camphor. Caustic vel Acid.
Nitros. Campherat.
Alum Ust.
Arsenicum.

2. ALKALINA, ut

Lapis Causticus vel Calx cum
Kali puro
Spt. Sal. Ammon. Caustic. vel
Alkali Volatil. Caustic.
Lixivium Saponar. vel Aqua Kali
pur
Ol. Tartar per Deliquium vel
Aqua Kali.

3. METALLICA, ut

Butyrum Antimon. vel Antimon.
Muriat.
Cuprum Vitriolat.
Cuprum Acetat.
Ferr Vitriolat.
Lapis Infernal. vel Argent. Ni-
trat.

Red Precipitate
Corrosive Sublimate.

Mer. Precipit. vel Nitrat. rub.
Mer. Corrosiv Sublimat. vel Hydrargyr. Muriat.

4. ANIMALS, as

4. ANIMALIA, ut

Cantharides.

Cantharides.

5. VEGETABLES, as

5. VEGETABILIA, ut

Oil of Cloves.

Ol. Caryophyllorum.

6. EARTHS, as

6. TERREA, ut

Quicklime.

Calx viva.

CLASS XII.

RESOLVENTS.

RESOLVENTIA.

1. SOAPS, as

1. SAPONACEA, ut

Castile Soap
Starkey's Soap

Sapo Venetus
Sapo Starkeanus, vel Terebinthinæ.

Sopewort.

Saponaria.

2. EMPYREUMATIC OILS, as

2. EMPYREUMATICA ut

Fætid Oil of Tartar

Ol. Tartar. Fætid. vel Aqua Ka Fætid.

Woodfoot

Fuligo

Dippell's Animal Oil.

Ol. Animale Dippelli vel Ol. Cornubus rectificat.

3. GUMMY RESINS, as

3. GUMMI RESINOSA, ut

Gum Ammoniac

Gum Ammoniac

Afa fætida

Afa fætida

Galbanum

Galbanum

Camphire

Camphora

Aloes.

Aloe.

4. MERCURIALS, as

4. MERCURIALIA, ut

Corrosive Solution

Solut. Mer. Corrosiv. vel Hydrargyr. Muriat.

Mercurial Ointment

Ungt. Mer. vel Hydrargyr.

Mercurial Plaster.

Emplast. Mer. vel Hydrargyr.

5. ACRIDS, as

5. ACRIA, ut

Cantharides.

Cantharides.

6. AIRS, <i>as</i>	6. AEREA, <i>ut</i>
Fixed and Inflammable Airs.	<i>Aer Fixus et Inflammabilis.</i>
7. NARCOTICS, <i>as</i>	7. NARCOTICA, <i>ut</i>
Opium	<i>Opium</i>
Belladonna	<i>Belladonna</i>
Cicuta	<i>Cicuta</i>
Tobacco.	<i>Nicotiana.</i>
8. WATERS, <i>as</i>	8. AQUOSA, <i>ut</i>
Warm Steams	<i>Vapor aquæ calidæ</i>
Warm Fomentations	<i>Fomentum ex aqua calida</i>
Warm Baths.	<i>Thermæ aeratæ.</i>
9. ACIDS, <i>as</i>	9. ACIDA, <i>ut</i>
Steams of Vinegar.	<i>Vapores Aceti.</i>
10. ALKALIES, <i>as</i>	10. ALKALINA, <i>ut</i>
Spirit of Tartar	<i>Sal Tartar vel Kali</i>
Mineral Alkali	<i>Sal Sodæ vel Natron</i>
Rectified Spirit of Sal Am-	<i>Spt. Sal Ammon. valde dilut. vel</i>
moniac	<i>Aqua Ammoniac</i>
Emulsive Liniment.	<i>Ungt. Volatile vel Ol. Ammoniat.</i>
III. NEUTRAL SALTS, <i>as</i>	11. SALSA, <i>ut</i>
Mindererus Spirit	<i>Spt. Mindereri vel Aqua Am-</i>
	<i>moniac Acetat.</i>
Sal Ammoniac	<i>Sal Ammoniac</i>
Salitre	<i>Nitrum vel Kali Nitratum</i>
Borax.	<i>Borax.</i>
12. SULPHURS, <i>as</i>	12. SULPHUREA, <i>ut</i>
Sulphur	<i>Sulphur</i>
	<i>Petroleum</i>
Sulphurated Baths.	<i>Thermæ Sulphuræ.</i>

CLASS XIII.

ANTIPHLOGISTICS, <i>as</i>	ANTIPHLOGISTICA, <i>ut</i>
Still Water	<i>Aqua Frigida</i>
Solution of Sal Ammoniac and	<i>Solut. Sal Ammoniac et Nitri,</i>
Nitre	<i>vel Kali Nitrat.</i>
Decrete	<i>Oxycratum</i>

White and Red Wine	<i>Vin. alb. et rubr.</i>
Sugar of Lead	<i>Sacchar. Saturn. vel Cerus.</i>
	<i>Acetat.</i>
Alum	<i>Alumen</i>
Vegeto Mineral Water	<i>Aqua Vegeto Mineral vel Litha.</i>
	<i>Acetat.</i>
Wine with Bitters and Aromatics	<i>Vinum cum Herbis Amar. et Aromat.</i>
Spirit of Wine diluted	<i>Spt. Vini vel Alcohol dilut.</i>
Dregs of Wine diluted	<i>Fæces Vini dilut.</i>
Decoction of Bark	<i>Decoct. P. C. P.</i>
Emollient Poultices	<i>Cataplasma. Emollient.</i>
Anodyne Poultices.	<i>Cataplasma Anodyn.</i>

CLASS XIV.

INSPISSANTS, as

INSPISSANTIA, ut

Mucilages	<i>Mucilaginea</i>
Starches	<i>Amylacea</i>
Armenian and Bolus Earths	<i>Bolus Armena et Alia</i>
Dry Sponge.	<i>Spongia Sicca.</i>

CLASS XV.

COAGULANTS, as

COAGULANTIA, ut

Alcohol of Wine	<i>Alcohol Vini</i>
Acid of Vitriol	<i>Acidum Vitriol</i>
White and Blue Vitriol	<i>Vitriolum alb. et Cærul.</i>
	<i>Zinci et Cupri</i>
Alum.	<i>Alumen.</i>

CLASS XVI.

MATURANTS.

MATURANTIA.

I. MILD, as

I. LENIORA, ut

Common Poultice	<i>Cataplasma. Emolliens</i>
Butter	<i>Butyrum</i>
Yolk of Egg	<i>Vitellum Ovi</i>
Linseed	<i>Semen Lini</i>
Figs in Milk	<i>Caricæ in Lacte</i>
White Lily root	<i>Radix Lillii alb.</i>

Diachylon Plaister
 Gum Plaister
 Basilicon Ointment
 Honey and Flour.

Emplast Diachylon
Emplast Gummos
Ungt. Basilicon, vel Resinæ Flavæ
Farina cum Melle.

2. ACRIDS, *as*2. ACRIA, *ut*

Onion
 Garlic boiled in Honey or Oil
 Galbanum dissolved
 Tincture of Cantharides,

Cepa
Allium cum Melle, vel Oleo cott.
Galbanum in Ol. solut.
Tinct. Cantharid.

CLASS XVII.

DETERGENTS.

DETERGENTIA.

1. BITTERS, *as*1. AMARA, *ut*

Holy Thistle
 Lesser Centaury
 Birthwort
 Gentian.

Carduus Benedict.
Centaurium Minus
Aristolochia
Gentiana.

2. BALSAMS, *as*2. BALSAMICA, *ut*

Myrrh
 Aloes
 Balsam Capivi.

Myrrha
Aloe
Balsam Copaibæ.

3. ACRIDS, *as*3. ACRIA, *ut*

Myrrum
 Myrrine
 Myrdigrease.

Arum
Sabina
Viride æris.

4. SWEETS, *as*4. DULCIA, *ut*

Honey
 Sugar.

Mel
Saccharum.

5. SALTS, *as*5. SALINA, *ut*

Ammoniac Salt.

Sal Ammoniac.

6. MERCURIALS, *as*6. MERCURIALIA, *ut*

Calomel
 Red Precipitate
 Corrosive Solution
 Aqua Phagadenica.

Calomel
Mer. Precipitat. vel Nitrat.
rubr.
Mer. Corrosiv. Sublimat. vel Hy-
drargyrus Muriatus
Aqua Phagadenica, vel Solut
Hydrargyri Murkat. in Aqua
Calcis.

CLASS XVIII.

ANTISEPTICS.

I. BITTERS, *as*

Peruvian Bark

2. AROMATICS, *as*

Rue

Chamomile.

3. BALSAMICS, *as*

Turpentine

Camphire

Myrrh.

4. ASTRINGENTS, *as*

Alum

Vitriol

Sugar of Lead

Galls.

5. COLD MATTERS, *as*

Cold Water

Snow

Ice.

6. SPIRITS, *as*

Spirit of Wine

Wines.

7. VEGETABLE ACIDS, *as*

Citron Juice

Vinegar.

8. MINERAL ACIDS, *as*

Spirit of Vitriol

Spirit of Nitre

Spirit of Salt.

9. ÆTHERIAL OILS, *as*

Spirit of Turpentine.

ANTISEPTICA, *ut*I. AMARA, *ut**Cortex Peruvian.*2. AROMATICA, *ut**Ruta**Chamæmel.*3. BALSAMA, *ut**Terebinthina**Camphora**Myrra.*4. AUSTERA, *ut**Alumen**Vitriolum**Sacchar. Saturni, vel Cerussa**Acetata**Gallæ.*5. FRIGIDA, *ut**Aqua Frigida**Nix**Glacies.*6. SPIRITUOSA, *ut**Spt. Vini**Vina.*7. ACIDA VEGETABILIA, *ut**Succus Citri**Acetum.*8. ACIDA MINERALIA, *ut**Spt. Vitrioli, vel Acidum Vitriol.**Spt. Nitri, vel Acidum Nitrosum**Spt. Salis, vel Acidum Muriat.*9. OLEA ÆTHEREA, *ut**Spt. Terebinthinæ.*

CLASSIFICATION.

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IC. SALTS, as

IO. SALINA, ut

Sal Ammoniac.

Sal Ammoniac.

II. AIRS, as

II. AERA, ut

Fixed Air.

Aer Fixus.

CLASS XIX.

SEPTICS, as

SEPTICA, ut

(Crabs' Eyes

Oculi Cancrorum

(Common Salt

Sal Culinare, vel Marinum, vel

Natron Muriatum

(Putrid Air

Aer Putridus

(Heat

Calor

(Quicklime.

Calx viva.

M m 2

PART III.
EXTEMPORANEOUS PRESCRIPTION;

OR, A

View of the Principal Remedies

IN THE CURE OF THE PRECEDING DISEASES.

TOPICAL INFLAMMATION.

I. *Resolution.*

The general antiphlogistic treatment, as directed in vol. I. page 276.

Topical means the same as pointed out in ditto, under the head *Resolvents*, being the articles *Sedative*, *Sedative and Astringent*, *Sedative and Emollient*.

Sedative.

Bleeding with leeches or scarificator.

Sedative and Astringent, as

Vinegar.

(*Acetum et Oxycrate.*)

or in the form of poultice
made with oat-meal and
bread, also,

R. Camphor. ʒi.

Myrrh. ʒi.

Acet distillat ℥i.

Tere Camphor cum Myrrh.

Dein adde Acet. ut ft. Solut.

Solutions of Lead, as

(*Solut Saturnin.*)

R. Ceruss. Acetat. vel

Sacchar Saturn. ʒss.

Acet. vini ʒii.

Aq. font. ℥ii. m. ft. Solut.

R. Aq. Vegeto Mineral Goulard.

Or in the form of the Resolvent Cataplasm, as

R. Pulv. vel placent Lini

Aq. Vegeto Mineral

Spt. Camphorat q. s. ad Catap.

Solutions of Vitriolated Zinc. (*Vitriol Zinci.*)

℞ Solut. Vitriol. alb. (gr. i. vel ii. ad Aq. ℥i.)

℞ Aq. Zinci Vitriol. Camphorat.

Solutions of Neutral Salts, as (*Sal. Neutri.*)

℞ Aq. Ammon. Acetat ℥i℥.
Tinct Opii ℥℥. m. ft. Solut.

℞ Sal Ammoniac ℥ii.
Aq. font. ℥vi.
G. Opii ℥℥. m. ft. Solut.

Lime Water. (*Aqua Calcis.*)

Sedative and Emollient, as

Anodyne Fomentations. (*Fotus Anodyn.*)

Capit Papaver. ℥i.
Flor. Sambuc. ℥℥.
Aq. font ℔iiii. coque ad ℔ii. ut ft. fotus.
Foment. papaver. alb. ℔i.
Solut. Opii ℥℥.
Mic. panis q. s. ut ft. Catap.

Stimulant, as

dispastica. (Blisters.)
cuticuli. (Issues.)
um. saponac. (Opodeldoch Balsam.)
um ammon. (Volatile Liniment.)

2. *Suppuration.*

The antiphlogistic plan to be here less rigorously pursued.
The application of *heat* and *acrids* in the form of *fomentation*
poultice, the chief topical means, as in vol. p. I. page 278.

Camomile Fomentation. (*Foment Chamæmel.*)

℞ Flor. Chamæmel ℥ii.
℞ Sem. Lini ℥i.
℞ Aq. fervent. ℔iv. coque paulisper dein cola.

Ammon Poultice. (*Cataplasma Farinac.*)

By itself, or with the addition of
Lintseed Flour, or of Acrids, as

℞ Rad. Lili alb. ℥iv.
 Caricar. ℥i.
 Rad. Cepæ contus. ℥iſſ.
 Galban. ℥ſſ.
 Pulv. Sem. Lini q. f. ut ft. Catap.

℞ G. Galban. ℥ſſ.
 Vitell ovi adde
 Ungt. Baſilicon ℥ii. m. ft. Ungt.

*A little to be applied on
 a poultice.*

℞ Camphor. ℥ii.
 Ol. Palmæ lbj. m.

*A little to be rubbed on
 the part previous to the
 common poultice being
 applied.*

℞ Ol. Terebinth ℥ii.
 Vitell ovi ft. Liniment

*A little to be applied on
 the poultice.*

3. Gangrene.

Antiphlogiſtic treatment in the firſt ſtage, with a view to prevention; ſucceeded on the actual appearance of ſphacelus, by the uſe of the bark, wine, and ſtimulants, (*vide* vol. I. page 310. alſo,

℞ Aq. Cort. Aurant.
 Cinn. Spirit a ℥iiſſ.
 Aromat. ℥iſſ.
 P. C. P. ℥ſſ. m.

*Two table ſpoonfulls every
 half hour ſhaking the glaſs.*

℞ P. C. P. ℥ii.
 Mucilag G. Arabic ℥iii.
 Tinct. P. C. P.
 Aq. Cinn. q ℥iv.
 Spt. Vitriol. q. f. ad grat. aciditat. m.

The ſame.

Topical applications here are various antifeptics and ſtimulants, as

℞ Cataplaſm Efferveſcens.

(Infuſion of malt, thickened with oat-meal,
 and the addition of a ſpoonful of yeast.)

Cataplaſm Cereviſiæ.

℞ Cataplaſm meal thickened with grounds of ſtrong beer.)
 (Cataplaſm)

℞ Sal Ammoniac crud ℥iſſ.
Acet. Vini ℥iſſ.
Aq. font. ℥vſſ. m. ft. Solut.

With which the part is to be kept wet.

℞ P. C. P.
Myrrh. in Pulv. a ℥ſſ. m.

To be sprinkled on the parts.

CLASS I.

Wounds.

The first step, hemorrhage to be stopped where vessels large, by ligature applied by the needle, delineated page 16.; or by the tenaculum, delineated page 14.

Next, extraneous substances to be removed, if practicable, by the hand; or where deep seated by the forceps; or where minute by bathing with a syringe, or elastic bottle. Cure of the wound to be then conducted either by *adhesion* or *suppuration*.

Adhesion.

Performed by contact of its sides, kept together by straps of adhesive plaister; or, if deep, by the twisted or interrupted sutures, p. 18. and 19.

Sore to be then covered with some emollient liniment, as

℞ Ol. Olivar. ℥iii.
Ceræ alb. ℥x. m. ft. Ungt.

℞ Ol. Olivar. ℥iſſ.
Ceræ albæ ℥vi.
Spermaceti ℥ii.
Liqueſcant ſimul leni igne dein addo
Lap. Calamin. ℥ſſ. m. ft. Ungt.

Uniting bandage to be applied over all.

Strict antiphlogistic course to be observed during this treatment.

Morbid symptoms requiring alleviation during the cure, are *excess of inflammation* and *pain*; removed by the usual means of emollients, rubbed on the part, producing relaxation, as

℞ Ol. Palmæ, vel
Ol. Lini.

A little to be frequently used.

By venesection, with leeches applied near the edges of the wound.

By Opiates in large doses, as in vol. I. page 283. And

If these prove ineffectual, by the removal of the ligatures themselves.

Suppuration.

Performed by moderating inflammation, if excessive; but keeping up a certain degree of it in the part, so as to produce new growth, and the means for this purpose consist in a proper application of heat, in the form of fomentation and poultice, as in p. 413. and 414. and in vol. I. p. 278.

When suppuration fully induced, and new growth begun, emollient liniments applied, spread on charpee, as in case of adhesion, (1.) supported by a compress and bandage, or roller.

Sore to be dressed daily.

Constitutional morbid symptoms during the treatment, are *fever or spasm*.

The former requires attention to relaxation of part; topical venesection: use of fomentations and poultices, as in first case; opiate internally as in vol. I. page 283.

The latter or spasm, chiefly removed by opiates, and a complete division of nerves, if partially separated; but when rising to tetany, (*vide* its treatment in vol. I. page 76. and 301.

1. Wounds from Puncture.

Previous step to the cure, getting access to the bottom of the wound, performed either by incision, where no danger from cutting, introducing a seton, or the use of a tent.

Where these are impracticable, preventing lodgement of matter attempted by pressure, and the use of astringent injections, as

R. Aq. Calcis pro inject.

R. Solut. Alum. (℥i. to ℥vi.)

R. Vin. rubr.

Aq. font. a ℥ii. m. ft. inject.

2. Contused and Lacerated Wounds.

The 1st step moderating excess of inflammation.

2^d, Inducing suppuration by the application of heat, in the form of fomentation and poultice, as directed in p. 413. and 414.

3^d, Where tendency to gangrene, counteracting its effects as in p. 414.

3. Wounds of Veins and Lymphatics.

Trusted chiefly to pressure and astringents, as agaric and sponge. Ligature rarely necessary.

4. *Wounds of Nerves.*

Palliated by the use of antispasmodics, as in vol. I. p. 301.

When continuing, removed by complete division of the affected nerve.

Sore then a simple wound, as in p. 416.]

5. *Rupture of Tendons.*

Treated by juxta position of their extremities, and rest; retaining the part in that position, as exemplified in the rupture of the tendo achillis.

6. *Wounds of Ligaments.*

The chief point preventing inflammation by exclusion of air from the wound by adhesive plaister; and a roller spirally applied, joined with rest, and a proper position of the part.

To remove inflammation, when commenced, topical venesection, as 12 or 14 leeches applied at once, succeeded by warm steams, the only means.

Sore dressed with simple liniment, as in p. 415.

Where matter formed, its discharge next promoted by fomentation and poultice, as in p. 143. and 414.

Constitutional treatment in first stage, rigidly antiphlogistic.

In suppurative, to be somewhat changed, and fuller diet permitted.

7. *Wounds of Face.*

The chief point, juxta position of edges, by adhesive plaister or twisted suture.

Hemorrhage of fore-head restrained by ligature, by tenaculum, or pounded agaric, held on the part till drying.

8. *Wounds of Eyelid and Ball.*

The 1st treated by the same strict retention of their edges.

The 2^d simply dressed, and washed with astringent solutions, (vide diseases of the eye.)

Pain requiring the use of opiates, as in p. 416.

9. *Wounds of Throat.*

Trachea.

Longitudinal wounds of trachea retained by adhesive plaister.

Transverse wounds retained by the same means, and supine.

posture of the head; or if failing, by ligature, carried only through the skin and cellular substance.

Oesophagus.

Wounds of oesophagus treated by ligature, passed in a similar way.

Morbid symptoms requiring alleviation, in both situations are pain and hemorrhage.

The 1st trusted to opiates as in p. 416.

The 2^d effected by ligature or pressure, either by a roller or a particular instrument.

10. *Wounds of Chest.*

External.

External wounds to be treated as those from puncture (p. 416.) in preventing lodgement of matter by pressure with a roller supported by a scapulary. (*Vide* Bandages.)

Penetrating.

The 1st step in penetrating wounds, restraint of hemorrhage by the tenaculum, or by a broad ligature round the rib, with a dossil appended to it.

2^d step, removal of irritation from blood coagulated by the operation of empyema (p. 270.)

3^d, Exclusion of air from the cavity.

4th, Treatment of the sore, as a simple wound (p. 415.)

Complicated.

The chief point, a strict antiphlogistic course.

Local treatment little in our power.

Wounds of lungs and matter forming to be removed by the operation of empyema (p. 270.)

Wounds of heart and large vessels fatal.

Wounds of thoracic duct require small quantities of aliment at a time.

Wounds of thoracic coverings in addition to the general treatment require also large doses of opium occasionally.

11. *Wounds of Abdomen.*

External.

Treated as simple wounds, with attention to posture, and proper support of the part by a roller.

Penetrating.

1st step, restraint of hemorrhage by ligature.

2^d step, where part of intestine protruded and wounded, if partial, uniting it by glover's suture, or if complete, by first inserting a roll of tallow, and stitching the ends of the intestine upon it.

3^d step, replacement of parts thus protruded, by relaxation and posture, and if failing, by cautious enlargement of the wound by incision.

4th step, uniting the sides of the wound, by adhesive plaister, with compress and roller, where no protrusion. Where there is protrusion, by ligature and posture joined to the same means.

5th, Where one end of the intestine is lost, so as to prevent union from its complete division, the securing the other end to the external opening or wound must take place: and in this case the 4th intention cannot be completed.

12. *Wounds of Stomach.*

1st step, applying a ligature and replacing it.

2^d, Strict antiphlogistic course during the cure, and nourishment taken by injection.

13. *Wounds of Omentum and Mesentery.*

If part of omentum gangrenous, to be removed before replacement.

Vessels of mesentery to be secured before replacement.

14. *Wounds of Liver.*

1st step, restraint of hemorrhage.

2^d evacuating any accumulation.

3^d, Treatment as a common wound.

15. *Wounds of Gall Bladder.*

1st step, discharge of bile,

2^d Preventing its accumulation.

3^d, Treatment as a common sore.

16. *Wounds of Kidneys.*

Nothing peculiar but strict antiphlogistic course.

17. *Wounds of Bladder.*

Wounds of upper part to be first united by glover's future.
Wounds of under part to be treated as common wounds.

18. *Wounds of Uterus.*

Generally fatal.

19. *Gun-shot Wounds.*

1st Step, removal of extraneous irritation by forceps, by enlarging incision, or making counter opening.

2^d Step, subduing inflammation by venesection, emollient dressings to the part, and also anodynes internally.

3^d Step, checking suppuration by bark and vitriolic acid, as in p. 414.

4th Step, healing the part by astringent ointment as in p. 415.

5th obviating gangrene, if appearing, as in p. 414.

20. *Burns.*

1st Step, the application of cold in different forms, as *pounded ice* laid on the part, and renewed as long as necessary, *plunging the part into cold water*, or *continued affusion* upon it. The application of *clothes wet in cold vinegarr*, and frequently renewed; or,

℞ Cataplasma folani tuberos.

(Potatoe poultice prepared by pounding them in a mortar to a proper fineness.)

2^d, The first effects being over, the part is then to be treated either by astringents or emollients, according as the injury is superficial or ulcerated.

The astringents are, solutions of sugar of lead, alum, &c. as in p. 412. and 413. Also,

℞ Aq. Lithargyri acetat ℥ii.

Aq. distillat lbii.

Spt. vin. rectific. ℥i.

M.

℞ Spt. Camphor. ℥ii.

Aq. Lithar. acetat ℥i.

Aq. distillat lbi. m. ft. solut.

℞ Ol. Lini
 Aq. vegeto mineral
 Calcis $\mathfrak{z}$ fl. m. ft. embrocatio
 The emollients are,

℞ Ol. olivar. $\mathfrak{z}$ i. fl.
 Aq. Calcis $\mathfrak{z}$ iii. m. ft. ungt.

℞ Ol. Lini
 Calcis $\mathfrak{z}$ ii. m. ft. ungt.

Where fungus rises from the use of emollients, astringents and pressure necessary to reduce it.

Adhesion of parts in the ulcerated kind to be prevented by attention to the dressings.

Opiates necessary in case of much pain.

The degree of antiphlogistic treatment regulated by the inflammation.

Contaminated Wounds.

The bites of small animals to be rubbed with honey or oil, or washed with vinegar or spirit of wine.

The wounds of the viper and rattle snake are to be treated by caustic, solution of salt of tartar, volatile alkali, or spirit ammon. succinat.

℞ Alkohol $\mathfrak{z}$ i.
 Aq. Ammoniae pur. $\mathfrak{z}$ iv.
 Ol. Succini rectificat. $\mathfrak{z}$ i.
 Saponis gr. x. m.

As also by viper's fat, which is reckoned specific here.

The constitution, in the mean time, to be attacked by emetics, as in vol. I. p. 274.

Oil taken internally to the extent of two or three spoonfuls every hour, and applied externally by unction, has proved a cure.

Mercury has also been at times successful. *Vide* vol I. p. 232.

Hydrophobia treated as in vol. I. p. 111.

The part itself by excision, caustic, and afterwards forming it into an issue.

Morbid Consequences of Blood-letting.

Echymosis of Vein.

1st Step, application of compresses wet in brandy or solution of sal ammoniac.

2d, When not discussing, to be opened and treated as an wound p. 416.

Acute Pain.

Treatment, the general antiphlogistic plan with opiates.
To the part, saturnine applications, as in p. 412.
Where failing, the operation necessary.

Aneurism.

Treated by compression, with strict antiphlogistic course.
Where failing, by the operation or ligature of the part.

CLASS II.

Ulcers.

1. Local Ulcers.

Benign Ulcer.

Benign ulcer requires full diet, astringents and compression.

Astringents used are,

℞ Cerat. Lapid. Calamin.

℞ Emplast. Lithargyri

Adipis suillæ a ℥ii.

Ceræ Flav. ℥ii.

Aq. Vegeto Mineral ℥ss. m. ft. ungt.

Compression made by straps of calico spread with the following plaister.

℞ Emplast Lithargyr. ℥iv.

Resin flav. ℥ss.

*To be spread thin and applied on
slips in opposite directions to draw to-
gether the edges of the ulcer.*

The whole well supported by compresses and roller applied over the whole member, and occasionally wetted with cold water, to preserve its tightness.

Vitiated Fluid Ulcer.

Vitiated fluid ulcer, besides attention to the state of habit as

in the former, requires sedative applications, both general and topical.

For the first, *vide* vol. I. p. 303.

The topical sedatives in use here, are,

℞ Aq. Lithargyr. acetat ℥i.

Aq. distillat ℔i.

Mic. Panis, q. s. ut ft. cataplasma.

℞ Cataplasma. farinac ℔i.℥.

Pulv. Carbon. ℥ii. m. ft. cataplasma.

℞ fol. cicut. ℥iv.

Coque in Aq. font. ℔ii. ad ℔i℥. dein liquor. colat. adde

Pulv. Lini

Avenæ q. s. ut ft. cataplasma.

℞ Mucilag. G. Arabic ℔i.

Camphor. ℥i.℥. m. ft. Liniment.

℞ Papaveris alb. exsiccat. ℥iv.

Aq. puræ ℔vi. coque ad dimid. dein cola et ft. foment.

The fore, by these applications, being reduced to a benign state, the treatment of the former species then applies to it; and if, in the progress of the cure, it is slow of cicatrization, it may be quickened by tincture of myrrh, solution of blue vitriol, or compresses dipt in brandy.

Also spirituous lotion, as,

℞ Spt. vin. rectificat. ℥iv.

Aq. Calcis ℔℥. m.

Or the absorbent powder, as

℞ Lap. calamin. preparat.

Myrrh Pulv. a ℥℥. m. ft. pulv.

Vitiated Solid Ulcer.

Vitiated solid ulcer must be varied in its treatment, according to the particular morbid state of the solid.

With Fungus.

The treatment is either by strong stimulants, escharotics, or ligature and compression.

Stimulants

℞ Argenti Nitrat. ℥i.
Aq. distillat. ℥ss. m.

To be applied by means of a bit of lint fixed to the end of a probe and dipt in it.

℞ Ammon. Muriat. ℥vi.
Acet.
Spt. Vin. rectificat. a ℔i. m. ft. solut.

℞ Ferri vitriol. calcinat.
Vel Vitriol Virid. ℥i.
Aq. distillat ℥viii. m. ft. lotio.

℞ Acet vin.
Spt. vin. rectificat a ℥iv.
Spt. Vitriol. ℥ii. m. ft. solut.

℞ Ærug. preparat. gr.vi.
Ammon. Muriat. ℥ss.
Aq. Calcis recent ℥viii.

℞ Zinci vitriolat. gr.x.
Aq. distillat ℥vi. m. ft. lotio.

℞ Pulv. Rhubarbari

A little to be sprinkled on the sore once or twice a-day, and if painful to be mixt with opium, (the proportion ℥i. to ℥i.)

℞ Pulv. Columbæ

The same.

℞ Ungt. Hydrar. nitrat.

℞ Ungt. Hydrar. nitrat. ruber

℞ Mercur. sublimat. corrosiv. ℥ss.
Aq. Calcis ℔i. m. ft. solut.

℞ Succ. Gastric. Bovin

To be applied on lint to the sore.

Escharotics

The best here is the lunar caustic, and the part should be covered with dry lint, after its use, mercury also in the strong

nitrous acid may be applied, or the nitrous acid itself, by a little lint dipped in it, which gives less pain; also,

℞ Alumin. ust. Hydrar. nitrat. rub. a ʒi. m. ft. pulv.

Ligature.

There is nothing particular in the application of it, but where difficult to apply, it may be done with Dr Hunter's polypus needle.

The fungus being removed by these means, compression is then necessary as in the other ulcers treated (p. 422. and 423.)

With Sinus.

The treatment consists in preventing lodgement of matter, which is done either by incision, the seton, or injection; and in the last only does prescription take place. For the injections *vide* p. 416.; and also

℞ Aq. distillat ʒv.

Liquor. Hydrar. Muriat. gutt.ii. m. ft. inject.

℞ Tinct. Cantharid. ʒiii.

Aq. distillat. lbi. m. ft. inject.

With Callus.

The treatment consists in its removal by the scalpel or caustics; the use of emollients during the progress of this removal; and lastly compression.

The caustics used are the same as in p. 424.

The emollients are the common poultice, and similar applications, as in p. 413.

The compression is directed as in the former species (p. 422.)

With Caries.

The treatment lies in hastening exfoliation, either by incision or external applications, guarding in the mean time against the effects of the caries on the part; and, when exfoliation takes place, healing the ulcer as recommended, by astringents and compression, p. 422.

The external applications against caries used here, are

℞ Alkolis ʒiii.

Ol. Caryophyll. ʒi. m.

℞ Decoct. Sabinæ ℥vi.
Spt. Vini ℥ss. m. ft. lotio.

℞ Mellis.
Aq. font. a ℥i.
Spt. Vitriol. dilut. gutt. 30 m. ft. Liniment,
vel Salis dilut.

℞ Tinct. Myrrh.

Necrosis.

The cure here is effected chiefly by a process of nature, or in assisting it by an operation. Where this last is performed, the parts are healed as directed in common wounds p. 416.

Issues.

Nothing is necessary here but to observe where the pea issue is applied; its drain may be kept up by dressing it alternately with the basilicon, and the epispastic ointment: but, if still deficient, the insertion of a slice of *mezereum acetatum* over the wound for a night, will restore the discharge.

Cutaneous Ulcers.

The variety of cutaneous ulcer is treated by attention to the general disease of which it is the consequence, as directed in vol. I. p. 220.

The local applications are then conjoined, and consist of stimulants and astringents, in the form of solution or ointment.

1. Solutions.

℞ Aq. Rosæ lbi.
Liquoris Hydrargyr. Muriat. gutt. xl.
(Hydrarag. Muriat. ℥i. Acet. Muriat. q. f.) *Herpes.*

℞ Kali Sulphurat ℥ss.
Aq. Calcis lbi. m. *Tinea.*

℞ Picis Liquidæ ℥iv.
Aq. Calcis ℥vi.
Fervent. lbiij. coque ad dimid dein cola. *The same.*

℞ Solut. Boracis in Aceto *Ring worm.*

℞ Aq. Calcis pro Lotione

℞ Solut. Saturnin. ut in p. 412.

℞ Solut. Argent. Nitrāt. ut in p. 424.

2. Ointments.

℞ Picis Liquid. ℥ss.
Cerae Flav. ℥ss.
Flor. Sulphur. ℥ii. m. ft. Ungt.

Tinea.

℞ Acid Vitriol. ℥ss.
Adipis Suillae ℥i. m. ft. Ungt.

Pfora.

℞ Calcis Hydrarg. alb. ℥i.
Adipis Suillae ℥i. m. ft. Ungt.

Pfora.

℞ Cerae alb. ℥iv.
Ol. Olivar. ℥i.
Acet. distillat ℥ii. m. ft. Ungt.

Herpes.

℞ Hellebor. alb. pulv. ℥i.
Adipis Suillae ℥iv. m. ft. Ungt.

Pfora.

℞ Ungt. Sulphur. *vide* part I. p.

Pfora.

2. Constitutional Ulcers.

1. Venereal.

To be treated as directed in vol. I. p. 151.

Local applications most used here are, the lunar caustic, and the red precipitate, and citrine ointments, as in p. 424.

2. Cancerous.

The cure by medicine attempted by alteratives and narcotics, for which *vide* vol. I. p. 206.

The local treatment by caustics, stimulants, and narcotics, as

Caustics.

(Caustic of Justamond.

℞ Antimon. Pulverisat. ℥ii.
Arsenic Pulverisat. ℥i. m.

*To be used simply, or
with Opium.*

Plunket's Powder.

℞ Ranuncul. acris fol.
 Flammul. vulgar. fol.
 Arsenic alb. Levigat. $\mathfrak{a}$ $\mathfrak{z}$ i.
 Flor. Sulphur. $\mathfrak{v}$. m. ft. pulv.

℞ Aq. font. ℔i.
 Extract Cicut. $\mathfrak{z}$ i
 Sacchar Saturni $\mathfrak{z}$ iii.
 L. L. $\mathfrak{z}$ i.
 Arsenic gr. x. m.

*The sore to be spread with this
 solution night and morning.*

Stimulants and Narcotics.

℞ Arsenic alb. Pulver. subtil.
 Kali preparat. $\mathfrak{a}$ gr. xvi.
 Aq. distillat. $\mathfrak{z}$ iv.
 Digere in balneo dum solvantur.

*Of this a poultice is made with
 crumb of bread in the proportion
 of one gr. of Arsenic to ℔ii. of
 water.*

℞ Decoct. Cicut. in Aq. Calcis ℔i.
 & Corrosiv. sublimat. $\mathfrak{z}$ i. m. ft. Lotio

℞ Ol. Lini pro Ungt.

℞ Ungt. Arsenical. ($\frac{1}{8}$ gr. ad Axung. $\mathfrak{z}$ i.)

℞ Fol. Cicut. recent
 Adipis Suillæ $\mathfrak{a}$ $\mathfrak{z}$ iv. m. ft. Ungt. f. a.

℞ Fol. Digitalis purpur recent
 Adipis Suillæ $\mathfrak{a}$ $\mathfrak{z}$ iv. m. ft. Ungt. f. a.

℞ Fol. Lauri Cerasi $\mathfrak{z}$ iv.
 Aq. Bullient ℔ii.
 Mellis Despumat. $\mathfrak{z}$ iv. m. ft. Infus.

*Linen rags to be wet
 in it, then applied, and
 occasionally renewed.*

℞ Kali Acetat. $\mathfrak{z}$ i.
 Aq. distillat. $\mathfrak{z}$ xx.
 Mic. Panis q. s. ft. Cataplasma.

℞ Cataplasma Dauci.

3. *Scrophulous.*

The constitutional remedies directed in vol. I. p. 325.

The ulcerations treated by ointments and watery dressings of various kinds, as

℞ Ol. Olivar.

Mellis despumat α ℥ss.

Ceræ Flav.

Emplast. Lithargyr. α ℥iv. m. ft. Ungt.

℞ Sal C. Cervi ℥ss.

Ungt. Ceræ ℥ss. m. ft. Ungt.

To be kept from the air.

℞ Ungt. Hydrar. Nitrat.

Cerat Spermaceti α ℥i. m. ft. Ungt.

℞ Alum. ust. ℥i.

Ungt Lap. Calamin. ℥i. m. ft. Ungt.

℞ Aq. Marin.

Clothes wet in it to be kept on the sore.

℞ Solut. Saturnin. ut in p. 412.

℞ Mellis Rosæ

Tinct. Myrrh α ℥ii.

Aq. Calcis ℥iss. m.

℞ Foment. Cicut.

(fol. cicut. ℥iii. ad Aq. ℥iii.)

℞ Tinct. Myrrh

Aq. Calcis α ℥ii. m.

Pledgits to be dipped in it and applied.

4. *Scorbutic.*

The general disease to be treated as directed in vol. I. p. 323.

The local treatment consists of antiseptics in various forms, suited to the state of the parts, as

℞ Cataplasma Lupuli

(A handful of hops boiled in ℥ii. of water to ℥i. and the decoction strained, and made into a poultice with oat-meal.)

℞ Cataplasma Dauci

℞ P. C. P.

To be sprinkled on the sore.

Ungt^a ægyptiac.

R. Succ. Gastric. bovin.

When scorbutic disposition gone, cicatrization effected by astringents, as in p. 423. ; or precipitat ointment as in p. 424.

CLASS III.

Tumors.

1. *Inflammatory.*

Phlegmon.

Suppuration to be induced by the common means of fomentation and poultice, as directed in p. 413.

The discharge regulated by the circumstances of the case, and made either by incision, caustic, or the seton.

Sore treated as a common wound p. 416.

Erysipelas.

Treated by the antiphlogistic course, as in vol. I p. 40.
Local applications, absorbents and astringents, as

R. Pulv. Lithargyr.

Amyli $\mathfrak{z}$ i. m. ft. Pulv.

R. Solut. Saturnin. ut in p. 412.

R. Spt. Camphorat $\mathfrak{z}$ ii.

Aq. Lythargyr. Acetat $\mathfrak{z}$ i.

Distillat. Ibi. m. ft. Lotio.

Inflammation of Ear.

Antiphlogistic treatment.

Local applications in the 1st stage, blisters and sedatives.

In 2^d stage, warm steams and injections, and the other means of inducing suppuration, as directed p. 413.

Discharge, when taking place, to be obviated by astringent injections, as in p. 416.

Inflammation of Throat.

General antiphlogistic treatment.

Local remedies in 1st stage, blisters, warm steams, and astringent gargles, as in vol. I. p. 14.

Suppuration forming, to be promoted by the usual means of warm steams, fomentations and poultices, as in p. 413.

Hepatic Inflammation.

The chief remedy the use of mercury, conducted as in vol. p. 28. ; or the nitrous acid, as

℞ Acid Nitros. fort. ℥i.

Aq. distillat. ℔i.

Syr. cois q. s.

*To be taken at different times
in 24 hours, and gradually
increased.*

Abscess pointing, to be opened by the trocar.

Treatment of the wound, dressing from its bottom, till parts heal up, and promoting the discharge by pressure, made with roller round the body.

Lactcal Mammary Inflammation.

Resolution, the chief point, to be effected by discutients, as

℞ Ammon. Muriat. ℥i.

Spt. Rosmarin ℔i. m.

℞ Ammoniaë Acetat.

Spt. Vinos. rectificat.

Aq. distillat a ℥iv. m.

℞ Ammon. Muriat. ℥℥.

Acet.

Spt. Vin. rectificat. a ℔i. m.

℞ Sal Tartar ℥℥.

Aq. font. ℔℥℥. m.

℞ Spt. Ammon. Comp. ℥iii℥.

Aq. distillat ℥iv.

Tinct. Opii ℥℥. m. ft. lotio.

Aq. Ammon. ℥ii.

Vitell. ovi subact. ft. liniment

vide also page 412. articles sedative and astringent.

Suppuration forming to be promoted by the common means warm steams, fomentation and poultice, as directed p. 413.

To be then opened, and the after treatment as in common wounds p. 416.

Pain to be obviated by opiates, as in p. 416.

Inflammation of Testicles.

The cure topical venesection, suspension, and saturnine applications, as in p. 412.

Gonorrhœa restored by warm bathing of the part, the use of the bougie, or injections.

Suppuration occurring, though rare, to be treated as in common cases p. 413.

Schirrus, or tendency to it, as directed in vol. I. p. 317.

Venereal Buboes.

Resolution, the great point, effected by the use of mercury, made to pass through the part, as directed vol. I. p. 318. and saturnine application to the seat of the affection.

Suppuration forming to be hastened by the common means, and treated in the same manner p. 413.

Secondary state, where healing suspended, to be treated as directed vol. I. p. 315.

Lumbar Abscess.

Resolution to be effected at first by the means of venesection, blisters, and antiphlogistic course.

Not succeeding, matter to be discharged by the trocar or seton.

Sore to be treated with astringent injections, as in p. 416. and pressure.

Whitlow.

The treatment consists in opiates and astringents as in p. 416. also

℞ Camphor. ℥i.
Spt. Vinos. rectificat. lbss. m.

℞ Opii purificat. ℥i.
Ol. Olivæ. ℥i.
Ungt Simpl. ℥iiss. m. ft. Ungt.

When effusion takes place, to be discharged by incision, and exfoliation of bone afterwards removed, by extending this incision.

Parts healed as a common wound.

Chilblains.

Treated by a gradual change of temperature, and applications made with a view to this.

Astringents and stimulants then useful, as

℞ Alumin ℥ii.

Acet.

Spt. Vin. Ten. a ℥ss. m.

Linen rags to be wet in it and applied.

℞ Coagul. Aluminos

℞ Ol. Ammoniae Camphorat.

Simple abrasion of skin to be covered with diachylon, or adhesive plaister.

Ulcers forming to be treated by caustics and stimulants, as

℞ Ungt. Digestiv ℥i.

℥ precipitat. rubr. ℥ss. m.

Sprains.

Treatment in 1st stage to restore instantaneous vigor of solid, and prevent effusion by tonics and astringents, as the cold bath, equal parts of spirits and vinegar, wine lees; or,

℞ Embrocation. Ammon. acetat. cum sap. ℥ii.

Aq. Ammoniae pur. ℥ii. m.

℞ Solut. sap. cum camphor.

Aq. Ammon. acetat. a ℥i.

Aq. Ammon. pur. ℥ss. m.

2^d Stage, to obviate inflammation and effusion by topical venesection, with leeches, and when symptoms abated by the use of astringent solutions as in first stage.

3^d stage, or chronic state, relieved by friction, emollients, and cold bathing, with the assistance of compression; sometimes by stimulants, as

℞ Ol. olivar. ℥ii. ss.

Ol. terebinth. ℥i.

Acid vitriol. gutt. xlv. m.

℞ Ol. succin. rectificat.
 Tinct. opii. $\mathfrak{a}$ $\mathfrak{z}$ ii.
 Adipis suillæ preparat $\mathfrak{z}$ i. m.

2. *Indolent Tumors.*

Anasarca.

Treatment by punctures and compression, with a roller or laced stocking.

Wens.

Treatment by the seton, by puncture, or dissection.
 Cure of wound by adhesion, if possible.

Original Marks.

Treatment by ligature or excision.
 Cure of wound by first intention.

Fleshy Excrescences.

Observe the same treatment by complete excision, particularly of their root and healing by first intention.

Warts.

Are removed by ligature or caustics, as,

℞ Ol. Tartar per deliquium
 ℞ Spt. C. Cervi
 ℞ Solut. argent nitrat. in spt. nitri
 ℞ Pulv. fabin.
 Cerugin. preparat $\mathfrak{a}$ $\mathfrak{z}$ i. m.
 ℞ Antimon. Muriat. vel butyrum Antimon.
 ℞ Pulv. Rhæi
 Ipecac. $\mathfrak{a}$ $\mathfrak{z}$ i. m.
 ℞ Hydrargyr. $\mathfrak{z}$ ii.
 Plumbi $\mathfrak{z}$ iss.
 Acid nitros. $\mathfrak{z}$ i. m. ft. solut. caustic

*To be applied by a pencil
 to venereal warts.*

Corns.

Treatment consists in wide shoes, pairing the part, and the use of fresh leaves, or diachylon plaister.

Scrophulous Tumors.

Require the constitutional remedies, as directed vol. I. p. 225.

The local treatment here is various, as a gentle use of mercurial friction, also

℞ Cataplasma quercus marin. vel
Cataplasma cum Aq. Marin.

℞ Fel Bovin.
Liniment Saponac. a ℥i. ft. Liniment

And all the other discutients applied in the next article, or bronchocele.

Bronchocele.

Treatment in the first stage *mercury*, as in vol. I. p. 218. internally; externally the same remedy, joined with friction, or blisters and discutients, as,

℞ G. Ammon. colat. ℔ss.
Hydrar. purificat. ℥i.℥.
Ol. Sulphurat. ℥i.
Mel q. s. m. ft. emplastr

℞ G. Ammon. ℥iii.
Succ. cicut. spissat ℥ii.
Aq. Lithargyr. acetat ℥i. m. ft. emplastr.

℞ Saponis ℔ss.
Emplastr Lithargyr. ℔ii. m. ft. emplastr.

℞ Galban.
Ammon. a ℥ss.
Opii ℥i.
Acet Scillae ℥iii.
Saponis ℥ss.
Emplastr. Lithargyr. ℥iii. m. s. a. et ft. emplastr.

℞ Camphor. gr. x.
Acid Vitriol. ℥ss.
Adipis suillae preparat. ℥i. m. ft. Liniment.

An operation, if discutients fail, hardly admissible here.

Ganglion.

Yields to pressure or dissection of its cyst.

Bursal Swelling.

In 1st stage yields to friction, blisters, or cold bathing.

Where long continued, its contents are to be discharged by a seton past through it.

Stiffness of part remaining, removed by warm steams and friction.

Capfular Swelling.

In the 1st stage yields to the same treatment of blisters, friction, cold bathing, and compression.

In the 2^d stage, a discharge of the fluid must be made by a trocar.

Access of air prevented by immediate covering of the wound with adhesive plaister, and the assistance of a roller.

Concrete Capfular Swelling..

Where unavoidable, from excess of pain, requires excision of the cause. The same attention to the replacement of the skin on completing it, and the exclusion of air is necessary as in the former.

White Swelling.

Rheumatic.

Treatment of 1st stage by topical venesection, blisters repeatedly applied, and afterwards the use of rubefacients and stimulants, as,

℞ Tinct. Cantharid.

Spt. Camphorat. a ℥i. m.

℞ Camphor. ℥ss.

Ol. Olivar. ℥ii.

Aq. Ammon. ℥ss. m. ft. liniment.

To be used thrice a-day.

℞ Solut. Saponis ℥ii.

Aq. Lithargyr. acetat. ℥i. m.

℞ G. Ammon. solve in acet. q. f. ut ft. emplast.

To be renewed every day.

The 2d stage, when effusion has taken place, is removed by friction simply, or with mercury, or with emollients, warm bathing, &c. (*Vide Distortions.*)

Where matter forms, a seton should be past to prevent its future collection.

Spina Ventose.

The cure has never succeeded in this species.

Spina Bifida.

Is treated by pressure, with compress and bandage.

Bony Swellings.

Local exostosis to be removed by an operation as in the general treatment described p. 161.

Spina ventosa and mollities ossium being general diseases, to be treated as directed in vol I. p. 188.

Venereal Nodes, the same as in vol. I. p. 157.

DIVISION II*.

1. *Injuries of the Head.*

In this division, no particular prescriptions occur to be noticed farther than the general treatment in the body of the work, only where diaphoretics are prescribed p. 175. the *vinum antimonii opiatum* is preferred, as,

℞ Tin. Antimon. ʒvi.

Tinct. Opii ʒii. m. ft. tinct.

Ten drops the dose, every four or six hours.

℞ Ipecacuan.

Opii purificat. a ʒi.

Kali Vitriolat. ʒi. m.

* In the after divisions of this Pharmacopœia, it is only where particular prescriptions occur, that any part of the general treatment of the future diseases is taken notice of at all.—The general principles of cure have been sufficiently pursued in the former division, under Wounds, Ulcers, and Tumors; and it would be only swelling this part unnecessarily, to carry it farther.

2. *Diseases of the Eyes.**Remedies in the Acute State.*1. *Cataplasms.*

℞ Pulp. mali maturi torrefact.

To be applied in immediate contact with the eye.

℞ Conserv. Rosar. ℥ii.
Alum. ℥ss. m. ft. Cataplasma.

℞ Coagul. Alumin. (*vide* vol. I. page 280.)

2. *Collyria or Washes* (*Vide* vol. I. p. 280.) Also,

℞ Opii purificat. ℥ii.
Cinn.

Caryophyll. a ℥i.

Vin. alb. lbi. macera per dies octo.

Two or three drops to be inserted betwixt the lids morning and evening.

*Remedies in the Chronic State.*1. *Collyria or Washes.*

℞ Cerussæ ℥i.
Aq. Rosar. ℥iv. m. ft. collyr.

℞ Ærugin. preparat. gr. iv.
Ammon. Muriat. ℥ss.
Aq. Calc. recent. ℥viii. m. ft. collyr.

℞ Aq. Cupri Vitriolat.
Camphorat. a ℥ii.
Aq. distillat. ℥iv. m. ft. collyr.

℞ Calc. viv. ℥ii.
Hydrargyr. muriat. ℥i.
Aq. distillat. lbi. m. ft. collyr.

℞ Liquor. Hydrargyr. Muriat. gutt. i.
Aq. distillat. ℥iv. m. ft. collyr.

- ℞ Opii in pulv. trit. gr.i.
Camphor. gr.ii.
Aq. fervent. ℥iv. m. ft. collyr.
℞ Zinc. Vitriolat. gr.v.
Aq. distillat. ℥iv. m. ft. collyr. vel
Idem cum camphora gr.vi.
℞ Crem Lactis ℥i.
Aq. Lithargyr. acetat ℥i. m. ft. collyr.

2. Ointments.

- ℞ Ungt. Citrin. ℥ss.
Simpl. ℥i. ss. m. ft. ungt.
For ulcers of lids.
℞ Zinc. ust. ℥i.
Ungt. Ceræ alb. ℥vi. m. ft. ungt.
The same.
℞ Tutia preparat. ℥i.
Adipis suillæ prep. q. s.
The same.
℞ Hydrargyr. nitrat. rubr.
Lapid Calamin. a ℥i. ss.
Lithargyr. levigat. ℥i.
Tutia preparat. ℥ss.
Hydrargyr. sulphurat. rub. ℥i.
Balsam Peruvian gutt.xv.
Adipis Suillæ preparat. ℥ii. m. ft. ungt.
For Specks of Cornea.
℞ Cal. Hydrargyr alb.
Tutia preparat.
Lap. Calamin. a ℥ii.
Tinct. Benzoin ℥i.
Adipis Suillæ preparat. iii. m. ft. ungt.
The same.
℞ Camphor. ℥i.
Ætheris ℥ss.
Ol. Viper. ℥ii. m.
For cataract.

*The point of the finger moistened with
it to be rubbed on the eye-lid evening and
morning.*

℞ Ungt. Lithargyr. cum Aceto ℥v.
 Camphor gr. viii.
 Ceruss. gr. xv.
 Opii Pulver. gr. viii. m. ft. Ungt.

℞ Sacchar. conditi
 Ossis Sepiæ a ℥ss.
 Calomel ℥i.
 Mellis Rosæ q. s. ut ft. Liniment. *For ulcers and specks.*

3. Solutions.

℞ Vitriol. alb. ℥i.
 Aq. font. ℥iv. m. ft. solut. *For excrescences.*

℞ Alum. ℥ss.
 Aq. font. ℥iv. m. ft. solut.

℞ Vin. Gallic ℥ss.
 Aq. font. ℥ii. m. ft. solut.

4. Powders.

℞ ♀ precipitat rubr. gr. v.
 Sacchar. alb. ℥i. m. ft. Pulv. escharotic *For specks.*

℞ Oerugin. preparat. gr. iii.
 Sacchar. alb. gr. x. m. ft. Pulv.

℞ Vitri. in Pulv. redact. gr. iii.
 Sacchar. alb. gr. x. m. ft. Pulv.

℞ Crem. Tartar
 Pulv. Bol. Armen.
 Sacchar. alb. a ℥i. m. ft. Pulv.
Vide Pulveres ad Maculas. Part I. articles stannum and vitrum.

3. Diseases of the Ears.

Deafness, when arising from Impaction, Ulcer, or Dryness, is the only subject of prescription.

Impaction.

℞ Natron Muriatic. ℥i.
 Aq. distillat. q. s. *A little to be inserted to soften the wax.*

Ulcer.

- ℞ Felis Bovin. ℥iii.
Balsam, Peruvian. ℥i. m.

*A little to be occasionally
dropped into the ear.*

Dryness.

- ℞ Ol. Amygdal. ℥ss.
Ol. Terebinth. gutt. xl. m.

*A little to be dropped into
the ear, or applied on cot-
ton.*

4. *Diseases of the Nose and Throat.*

Admit only of prescription in case of swelled tonsils and uvula, hemorrhage and ulcers.

Swelled Tonsils and Uvula.

Astringent gargles to be used as in vol. I. page 281. also

- ℞ Alumin. ℥i.
Infus. Rosar. ℥iv.
Mellis Rosæ ℥i. m. ft. gargarism.

Hemorrhage.

To be restrained after the operation by the same means, or

- ℞ Vitriol alb. ad rubedinem calcinat ℥i.
Aq. distillat. ℥iv. m. ft. solut. styptic.
℞ Pulv. Alumin. ust ℥iii.
Colcothar. Vitriol. ℥i. m. ft. pulv. styptic.
Charcoal powder may be also tried.

Ulcer.

Washes.

- ℞ Lotion. Alumin. (℥i. to ℔i.)
℞ Decoct. P. C. P. cum Alumin.
℞ Quercus Contus. ℥i.
Aq. distillat ℔ii. coque ad ℔i.

Ointments.

The same as in Chronic Ophthalmia page 438. also

℞ ꝑ precipitat. rubr. ℥iij.
Ungt. Simpl. ℥ii. m. ft. Ungt.

℞ Oerugin. oeris gr. xii.
Ungt. Simpl. ℥i. m. ft. Ungt.

Constitutional treatment, when necessary, by mercury, as in vol. I. page 318.

5. Diseases of the Lips

Admit no peculiar prescriptions.

In Hare-lip, dressing to the fore, macilages, as

℞ G. Arabic ℥iv.
Aq. fervent. ℥viii. m.

Excoriation of lips cured by

℞ Ungt. Ceræ ℥i.
Styracis Colat ℥i. m. ft. Ungt. Labiale

*6. Diseases of Mouth and Teeth.**Dentition.*

The operation the only radical relief, but the different symptoms of the morbid state palliated.

Aphthæ, by

℞ Boracis ℥i.
Mellis Despumat. ℥i. m.

Mild Diarrhœa promoted by

℞ Pulv. Rhæi gr. v.
Magnes. alb. gr. vi. m. ft. pulv. laxans.

℞ Magnes. alb. ℥ii.
Pulv. Rhæi gr. xv.
Aq. Fenicul.
Anethi a ℥i.
Spt. Salin. Aromat. gutt. xv.
Syr. Rosar. ℥vi.

*Two small spoonfuls twice,
or oftener a-day.*

℞ Syr. de rhamno
Cois a ℥ii. m. *A tea spoonful or two a dose.*

℞ Infus. Rhæi ℥iii.
Sacchar. alb. ℥ii.
Sal Tartar gr. iii. m.

Diarrhœa restrained, where excessive and much pain, by

℞ Cret. alb. preparat ℥ii.
Sacchar. alb. ℥i.
Confect. jabon. ℥ii.
Aq. Menth. pip.
font. a ℥ii. m. *Two tea spoonfuls after every stool.*

℞ Mucilag Gum Arabic ℥iii.
Pulv. Ocul. Cancror. ℥i.
Sacch. alb. ℥ii.
L. L. gutt. xx. m.

℞ Potion. Cretac. (*vide* vol. I. page 248.)

℞ Ennem. Amyli cum L. L.

℞ Aq. Flor. Tiliæ ℥ii.
Ceras. Nigr.
Ol. Amygdal recent a ℥i.
Sal Tartar ℥i.
Vitell ovi ℥iii.
Mucilag. G. Arabic ℥i. m. *A table spoonful every hour or half hour, as indicated by pain.*

Vomiting checked by Sedatives, as

℞ Moschi
Sachar. alb. a gr. iii. tere bene et adde
Aq. Menth. ℥iii. m. pro dose.

Pain

By opiates, as in other cases, proportioning the dose, (*vide* vol. I. page 310. also

℞ Syrup. Diacod. ℥i. *One, two, or more tea spoonfuls a dose, according to the age.*

Convulsions

By the general means, pointed out in page 230. and sedatives, as

℞ Nitri purificat.

Tartar. Vitriolat *a* ℥i.

Cinnabar pur. gr. xlv. m. ft. Pulv. Subtil.

*The dose gr. x.
to be gradually
increased.*

Fever

By mild alkalies, in preference to neutral salts, from the excess of acid in children, as

℞ Aq. Pur. ℥i.

Sal Tartar. ℥ii. m.

A table spoonful thrice a-day.

Toothach.

Cariated toothach palliated by anodynes and caustics, as

℞ Opii purificat.

Camphor. *a* gr. i.

Ol. Caryophyll.

Piperis *a* gutt. i. m. ft. pill

*To be put into the cariated
tooth.*

℞ Vitriol alb.

A small bit to be inserted.

℞ Rad Pyrethri.

A bit applied to the hollow.

℞ Ol. Caryophyll. vel Guiac.

*A drop or two applied on
cotton to the cariated part.*

℞ Gum Mastiche. ℥i.

Ol. Terebinth. ℥vi. m. ft. solut.

The same.

The teeth preserved clean by tinctures and teeth powders, as in vol. I. page 330. also

℞ Oſſis Sepiæ

Sacchar. alb. *a* ℥ii.

Aloes Soccot. ℥vi.

Rad. Irid. Florent. ℥ss. m. ft. pulv subtil.

Insects in antrum maxillare removed by injections of tobacco, oil, and asa foetida, as

℞ Nicotianæ ʒss.

Aq. Bullient. ℥ss. infunde per quartam horæ partem.

℞ Ol. Oliv.

Spt. Salin. aromat gutt. aliquot.

℞ Solut. asæ foetid. (ʒi. ad aq bullient ʒi.)

Ulceration from transplanted teeth treated by mercury, as in vol. I. page 318. also by bark and elixir of vitriol as in ditto page 297.

Diseases of the Neck and Throat.

In this division no particular prescriptions prevail.

Diseases of Female Breasts.

Affections of Nipples.

Common ulceration of nipples treated by washes and liniments, as

℞ Ferri vitriolat ad rubedinem calcinat ʒi.

Aq. distillat ʒviii. m.

This solution to be frequently applied.

℞ Solut Zinci

Vitriolat ut in page 413.

℞ Solut. Ceruss.

Acetat ut in page 412.

℞ Emplast Lithargyr. ʒiv.

Ol. Olivæ ʒiii.

Acet. ʒi. m. ft. Ungt.

Ointment with which the sore is to be dressed in the interval of sucking.

℞ Cert. Goulard. ʒss.

Ceræ alb. ʒi. m. ft. Ungt.

℞ Ungt. Ceruss.

Acetat. ʒi.

Ditto.

Specific ulceration by mercury, as in vol. I. page 318. and page 321.

Diseases of Chest admit no forms of prescription.

Diseases of the Belly

Admit few forms.

Ascites.

Relaxation of the parts after tapping in ascites, and tympany removed by friction and stimulants, as

℞ Ol. Ammon.

℞ Balsam Opodeldoc.

Hydrocele.

Inflammation obviated from puncture in hydrocele, by saturnine, and other astringent solutions, as in page 412.

Gangrene treated locally in page 414.

Radical treatment of Hydrocele by astringents externally, attempted by the following forms,

℞ Sal Ammoniac in pulv. trit. ℥i.

Acet. vini.

Spt. vini rectificat. a ℥iv.

A compress to be soaked in it, applied to the scrotum, and retained by a bandage, to be renewed thrice a-day.

℞ Ol. Oliv. ℥vi.

Camphor. ℥i.

Spt. C. C. ℥i. m. ft. Liniment.

℞ Tinct. Canthard.

℞ Vin. Gallic.

Acet. cois a ℥iv. m. ft.

In radical cure by caustic, the following preparations are employed,

℞ Calcis cum Kali pur. ℥iii.

Opil Pulverifat. ℥ii.

Saponis Mollis Vulgaris q. s. ut ft. past

To be applied as directed.

℞ Kali pur.

To be applied in the same way.

Radical cure by injection, is according to the following form,

℞ Vini rubr. ℥xii.

Aq. pur. ℥iv. m.

To be used somewhat warm.

Hematocoele.

Vaginal hematocoele treated by the use of external stimulants and astringents, as in page 412.

Hemorrhage restrained by ligature, or ardent spirits, æther, &c. applied on pledgits.

Varicocele, &c.

Varicocele treated by astringents, as in page 412. and suspension.

Hernia.

Tobacco injection in hernia, is preferred in the following proportion,

℞ Herbæ Nicotianæ ℥ii.
Aq. fervent. ℔i.

To infuse ten minutes, then employed.

To the part externally are applied pounded ice, frequently renewed, cold saturnine solutions, as in page 412.

Diseases of Penis and Urinary Organs.

Phymosis.

In phymosis, with ulcerations within the prepuce, the following injection is to be applied by a syringe,

℞ Cupri Vitriolat. gr. vi.
Aq. pur. ℥iv.
Lithargyr. Acetat. gutt. xx. m.

To be injected with a syringe betwixt the prepuce and glans thrice a-day.

℞ Vitriol. Cærul gr. vi.
Aq. font. ℥iii. m. ft. solut.

Calculous Affections.

Constitutional treatment by lithontriptics, as directed in vol. I. page 330.

In the local treatment, no peculiar prescription occurs, except in case of severe fits, the *cannula terebiathæ*.

- ℞ Terebinth. vulgar ℥ss.
 Ovi unius Vitell.
 Decoct. Avenæ lbss. m. ft. inject.

Piles.

Local treatment consists in the use of ointments, and injections, as

- ℞ Pulv. Gallar.
 Axung. a ℥ss. m. ft. Ungt.
 ℞ Pulv. Gallar. ℥ii.
 Camphor. ℥ss.
 Adipis Suillæ ℥i. m. ft. Ungt.
 ℞ Gallar. Contus. ℥ss.
 Aq. fervent. lbii. m. ft. foment.
 ℞ Solut. Saturnin. tepid. valde dilut. page 412.

Obstruction of Urine.

From stricture, palliated by

- ℞ Ferri Rubiginis lbss.
 Acid Muriatic (pondere) lbiii.
 Spt. Vinos. rectificat. lbiii. *Dose, ten drops every ten minutes, till relief is obtained.*

Cured by bougies employed as directed in vol. I. page 145.
 Bougies are of three kinds, of *plastered linen*, of *catgut*, and *elastic resin*. For the composition of the *first*, the receipts are various, as

- ℞ Ol. Oliv. lbiii.
 Cerae Flav. lbj.
 Minii lbss. coque mass. per horas sex.
 ℞ Cerae Flavæ lbj.
 Spermaceti ℥iii.
 Ceruss. Acetat. ℥ss. coque ut antea.
 ℞ Emplast. Litharg. ℥iv.
 Cerae Flav. ℥ss.
 Ol. Oliv. ℥iii. coque emplast. seperat. dein adde cer. et ol.

Bougies are formed, by dipping into the plaister made from any of the above receipts, *thin slips of linen rag*. They are then *rolled up*, and their surface *smoothed on a marble slab*.

Suppression of Urine.

Relieved by anodyne injections, as

℞ Mucilag. Amyli ℥ss.
Tinct. Opii ℥i. m. ft. inject.

℞ Ol. Olivæ ℥v.
Tinct. Opii gutt. lx. m. ft. inject.

Incontinence of Urine.

Besides the other tonics mentioned, page 323. when from palsy of sphincter, is treated by small doses of alum.

℞ Pulv. Alum. gr. v.
G. Arabic gr. x. m. ft. pulv. *One twice a-day.*

Excrescences.

Round the anus removed by ligature, caustic, or escharotics, as in page 434.

Falling down of Gut.

Prolapsus ani has its inflammation abated, previous to replacement, by warm astringent injections, as

℞ Foment. Gallarum page 448.

℞ Solut. Alum tepid. (℥i. ad aq. ℥vi.)

℞ Solut. Saturnin. tepid. page 412.

Sinus Ulcer of Anus.

Fistula in ano cured at times by Ward's *pastila piperis*.

℞ Piperis Nigri
Rad. enul. Campan. a ℥bi.
Sem. Fœnicul. dulc. ℥iii.
Mellis despumat.
Sacchar. purificat. a ℥ii. m.

The size of a nutmeg thrice a-day, drinking after it a glass of wine.

But, in general, the operation is necessary, and the rest of the local treatment, detailed page 330.

DIVISION III.

CLASS IV.

*Fractures.**Simple.*

1st step, in the cure of simple fracture, replacement of the part, by a proper relaxation of the muscles, and extension of the member.

2^d step, retaining it in this replaced state by the application of splints and a bandage.

3^d step, obviating the attending inflammation by the usual means of venesection, with leeches, if necessary, or more commonly by the use of saturnine and sal ammoniac solutions alone, as in page 412. or instead of these, where inflammation is slight,

℞ Litharg. Levigat. ℥ss.
 Acet. ℥iij.
 Saponis ℥iv.
 Ol. Oliv.
 Ceræ Flay. a ℥ss. m. f. a.

Callus, if too luxuriant, in the progress of the cure, checked by astringents as above, or more completely by pressure.

4th step, removing the effects of the injury, which consist in weakness of the part, or general stiffness of the member.

The *first* relieved by plaisters, giving a firmness or support, and constantly worn, as

℞ Emplast. Defensiv. vel Roboran.

Stiffness is relieved by the use of friction and emollients, as in page 337. also by warm bathing, or steams received on the part.

Compound.

1st step, restraint of hemorrhage; removal of obstacles to replacement; and the replacement of the bones.

2d step, attempting the cure by the first intention, or adhesion, by obviating inflammation, by the usual means, as in page 412. and the use of gently astringent applications to the part, as in page 413. or first casing the wound with gold beater's leaf, then forming a covering over it, for the exclusion of air, by pledgits dipped in the *tinct. benzoes composita*, but guarding against any part of it entering the wound.

3d step, if adhesion frustrated by matter forming, this termination to be hastened by fomentation and poultice, as directed in page 413. and then a free vent given to it.

4th step, if discharge continuing too great, to be checked by astringent dressings in a watery form, as

R. Solut. Saturnin. as in page 312.

(A small proportion of brandy to be here added.)

Charpee dipped in this solution, to be laid on the sore, and also frequent change of dressings to take place.

5th step, where tendency to gangrene, to be counteracted by wine, bark, and elixir of vitriol, as directed page 414. and also by the local means there detailed.

6th, Where a cure takes place, morbid consequences to be removed as in simple fracture.

CLASS V.

Luxations.

1st step, replacement of the part, by relaxation of the muscles affecting the motion of the member, and its extension.

2d step, its retention in this state, by continuing the same relaxation, and the application of a bandage.

3d, obviating effects of inflammation by the usual means of venesection, and sedative and astringent remedies, as in page 412.

4th, removing the consequences of the accident, or stiffness and pain in the part, by emollients, as in page 337. warm bathing, and steams. And where from weakness, preventing also a recurrence by a bandage, tonics, and cold bathing.

CLASS VI.

*Distorsions.**Spine.*

The general tonic treatment indicated, as in page 368.

Local treatment, the giving relief to the affected part, by preventing inequality of pressure on it from above by a collar, supporting the head, and by lessening accumulation in the part itself, by a seton on each side of the protrusion.

Joints.

The treatment, regular and continued friction with emollients, of a firm consistence, as animal fats or fowl grease, long persevered in, and the occasional effect gained, or degree of extension acquired, constantly preserved by the application of a machine.

Limbs.

Original Distorsion attempted to be removed by pressure made by machines, fitted to the particular species of it.

Morbid Distorsion, or from disease, attempted also by the same means of pressure, joined with a tonic regimen, as in page 368.

CLASS VII.

Amputations.

In this class nothing particular occurs in the way of prescription.

The success of the after treatment lies in preventing hemorrhage, obviating inflammation, and abating pain.

The 1st is done by a due attention to the use of the tourniquet and ligature; the 2^d, by a strict antiphlogistic regimen; and the 3^d by anodynes, and an easy position of the member.

DIVISION IV.

BANDAGES.

In the preceding part, the several applications are detailed in the way of medicine, suited to the different morbid circumstances of local disease, according as it forms an object of surgery, it remains still, after the application of these means, to examine the different ways of retaining them to the part, so as to prove effectual for the purpose. This part of surgery consists in the use of bandages.

Bandages are composed either of old linen, cotton, or flannel.

The *1st* is generally employed as the medium of application for the dressings, and on which they are spread. It is also placed immediately above them in the form of compress or a square piece, several times doubled, to soften the pressure of the bandage, or render it more equal. When employed as a bandage itself, it is only suitable where there is little discharge or subsequent swelling. But the two last are now preferred for external use, as both yielding from their elasticity, giving additional warmth, and being capable of absorption from their more spongy texture.

All bandages must have their application made with a certain degree of firmness, and extremes avoided, but this must be regulated in its extent by the peculiar morbid circumstances, or the exact degree of pressure required.

In the application of every bandage, two circumstances are to be always attended to.

1. The equality of its application or pressure; and,
2. Its easy removal when applied.

With respect to the *first*, in forming it, every seam or rough part must be cut off.

In regard to the *second*, the circumstances of the case will determine its form, which regulates this,

The forms of bandages are very various: they consist chiefly of rollers, either simply applied in different ways, as circular, spiral, &c. or with openings in them, in order, along with their degree of pressure, to form a means of the union of parts, from which they derive their name of uniting bandages. They are rolled up into balls before their application, and when applied, the ball is kept outermost, but when taken off again innermost. But in order to detail the variety of their form more particularly, we shall consider their application to different parts of the body; previous to which, in all cases, every thing necessary for the treatment of the injury should be ready and at hand.

Head.

The bandages suited to all injuries of the head are the *common night cap*, the *couvre chef*, or a *roller*.

The *night cap* when applied, is secured by a band before or going round it, and another passing below the chin.

The *couvre chef* consists of a doubled napkin put round the head, and made to fasten at the back part and hang down, or else brought forward and also tied under the chin, but it is less secure than the former.

The *roller* is only used here to make compression on one part or point, and is applied either as the radiated or uniting bandage.

In the *1st* form, it is made to pass round the head, then turned at the place of the injury, which increases the degree of pressure here, and made to pass in the opposite direction, or below the chin, and over the top of the head.

In the *2^d* form, or uniting bandage, it consists of a long roller, with two heads, and a slit or opening in the middle. The sides of the injured part being brought close together, it is applied by passing one head through the opening, which makes a proper pressure, so as to secure their contact, and then repeating the turns with the roller in the usual manner; or instead of a hole or slit, it may be joined at this part by threads, which passing through each other, will make a still more equal pressure.

Face.

The bandages for the face are few.

In injuries of the eye, a compress is first applied, which is supported by a roller put two or three times round the head, or it may be fixt equally well to a night cap or *couvre chef*.

In injuries of the nose, and also in longitudinal divisions of the lips, a roller applied in the manner of a uniting bandage answers best.

In fractures of the lower jaw, a four-headed roller is preferred. When applied, the middle space between the heads having a hole in it, is received by the chin, the two superior heads are carried back round the occiput, and brought to unite at the forehead, or are carried back again; the two remaining heads, are first reflected on the jaw, and then brought up to be fixt on the top of the head.

Neck.

In the neck no particular bandage is necessary, farther than the roller. Where particular operations are performed, the instruments necessary in the after treatment, are detailed in the preceding part of the work (page 40. 257.)

Shoulders.

In injuries of the shoulders, as well as the neck, no other bandage is applicable, in preference to the roller; and, for its particular mode of application here, a reference may be made to the treatment of these injuries themselves (page 359.)

Chest and Belly.

Injuries of the chest and belly, are best supported by a *napkin* and *scapulary*.

The napkin may be either applied so as to answer for simple retention, or also to make compression.

In the *first* case it consists of a piece of linen six or seven inches broad, brought once round, having pieces of tape tying it at each end, instead of pins.

In the *second* case, it is formed by a broad roller, passing several times round the body, with a proper tightness to compress the parts, as in case of fracture of ribs, protrusion in hernia, &c.

The scapulary is formed of a piece of cloth three inches broad, and so long as to reach the napkin behind, to which its ends are fixed, to pass over the shoulders, being slit into two from its middle for this purpose, and to pin to the napkin before.

Another strap may be also connected to the napkin below, where more pressure is necessary, and passed betwixt the thighs.

The particular bandages for the operation of tapping in ascites, and the trusses for hernia, belong to the mechanic, not the surgeon.

As also the suspensory for diseases of the testicles: And

The penis is best supported by a small bag, connected by tape round the waist.

Perinæum and Anus.

The T. bandage is peculiarly adapted for dressings to these parts. It is formed by a band going round the waist, to which is connected a perpendicular one, of a proper breadth, and so long as to pass from the band behind, between the thighs, and to be fastened to the band before.

Extremities.

Simple wounds of the extremities, especially longitudinal ones, are best supported by the uniting bandage.

Fractures, particularly those of a compound nature, and in the lower extremities, are treated by the application of a twelve or eighteen tailed bandage, which is formed by laying together three pieces of cloth, and making the breadth of the bandage equal to the length of the member. The length of its tails should go round the limb once and a half, and being laid below before hand; it is applied by beginning with the inner tails, which are somewhat shorter than the outer ones, at the place of the fracture, applying them straight. The others may then be either carried straight or in a slanting direction; when finished, they are fixed with pins.

FINIS.

