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THE

CLINICAL GUIDE,

OR, A

Concise View of the Leading Facts,

ON THE

HISTORY, NATURE, AND TREATMENT,

OF

SUCH LOCAL DISEASES AS FORM

THE

OBJECT OF SURGERY.

To which is Subjoined,

A SURGICAL PHARMACOPŒIA,

Divided into Three Parts:

viz.

MATERIA MEDICA, CLASSIFICATION, AND EXTEMPORANEOUS PRESCRIPTION:

Intended

AS A MEMORANDUM-BOOK FOR PRACTITIONERS.

THE SECOND EDITION.

BY *WILLIAM NISBET*, M. D.

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

EDINBURGH:

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TO

DR MAXWELL GARTSHORE,

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.

PREFACE

TO THE FIRST EDITION.

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 cotemporaries. 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.

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.

PREFACE

TO THE SECOND EDITION.

IN giving a Second Edition of this Volume to the Public, the Author is happy to find, that it has met the ſame approbation as the Firſt Volume.

The Work he conſiders as now complete, by the addition of the *third* and *fourth* Parts; the *one* containing the Practice of Midwifery, the *other* a view of the Diſeaſes of Children; each Part of the Work therefore forms a diſtinct ſyſtem appropriated to a particular department of the profeſſion; a plan the moſt uſeful, perhaps, that could be deviſed for the benefit of practitioners; and the whole is concluded by a general Pharmarcopœia or pocket conſpectus, formed on the ſame principles.

London, Oct. 1st,
1800.

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TO THE SECOND EDITION.

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INTRODUCTION.

I. THE 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; and in 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 for 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 ritation, 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 :

1*ſt*, 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.

2*d*, 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.

3*d*, 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 duſkiſh, 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 headach, 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 ſcrophulous 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.

2*d*, 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 vio-

lent, it is to be repreſt 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.

3*d*, 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 the 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.

I. A WOUND is a recent and total ſolution of continuity of texture through the teguments and ſoft ſubſtance.

II. Wounds are divided into different kinds, from the *texture* of the part; from the *nature* of the 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 retraction 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, or 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, or extent of the injury, it is followed by an oozing of a faint coloured or ſerous fluid, which ends in the ſur-

face of the ſore 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 ſhews 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 ſerous fluid oozing from the ſurface of the ſore, 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 ſtop 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 of the morbid cauſe.

2. The tendency to a lodgement of matter when formed 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.

VII. With reſpect to the *firſt*, a certain degree of inflammation muſt neceſſarily attend the proceſs of ſuppuration. Wherever, therefore, it exceeds, it threatens a 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 renewal 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 ſolids, from age, are leſs capable of going through the proceſs of reformation.

On the *fourth*, or texture of the part, much depends for 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 of 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 alſo 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, even 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 farther effuſion of blood.
2. The ſecond to remove any extraneous irritation preſent in the part.

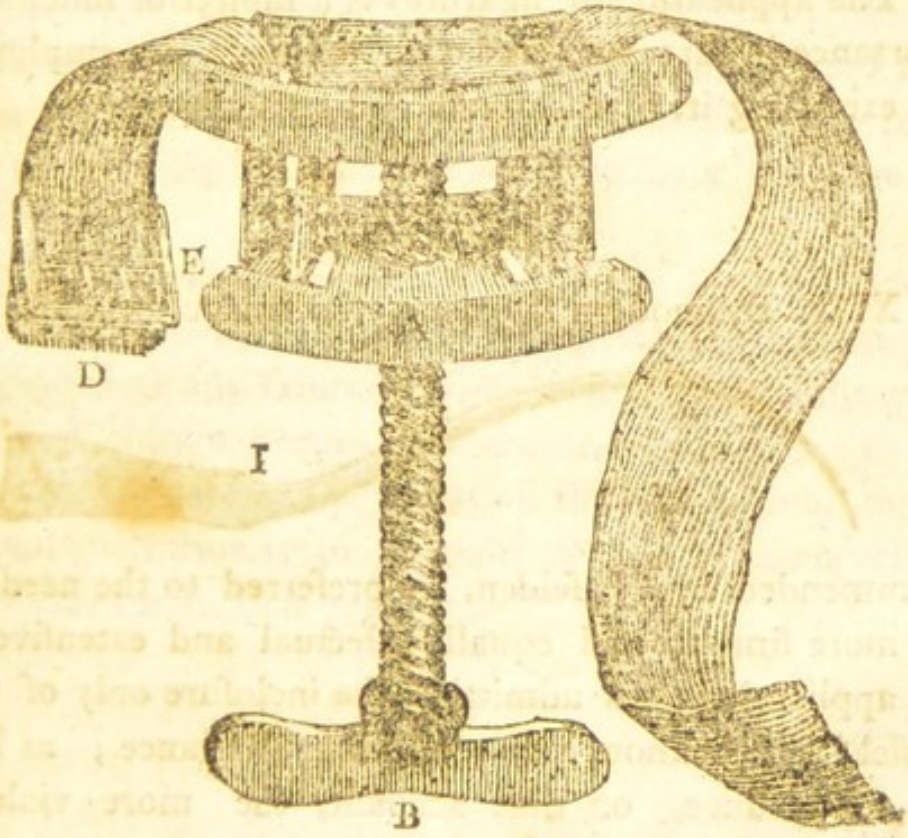
X. The former of theſe is to be immediately executed by preſſure, till ſome permanent means by ligature are applied.

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 agaric, in the

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, 2¼ broad, and about 1½ 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

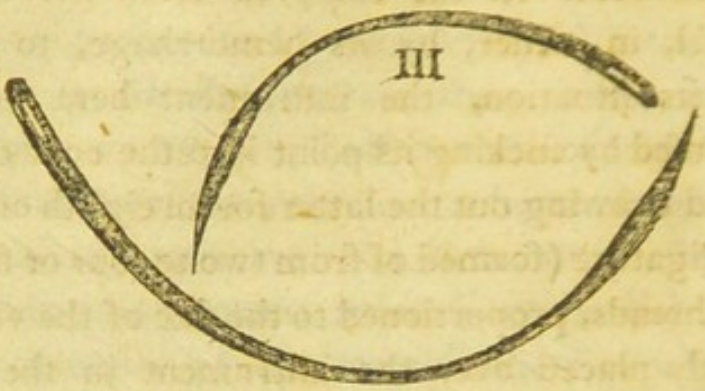
ſymptoms of ſpaſm or pain; and as occaſioning, in the end, an eaſier removal of the ligature itſelf.

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 eighth 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 needles 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 a quarter 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 the 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 ſutures.

Sutures.

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

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

1. That one ſtitch, or ſuture, 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 ſuture*, (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 ſore, when puſhed outwardly about half 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 re-

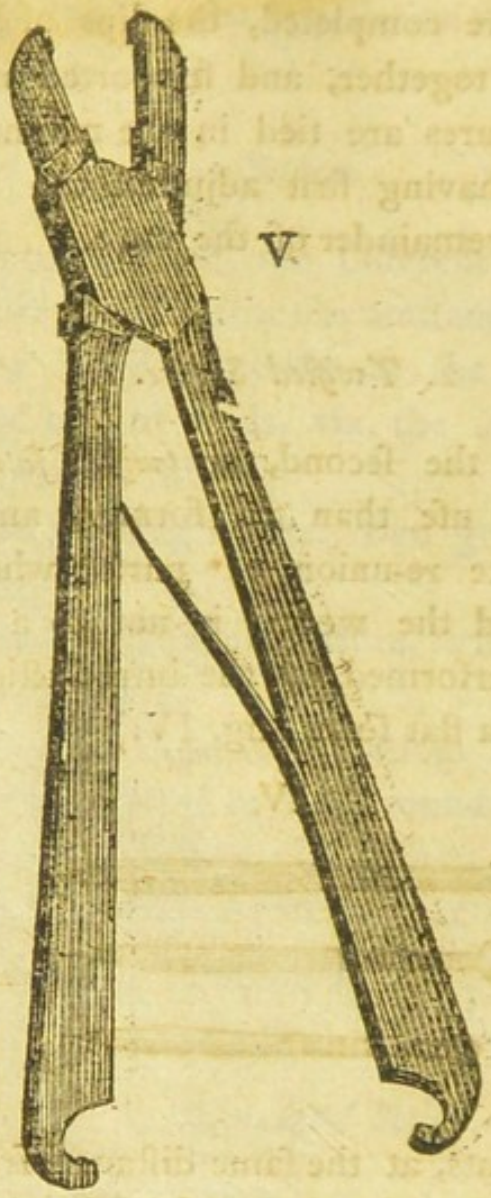
peated, according to the extent of the wound. When all the ſtitches are completed, the lips of the wound are to be preſſed together, and ſupported in that poſition till the ligatures are tied in the manner formerly directed, (xvi.) having firſt adjuſted the ſituation the part for the remainder of the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

IV.

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 aguille*. (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-

er 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 $\frac{1}{4}$ or $\frac{1}{3}$ 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 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 in 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 ſore, or injecting a fluid into it.

XXVIII. The *firſt* is confined to theſe ſituations where the extraneous body appears, and is eaſily come at; but unneceſſary and rough handling, by increaſing the 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 extraction, 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 cure of 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 intention, conſiſts in the adheſion of ſurfaces by an inoſculation 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 ſtraps of adheſive plaiſter, termed the dry ſuture, which are 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 ſuture, by the twiſted or interrupted ſuture, (xxxiii.) over which the uniting bandage is to be applied, and before it, the ſore 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 this juxta poſition of the ſurfaces. By this treatment, adheſion ſoon takes places, from a conſequent increaſed vaſcularity of the contiguous ſurfaces, and a new formed circulation of the part is ſubſtituted in the room of the former veſſels deſtroyed by the diviſion;

for diſſections ſhow the latter, where of any ſize, in the form of white cords completely empty.

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 emolients, to ſoften the teguments of the part; and, if failing, topical veneſection and opiates may be uſed; but if 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 infeebled 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 un-

avoidable; where, in conſequence of the injury, the retraction 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 formation of new ſubſtance by granulations, and the decay of the contiguous divided parts, to reduce the ſurface to a level with the cicatrix. The method of effecting 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 fairly begun, and continued till a full appearance of pus, with relief of the more violent ſymptoms of inflammation, takes place. The means by which heat is applied here, is either in the form of fomentation or poultice. The former is commonly employed were 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 additional cauſe of irritation, the acceſs of the external atmoſphere to the part.

XXXVI. When the ſymptoms of violent inflammation 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 up 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 ſore; which may be ſupported by a bandage either of linen 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 ſore ſhould follow. When the proceſs of healing becomes interrupted, and a change ariſes in the nature of the ſore, 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 by fomentations 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.*

XL. 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 the lock jaw and tetanus.

The treatment of ſuch ſymptoms, when ſlight, depends on the uſe of opiates, and in attending to the poſture 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, (*vide* vol. I. p. 176.) Theſe are by large doſes of opium, the uſe of the warm bath, mercury, friction, rubbing with emollients, &c.

XLI. 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 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 unpliable 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.

I. 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 tendecy to adheſion in the contiguous ſurfaces.

XLV. The treatment of Punctured Wounds depends, 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 leaving 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 whenever the puncture runs deep, or near large blood veſſels, this practice would be hazardous.

2. When the violence of the inflammation ſubſides, and it is in a proper ſituation for a counter opening, by 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 ſachar. 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 enſue.

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 timeouſly 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, a relief of all the ſymptoms will occur, when it is to be treated as a ſimple wound.

If this treatment, however, ſhould fail, and gangrene 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 ſore 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 *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.

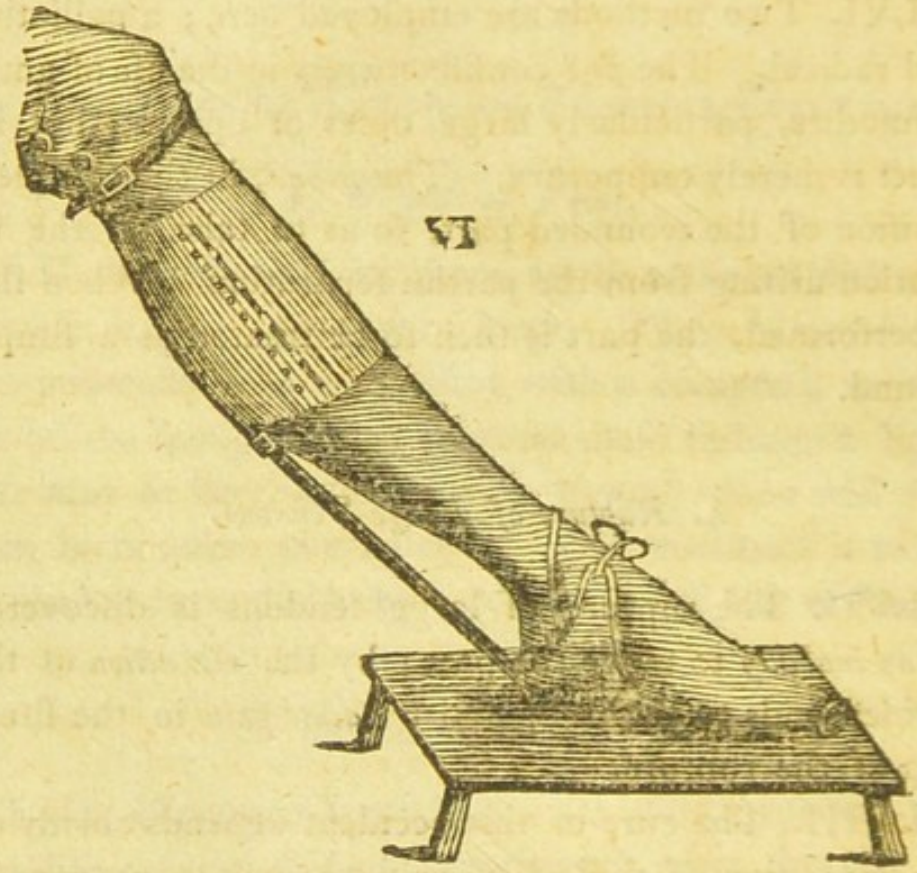
4. *Rupture of Large Tendons.*

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 the appoſition of the ends, or as nearly ſo as can be done with 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 exertion, 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 muſt, 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

here, 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.*

LXI. 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, by *acute pain, ſwelling and tightneſs*, extending to all the *contiguous parts*, as well as *the joint.*

LXII. 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 protracting the malady, ſo as to prove frequently fatal in the end, or to occaſion amputation of the member.

LXIII. 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 is ſlower than in other caſes. Or,

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

LXIV. The *firſt* depends on hindering the acceſs of the air to the cavity of the ſore; 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 a certainty 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 liberal 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 as they are inflicted on different parts of the body, beginning firſt with thoſe of the Face.

Wounds of Particular Parts.

1. *Wounds of Face.*

LXX. 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 juxta-poſition 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 future, (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 future 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.

LXXIII. 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 emolient liniment, occaſionally waſhed with a ſaturnine ſolution; and, where exciting much pain, the latter is to be obviated by the uſe of opiates.

3. *Wounds of the Throat.*

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

LXXV. In diviſions of the trachea, the uſe of adheſive plaiſter is to be chiefly truſted to for producing re-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 æſophagus, 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 ſuture (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. When 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.*

LXXVII. 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.

LXXVIII. 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, a ſpeedy diſcharge ſhould be procured by the moſt effectual means, from the danger, if the matter lodge, of making its way through the pleura into the cheſt.

LXXIX. 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.

LXXX. 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, ſo as to lay the wound open to the bottom, or inſert in 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.

LXXXI. From the nature of the affected part, the conſtitutional management is here of much importance. An antiphlogiſtic courſe ſhould be rigorouſly enjoined, and reſt and quietneſs particularly recommended, ſo 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 attends 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-

tempt may be made to draw it out with a tenaculum, bent ſomewhat 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 doſſil 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 twice or thrice, will relieve the oppreſſion by expelling the irritating cauſe. The ſore 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 continual 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 particulary when lying on the ſound ſide.

XCII. 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* Vol. Firſt, 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 takes 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 tent, 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.

XCIII. As ſuch wounds are always mortal, the barely 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 farther 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 lodgement 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 it 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 ſuture.

The interrupted ſuture 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 1½ inches 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 continues 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 note 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 ſuture 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

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

CXIV. Formation of matter, the next morbid circumſtance, is often not leſs troubleſome than 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.

CXV. 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 fæces*, or the *expulſion of fæted 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, naufea, pain of bowels, &c.

CXVI. 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 ſuture, 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 of, when the ſtate of the inteſtine will be reduced to that of a common ſore.

CXXII. Where no protruſion of inteſtine takes place, though their 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 in 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 *bilous 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

than 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 does not prove 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 *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-

jury, nothing particular is neceſſary, farther than to dreſs 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 exhibited, 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 not 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 noticed, (cxv.)

GUN-SHOT WOUNDS.

CXLVII. GUN-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-

ing an inciſion or counter opening into the place of its lodgement, 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 expulſion by the proceſs of ſuppuration; 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 incarnating.

CLII. In the management of the *firſt*, or inflammatory ſtage, much nicety is required; and as the tendency to gangrene ariſes here alone from extreme action 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 order 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 plentiful 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 ſinouy 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

BURNS.

CLVIII. BURNS 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,

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

CLXII. 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 entire as poſſible.

CLXIII. In the ſecond, or ulcerated ſpecies, the application of emollients has been chiefly conſided 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 ſeldomer 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 even ice itſelf, have 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 effects 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. CONTAMINATED Wounds are ſuch as ariſe from the *introduction of a ſpecific matter* or *poiſon* along with the injury inducing them.

CLXVI. Such wounds proceed from the bites of certain animals, or 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. Theraica 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

its 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 inflicted 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 for 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 ſteam 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 ſymptoms ſimilar to ſmall pox; it alſo prevents any future contagion from this diſeaſe, and is always milder 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 teguments, 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 the 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.*

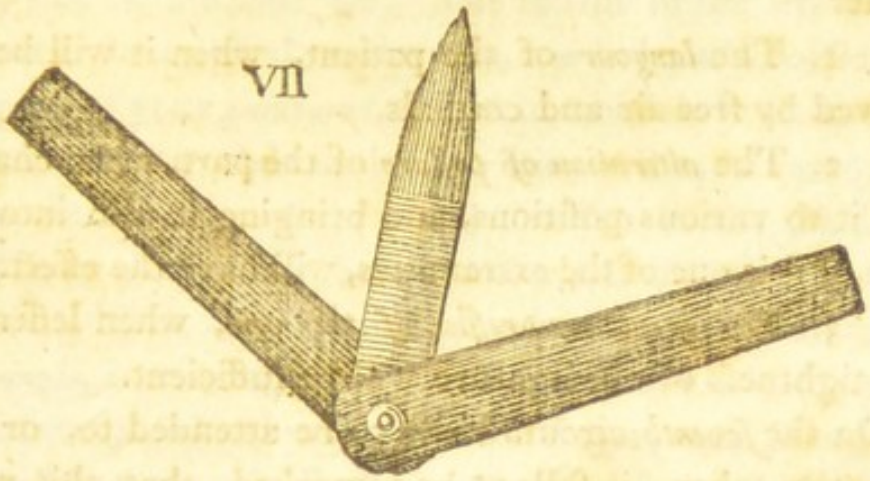
CLXXXVII. With reſpect to the *firſt*, the tendency to faintneſs will be beſt promoted, if wanted, by a ſtanding or ſitting poſture of the patient during the operation; while, on the contrary, if this ſtate is wiſhed to be avoided, the horizontal poſition ſhould be preferred.

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 fleam is occaſionally uſed in ſome places, many incon-

veniencies attend it, ſo that the lancet is decidedly preferred; 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 nicety 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 ligature. 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 *langour* 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, or 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.

1. 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 are 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-*

low 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, *one inch and a half 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 appear* riſing on each ſide, when it is to be withdrawn, *without, however, changing* its direction, or *raiſing the handle*, leaſt the point, being lowered in proportion, ſhould 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 *two 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 compreſs. When finiſhed, the arm is to be *bent inwards*, in order to compreſs more firmly the ſides of the wound.

CXC. Though ſuppreſſion of the diſcharge is here, in general, eaſy after the operation, yet in ſome particular caſes it becomes more difficult; when compreſſion muſt be made with the fingers *both above and below* the orifice, the orifice itſelf ſhould alſo be properly cleared from any plug before applying the bandage.

CXCI. Though the veins are alſo, in general, very conſpicuous here, yet at times, from corpulence, they are not ſo eaſy to be traced. If, however, a vein is ſenſible to the touch, we may proceed; or where this fails, we may apply the ligature below the ſituation of the intended opening, inſtead of its proper one above it, when it will make the veſſel perhaps ſwell out.

Neck.

CXCII. In the ſecond ſituation, 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 preſſure is required. This preſſure is made by *firſt* compreſſing the vein on the *oppoſite ſide* of the neck, by applying over it a firm compreſs of linen, which is to be ſecured by a ribbon tied under the oppoſite arm-pit, the head being laid on one ſide and properly ſupported, the thumb of the left hand of the operator is then to be placed on the vein about *an inch and a half* below the intended place of the opening, while the latter takes place by the ſurgeon plunging the lancet held in his right hand into the vein, which requires here a conſiderable depth, till the blood appear on each ſide,

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 ſaphena 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, it 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 veneſection, 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

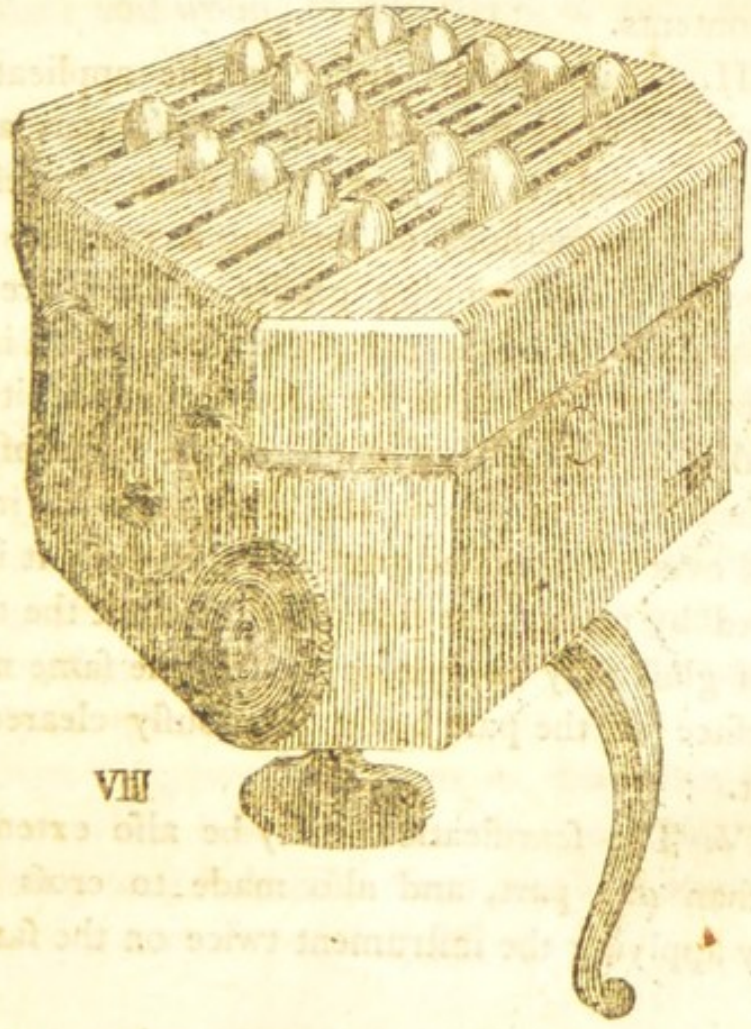
creep over a dry cloth, the part alſo, to attract them, muſt be *moiſtened* with cream, ſugar, or blood, and if ſtill not faſtening, *even cooled* by a cloth applied to it dipped in cold water, and they muſt alſo be *confined upon it*, for which purpoſe a ſmall wine glaſs is generally applied over them.

By Inciſions.

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

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



VIII

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; 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 bottom 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 thrombus and ecchymoſis, according to its extent, being a tumour formed by the blood, inſinuating itſelf betwixt the ſkin and cellular ſubſtance, where the member 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, and 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 take 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

pricking of a ſenſible part, whether nerve or tendon, and the inflammation of the vein is to be conſidered as a 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 eaſe 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.

CXII. 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 læſed nerve is fairly cut through; and if no relief appear, which will then be known on looſening the tourniquet, the inciſion may be carried to the depth of the perioſtæum itſelf. If ſtill unſucceſsful, as a laſt reſource, the tendon, or parts of tendons neareſt 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; 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 a 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-

quently, 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 in it 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 ædematous, 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 for 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,

a 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 tried, 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, as in 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 ham 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 adjacent 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 under part of that, than in the under part of the member of 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 if an operation ſhould become unavoidable, its ſituation, as in other caſes, muſt determine the chance of its ſucceſs.

SURGERY.

CLASS II.

ULCERS.

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

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 unpliable 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-

cipal 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.

CXLII. 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 læſed 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 incarnation 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 plaiſter brought from

the ſound ſurface on each ſide over the ſore, till the whole is covered by them. Theſe are ſucceeded by compreſſes of linen or *calico* laid above the plaiſters, and 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, and 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.

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

CCXLV. The diſcharge here is generally more or leſs of a corroſive nature, producing irritation or freting 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.

CCXLVI. 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 is 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 (ccxlviii.), a proper ſuppuration has been induced, its farther exhibition becomes unneceſſary.

3. *Vitiated Solid Ulcer.*

CCL. 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.

CCLI. 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 varies alſo conſiderably, and different degrees of pain attend it, according to the ſtate of irritation in the ſore.

CCLII. 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 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 morbid 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 compreſſion of the ſore externally giving the matter this direction.

CCLVII. Our opinion here is determined by the acceſſible 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*; and 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 courſe from which it proceeds.

CCLIX. The cure by *inciſion* conſiſts merely in laying open the parts along the courſe of each ſinus, and it 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 ſore uniting. The directions for employing it were already detailed in Claſs I. xlvi.

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. xlvii.)

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 ſore.

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-

mended in the caſe of fungus, and they may be applied every ſecond day till the callus is deſtroyed. The *ſcalpel* will ſucceed wherever the cauſtic is not ſufficiently powerful, or where the operation is wanted to be quickly performed.

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

With Caries.

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

CCLXVII. The diſcharge, in caſes of caries, is various. It has often a purulent appearance, though it never 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 perioſtæum 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-

cies 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, vertebræ, or opening into a joint. In theſe ſituations there is always much danger.

2. The conſiſtence or compactneſs of the bone, and of courſe, 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 caries 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 this, 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 crucial, being regulated in its form by the ſeeming extent of the affection.

CCLXXIII. When the carious parts are thus denuded, the *ſecond* indication falls to be completed; which conſiſts in making, with a pin, or perforator, ſlight 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 fætor 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.

CCCLXXIV. But in the more alarming ſtates of caries, inſtead of ſuch ſlight perforations, directed (cclxxiii.) 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 anchyloſis 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 oftenеſt prevails, counteracted by an oppo-

fite 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 ſimiliar 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-

tor 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 the new growth.

CCLXXXIII. This preliminary operation is attended with little pain or hemorrhage, nor is the removal of any ſkin neceſſary, unleſs the oſſeous part, to be next 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 ſequeſtra to be removed.

CCLXXXIV. 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 induced, and granulation form, when it gives place to any 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.

CCLXXXV. 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.*

CCLXXXVI. 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 dif-

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.

CCXCII. 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 Curaſſoa apple, covered with ſome mild ointment, and ſecured by a bandage.

By Inciſion.

CCXCIII. But the laſt method of forming an Iſſue, or 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.*

CCXCVI. Eruptions of the ſkin terminating in ſores, form a ſpecies of ulcer termed the Cutaneous, though ſuch 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* vol. I. page 220.) We ſhall therefore conſider only here the peculiar circumſtances of their local treatment, and that chiefly in their advanced ſtage.

CCXCVII. 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, often highly corroſive and depaſcent, and inducing eriſepelatous inflammation to ſome extent.

CCXCVIII. Different ſituations of the body are the ſeat 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 moſtly in full and inflammatory habits, and they are generally, by contact, more or leſs contagious.

CCXCIX. Our prognoſis is determined much by the age 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 re-formation.

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 guiac and ſarſa 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 or citrine ointment, zinc ointment, &c.

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

even 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 totally diſtinct from the primary ulcer, or chancre, the immediate or recent conſequence of infection. (For which *Vide* vol. I. p. 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 bones of the cranium, tibia, and humerus, and on ſuch parts as are thinly covered with muſcles.

CCCVI. Their appearance on the external ſurface or ſkin, is in the form of a diffuſed efflorescence, the pimples of which ooze out an acrid ſerous diſcharge, and when paſſing into the ulcerous ſtate, form a ſpreading ſore of a conical ſhape, with callous edges, the inflammation of which extends beyond the part apparently affected. The matter diſplays a peculiar greeniſh 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, ozygenated 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. p. 156. It is only therefore neceſſary here to conſider what reſpects the local treatment.

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 of, 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, (*Vide* vol. I. page 186.) on the ſuppoſition of the ſore partaking of the nature of this laſt diſeaſe.

CCCXI. When all thoſe 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 ſchirrous tumour of the glands of the part, and where paſſing into the ulcerous ſtate, by a depaſcent 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 fœtid, frequently mixed with blood, and the feeling it communicates is either a ſharp lancelating 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 fœtor of the diſcharge, which is ſo remarkable as to ſtrike every practitioner at once.

3. Its uncommon pain, which is either of a ſharp lancelating 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 part 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 ſallow 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.

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

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

CCCXXI. The firſt conſiſts chiefly in the uſe of alteratives or narcotics.

Of the former the principle 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. p. 206.

CCCXXII. 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 afterwards 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.

CCCXXVII. 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.*

CCCXXVIII. 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 no change for a length of time, at other times healing up, 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.

CCCXXIX. 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 is the acute dolor pulſatilis, or ſtrong action of veſſels, felt 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.

CCCXXX. 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. (*Vide* vol. I. p. 186.)

4. *Scorbutic Ulcer.*

CCCXXXIII. Scorbutic Ulcers are marked by a thin fætid diſcharge mixed with blood, often caking, as it were 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 ſore, or œdema of the member, and by the livid puffy appearance of their edges.

CCCXXXIV. 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.

CCCXXXV. 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.

CCCXXXVI. 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 on any injury, inducing a rupture of the teguments, that this particular ſtate of the part is diſcovered.

CCCXXXVII. 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 uſes of freſh vegetables, milk, whey, fermented liquors, &c. and by opening the different ſecretions by means of remedies of a vegetable and aceſcent 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 ſcophulous 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

be equally without remedy. All old ulcers, whatever their nature be, though 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, he has no doubt; but a ſhort time will, generally, ſhow, that the relief is by no means permanent. At the ſame time it is 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.

SURGERY.

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*, the *acute* and *indolent*, according to the diſpoſition it diſplays to aſſume inflammation.

1. Acute Tumours.

Inflammatory Tumour.

CCCXLI. 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, acquires

a ſoftneſs to the feel, and ſhows a tendency to point in one particular place. The teguments there thin by degrees, and ſhow a lividneſs in 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 ſore 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 pain, 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 practiſed by authors to render their termination as favourable for the conſtitution as poſſible. Theſe conſiſt either in *diminiſhing* the quantity of matter, or *ſuſpending* its 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 parts. 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 their 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 atmoſ-

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

CCCXLVIII. The methods of opening abſceſſes with this view, have been either by a *ſmall puncture*, or 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 latter 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, and 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.

Eriſepelatous Tumour, or Roſe.

CCCXLIX. The Roſe (eriſepelas) is a diffuſed inflammation without any prominence, attended with *pain*, *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 an 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 lavander 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, receiv-

ing warm ſteams upon it. Poultices have been alſo adviſed.

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

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

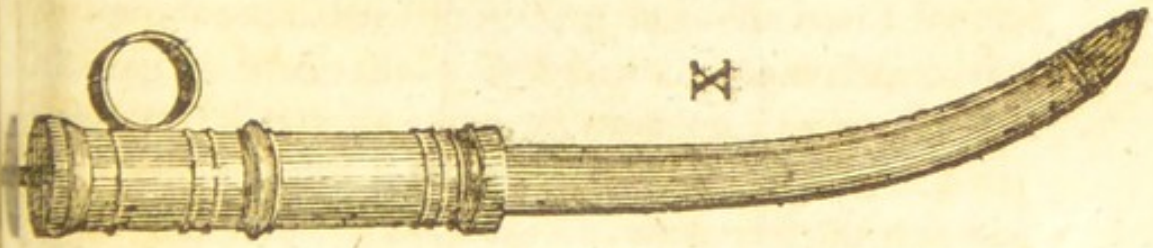
Inflammation of the Throat.

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

CCCLVIII. 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 bliſters 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,

XI

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 *acute* or *obtuſe pain of the right ſide*, or its region, riſing to the *top of the ſhoulder*, attended with *conſiderable fever* and *difficulty of lying* on the left ſide, the ſkin diſplaying a *yellow tinge*, and the *urine highly coloured*.

CCCLX. Thoſe ſymptoms ſuffer an exacerbation as ſuppuration enſues, by the extenſion of the pain, and a tenſion 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 the 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 acid 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 an 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.)

Lacteal Mammary Inflammation.

CCCLXVIII. Lacteal 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

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

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

CCCLXXI. From its ſeat, this inflammation is properly divided into two kinds, the ſuperficial and glandular; 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 moderate, the progreſs rapid, and little fever attends.

In the latter, the pain is violent, the progreſs ſlow, and acute fever is conſtantly preſent. It leaves alſo often 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 attending ſuppuration, reſolution is here the great object to be aimed at in the cure, and this is to be attempted by a rigorous 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, ſolutions of lead, &c.; and, when drying, ſuch applications are to be immediately renewed.

If much pain prevail, the uſe of opium is properly had recourſe 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 lancilating 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 expedidymis, extends next to the teſticle.

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

CCCLXXVIII. 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.

CCCLXXIX. For its cure, the general means of obviating 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 alſo being one means of promoting reſolution, the latter is be to 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.

CCCLXXX. 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, (cccxliii.) But 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 conjoined with the former remedy. Bark alſo, ſea bathing, and ſuch remedies as are ſuited to ſcro-

phulous tumours, are employed here. (*Vide* vol. I. page 140.)

Venereal Buboes.

CCCLXXXI. Glandular ſwellings, ariſing in any external part of the body from a venereal 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 ſucceſ-

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

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

CCCLXXXIV. 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 ſtill 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 invigorating nature, and the former antiphlogiſtic plan altered.

CCCLXXXV. When a proper ſuppuration is formed, to be judged of by the feel of the part, if the teguments do not appear to give way, it may then be opened 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.

CCCLXXXVI. 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 ſore become hard and livid; the matter thin and acrimonious; 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 ſore 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 fætid, till the patient is cut off by the progreſs of the hectic ſtate.

CCCLXXXIX. The ſituation of theſe ſymptoms render 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 ſhiverings 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 alſo ſudden, while the lumbar tumour is preceded by various complaints before its appearance in the thigh. In a horizontal poſture, the abſceſs alſo totally diſappears, while the hernia does not.

CCCXC. The cauſe of lumbar abſceſs is aſcribed to over-exertion, and ſtraining or twiſting of the part; hence 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 vertebræ denuded of their cartilages and ligaments, even at times carious and partly diſſolved.

CCCXCIII. In the treatment of this affection, where in our power, reſolution is the point to be aimed at, and to accompliſh this, as it is commonly the effect of external injury, inducing inflammation, blood-letting, particularly by leeches from the part, or the ſcarificator, 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 to 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 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,

and, 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, (cccxlvii.) when a cure will, in a ſhort time, be generally effected.

Whitlow.

CCCXCV. 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.

CCCXCVI. 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 point, rendering it tender and painful to the touch, ſlight ſwelling, without diſcolouration of the ſkin, but ending in ſerous effuſion, denoted by increaſed beating, pain and ſhiverings.

CCCXCVII. 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.

CCCXCVIII. 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, carious.

CCCXCIX. This diſeaſe 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, ſhooting pain, and great itchineſs. The ſkin alſo aſſumes a deep purple or leaden colour. It frequently gives way, and a thin ſerum is diſcharged, or it ſloughs off, when a fætid 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. One 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 bathed 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 times of the ſeaſon.

CCCCVII. Where ulcers form of a fætid nature, all emollients muſt be avoided, and their treatment truſted 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 reforted 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 effec-

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

CCCCXII. But, though relieved, ſuch accidents are often 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 in 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 aſſume it 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 punctures 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 hydatis, ſtealoma,

atheroma, meliceris, talpa, &c. Such appellations, however, are of no import, as marking no real diſtinction in their nature, and are improperly founded, as the conſiſtence 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 induced 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 abſceſs, 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.

In 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 containing 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 circu-

lation. When their attachment, however, is broad, as 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 ſutures, (xxi. 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.

CCCCXXV. 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 coulour 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.

CCCCXXVI. 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 ſavine 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 pairing off the diſeaſed or hardened part of the cuticle, and afterwards

applying ſoft applications, as the gum plaiſter, or diachylon 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 troubleſome ulcerations.

Scrophulous Tumours.

CCCCXXXI. Scrophulous Tumours chiefly affect the 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 fluctuation appears at laſt in the centre. This continues 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 ulceration, 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 healed, a diſagreeable puckering of the ſkin takes place.

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

CCCCXXXIII. Though ſuch tumours are ſeldom dangerous on the external ſurface, yet, if attacking ſeveral places at once, and the ulcerations enlarge, the patient may be exhauſted by the diſcharge.

CCCCXXXIV. The general treatment of this diſeaſe has been elſewhere given; (*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 trochea.

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 affect-

ed 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 laſt the ſame ſymptoms enſue as already deſcribed, joined to occaſional ſtinging pains in the tumour itſelf.

CCCCXXXIX. From whatever cauſes 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 plaiſters, 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 trochea 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 appearance 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 Burſæ 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-

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

CCCCXLVIII. When of a ſerous nature, the ſwelling will yield to friction, bliſters, or bathing; but when from external violence, and long continued, it is of a 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 by a bandage.

CCCCL. Stiffneſs of the joint, after the cure, will yield to the uſual treatment of friction, warm ſteams, &c.

Capſular Swelling.

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

CCCCLII. 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.

CCCCLIII. 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 concoct-ed pus; and when from a general rheumatic affection, of ſerum entirely.

CCCCLIV. 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 ge-nerally 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 in-convenience; but where the collection is of a groſs na-ture, it requires to be diſcharged, from the danger of its acting upon the joint itſelf.

CCCCLV. This will be done when unavoidable, and neceſſity alone ſhould urge an operation here, by making a ſmall opening into the joint with a tro-car; 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.

CCCCLVI. Concrete capſular ſwellings conſiſts in the formation of certain bodies of various conſiſtence within the capſule of the joint.

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

CCCCLVIII. The cauſe of their formation is uncertain. They have been known to ſucceed rheumatiſm. The attack of pain from them is ſudden, and gives a feeling as if ſomething were thruſt into the joint. The joint moſt ſubject to their attack is the knee.

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

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

CCCCLXI. In doing this, after adjuſting the poſition of the patient, which, if the diſeaſe is in the lower extremities, 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 in one part, (viz. the upper part of the joint) the ſkin 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 take place, theſe may be removed by a pair of ſciſſars, 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.

CCCCLXII. 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 ventoſe. 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

up, 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.

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

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

CCCCLXX. 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 ſeem never here affected but in the ultimate progreſs of the diſeaſe.

CCCCLXXI. 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 at the arm, or 10 or 12 oz. at a time, and even repeated. This diſcharge is to be ſucceeded by bliſters, and theſe again, as ſoon as the parts will admit, by other rubeficients, as the volatile liniment, with a large proportion of ſpirit of ſal ammoniac.

If yielding to theſe remedies, the diſeaſe has not paſſed 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 emolients.

CCCCLXXII. 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; but whether one emollient is preferable to another, is doubtful.

CCCCLXXIII. 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 from acting upon the internal parts.

Spina Ventoſa.

CCCCLXXIV. 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.

CCCCLXXV. The ſame ſtate of hectic attends alſo its progreſs, and the ſame fatal termination ſucceeds, if not timely relieved, as in the former ſpecies.

CCCCLXXVI. The cauſe of this ſpecies of tumour is a diſeaſe with which we are even leſs acquainted than that which produces the former.

CCCCLXXVII. The prognoſis here is always unfavourable, as no inſtance of recovery is known in this ſpecies of the malady.

CCCCLXXVIII. 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.

CCCCLXXIX. 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 Biſida.

CCCCLXXX. Spina Biſida 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 vertebræ.

CCCCLXXXI. This tumour is at firſt ſmall, but

increaſes very quickly after birth. Its colour differs from the reſt of the tegumenta 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, ſhouting 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 future 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 center 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 large ones. The ſwelling terminates at laſt in ulceration, and a thin fœtid 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, portuberant 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 aneroſion or thickened ſtate of the perioſtæum 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 reſtrictions required in the cure of the venereal diſeaſe. (*Vide* vol. I. p. 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.

SURGERY.

PART II.

DISEASES OF PARTICULAR PARTS OF THE BODY.

I. WE have now examined the three general forms or claſſes of local diſeaſe, under one 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 a 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 (ii.) are the different external injuries to which this 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 minute examination of every part of them.

VII. For this purpoſe the head ſhould be properly ſhaved, 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 hemor-

rhage, 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 avoid-

ed in the uſe of the trepan, here delineated, are the

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ifferent parts where the ſinuſes run, viz. the under arts of the temporal and parietal bones, the ſame of he 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 trapan, 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

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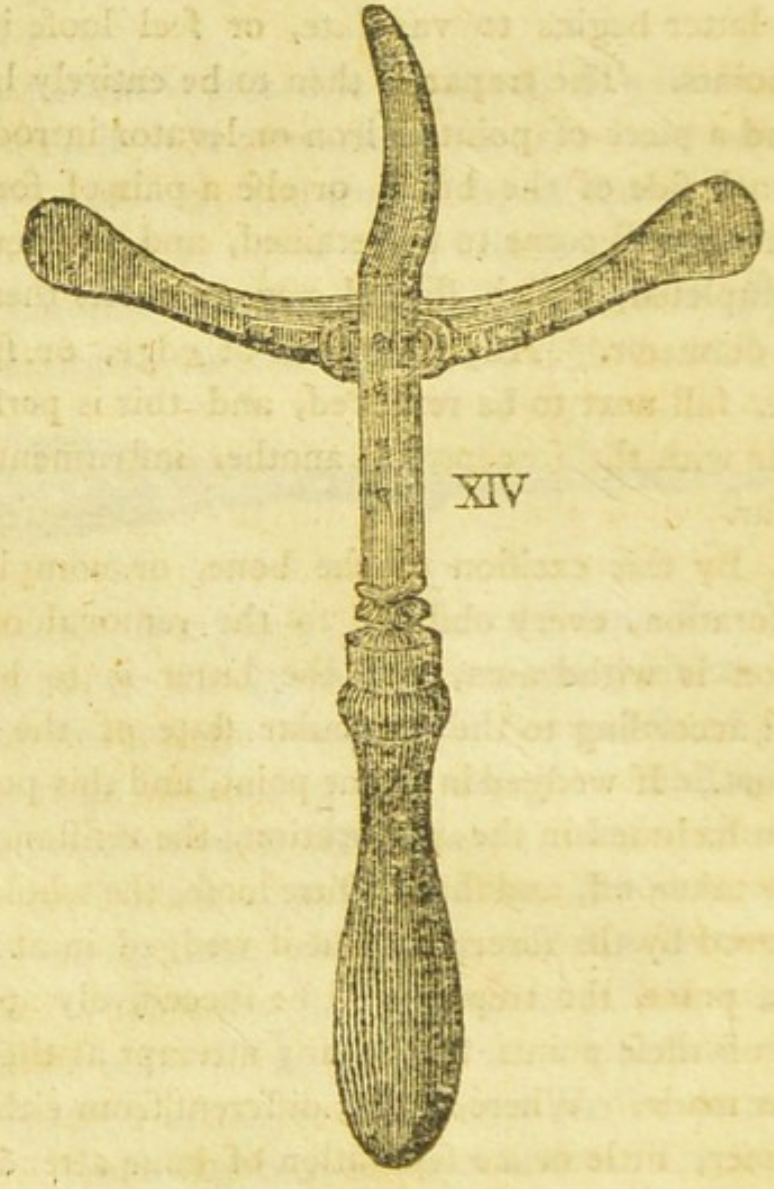
fixed on for its application where the depreſſion is greateſt, and where the ſegment it forms may include even a part of the depreſſed bone. In the middle of this ſegment, to be included by the trepan, a ſmall hole with the perforator ſhould firſt be made; and as the trepan, on its application, is apt 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 trapan 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 then one inch in diameter. Any roughneſs of edge, or ſplints of bone, fall next to be removed, and this is performed either with the forceps, or another inſtrument, the lenticular.

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



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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 ſore 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 ſore.

XVI. During the progreſs of the cure, the ſtate of the ſore 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

of 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.) as 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 ſhould 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 exhibition 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, a 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 ſoon enſues.

But previous to this, in the ſeat of the injury, the local ſymptoms of inflammation increaſe and extend in 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, bloodletting, 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, (xlviii.) 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 wearing 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 ſore, 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.)

SURGERY.

DISEASES OF THE EYES AND EYE-LIDS.

XXX. NEXT 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 ſuch 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; 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. I. 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 of.

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 ſenſe 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, bloodletting muſt then be had recourſe to, and the diſcharge may be either drawn 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 inſtrumen-

(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 is uſed; 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 of

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.

LI. Should excreſcences ariſe from the wound in the progreſs of the healing, gentle cauſtics are the proper application.

Excreſcence.

LII. 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 cicatriſation 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-

tion, and the cure completed by the uſe of aſtringents.

LXIV. 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. p. 184.)

Films or Specks.

LXV. 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.

LXVI. 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.

LXVII. They are always, as obſerved, the conſequence of previous inflammation, and they ariſe as the effect of effuſion during its progreſs.

LXVIII. 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 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.

LXII. By cataract is underſtood a loſs of viſion, ariſing from a thickening, or opake 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 light 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 gutta 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, as 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, as ſuppoſing it connected with inflammation, particularly topical veneſection, bliſters, briſk purging, &c. or elſe in a ſlight exhibition of mercury, particularly calomel 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 right

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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, canſing 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, which the patient will know 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 firſt 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 opake 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

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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 opake, 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-

parated 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 ſtye.

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 charpee, 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 itſelf, is the inverſion of the cilia, or eye-lids.

CXII. This affection proceeds from various cauſes, as natural derangement, muſcular ſpaſm, previous injury, compreſſion from tumours, relaxation of tegu-ments, &c.

CXIII. With reſpect to the firſt, or natural derangement, 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 gained a certain length, a different direction is to be given them by means of ſtrong glue or mucilage applied 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 injury, the cicatrix muſt be removed, and the ſore healed 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, dropſical ſwellings, previous inflam-

mation, or cicatrix from ſores, 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 dropſy, 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 ſores, 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 plaiſter over the uſual dreſſings, as in other caſes of ſore.

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 dropſy 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 inconveniences of the diſeaſe, may be attempted by an inſtrument delineated by authors for that purpoſe, 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, (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 as the other end, ſo as not to ſlip in.

The ſore is then to be dreſſed in the uſual manner, and covered with adheſive plaiſter.

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 (cxxix.) 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, or attempting any operation.

SURGERY.

DISEASES OF THE EARS.

CXXXIV. THE 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; viſcidity 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 fœtid, 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 ulceration or ſore.

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 joined 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.

SURGERY.

DISEASES OF THE NOSE AND THROAT.

CXLV. NEXT 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 doſſil 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 doſſil or plug tied as they hang out at the mouth, while, on drawing their other ends in the noſtrils, this plug will be carried forward, and fixed in the upper part of the pharynx. Another doſſil 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 doſſils 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 fulneſs 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 intō 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 a 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 cannula, 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 ſtrait, 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 tu-

mour is ſo confined, as not even to admit this, an attempt may be made to leſſen it, by piercing 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 p. 127.; *vide* alſo vol. I. p. 13.; 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 ſtraight 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 ozœna; 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 cattarh, 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 fætor 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 diſeaſ-

ed bone, as the precipitate or verdigris 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 plaiſter, 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.

SURGERY.

DISEASES OF THE LIPS.

CLXVII. DISEASES of the lips, the next part of the body, are few in number, chiefly two, viz. the harelip, and cancerous affections of the lips.

1. *Harelip.*

CLXVIII. Harelip, or fiſſure of this part, is one of the moſt frequent natural deficiencies that occurs. It is oftener 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 an 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 connection 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 ſuture, (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 plaee.

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 where 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.

SURGERY.

DISEASES OF THE MOUTH AND TEETH.

CLXXVI. THE next diviſion of ſurgery, in the order of arrangement, is the diſeaſes of the mouth, the morbid affections of which are ſo frequent and numerous, as to form a diſtinct profeſſion, under the title of the Dentiſt.

CLXXVII. 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.

CLXXVIII. 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 1*ſt*, or infantine dentition, extends generally from 6 months to 3 years.

The 2*d*, or 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 4*th*, 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 gum, accompanied with an increaſed ſalivary diſcharge, frequently aphthœ 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, teazing 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 progreſs 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,

1*ſt*, 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 foreſinger 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, either 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 ſtinted 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.

Tooth-ach.

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; 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 abating 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.

CCIX. 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.

In children, the treatment conſiſts in removing the acid. Keeping warm water in the mouth will alſo eaſe pain.

CCXII. The *ſecond* ſpecies, or ſympathetic, is the frequent attendant of ſtomach complaints; and where-

ever this can be judged of from inſpection of the tongue, or an acquaintance with the patient's habit, an emetic 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 ſympathetic, requires to be treated as an inflammatory affection.

CCXIII. 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.

CCXIV. In extracting the teeth, the two circumſtances deſerving attention are,

1*ſt*, The previous ſeparation of the part from its connection with the gum; and

2*d*, The proper hold or reſt, obtained by the inſtrument, in order to act.

CCXV. The inſtrument long preferred for extraction, is 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 under jaw, and the back and fore part of each.

CCXVI. 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 this 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.

2. *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 in

a great degree, the claw is placed on the oppoſite ſide, as giving a ſurer hold.

3. *Fore Teeth of each Jaw.*

CCXX. 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.

CCXXI. 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.

CCXXII. 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 or 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. 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 fœted

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 fœtida.

CCXXXVI. Beſides abſceſs 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.

There is no remedy 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 fail 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 connection 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

1*ſt*, 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 to be noticed 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 ſpunge, till they they are ſufficiently whitened.

CCL. 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; it is either 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 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.

CCLVII. 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.

CCLVIII. 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 pre-

vent injury of the ſocket, which ſhould be in a perpendicular direction, or with the forceps.

CCLIX. 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 years, and the patient ſhould never, if in our power, be above 40 years of age.

CCLX. 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 antiphlogiſtic regimen to be very ſtrictly put in practice.

CCLXI. Where the operation ſucceeds, the tranſplanted tooth has been known to continue ſound and preſerve its colour for 28 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.

CCLXII. 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.

CCLXIII. 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.

CCLXIV. Artificial teeth are made in three ways:

1*st*, By fixing a new crown to the natural root.

2*d*, By forming a complete tooth or teeth, and fixing them to the coutiguous ones. And

3*d*, By forming, as well as the teeth, an artificial ſocket fitted to the jaw.

CCLXV. 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.

CCLXVI. 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.

CCLXVII. 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 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.

CCLXVIII. 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.

CCLXIX. Their collection is generally of a fluid, ſometimes of a fatty, often of a calculous nature. When riſing to a certain ſize, they burſt, 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 ſore 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.

CCLXX. 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, ſcrobhulous, or ſcorbutic nature, (p. 111. &c.)

CCLXXI. When their nature is once determined, the treatment is then pointed out; and the conſtitutional remedies muſt be ſeconded by local applications.

CCLXXII. 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.

CCLXXIII. 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 fœtid diſcharge, little is to be expected in the way of cure.

CCLXXIV. Extirpation has been here propoſed, as elſewhere; 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.

CCLXXV. The extenſion of the frænum beyond its proper limits, in new born children, is attended with ſuch inconvenience, as to require its inciſion.

CCLXXVI. 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 in them, and with a pair of ſciſſars 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.

CCLXXVII. 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.

CCLXXVIII. 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 circumſtances of the caſe, an artificial opening muſt be formed, and this opening made to connect with the upper part of the duct.

CCLXXIX. To make this opening, a perforation

ſhould be paſſed obliquely through the oppoſite ſide of the ſore, 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.

SURGERY.

DISEASES OF THE NECK AND THROAT.

CCLXXX. THE 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.*

CCLXXXI. 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 of that ſide.

CCLXXXII. 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,

1*st*, The removal of the morbid ſtate; and

2*d*, Preſerving the parts in that extenſion, as to prevent the recurrence of the ſame deformity.

CCLXXXIII. 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.

CCLXXXIV. 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.*

CCLXXXV. 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 there 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.

CCLXXXVI. 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:

1*st*, 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 ſallowed, and ſticking in the throat.

2*d*, Internal tumours, already noticed, ſo large as to preſs on the glottis, as polypus, enlarged tonſils, or uvula, or even the tongue, tumified by ſallivation.

3, External tumours, as noticed under the head of bronchocele (p. 150.) though this cauſe is not ſo frequent.

CCLXXXVII. 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 to avoid 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.

CCLXXXVIII. The chief circumſtances neceſſary for the ſucceſs of this operation are,

1*ſt*, 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 ſtopt 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 being brought over the wound and retained by adheſive plaiſter, the opening will immediately cloſe.

Oeſophagotomy.

CCLXXXIX. The preſſure of ſubſtances obſtructing deglutition, is not ſo eaſily relieved as reſpiration by bronchotomy.

CCXC. 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*.

CCXCI. 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.

SURGERY.

DISEASES OF THE BREASTS.

CCXCII. THE 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.

CCXCIII. 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.

CCXCIV. In order to conduct it with ſucceſs, three circumſtances, as formerly obſerved, (p. 116.) are eſſentially neceſſary.

1*ſt*, 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 ſore.

CCXCV. With attention then, always, to theſe circumſtances as far as in our power, the ſteps of the operation are conducted in the following manner:

CCXCVI. 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 extention 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 ſore being carefully cleaned with a wet ſpunge to diſcern them, and the circulation invigorated by ſome cordial given to the patient.

CCXCVII. When the hemorrhage is fully reſtrained by the ligature of the veſſels, and the ſurface of the ſore 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 ſcapullary bandage.

CCXCVIII. 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.

CCXCIX. 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.

CCC. 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.

Affection of Nipples.

CCCI. 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.

CCCII. 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.

CCCIII. 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 the ſore with an emollient or gently aſtringent liniment, as the unguent nutritum, Gowlard's cerate, &c.

CCCIV. 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.

CCCV. 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 the 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.

SURGERY.

DISEASES OF THE CHEST.

CCCVI. THE 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.

CCCVII. 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.

CCCVIII. 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.

CCCIX. The ſymptoms that denote blood are, uncommon oppreſſion of breathing and ir-

regular feeble pulſe, blood alſo, in part, coughed up.

CCCX. 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.

CCCXI. 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 incifion, as it paſſes through the muſcles and internal parts. On the appearance of the pleura, the latter is to be cautiouſly entered, from 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 acceſs of the external air prevented as much as poſſible, by the application of a compreſs and bandage.

Air.

CCCXII. Next to blood, air, as mentioned, is a fluid

occaſionally effuſed in the cavity of the thorax. The ſymptoms attending it are,

1*ſt*, 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.

4*th*, Incapacity to bear a horizontal poſture.

5*th*, A ſort of crackling ſenſation in the part, on the preſſure of the hand, and emphyſema, more or leſs diffuſed.

CCCXIII. 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.

CCCXIV. 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 dropſy elſewhere, it admits of relief by an operation.

CCCXV. The ſymptoms of ſuch a collection here are chiefly the following:

1*st*, The conſtitution ſhews ſomething of a dropſical 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.

4*th*, Difficulty of reſpiration next commences, which is moſt experienced in aſcending any height, attended with a teazing cough, by ejecting little or no ſpittle; accompanied with palpitation, and numbneſs of the right arm and fingers.

5*th*, 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.

6*th*, During the progreſs of the diſeaſe, the pulſe is very variable; and at this period, though not always, an intermiſſion of it occurs.

7*th*, 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.

CCCXVI. 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.

CCCXVII. 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 de 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.

CCCXVIII. 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.

CCCXIX. 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.

CCCXX. 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.

CCCXXI. 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:

1*st*, The common ſymptoms that attend ſuppuration elſewhere, (ix.) viz. *frequent irregular ſhiverings*, with other marks of ſymptomatic fever.

2*d*, *Fixed pain in the chest*, with difficult reſpiration, and ſtrong deſire of an erect poſture.

3*d*, *A conſtant and teazing cough*, moſt ſevere when lying on the ſound ſide.

4*th*, *Enlarged puffy feel of the ſide itſelf*, or where the pain was originally felt; or an evident fluctuation decerned, by placing the patient in a ſitting poſture, and ſhaking or otherwiſe agitating the thorax.

CCCXXII. The cauſes of this diſeaſe are all theſe 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. I. 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.

CCCXXIII. The ſteps of this operation, are the ſame with theſe already deſcribed in caſe of ſerous effuſion, (cccxvi.), and the ſituation for performing it is alſo the ſame; unleſs determined elſewhere by the external feel of matter, or the long continuance of fixed pain, when a preference is to be given to this ſituation for the inciſion.

CCCXXIV. 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.

CCCXXV. The external opening ſhould therefore be preſerved ſo, if poſſible, as to prevent this relapſe, at leaſt when connected with phthiſis, till the dangerous or phthifical period is over.

SURGERY.

DISEASES OF THE BELLY.

CCCXXVI. THE 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.

CCCXXVII. This diſeaſe was already conſidered in (vol. I. p. 273.) It is chiefly denoted along with the general ſymptoms of dropſy, 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.

CCCXXIII. 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 center 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, on fixing the head of the ſtilette in the palm of his 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.

CCCXXIX. On finiſhing the operation, the wound is to be treated by the application of a bit of plaiſter,

and every caution employed to exclude the admiſſion of the external air.

CCCXXX. The fluid diſcharge 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.

CCCXXXI. 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.

Dropſy of the Ovarium.

CCCXXXII. But without being viſcid, the fluid alſo inſtead of being diffuſed, may be contained in cyſts, as happens in dropſy of the ovarium as well as hydatids.

In dropſy 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.

CCCXXXIII. 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 of 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.

CCCXXXIV. 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.

CCCXXXV. 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 anaſarcous and vaginal hydrocele of the teſtes, and the ſame of the ſpermatic cord.

Anaſarcous Hydrocele of the Teſtes.

CCCXXXVI. This affection is diſtinguiſhed by a ſoft elaſtic 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 continuous parts, and frequently diſtortion of the penis.

CCCXXXVII. The cauſes of this affection are either general dropſical habit, when it is combined with general anaſarca, or local injury, producing merely dropſy of the part.

CCCXXXVIII. 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.

CCCXXXIX. This diſcharge may be made in different ways; by the ſeton, trocar, inciſion or puncture; of theſe methods, the laſt is commonly preferred.

CCCXL. In making them, two circumſtances require attention: *firſt*, the place and number of them; and *ſecond*, 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 tumour, 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.

CCCXLI. When this affection ariſes from local injury, or a cauſe connected entirely with a morbid ſtate of theſe parts, as tumour, 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.

CCCXLII. 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,

1*ſt*, 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.

4*th*, The diſappearance of the teſticle, which can hardly ever be felt, and diſtortion of the penis, from the ſize of the ſwelling.

5*th*, The ſmoothneſs and equality of its ſurface yielding to the finger.

6*th*, The lightneſs of its weight, proportioned to its ſize, when raiſed on the hand; and

7*th*, No ſenſation of pain in its progreſs.

CCCXLIII. The cauſes of this diſeaſe are the ſame as of dropſy elſewhere, viz. increaſed exhalation, or diminiſhed abſorption of the veſſels of the part, (*vide* vol. I. p. 165.)

CCCXLIV. 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.

CCCXLV. 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.

CCCXLVI. 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.

CCCXLVII. 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 injoined 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.

CCCXLVIII. The fluid diſcharged in this affection, is of a yelloviſh, greeniſh, or brown colour, and reſembles in its properties, the ſerum of the blood.

Radical Treatment.

CCCXLIX. 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.

CCCL. 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.

CCCLI. 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.

CCCLII. 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 plaiſter. 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 opiat given, and attention to avoid motion enjoined.

CCCLIII. 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.

CCCLIV. 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.

CCCLV. 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 orifice, 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.

CCCLVI. 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 to 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.

CCCLVII. 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. It 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 canula. 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 canula before the removal of the latter; the parts are then to be dreſſed with a pledget and compreſs, 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.

CCCLVIII. 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.

CCCLIX. From hydrocele of the teſticle, now conſidered, we proceed next to that of the ſpermatic cord.

Anaſarcous Hydrocele of the Cord.

CCCLX. The anaſarcous hydrocele 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.

CCCLXI. 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.

CCCLXII. The encysted affection of the same part, is distinguished by the progress of the tumour, which commences above the situation of the testicle, which can at all periods of the disease be felt, and by the small distortion of penis. In other respects, its shape is pyramidal; it contains a sensible fluctuation, with a sort of spongy 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.

CCCLXIII. 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.

CCCLXIV. Besides such serous collections as we have hitherto examined, blood is also frequently effused in these parts, forming a disease termed *hematocele*.

CCCLXV. 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.

CCCLXVI. 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.

CCCLXVII. 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.

CCCLXVIII. 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.

Variocele.

CCCLXIX. 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, circocele, &c.*

CCCLXX. The cauſe of theſe ſwellings is either relaxation or preſſure, moſt frequently the former; joined to their natural dependent ſituation.

CCCLXXI. Their ſymptoms are a knotty unequal ſwelling, attended with no pain.

CCCLXXII. 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.

CCCLXXIII. 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.

CCCLXXIV. 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.

CCCLXXV. The cauſes of this protruſion are aſcribed either to a ſudden exertion, producing violent

action of the abdominal muſcles, as in laughing, crying, fall, &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.

CCCLXXVI. 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 ſtomach; and, by its diſappearance on preſſure, more or leſs into the abdomen.

CCCLXXVII. In every diſſection of hernia, two parts are conſpicuous: The protruded part, forming the diſeaſe; and its ſac or covering.

CCCLXXVIII. The protruded part conſiſts chiefly of ſome portion of inteſtine, or omentum, or both. The covering or ſac is always part of the peritonœum, when of long ſtanding, thickened in its texture, and conſiſting of ſeveral layers.

CCCLXXIX. 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.

CCCLXXX. The conſequence of this ſtate is the production of inflammation and its effect, 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.

CCCLXXXI. 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.

CCCLXXXII. In order to render the firſt ſucceſsful, ſeveral circumſtances require attention, viz.

1ſt, The proper poſition or poſture of the part.

2d, Its full relaxation; and laſtly,

3d, 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 tumour.

CCCLXXXIII. 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.

CCCLXXXIV. 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.

CCCLXXXV. The *firſt*, and moſt frequent ſpecies of the affection to be conſidered, is the bubonocele, 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.

CCCLXXXVI. 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 gently turning them 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.

CCCLXXXVII. 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.

CCCLXXXVIII. 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.

CCCLXXXIX. Theſe effects of inflammation, conſiſt either of adheſions or gangrene.

CCCXC. With reſpect to the *firſt*, or adheſion, they are formed either among the protruded parts themſelves, or elſe they are formed to the contiguous parts.

CCCXCI. 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.

CCCXCII. 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.

CCCXCIII. But, where gangrene of the inteſtines is diſcerned, that part of it diſeaſed, if not extenſive, is to 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.)

CCCXCIV. 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.

CCCXCV. 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.

CCCXCVI. 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, ſoon after birth.

Femoral Rupture, or Hernia.

CCCXCVII. 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.)

CCCXCVIII. 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

2d, By its ſudden occurrence, and the coſtiveneſs, and other ſymptoms of diſorder in the *primæ viæ*, which attend it.

CCCXCIX. 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.

CCCC. 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 ſore is to be retained by ſtrong adheſive plaiſter, and laſtly the uſual bandage.

Umbilical Rupture, or Hernia.

CCCCI. The umbilical hernia conſiſts of a ſimilar tumour 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.

CCCCII. 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.

CCCCIII. 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.

Sarcocele.

CCCCIV. The next tumour of a ſolid nature to be

conſidered after hernia, is the *ſarcocele*, or ſchirrus of the teſticle. This affection ſhews great variety in its appearance; but its leading ſymptoms are, 1*ſt*, 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.

CCCCV. 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.

CCCCVI. 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.

CCCCVII. 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 the prediſpoſition of the patient.

CCCCVIII. 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.

CCCCIX. 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.

CCCCX. 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 ſame time rapid progreſs; for, while indolent, the operation may ſtill be delayed.

CCCCXI. 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 tumour 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.

CCCCXII. 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.

CCCCXIII. 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.

CCCCXIV. Theſe circumſtances are the ſtate of the cord; the diſeaſe of the teguments; and adheſion of the tumour to the oppoſite ſide.

CCCCXV. 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 ſore.

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.

CCCCXVI. Where the two diſeaſes of hydrocele and ſarcocele 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.

CCCCXVII. Two peculiar ſpecies of this diſeaſe prevail, which have been taken notice of by authors, and theſe may be termed the *external ſpecies*.

CCCCXVIII. The firſt is common to all workers in ſoot, the irritation of which produces on the upper part of the ſcrotum a wart, termed the ſoot-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.

CCCCXIX. The other ſpecies is peculiar to warm

limates, and to the African conſtitution; it conſiſts f a uniform firm ſwelling, affecting the teguments of ne ſcrotum, and communicating to the teſticle, which equires, in time, an enormous ſize; it is ſlow in its rogreſs, and always without pain. In other caſes, it egins in the teſticle itſelf, which has been known, in s ultimate progreſs, to weigh 50 lib.

Mercury ſometimes ſucceeds, and aſtringents exter- ally applied; but, in the advanced ſtate, theſe are effectual, and ſuſpenſion and opiates prove the only lief.

SURGERY.

DISEASES

OF THE

PENIS AND URINARY ORGANS.

CCCCXX. DISEASES 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.

CCCCXXI. The firſt affection to be noticed is the *phymoſis*, or contraction of the ſkin, or preputium over the glans.

CCCCXXII. 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.

CCCCXXIII. 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 from venereal ſores is confined under the glans, and acting upon this part, an operation for its diviſion becomes then neceſſary.

CCCCXXIV. 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 ſore then covered with charpee, a compreſs laid above, and the parts 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, where the ſore does not readily heal, the uſe of mercury ſhould take place.

CCCCXXV. If the prepuce ſhould be very much elongated along with this contraction, inſtead of its diviſion, as recommended, circumciſion itſelf may be performed.

Paraphymoſis.

CCCCXXVI. 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.

CCCCXXVII. 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.

CCCCXXVIII. 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.

CCCCXXIX. 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.

CCCCXXX. This operation, the moſt direful that can be propoſed to a patient, becomes neceſſary from two cauſes, gangrene and cancer, particularly the latter.

CCCCXXXI. 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 glans. 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.

CCCCXXXII. Where the frænum is tight and troubleſome in erection, it may be divided with ſciſſars, and the wound dreſſed with charpee.

Imperforation of Urethra.

CCCCXXXIII. Imperforation, or improper direction of the uretra 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.

CCCCXXXIV. The ſeat of theſe affections, though 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.

CCCCXXXV. 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.

CCCCXXXVI. The circumſtances obſerved to favour the generation of calculi, or this *morbid exceſs of lithic acid* are,

1*ſt*, *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.

4*th*, *Peculiar morbid ſtates*, as gout, dyſpepſia,

ague, &c. which all give ſtrong tendency to depoſition in the urine.

5*th*. *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.

6*th*, *The water of certain countries* favouring this generation or *exceſs of lithic acid*, as the waters of the Seine, &c.

CCCCXXXVII. 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.

CCCCXXXVIII. 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 arboreſcent 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.

CCCCXXXIX. 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.

CCCCXL. The general treatment of this diſeaſe, was conſidered in vol. I. p. 30. both in its acute and chronic ſtate; what reſpects the local treatment, is only to be noticed here.

CCCCXLI. 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.

CCCCXLII. 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.

CCCCXLIII. 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 yelloviſh. Their ſpecific gravity is alſo uncertain.

CCCCXLIV. Their preſence in the bladder is denoted by the ſymptoms enumerated (vol. I. p. 207.) viz.

1*ſt*, 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.

CCCCXLV. 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.

CCCCXLVI. 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.

CCCCXLVII. 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.

CCCCXLVIII. 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, it communicated to the hand by

by the inſtrument; while by ſhifting the latter, ſome opinion, alſo, of its ſize, may be formed.

CCCCXLIX. 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 dangerons at the prime of life, and leſs ſo, both in children, and from the 50th to the 70th year.

CCCCL. 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.

CCCCLI. 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.

Perinæal Operation.

CCCCLII. The perinæal 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 perinæum, 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.

CCCCLIII. But the objections to this method, tho' 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.

CCCCLIV. 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.

CCCLV. 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.

CCCCLVI. 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.

CCCCLVII. 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.

CCCCLVIII. 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.

CCCCLIX. 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.

CCCCLX. 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 ſounding 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, through 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 from 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 the other hand, (as he riſes) he puſhes on the gorget, till it paſs into the bladder, when the urine flows out.

CCCCLXI. From this deſcription, the chief points for the ſucceſs of the operation, in this preceding part, are,

1*ſt*, 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.

CCCCLXII. 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.

CCCCLXIII. The difficulty to extraction ariſes generally from three cauſes,

1*ſt*, 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, to make it 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.

CCCCLXIV. 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.

CCCCLXV. 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 preſent accumulation in the internal cavity, the pelvis ſhould be kept low, and the ſuperior parts of the body raiſed.

CCCCLXVI. 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.

CCCCLXVII. When excoriation of the parts ariſes from preſſure and irritation during the cure, aſtringent ſolutions, as diluted brandy and lime water, are moſt uſeful.

CCCCLXVIII. 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.

CCCCLXIX. 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.

CCCCLXX. 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.

CCCCLXXI. 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 regnlated by the circumſtances of its ſituation.

CCCCLXXII. 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.

CCCCLXXIII. 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.

CCCCLXXIV. 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.

CCCCLXXV. Suppreſſion of urine, depending on its retention in the bladder, from a variety of cauſes, is a complaint of the moſt alarming nature.

CCCCLXXVI. 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.

CCCCLXXVII. 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.

CCCCLXXVIII. 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.

CCCCLXXIX. 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.

CCCCLXXX. 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.

CCCCLXXXI. 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.

CCCCLXXXII. 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 the conſequence, prove ſucceſsful.

Obstructions of the Urethra.

In the Male.

CCCCLXXXIII. 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.

CCCCLXXXIV. 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 fulneſs of the ſpungy bodies of the urethra, which is the moſt frequent.

CCCCLXXXV. 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.

CCCCLXXXVI. 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.

CCCCLXXXVII. 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 at in the male.

Sinus Ulcer of the Perinæum, or Fiſtula Perinæi.

CCCCLXXXVIII. A conſequence of the laſt diſeaſe deſcribed, or obſtruction in the urethra, is the formation of the fiſtula perinœi.

CCCCLXXXIX. This conſiſts in a ſinuoy ulcer of the perinœum, 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.

CCCCXC. Of the firſt are all cauſes producing injury and abſceſs of theſe parts; of the ſecond all obſtructions, as mentioned, of the urethra itſelf.

CCCCXCI. 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.

CCCCXCII. 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 ſtone 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 ſore, 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.

CCCCXCIII. When the operation is finiſhed, the ſtaff ſhould be withdrawn, and dreſſings inſerted gently into the openings, and then the whole covered with an 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.

CCCCXCIV. 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 perform the operation here, a ſtaff muſt be paſſed into the bladder, and the ſame attempt made to lay open and diſpoſe them to heal.

CCCCXCV. 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.

CCCCXCVI. Incontinence of urine is a frequent complaint in both ſexes, and it ariſes either from irritation or debility in the neck of the bladder.

CCCCXCVII. 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.

CCCCXCVIII. 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.

CCCCXCIX. 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 perinœum. Cloths alſo wet in oxycrate, or ſaturnine ſolutions, may be uſed to the part itſelf.

SURGERY.

DISEASES

OF THE

ANUS AND GUT.

Hemorrhoids or Piles.

D. PILES 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 membrance takes place, when they increaſe to a conſiderable ſize; and, on burſting, tho' their contents are diſcharged, their ſize continues, aſſuming a livid appearance, with a firm fleſhy feel.

DI. 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.

DII. The general treatment of piles, conſiſts in abating the preſent ſtate of inflammation or the fit, and preventing its recurrence.

DIII. 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.

DIV. 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.

DV. 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.

DVI. 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.

DVII. 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.

DVIII. 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.

DIX. 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 tumour is at the verge, or an inch or two within the rectum. The tumour may then be removed as in other caſes, either by ligature or exciſion.

DX. The ligature is applied to thoſe tumours 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 tumour, when, if properly applied, the tumour will drop off in a few days. Where, on the contrary, the neck of the tumour is narrow, exciſion will be preferable ; and the parts are then to be dreſſed with emollient liniment, till healed.

Excreſcences.

DXI. The verge of the anus is the frequent ſeat of excreſcences, termed condylomanta, fici criſtæ, &c.

DXII. 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.

DXIII. Their ſymptoms alſo vary ; in ſome they

give no uneaſineſs; while in others they excite exquiſite pain.

DXIV. 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.

DXV. 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 ſore.

Falling down of the Gut, or Prolapſus Ani.

DXVI. 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.

DXVII. It is produced 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.

DXVIII. 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.

DXIX. 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.

DXX. 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.

DXXI. 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.

DXXII. 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.

DXXIII. If ſucceſsful, by the diſcharge of fæces, much care is neceſſary afterwards, to preſerve the paſſage open; which can only be done by large doſſils, 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.

DXXIV. 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.

DXXV. It may be therefore divided into two ſpecies, the ſimple and complicated.

DXXVI. 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 ſore treated as a common wound.

DXXVII. 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.

DXXVIII. 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.

DXXIX. 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.

DXXX. 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.

DXXXI. 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.

DXXXII. The after treatment conſiſts in dreſſing the ſore 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.

DXXXIII. 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.

DXXXIV. 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 fœtid, and the ſore looks unhealthy, the particular conſtitutional taint ſhould be inquired into, and diſcovered, and proper remedies conjoined with the local treatment. Where ſimple weakneſs exiſts, tonics will repair it.

DXXXV. But beſides this treatment merely of the part itſelf, we muſt next attend to its conſequences on the adjacent parts.

DXXXVI. 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.

DXXXVII. 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.

DXXXVIII. 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.

DXXXIX. 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.

DXL. Theſe are affections of the contiguous bones and communications with the bladder of urine.

DXLI. 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.

DXLII. The latter, or a communication with the bladder is always fatal. Its ſymptoms are a dark brown urinary ſediment, gradually deepening, with a fætid ſmell, and diſcharge of air by the bladder, ſucceeded by difficulty in the diſcharge of urine.

DXLIII. No remedy can be applied here, and the patient ſeldom outlives two years of miſery.

SURGERY.

PART III.

CLASS IV.

FRACTURES.

I. FROM 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

1*ſt*, 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,

4*th*, 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,

1*ſt*, On its particular ſpecies.

2*d*, On the ſituation of the fracture.

3*d*, On the patient's habit; and,

4*th*, 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 conſider-

able 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,

1*ſt*, The proper replacement of the parts.

2*d*, Their retention in that ſtate.

3*d*, Obviating the attending morbid ſymptoms; and,

4*th*, 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, or 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 *firſt* of them is removed by frictions with mollients; warm ſteams; warm ſea-bathing; or with mineral waters.

The 2*d*, 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 3*d* circumſtance, or imperfection of reunion, is the moſt perplexing event. It may depend on four cauſes; on the want of 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 an 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 thoſe 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 any 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 Vertebræ, and Lumbar Bones.

XXXII. Fractures of the vertebræ 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 of 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 fore arm 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 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 to 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-

tuſe 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 apoſition 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 decerned 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 venefection, 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 bone 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 up 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 proper 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 1*ſt* 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 (ſee p. 61.) here, rendering this ſtep unavoidable are,

1*ſt*, 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.

SURGERY.

CLASS V.

LUXATIONS.

LXXVII. IN 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, or a degree of protuberance, on one ſide, equalled by a correſponding hollow on the other; moſt apparent on comparing the joint of the one 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 as 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 subsultus 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:

1*st*, 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

4*th*, 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 *ſecond* indication, viz. 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 almoſt never 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 horſeback, 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-

ists 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 vertebræ. 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 vertebræ above and below are pressed inwards.

The retention will take place by applying thick compresses over these vertebræ 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 scapulary bandage, to prevent its

ſhifting. 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 encreaſing 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 into 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 obſtacle, 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 aſtralagus 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.

SURGERY.

CLASS VI.

DISTORTIONS.

CXLIV. DISTORTIONS 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 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.

CL. Stiffneſs or diſtortion of the joints and ſtiffneſs of the limbs themſelves, is a frequent effect of diſeaſe, particularly of ſcrophula and rheumatiſm.

CLI. Whatever be 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.

CLII. 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.

CLIII. 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.

SURGERY.

CLASS VII.

AMPUTATIONS.

CLIV. THE 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.

CLV. 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 no

ſucceed, particularly in the thigh and limb, or where the parts are ſo diſeaſed as not to admit of it.

II. *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 phegadenic 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. The tendency to gangrene, inſtead of ſuppuration, and the operation ſhould take place ſo ſoon as the gangrene appears to be ſtopt, without waiting the period of ſeparation.

2. Profuſe hemorrhage in the progreſs of the cure of compound fracture, where the veſſels cannot be reached or ligatures applied.

3. No tendency in the parts to re-union, while the patient is ſinking under its effects.

CLVI. 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 parts.

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 ligature 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 3*d*, 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 a 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 an 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 perioſtæum 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.

CLXI. The retractors being withdrawn, the ligature 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 ſpunge, and then the hemorrhage will detect each ſeparate branch, which muſt be 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.

CLXII. 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 pined, a ſmall part of it remaining ſtill 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.

CLXIII. When the ſtump is dreſt, 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.

CLXIV. The morbid conſequences that reſult from the operation, are next to be conſidered, and theſe are of two kinds, the more *immediate* and *ſecondary*.

CLXV. The *firſt* conſiſt of hemorrhage and ſpaſm; the latter of fever, inflammation, and its conſequences.

CLXVI. The 1*ſt*, 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.

CLXVII. The 2*d* 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.

CLXVIII. The conſequences of inflammation, however, are more ſerious. Where much tenſion and inflammation prevail, with 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.

CLXIX. 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.

CLXX. 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.

CLXXI. 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.

CLXXII. 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.

CLXXIII. 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.

CLXXIV. 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 interoſeous 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.

CLXXV. 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 hereeaſy from the thickneſs of the fleſhy parts.

Hip Joint and Shoulder.

CLXXVI. 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.

CLXXVII. 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.

CLXXVIII. The patient being placed, as in other caſes, on a table, and 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.

CLXXIX. 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.

CLXXX. 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.

CLXXXI. 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 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 in view. When opened, and the arm drawn backwards, diſlocation will take place, which finiſhes the operation.

CLXXXII. The parts being replaced, after re-

ſtraining any hemorrhage and cloſing the wound, they are to be retained by ſutures. 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.

CLXXXIII. The danger of hemorrhage requires here the attendance of an aſſiſtant for ſome days, and if appearing, it can eaſily to 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.

CLXXXIV. 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.

CLXXXV. 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.

CLXXXVI. 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.

CLXXXVII. 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.

CLXXXVIII. 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 ſore, and there retained either by ſutures or adheſive plaiſter, above which a compreſs and flannel roller are applied.

Fingers.

CLXXXIX. 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 ſore, and then diſſected from the bone, and afterwards held by an aſſiſtant, while a circular inciſion is carried through the reſt of the ſoft part 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 ſore, and the whole ſecured by adheſive plaiſter, and the preſſure of a roller.

Flap Operation.

CXC. We have hitherto detailed the ſteps of amputation on the different members, as performed according 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 tedioufneſs 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.

CXCIII. 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.

Article.	*Preparations or forms in use.*	*Diseases to which applied.*
Absinthium. Wormwood.	Decoction.	Gangrene.
Acetum. Vinegar.	Oxycrate.	Inflammation.
	Cataplasm.	Gangrene.
Acidum Vitriol. Vitriolic Acid.	Ointment (sp. Vitriol. dilut. gutt. xxx. ad. aq. et mellis *a* ʒi.)	Itch and Cutaneous diseases.
		Gangrenous Ulcers.
Aer Fixus. Fixed Air.	Fermenting Poultice.	Putrid Ulcers.
	Carrot Poultice.	Cancer.
	Elastic state.	
Ærugo. vel Cuprum Acetatum. Verdigrease.	Ungt. ærugin. vel Cupri. Ammon. (ʒss. to ʒii. Axung.)	Ulcers.
		Gangrene from Bedrid.
	Aqua Sappharina. vel Cupri. Ammoniat.	The same.
	Aqua Viridis Hartmanni. (Vin. alb. ℔ii. ærug. Alum. *a* ʒss. mellis ʒi. m.)	To Ulcers of the Mouth and Throat.

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
Allium. Garlic.	Sinapiſm. ex Allio.	Lethargy and Apoplexy.
	Ungt. ex Allio.	
Aloe. Aloes.	Powder and Tincture.	Herpes & Deafneſs. Carious Ulcers.
Alumen. Alum.	Pulv. Styptic.	Hemorrhage.
	Alum. Uſt.	Ulcers.
Amygdal. Dulc. Sweet Almonds.	Oil.	Rigid parts.
Amylum. Starch.	Mucilag. Inj.	Inflammation. Excoriation.
	Pulv.	
Alcochol Vini. Spt. of Wine.	Sp. Vitriol. Dulc. vel. ætheris Vitriol.	Hemorrhage from ſmall veſſels.
	Idem dilut. vel Aqua. Thedian.	Ulcers and Exceſſive Suppuration.
Albumen Ovi. Whites of Eggs.	Coagulum Alum.	Ophthalmia.
	Linim. album cum Spt. Vini.	Excoriation.
Agaricus. Agaric.	Pulv.	Hemorrhage from ſmall veſſels.
Anchuſa. Alkanet.	Ungt. ad Labia, and as a Colorant to ointments and plaiſters.	Excoriations.
Ammoniacum. G. Ammoniac.	Ungt. ex Ammon.	White Swelling.
	Emplaſt. ex Am.	Sprains.
Antimonium. Antimony.	Crude to give conſiſtence to bougies.	
	Solut Croci Metall. vel Antimonii.	Ophthalmia and Suppurating wounds.
	Aqua benedict. Rulandi pro Enem.	Hernia.
Arabicum. Gum Arabic.	Mucilag. pro Inject. (℥i. to Aq. ℔i.)	Gonorrhœa.
	Pulv.	Excoriations.

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
Argentum. Silver	Lapis Infernalis, vel Cauſtic. Argentum Nitratum.	Opening Abſceſſes, Deſtroying Chancres, and Callous edges of Sores.
Ariſtolochia longa. Long Birthwort.	Decoction.	Carious Ulcers.
Arſenicum. Arſenic.	Ungt. Arſenic. (gr. ⅛ ad axung ℥i.) Solut Arſenic. (gr. 1. ad aq. lib. ii.)	Cancer and Phagadenic Ulcers.
Aſa Fœtida. Devil's dung.	Powder. Emplaſt Antihyſteric	Carious Ulcers. Inguinal Vermin. Fixed Nervous Pain.
Axung. Porcina. Hog's Lard.	The baſis of all Ointments and Plaiſters.	
Balſam Copaibæ. Balſam of Capivi.		Wounds.
Balſam Toletan. Balſam of Tolu.		The ſame.
Balſam Peruvian. Balſam of Peru.		Ditto of Nerves.
Belladonna. Deadly Nightſhade.	Poultice. Plaiſter.	Cancer. Schirrus.
Benzoe. Benjamin.	Elixr. Traumat, vel Tinct. Benzoes comp. Lac Virginis.	Wounds and Ulcers. Defedations of Skin.
Bolus Armena. Bolar Earth.	Powder. Infuſion.	Gleety Sores.
Borax. Tincal.	Collirium. (Borac ℥ſſ. ſacchar alb. ℥i. aq. roſar. ℥i. m.)	Ophthalmia. Aphthæ.
Butyrum. Butter.	An Ingredient in moſt Cataplaſams and Injections.	

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
Calor. Heat.	Applied by Additional Coverings to the Parts.	Inflammations.
	by Steams.	Swellings.
	Fomentations.	Pains.
	Poultices.	
	Actual Cautery.	Hemorrhage and
	Moxa.	Fixed Pains.
	Burning Cylinders.	Ditto.
	Burning Glaſs.	Cancerous Ulcers.
Calx Viva.	Aqua Calcis.	Ulcers, Scrophulous and Cutaneous.
Quicklime.	Cataplaſm cum melle	Rheumatiſm.
	Liniment. ad Nævos.	
	Paſta Depilatoria.	Tinea.
	Liniment. Aq. Calcis.	Burns.
Camphora. Camphire.	Ol. Ammoniat. Liniment. Saponac. vel Balſam. Opodeldoch.	Chronic Swellings.
		Ditto.
	Ol. Camphor. Cauſtic. (i. e. ſolut. in Acid Nitros.)	Warts and Excreſcences.
	Aq. Vitriol. Camphor. vel Zinc. Vitriol. cum. Camphora.	Gonorrhœa.
Cantharis. Spaniſh Fly.	Tinct. Cantharid.	Indolent Swellings. Rheumatiſm, Palſy.
	Emplaſt. Epiſpaſt. vel Cantharidis.	Internal Inflammation.
	Ungt. Epiſpaſt. vel Canthar. fort. et mitis.	The ſame.
Carbon. Charcoal.	Pulv.	Hemorrhage.
	Cataplaſm.	Irritable Ulcers.
Centaur. minus. Leſſer Centaury.	Decoct.	Ulcers.
	Cataplaſm.	Inflammatory Swelling.
Cepa. Leek	Bulb. cum Melle.	Cutaneous Diſeaſes. Buboes and Callous Warts.
Cera alba et flava. White and yellow Wax.	An ingredient in Cerates, Plaiſters, and Bougies.	
	Ceromel.	Wounds and Ulcers.

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
Chamemelum. Chamomile.	Decoct. Cois. pro foment.	Inflammatory Swellings.
Cicuta. Hemlock.	Powder ſimple, or with Honey.	Cancer.
	Liniment.	Ditto.
	Emplaſt.	Ditto.
	Foment. cum Aq. Calcis.	Scrophula.
	Cataplaſm.	Cutaneous Diſeaſes.
Cochlearia. Scurvy Graſs.	Succ. cum Alum et Melle.	Foul Ulcers. Scorbutic.
Columbo. Columb.	Pulv.	Ulcers.
Cortex Peruvian. Peruvian Bark.	Pulv.	Chro. Inflammation.
	Cataplaſm.	Ulcers.
	Foment.	Gangrene.
	(Decoct. C. P. Saturat. ℔i. Aq. Thedian. ℥iv. Camphor. Sal Ammon. *a* ʒi. Extract. Saturn. ℥i. m.)	
	Collyrium.	Chronic Ophthalmia.
Creta alba. Chalk.	An Abſorbent Powder.	Gleety Sores.
Compreſſio. Preſſure.	Applied by Inſtruments, Plaiſters, Bandages.	To all Local Diſeaſes the objects of Surgery.
Corallium. Coral.	Pulv. Dentifric. Collyrium.	
Cremor Lactis. Cream.		Burns of Mouth and Throat.
Cuprum Vitriol. Blue Vitriol.	Ungt. varia.	Ulcers.
	Aqua Styptic.	Hemorrhage.
Daucus. Carrot.	Cataplaſm ſimplex.	Foul Ulcers.
	Idem cum Cicuta.	Cancer.

Article.	*Preparations or forms in use:*	*Diſeaſes to which applied.*
Digitalis. Fox-glove.	Ungt.	Scrophulous.
	Infus. et foment.	Ulcers.
Electricitas. Electricity.	Applied by Sparks or Shocks.	Inflammations, Tumors, Contractions, Palſy of Parts.
Faba. Bean.	Cataplaſm.	Inflammatory Swellings.
	Pulv.	Eriſepelas.
Fæces Vini. Wine Dregs.	Solut. cum Aq.	Sprains.
	Vinum rubr. dilut. pro Inj.	Hydrocele.
Ferment. Panis. Yeaſt.	Cataplaſm Effervеſ.	Foul Ulcers. Cutaneous Diſeaſes.
Ferrum. Iron.	Solut. Ferri. in Oxycrat.	Inflammatory Swellings & Contuſions.
	Solut. Vitriol. virid. vel Ferri. Vitriolat.	Ulcers.
Frigus. Cold.	Applied by Snow.	Hemorrhage.
	By Pounded Ice.	Burns and Hernia.
	Cold Bath gen. & par. Affuſion, &c.	Tumors, Inflammations, &c.
Fuligo Ligni. Woodſoot.	Aqua Vulneraria. (Fulig. ℥i. Ceruſſæ ℥ſſ. coque in Aq. Calcis. per dimid. horæ et adde Myrrhæ ℥i. m.)	Spreading Ulcers. Indolent Swellings. Herpes.
Galbanum. Gum Galban.	Ungt.	Milk Swellings.
	Emplaſt.	Ditto.
Glacies. Ice.	Powdered.	Burns, Hemorrhage, and Hernia.
Gallæ. Galls.	Infus.	Gleety Sores.
	Ungt.	Piles.
Granatum. Pomegranate.	Infus.	Gleety Sores.
G. Guiac. Gum Guiac.	Tincture.	Toothach.
	Pulv.	Venereal Ulcers.
	Decoct.	

Article.	*Preparations or forms in uſe.*	*Diſeaſes to which applied.*
Hordeum. Barley.	Pulv.	Eriſipelas.
Gypſum vel Calx Vitriolat. Plaiſter of Paris.	Cataplaſm. ex Pulv. et Aq.	Irritable Ulcers.
Hydrargyrus. Mercury.	Ungt. Mercurial. vel Hydrargyr.	Venereal Sores and Swellings.
	Emplaſt Mer. Am. cum Mer.	
	Foment. Mer. Gummos. cum Lacte.	
	Gargariſm. ejuſdem.	
	Pulv. Mer. Alcaliſat, (Mer part iii. ad Cret part v.) (Spread on ſores.)	
	Cerat. Calomel	
	Ungt. Calc. Hydrarg. alb.	
	Ungt. Norford ad Cancr. (Succ. Inſpiſſat. Sem. Ricini. plumb. uſt. Mer. alb. ex Aq Calcis precipit. *a* ℈i.)	Cancerous Ulcers
	Ungt. Hydrar. Nitr. rubr.	Venereal and Indolent Ulcers
	Balſam. Mer. (Ungt. Baſilic. ℥i. Ungt. Mer. ℥ſſ. Mer. Precip. rubr. ʒii.)	
	Solut. Hydrar. Muriat. Ungt. ejuſdem.	
	Aqua Phagadenica. (Mer. corroſiv. ʒſſ. Aq. Calcis ℔i.)	Cancer of Face.
	Aqua Aluminos. (Mer. Corroſiv. ʒi. Alum. ℥ſſ. Aq. Roſar ℔i.)	
	Liquor Belloſt. (Aq. Calc. ℥i. Liq. Mer. Nitr. gutt. vi. *i. e.* Solut. Mer. in Acid Nitr. part i. Mer. ad part ii. Acid.)	Cancer.

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
	Solut. Hydrargyr. cum Plumbo. (Mer. ℥ii. Plumbi. ℥iſſ. Acid nitros. ℥i.)	Warts and Excreſcences.
	Cinnabar Fumigations.	
	Hydrarg. cum Sulphure, (Spread on ſores.)	
Hyoſciamus Niger. Henbane.	Ungt. Hyoſciami.	Cancer.
	Emplaſt ejuſdem.	Schirrus.
	Tinct. Odont. Hoff.	
Ichthyocolla. Iſinglaſs	Emplaſt adheſiv.	Wounds.
Ipecacuhana. Ipecacuhan.	Pulv.	Ulcers
Lac Vaccinum. Cow Milk.	The baſis of all emollient Cataplaſms and Fomentations.	
Lapis Calamin. Calamy.	Prepared powder.	Gleety ſores.
	Ungt. Cerat. Turner. vel Cerat Lap. Calamin.	
Lilium album. White Lilly.	Cataplaſm.	Inflammatory Swellings.
Liquoritia. Liquorice.	Ungt.	Excoriations.
Linum. Lintſeed.	Cataplaſm ex placent.	Inflammatory Swellings.
	Foment.	Inflammations.
Malva. Mallows.	Cataplaſm.	
Maſtiche. Maſtic.	Eſſen. cum Mer. Corros. Solut in oleo.	Venereal Ulcers. Toothach.
Mandragora.	Pulv. cum melle.	Schirrus.
Mentha. Mint.	Foment.	Effuſed Fluid.
Mel.	Mel Roſar.	Ulcers, Inflammatory Swellings.
Honey.	Ennema Mellitum.	Caries of Bones.
	Liniment Mellis. cum Bile vel Vitriol alb. vel Spt. Vini.	

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
Mezereon.	Pulv.	Venereal Ulcers.
Mica Panis. Crumb of bread.	Cataplaſm Emmollient. vel Farinac. — Antiphlogiſtic.	Inflammations.
Myrrha.	Pulv. cum P. C. P.	Gangrene.
Myrrh.	Tinct.	Caries.
Minium. Red Lead.	The baſis of many Plaiſters.	
Nicotiana. Tobacco.	Ennema Fumor.	Hernia.
	Infus. fol.	Ulcers.
	Foment.	Paraphymoſis.
Nitrum.	Foment.	Gangrene.
Nitre.	(Aq. font. ℔i. Acet. ℥vi. Nitri. ℥iii. Sal. Ammon. ℥i. m.)	Contuſions.
Nix.		Burns.
Snow.		
Olibanum. Frankincenſe.	Pulv. cum album. Ovi.	Specks and Scars.
Opium.	Cauſtic. Opiat.	Abſceſſes.
	Ungt. Opiat.	Painful Ulcers.
	Emplaſt Opiat.	Rheuma. Swellings.
	Infus. vel Tinct. Opii.	Painful Ulcers.
	Infus. Opii. in Vino.	Ophthalmia.
Papaver. Poppy.	Cataplaſm Papaver.	Inflammatory Swellings.
	Foment Papaver.	
Petreolum. Rock Oil.	Aqua Petreoli. (℔i. to gong. ℔ii.)	Ulcers.
Pix Liquida. Tar.	Ungt. *e* pice.	Ulcers.
	cum Sev. Ovill. vel cum Sulphure.	Cutaneous Diſeaſes.
	Lotio ejuſdem.	
Pyrethrum.	Decoct.	Ulcers and Palſy of Tongue.
Pellitory.	Gargariſm.	
Plumbum.	Plates of Lead.	Fungous Ulcers and Schirrus.
Lead.	Amalga Plumbi.	Buboes.
	Lithargyrus.	Eriſepelas.

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
	Lithargyr. Acetat vel Sacchar. Saturn.	Chancre.
	Aq. Litharg. Acet. vel Vegeto. Mineral.	Wounds, Contuſions, and Inflammatory Swellings.
	Eadem cum Camphora.	
	Ungt. Litharg. Acet.	
	Emplaſt Lithargyr.	
	Ceruſſa.	
	Ungt. Ceruſſæ. Acet.	
	Emplaſt Ceruſſæ.	
Quercus. Oak.	Infus. Cort.	Ulcers.
Quercus Marina. Sea Wreck.	Lotio.	Scrophula.
	Cataplaſm.	
	Æthiops Vegetal. (Powder ſpread on ſores.)	
Rheum. Rhubarb.	Pulv. Rhei. (Spread on ſores.)	
Reſina Vulgaris. Roſin.	Emplaſt.	Tinea.
Roſmarinus. Roſemary.	Foment Vinos.	Gangrene.
Ruta. Rue.	Decoct.	Ulcers of Ear.
Sabina. Savine.	Pulv. cum melle.	Warts and Carious Ulcers.
	Decoction & Fomentation.	The ſame.
Sal Ammoniac. Ammoniac Salt.	Oxycrate. (Ibi. to ʒſſ.)	Contuſions.
	Solut. Simpl.	Grangrene.
	Foment. cum Camphor. (Foment. cois Ibii. Ammon. Muriat. ʒi. Spt. Camphorat. ℥ii. m.)	The ſame.
	Spt. Mindereri vel Aq. Ammon. Acet.	
	Emplaſt. Ammon. (Sapon. ʒii. Emplaſt. Litharg. ℥ſſ. Ammon. Muriat ʒi.)	Indolent Tumours.

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
Ammoniacum. Ammoniac.	Emplaſt.	Tumours.
Sal Marin. Sea Salt.	Brine.	Palſy.
	Sea water.	Scrophulous ſores.
	An ingredient in injections.	
	Spt. Sal Dulc. cum melle.	Ulcers of Mouth.
Saccharum. Sugar.	Pulv.	Ulcers and Specks of the eye.
Sapo alb. Hiſpan. Caſtile Soap.	Solut. in Lacte.	
	Liniment Sapon. vel Balſam. Opodel. Emplaſt. Saponac.	Indurations and Ganglia.
Sal Sodæ vel Natron.		Scrophula. Calculus.
Mineral Alkali.	Cataplaſ. Natr. Vitriolat. (Natr. Vitriolat. ℥i. Aq. fervent. ℔ſſ. Mic. pan. q. ſ.)	Chronic Ophthalmia.
Sarſaparilla.	Pulv.	Venereal Ulcers.
	Decoct pro Lotione.	
Serpentaria. Snakeroot.	The leaves.	Bites of Serpents.
	Decoction.	Gangrene.
Secale.	Cataplaſm. cum Cervis.	Sore Throat.
Semen Cydonior. Quince Seed.	Mucilag.	Ophthalmia.
Semen Lini. Linſeed.	Cataplaſm.	Inflammations.
	— cum Lacte.	
	— Aq. Vegeto. Mineral. vel Ceruſſ. Acetat.	
Spermaceti	An Ingredient in Ointments.	
Sanguis Draconis. Dragon's Blood.	Balſam. Locatelli.	Wounds and Ulcers.
Styrax Liquida. Liquid Storax.	Ungt. e Styrace. vel cum Camphora.	Wounds, Ulcers, and Gangrene.
Succinum. Amber.	Eſſence.	Wounds of Tendons.

Article.	*Preparations or forms in use.*	*Diſeaſes to which applied.*
Stannum. Tin.	Pulv. ad Maculas. (Sacchar. ʒii. Pulv. Limatur. Stanni ʒi. Vitriol. alb. gr. v. m.)	
Sinapi. Muſtard.	Cataplaſm. vel Epithe n. cum Acet.	Comatoſe States.
Sulphur. Brimſtone.	Ungt. e Sulphur. vel cum Succ. Citrin.	Itch and Cutaneous Diſeaſes.
	Balſam Sulphur.	Ulcers, &c.
Terebinthina. Turpentine.	Ol. Terebenth.	Wounds of Nerves and Tendons.
	Ungt. Digeſtiv. (ex Terebinth. cum Vitell Ovi.)	Wounds requiring Suppuration.
	Cerat. Mellis cum Terebinth.	
Triticum. Wheat.	Pulv.	Eriſepelas.
	Cataplaſm. Emmolliens.	Inflammations.
	Cataplaſm. Antiphlogis.	
	Cataplaſm. Ferment.	Gangrene and Ulcers.
Tutia. Tutty.	Pulv.	Excoriations.
	An Ingredient alſo in Ointments and Collyria.	
Vitellum Ovi. Yolk of Eggs.	To divide Reſins and Oils.	
Vitrum. Glaſs.	Pulv. Ophthalmic. (Vitri. ʒſſ. ♀ ʒii. Sachar. ʒſſ. tere donce ft. Pulv. Subtil.	Specks.
Zincum. Zinc.	Calx. vel Flor. Zinci.	Wounds and Ulcers.
	Solut. Zinci vel Vitriol. alb. (gr. i. vel ii. ad aq. ʒi.)	
	Ungt. Zinci Vitriolat. Camphorat.	

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.

EMOLEIENTS, as,	EMOLLIENTIA, ut,
Warm water, in the form of Steams or Fomentations.	*Aqua Calida, forma Vaporum vel Fomentationum.*
Oils, *as*	*Olea*, ut
Linseed oil	*Ol. Lini*
Olive oil.	*Ol. Olivar.*
Fatts, *as*	*Pinguia*, ut
Hog's Lard	*Axungia vel adeps Suilla*
Butter.	*Butyrum.*
Milks, *as*	*Lac*, ut
Cow Milk	*Lac Vaccin.*
Cream.	*Cremor Lactis.*
Mucilages, *as*	*Mucilaginea*, ut
Infusion of Linseed	*Infusum Lini*
Decoction of Althæa	*Decoct Althææ*
Decoction of Mallows.	*Decoct Malvæ.*
Starches, *as*	*Amylacea*, ut
Wheat flour	*Pulv. Tritici*
Barley flour	*Hordei*
Oat flour.	*Avenæ.*

CLASS II.

ASTRINGENTS.	ASTRINGENTIA.
1. VEGETABLE, *as*	1. VEGETABLIA, ut
Infusion of Granate Bark	*Infus. Cort. Granat.*
Infusion of Oak Bark	*Infus. Cort. Querci*
Infusion of Red Rose leaves.	*Infus. Flor. Rosar-rubr.*
2. MINERAL, *as*	2. MINERALIA, ut
Solution of White Vitriol	*Solut Vitriol alb. vel Zinci Vitriolat.*
Solution of Green Vitriol	*Solut Vitriol. virid. vel Ferri Vitriolat.*
Solution of Blue Vitriol	*Solut Vitriol cærul. vel Cupri Vitriolat*
Solution of Sugar of Lead, and its Compositions	*Solut Sacchar. Saturn et compos. vel Ceruſſæ Acetat*
Solution of Iron in Oxycrate	*Solut Ferri in Oxycrat.*
Solution of Flowers of Zinc	*Solut Flor. vel Calc Zinci*
Spirit of Vitriol diluted	*Spt. Vitriol. dilut. vel Acid Vitriol. dilut.*
Spirit of Salt diluted	*Spt. Salis dilut. vel Acid Muriat dilut.*
Solution of Alum	*Solut Aluminis*
Cold Water	*Aqua Frigida*
Lime Water	*Aqua Calcis*
Ice	*Glacies*
Snow.	*Nix.*

CLASS III.

TONICS.	TONICA.
1. AROMATICS, *as*	1. AROMATICA, ut
Peppermint Water	*Aqua Menth. Piperit.*
Infusion of Rosemary	*Infus. Rosmarin.*
Lavander Water	*Aqua Lavendulæ*
Infusion of Chamomile.	*Infus. Chamœmel.*
2. BITTERS, *as*	2. AMARA, ut
Decoction of Wormwood	*Decoct. Absinthii*
Decoction of Rue	*Decoct. Rutæ*

Decoction of Leſſer Centuary	*Decoct. Centaur. Minor.*
Decoction of Holy Thiſtle	*Decoct. Cardui. Benedict.*
Decoction of Bark.	*Decoct. Cort. Peruvian.*
3. SPIRITS, *as*	3. SPIRITUOSA, ut
Spirit of Wine diluted	*Spt. Vini vel Alcohol. dilut.*
Camphorated ditto	*Spt. Vini Camphorat. vel Spt. Camphorat.*
White Wine diluted	*Vin. alb. dilut.*
Red Wine diluted.	*Vin. rubr. dilut.*
4. COLD WATER.	4. AQUA FRIGIDA.

CLASS IV.

CONSOLIDANTS.	CONSOLIDANTIA.
1. BALSAMS, *as*	1. BALSAMA, ut
Balſam of Peru	*Balſam. Peruvian.*
Storax Ointment.	*Udgt. e Styrace.*
2. DETERGENTS. (*vide* Claſs xvii.)	2. DETERGENTIA. (*vide* Claſs xvii.)

CLASS V.

CICATRIZERS.	*CICATRIZANTIA.*
1. ABSORBENTS, *as*	1. ABSORBENTIA, ut
Armenian and the other Bolar Earths	*Bolus Armena et alia*
Dry Cadis.	*Linteum Carptum.*
2. ASTRINGENTS. (*vide* Claſs II.)	2. ASTRINGENTIA. (*vide* Claſs II.)
Calces of Lead, (Red and White.)	*Calces Plumbi* (*Min. et Ceruſſ.*)
Flowers of Zinc	*Flor. vel Cal. Zinci*
Lunar Cauſtic.	*Cauſtic. Lunar. vel Argentum Nitratum.*

CLASS. VI.

ANODYNES.	ANODYNA.
1. NARCOTICS, *as*	1. NARCOTICA, ut
Leaves of Henbane	*Flores Hyoſciam.*
Poppy Heads	*Capit Papaver.*
Opium	*Opium*
Liquid Laudanum.	*Laudan. Liquid. vel Tinct. Opii.*
2. EMOLLIENTS. (*vide* Claſs I.)	2. EMOLIENTIA. (*vide* Claſs I.)
3. SEDATIVES, *as*	3. SEDATIVA, ut
Preparations of Lead.	*Preparat. Plumbi.*

CLASS VII.

ADHESIVES, as	ADHESIVA, ut
Pitch	*Pix*
Roſin	*Reſina*
Calx of Lead in Oil	*Calx Plumbi Oleo Soluta*
Wax.	*Cera.*

CLASS VIII.

IRRITANTS or ACRIDS, as	IRRITANTIA vel ACRIA, ut
Rue	*Ruta*
Muſtard	*Sinapi*
Sal Ammoniac	*Sal Ammoniac*
Tincture of Cantharides	*Tinct. Cantharid.*
Arum.	*Arum.*

CLASS IX.

RUBEFACIENTS, as	RUBEFACIENTIA, ut
Garlic	*Allium*
Pepper	*Piper*
Muſtard	*Sinapi*

Rue	*Ruta*
Pellitory	*Pyrethrum*
Yeaſt	*Fermentum Panis*
Galbanum.	*Galbanum.*

CLASS X.

VESICANTS, as	VESICANTIA, ut
Powder of Cantharides	*Pulv. Cantharid.*
Ranunculus.	*Ranunculus.*

CLASS XI.

CAUSTICS.	CAUSTICA.
1. MINERAL ACIDS, as	1. ACIDA MINERALIA, ut
Oil of Vitriol	*Ol. Vitriol. vel Acid. Vitriol.*
Concentrated Spirit of Salt	*Spt. Sal. Concentr. vel Acid. Muriat.*
Smoking Spirit of Nitre	*Spt. Nitr. Fum. vel Acid. Nitros.*
Bellofte's Liquor	*Liquor Belloſt. vel Solut. Mer. Nitros. in Aq. Calcis*
Cauſtic Oil of Camphor	*Ol. Camphor. Cauſtic vel Acid. Nitros Camphorat.*
Burnt Alum	*Alum Uſt.*
Arſenic.	*Arſenicum.*
2. ALKALIES, *as*	2. ALKALINA, ut
Cauſtic Stone	*Lapis Cauſticus vel Calx cum Kali puro*
Cauſtic Spirit of Sal Ammoniac	*Spt. Sal. Ammon. Cauſtic. vel Alkali Volatil. Cauſtic.*
Soap Lye	*Lixivium Saponar. vel Aqua Kali pur*
Liquified Tartar.	*Ol. Tartar per Diliquium vel Aqua Kali.*
3. METALS, *as*	3. METALLICA, ut
Butter of Antimony	*Butyrum Antimon. vel Antim. Muriat.*
Blue Vitriol	*Cuprum Vitriolat.*
Verdigreaſe	*Cuprum Acetat.*
Green Vitriol	*Ferr Vitriolat.*
Infernal Stone	*Lapis Infernal. vel Argent. Nitrat.*

Red Precipate	*Mer. Precipit. vel Nitrat. rubr.*
Corrosive Sublimate.	*Mer. Corrosiv. Sublimat. vel Hydrargyr. Muriat.*
4. ANIMALS, *as*	4. ANIMALIA, ut
Cantharides.	*Cantharides.*
5. VEGETABLES, *as*	5. VEGETABILIA, ut
Oil of Cloves.	*Ol. Caryophilorum.*
6. EARTHS, *as*	6. TERREA, ut
Quicklime.	*Calx viva.*

CLASS XII.

RESOLVENTS.	RESOLVENTIA.
1. SOAPS, *as*	1. SAPONACEA, ut
Castile Soap	*Sapo Venetus*
Starkey's Soap	*Sapo Starkeanus, vel Terebinthinæ*
Sopewort.	*Saponaria.*
2. EMPYREUMATIC OILS, *as*	2. EMPYREUMATICA, ut
Fætid Oil of Tartar	*Ol. Tartar. Fætid. vel Aqua Kali Fætid.*
Woodsoot	*Fuligo*
Dippell's Animal Oil.	*Ol. Animale Dippelli vel Ol. et Cornubus rectificat.*
3. GUMMY RESINS, *as*	3. GUMMI RESINOSA, ut
Gum Ammoniac	*Gum Ammoniac*
Asa fætida	*Asa fætida*
Galbanum	*Galbanum*
Camphire	*Camphora*
Aloes.	*Aloe.*
4. MERCURIALS, *as*	4. MERCURIALIA, ut
Corrosive Solution	*Solut. Mer. Corrosiv. vel Hydrar. Muriat.*
Mercurial Ointment	*Ungt. Mer. vel Hydrar.*
Mercurial Plaister	*Emplast. Mer. vel Hydrar.*
5. ACRIDS, *as*	5. ACRIA, ut
Cantharides.	*Cantharides.*

6. AIRS, *as*	6. AEREA, ut
ixed and Inflammable Airs.	*Aer Fixus et Inflammabilis.*
7. NARCOTICS, *as*	7. NARCOTICA, ut
pium	*Opium*
elladonna	*Belladonna*
icuta	*Cicuta*
obacco.	*Nicotiana.*
8. WATERS, *as*	8. AQUOSA, ut
arm Steams	*Vapor aquæ calidæ*
arm Fomentations	*Fomentum ex aqua calida*
arm Baths.	*Thermæ aeratæ.*
9. ACIDS, *as*	9. ACIDA, ut
teams of Vinegar.	*Vapores Aceti.*
10. ALKALIES, *as*	10. ALKALINA, ut
alt of Tartar	*Sal Tartar vel Kali*
Mineral Alkali	*Sal Sodæ vel Natron*
iluted Spirit of Sal Ammoniac	*Spt. Sal Ammon. valde dilut. vel Aqua Ammoniæ*
olatile Liniment.	*Ungt. Volatile vel Ol. Ammoniat.*
11. NEUTRAL SALTS, *as*	11. SALSA, ut
Hindererus Spirit	*Spt. Mindereri vel Aqua Ammoniæ Acetat.*
al Ammoniac	*Sal Ammoniac*
itre	*Nitrum vel Kali Nitratum*
orax.	*Borax.*
12. SULPHURS, *as*,	12. SULPHUREA, ut
ilphur	*Sulphur*
ar	*Petroleum*
ilphurated Baths.	*Thermæ Sulphureæ.*

CLASS XIII.

ANTIPHLOGISTICS, as	ANTIPHLOGISTICA, ut
old Water	*Aqua Frigida*
olution of Sal Ammoniac and Nitre	*Solut Sal Ammoniac et Nitri, vel Kali Nitrat.*
xycrate	*Oxycratum*

White and Red Wine	*Vin. alb. et rubr.*
Sugar of Lead	*Sacchar. Saturn. vel Ceruſſa Acetat.*
Alum	*Alumen*
Vegeto Mineral Water	*Aqua Vegeto Mineral vel Lithar. Acetat.*
Wine with Bitters and Aromatics	*Vinum cum Herbis Amar et Aromat.*
Spirit of Wine diluted	*Spt. Vini vel Alcohol dilut.*
Dregs of Wine diluted	*Fæces Vini dilut.*
Decoction of Bark	*Decoct. P. C. P.*
Emollient Poultices	*Cataplaſm. Emollient.*
Anodyne Poultices.	*Cataplaſm. Anodyn.*

CLASS XIV.

INSPISSANTS, as	INSPISSANTIA, ut
Mucilages	*Mucilaginea*
Starches	*Amylacea*
Armenian and Bolar Earths	*Bolus Armenia et Alia*
Dry Sponge.	*Spongia Sicca.*

CLASS XV.

COAGULANTS, as	COAGULANTIA, ut
Alcohol of Wine	*Alcohol Vini*
Acid of Vitriol	*Acidum Vitriol*
White and Blue Vitriol	*Vitriolum alb. et Cærul. vel Zinci et Cuprl*
Alum.	*Alumen.*

CLASS XVI.

MATURANTS.	MATURANTIA.
1. MILD, as	1. LENIORA, ut
Common Poultice	*Cataplaſm. Emolliens*
Butter	*Butyrum*
Yolk of Egg	*Vitellum Ovi*
Linſeed	*Semen Lini*
Figs in Milk	*Caricæ in Lacte*
White Lily root	*Radix Lilii alb.*

Diachylon Plaiſter	*Emplaſt Diachylhon*
Gum Plaiſter	*Emplaſt Gummos*
Baſilicon Ointment	*Ungt. Baſilicon, vel Reſinæ Flavæ*
Honey and Flour.	*Farina cum Melle.*
2. ACRIDS, *as*	2. ACRIA, ut
Onion	*Cepa*
Garlic boiled in Honey or Oil	*Allium cum Melle, vel Oleo coct.*
Galbanum diſſolved	*Galbanum in Ol. ſolut.*
Tincture of Cantharides.	*Tinct. Cantharid.*

CLASS XVII.

DETERGENTS.	DETERGENTIA.
1. BITTERS, *as*	1. AMARA, ut
Holy Thiſtle	*Carduus Benedict.*
Leſſer Centaury	*Centaurius Minus*
Birthwort	*Ariſtolochia*
Gentian.	*Gentiana.*
2. BALSAMS, *as*	2. BALSAMICA, ut
Myrrh	*Myrrha*
Aloes	*Aloe*
Balſam Capivi.	*Balſam Copaibæ.*
1. ACRIDS, *as*	3. ACRIA, ut
Arum	*Arum*
Savine	*Sabina*
Verdigreaſe.	*Virite æris.*
4. SWEETS, *as*	4. DULCIA, ut
Honey	*Mel*
Sugar.	*Saccharum.*
5. SALTS, *as*	5. SALINA, ut
Ammoniac Salt.	*Sal Ammoniac.*
6. MERCURIALS, *as*	6. MERCURIALIA, ut
Calomel	*Calomel*
Red Precipitate	*Mer. Precipitat. vel Nitrat. rubr.*
Corroſive Solution	*Mer. Corroſiv. Sublimat. vel Hydrargyrus Muriatus.*
Aqua Phagadenica.	*Aqua Phagadenica, vel Solut Hydrargyri Muriat. in Aqua Calcis.*

CLASS XVIII.

ANTISEPTICS

1. 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.

1. AMARA, ut

Cortex Peruvian.

2. AROMATICA, ut

Ruta
Chamæmel.

3. BALSAMICA, ut

Terebinthina
Camphora
Myrrha.

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 MINERHLIA, ut

Spt. Vitrioli, vel Acidum Vitriol.
Spt. Nitri, vel Acidum Nitroſum
Spt. Salis, vel Acidum Muriat.

9. OLEA ÆTHEREA, ut

Spt. Terebinthinæ.

10. SALTS, *as*	10. SALINA, ut
Sal Ammoniac.	*Sal Ammoniac.*
11. AIRS, *as*	11. 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 Putridis*
Heat	*Calor*
Quicklime.	*Calx viva.*

PART III.

EXTEMPORANEOUS PRESCRIPTION;

OR, A

View of the Principal Remedies

IN THE CURE OF THE PRECEDING DISEASES.

TOPICAL INFLAMMATION.

1. *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,

℞ Camphor. ʒi.
Myrrh. ℈i.
Acet diſtillat ℔i.
Tere Camphor cum Myrrh.
Dein adde Acet. ut ft. Solut.

Solutions of Lead, as (*Solut Saturnin.*)

℞ Ceruſſ. Acetat. vel
Sacchar Saturn. ℥ſſ.
Acet. vini ℥ii.
Aq. font. ℔ii. m. ft. Solut.

℞ Aq. Vegeto Mineral Goulard.

Or in the form of the Reſolvent Cataplaſm, as

℞ 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 ℥iſſ.
Tinct Opii ℥ſſ. m. ft. Solut.

℞ Sal Ammoniac ʒii.
Aq. font. ℥vi.
G. Opii ʒſſ. m. ft. Solut.

Lime Water. (*Aqua Calcis.*)

Sedative and Emollient, as

Anoydne Fomentations. (*Fotus Anodyn.*)

℞ Capit Papaver. ʒi
Flor. Sambuc. ℥ſſ.
Aq. font. ℔iii. coque ad ℔ii. ut ft. fotus.

℞ Foment. papaver. alb. ℔i.
Solut. Opii ℥ſſ.
Mic. panis q. ſ. ut ft. Catap.

Stimulant, as

Epiſpaſtica. (Bliſters.)
Fonticuli. (Iſſues.)
Linim. ſaponac. (Opodeldoch Balſam.)
Oleum 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* or *poultice*, the chief topical means, as in vol. I. page 278. viz.

Chamomile Fomentation. (*Foment Chamæmel.*)

℞ Flor. Chamæmel ℥ii.
Sem. Lini ℥i.
Aq. fervent. ℔vi. coque pauliſper dein cola.

Common Poultice. (*Cataplaſm Farinac.*)
By itſelf, or with the addition of Lintſeed Flour, or of Acrids, as

℞ Rad. Lilii alb. ℥iv.
Caricar. ℥i.
Rad. Cepæ contus. ℥iſſ.
Galban. ℥ſſ.
Pulv. Sem. Lini q. ſ. 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 ℔i. 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* ℥iiiſſ.
P. C. P. ℥ſſ. m. *Two table ſpoonfuls every half hour ſhaking the glaſs.*

℞ P. C. P. ℥ii.
Mucilag G. Arabic ℥iii.
Tinct. P. C. P.
Aq. Cinn. *a* ℥iv.
Spt. Vitriol. q. ſ. ad grat. aciditat. m. *The ſame.*

Topical applications here are various antiſeptics and ſtimulants, as

℞ Cataplaſm Effervescens.
(Infuſion of malt, thickened with oat-meal, and the addition of a ſpoonful of yeaſt.)

℞ Cataplaſm Cerevisiæ.
(Oat-meal thickened with grounds of ſtrong beer.)

℞ Sal Ammoniac crud ℥iſſ.
Acet. Vini ℥iiſſ.
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 part.*

CLASS I.

Wounds.

The firſt ſtep, hemorrhage to be ſtopped where veſſels are 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, page 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 adde
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 ralaxation, 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.

Perfomed 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 ſtage; opiates 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

℞ Aq. Calcis pro inject.

℞ Salut. Alum. (℥i. to ℥vi.)

℞ Vin. rubr.

Aq. font. *a* ℥ii. m. ft. inject.

2. *Contuſed and Lacerated Wounds.*

The 1*ſt* 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 p nge. 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 inflammations, when commenced, topical venefection, as 12 or 14 leeches applied at once, ſucceeded by warm fomentations, 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 to prevent diſtorted future.
Hemorrhage of fore-head reſtraining by ligature, by tenacula, 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 *2d* ſimply dreſſed, and waſhed with aſtringent ſolutions, (*vide* diſeaſes of the eye.)
Pain requiring the uſing 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 1*ſt* 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 1*ſt* 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.

4*th*, 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.

1*ſt* ſtep, reſtraint of hemorrhage by ligature.
2*d* ſtep, where part of inteſtine protruded and wounded, partial, uniting it by glover's ſuture, or if complete, by firſt ſerting a roll of tallow, and ſtitching the ends of the inteſtine pon it.
3*d* ſtep, replacement of parts thus protruded, by relaxation nd poſture, and if failing, by cautious enlargement of the ound by inciſion.
4*th* ſtep, uniting the ſides of the wound, by adheſive laiſter, with compreſs and roller, where no protruſion. Where there is protruſion, by ligature and poſture joined to the me means.
5*th*, Where one end of the inteſtine is loſt, ſo as to prevent nion from its complete diviſion, the ſecuring the other end the external opening or wound muſt take place: and in this ſe the 4th intention cannot be completed.

12. *Wounds of Stomach.*

1*ſt* ſtep, applying a ligature and replacing it.
2*d*, Strict antiphlogiſtic courſe during the cure, and nouriſhent 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.*

1*ſt* ſtep, Reſtraint of hemorrhage.
2*d*, Evacuting any accumulation.
3*d*, Treatment as a common wound.

15. *Wounds of Gall Bladder.*

1*ſt* ſtep, Diſcharge of bile.
2*d*, Preventing its accummulation.
3*d*, Treatment as a common ſore.

16. *Wounds of Kidneys.*

Nothing peculiar but ſtrict antiphlogiſtic courſe.

27. *Wounds of Bladder.*

Wounds of upper part to be firſt united by glover's ſuture.
Wounds of under part to be treated as common wounds.

18. *Wounds of Uterus.*

Generally fatal.

19. *Gun-ſhot Wounds.*

1*ſt* 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.

4*th* Step, healing the part by aſtringent ointment as in p. 415.

5*th*, obviating gangrene, if appearing, as in p. 414.

20. *Burns.*

1*ſt* 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 vinegar*, and frequently renewed; or,

℞ Cataplaſm ſolani 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 ℔ii.
Spt. vin. rectif. ℥i.
M.

℞ Spt. Camphor. ℥ii.
Aq. Lithar. acetat ℥i.
Aq. diſtillat ℔i. m. ft. ſolut.

℞ Ol. Lini.
Aq. vegeto mineral
Calcis *a* ℥ ſſ. m. ft. embrocatio

The emollients are,

℞ Ol. olivar. ℥i. ſſ.
Aq. Calcis ℥iii. m. ft. ungt.

℞ Ol. Lini
Calcis *a* ℥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 rattleſnake are to be treated by cauſtic, ſolution of ſalt of tartar, volatile alkali, or ſpirit ammon. ſuccinat.

℞ Alkohol. ℥i.
Aq. Ammoniæ pur. ℥iv.
Ol. Succini rectificat. ℈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 into an iſſue.

Morbid Conſequences of Blood-letting.

Ecbymoſis of Vein.

1*ſt* Step, application of compreſſes wet in brandy or ſolution of ſal ammoniac

2*d*, 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, ſatutnine applications, as in p. 412.
Where failing, the operation neceſſary.

Aneruiſm.

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 calicoe ſpread with the following plaiſter.

℞ Emplaſt Lithargyr. ℥iv.
Reſin flav. ℥ſſ.

To be ſpread thin, and applied on ſlips in oppoſite directions to draw together 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

the former, requires ſedative applications, both general and opical.

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.

℞ Cataplaſm. farinac ℔i. ſſ.
Pulv. Carbon. ℥ii. m. ft. cataplaſm.

℞ fol. cicut. ℥iv.
Coque in Aq. font. ℔ii. ad ℔iſſ. dein liquor. colat. adde
Pulv. Lini
Avenæ q. ſ. ut ft. cataplaſm.

℞ Mucilag. G. Arabic ℔i.
Camphor. ℥i. ſſ. m. ft. Liniment.

℞ Papaveris alb. exſiccat. ℥iv.
Aq. puræ ℔vi. coque ad dimid. dein cola et ft. foment.

The ſore, by theſe applications, being reduced to a benign ate, the treatment of the former ſpecies then applies to it; d if, in the progreſs of the cure, it is ſlow of cicatrization, it ay be quickened by tincture of myrrh, ſolution of blue vi-iol, or compreſſes dipt in brandy.

Alſo ſpirituous lotion, as,

℞ Spt. vin. rectificat. ℥iv.
Aq. Calcis. ℔ſſ. m.

Or the abſorbent powder, as

℞ Lap. calamin. preparat.
Myrrh Pulv. *a* ℥ſſ. m. ft. pulv.

Vitiated Solid Ulcer.

Vitiated ſolid ulcer muſt be varied in its treatment, accord-g to the particular morbid ſtate of the ſolid.

With Fungus.

The treatment is either by ſtrong ſtimulants, eſcharotics, ligature and compreſſion.

Stimulants.

℞ Argenti Nitrat. ʒi.
Aq. diſtillat. ℥ſſ. m.

To be applied by means of a bit of lint fixed on the end of a probe and dipt in it.

℞ Ammon. Muriat. ʒvi.
Acet.
Spt. Vin. rectificat. *a* lbi. m. ft. ſolut.

℞ Ferri vitriol. calcinat.
Vel Vitriol Virid. ʒi.
Aq. diſtillat. ℥viii. m. ft. lotio.

℞ Acet. vin.
Spt. vin. rectificat *a* ℥iv.
Spt. Vitriol. ʒii. m. ft. ſolut.

℞ Ærug. preparat. gr. vi.
Ammon. Muriat. ʒſſ.
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 ʒi. *to* ℥i.)

℞ Pulv. Columbæ

The ſame.

℞ Ungt. Hydrar. nitrat.

℞ Ungt. Hydrar. nitrat. ruber

℞ Mercur. ſublimat. corroſiv. ʒſſ.
Aq. Calcis lbi. 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 ℥v.
Liquor. Hydrar. Muriat. gutt. ii. m. ft. inject.

℞ Tinct. Cantharid. ʒiii.
Aq. diſtillat. ℔i. 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 aſtringent 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 basillicon, 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 ℔i.
Liquoris Hydrargyr. Muriat. gutt. xl.
(Hydrarg. Muriat. ℥i. Acet. Muriat. q. s.) *Herpes.*

℞ Kali Sulphurat ℥ss.
Aq. Calcis ℔i. m. *Tinea.*

℞ Picis Liquidæ ℥iv.
Aq. Calcis ℥vi.
Fervent. ℔lii. 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. Nitrat. ut in p. 424.

2. *Ointments.*

℞ Picis Liquid. ℔ss.
Ceræ Flav. ℥ss.
Flor. Sulphur. ℥ii. m. ft. Ungt. *Tinea.*

℞ Acid Vitriol. ʒss.
Adipis Suillæ ℥i. m. ft. Ungt. *Psora.*

℞ Calcis Hydrarg. alb. ʒi.
Adipis Suillæ ℥iss. m. ft. Ungt. *Psora.*

℞ Ceræ alb. ℥iv.
Ol. Olivar. ℔i.
Acet. distillat ℥ii. m. ft. Ungt. *Herpes.*

℞ Hellebor. alb. pulv. ℥i.
Adipis Suillæ ℥iv. m. ft. Ungt. *Psora.*

℞ Ungt. Sulphur. *vide* part I. *Psora.*

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. ʒi. m. *To be used simply, or with Opium.*

Plunket's Powder.

℞ Ranuncul. acris fol.
Flammul. vulgar. fol.
Arſenic alb. Levigat. *a* ℥i.
Flor. Sulphur. ♃v. m. ft. pulv.

℞ Aq. font. ℔i.
Extract Cicut. ℥i.
Sacchar Saturni ℥iii.
L. L. ℥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. *a* gr. xvi.
Aq. diſtillat. ℥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.
☿ Corofiv. ſublimat. ℥i. m. ft. Lotio

℞ Ol. Lini pro Ungt.
℞ Ungt. Arſenical (⅛ gr. ad Axung. ℥i.)

℞ Fol. Cicut. recent
Adipis Suillæ *a* ℥iv. m. ft. Ungt. ſ. a.

℞ Fol. Digitalis purpur recent
Adipis Suillæ *a* ℥iv. m. ft. Ungt. ſ. a.

℞ Fol. Lauri Cerafi ℥iv.
Aq. Bullient ℔ii.
Mellis Deſpumat. ℥iv. m. ft. Infus.

Linen rags to be wet in it, then applied, and occaſionally renewed.

℞ Kali Acetat. ℥i.
Aq. diſtillat. ℥xx.
Mic. Panis q. ſ. ft. Cataplaſm.

℞ Cataplaſm 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 *a* ℔ſſ.
Ceræ Flav.
Emplaſt. Lithargyr. *a* ℥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 *a* ℥i. m. ft. Ungt.

℞ Alum. uſt. ℈i.
Ungt. Lap. Calamin. ℥i. m. ft. Ungt.

℞ Aq. Marin. *Clothes wet in it and to be kept on the ſore.*

℞ Solut. Saturnin, ut in p. 412.

℞ Mellis Roſæ
Tinct. Myrrh *a* ℥ii.
Aq. Calcis ℥iſſ. m.

℞ Foment. Cicut. (fol. cicut. ℥iii. ad Aq. ℔iii.)

℞ Tinct. Myrrh
Aq. Calcis *a* ℥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

℞ Cataplaſm Lupuli
(A handful of hops boiled in ℔ii. of water to ℔i. and the decoction ſtrained, and made into a poultice with oat-meal.)

℞ Cataplaſm Dauci

℞ P. C. P. *To be ſprinkled on the ſore.*

℞ Ungt ægyptiac.

℞ Succ. Gaſtric bovin.

When ſcorbutic diſpoſition gone, cicatrization effected by aſtringents, as in p. 423.; or precipitat ointment as in p. 424.

CLASS III.

Tumours.

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.

Ereſipelas.

Treated by the antiphlogiſtic courſe, as in vol. I. p. 40.

Local applications, abſorbents and aſtringents, as

℞ Pulv. Lithargyr.
Amyli ā ℥i. m. ft. Pulv.

℞ Solut. Saturnin. ut in p. 412.

℞ Spt. Camphorat ℥ii.
Aq. Lythargyr. Acetat ℥i.
Diſtillat. ibi. m. ft. Lotio.

Inflammation of Ear.

Antiphlogiſtic treatment.

Local applications in the *1ſt* ſtage, bliſters and ſedatives.

In *2d* 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. I. p. 28.; or the nitrous acid, as

℞ Acid Nitros. fort. ʒi.
Aq. diſtillat. ℥bi.
Syr. cois q. ſ.

To be taken at diffent 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 a roller round the body.

Lacteal Mammary Inflammation.

Reſolution, the chief point, to be effected by diſcutients, as

℞ Ammon. Muriat. ʒi.
Spt. Roſmarin ℥bi. m.

℞ Ammoniæ Acetat.
Spt. Vinos. rectificat.
Aq. diſtillat *a* ʒiv. m.

℞ Ammon. Muriat. ʒſſ.
Acet.
Spt. Vin. rectificat. *a* ℥bi. m.

℞ Sal Tartar ʒſſ.
Aq. font. ℥biſſ. m.

℞ Spt. Ammon. Comp. ʒiiiſſ.
Aq. diſtillat ʒiv.
Tinct. Opii ʒſſ. m. ft. lotio.

℞ Aq. Amon. ʒii.
Vitell. ovi ſubact. ft. liniment

vide alſo page 412. articles *ſedative* and *aſtringent.*

Suppuration forming to be promoted by the common means of 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. 418.

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. ʒi.
Spt. Vinos. rectificat. ℔ſſ. m.

℞ Opii purificat. ʒi.
Ol. Olivar. ℥i.
Ungt Simpl. ℥iſſ. 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 ʒii.
Acet.
Spt. Vin. Ten. *a* ℔ſſ. m. *Linen rags to be wet in it and applied.*

℞ Coagul. Aluminos.

℞ Ol. Ammoniæ 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. ʒſſ. 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. ʒii.
Aq. Ammoniæ pur. ʒii. m.

℞ Solut. ſap. cum camphor.
Aq. Ammon. acetat. *a* ℥i.
Aq. Ammon. pur. ℥ſſ. m.

2d 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.

3d Stage, or chronic ſtate, relieved by friction, emollients, and cold bathing, with the aſſiſtance of compreſſion; ſometimes ſtimulants, as

Ol. olivar. ʒii. ſſ.
Ol. terebinth. ℥i.
Acid vitriol. gutt. xlv. m.

℞ Ol. ſuccin. rectificat.
Tinct. opii. *a* ʒii.
Adipis ſuillæ preparat ʒi. 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. ſabin.
Œrugin. preparat *a* ʒi. m.

℞ Antimon. Muriat. vel butyrum Antimon.

℞ Pulv. Rhæi.
Ipecac. *a* ʒi. m.

℞ Hydrargyr. ʒii.
Plumbi ʒiſſ.
Acid nitros. ʒi. 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.

Schrophulous Tumors.

Require the conſtitutional remedies, as directed vol. I. p. 3325.

The local treatment here is various, as a gentle uſe of mercurial friction, alſo

℞ Cataplaſm quercus marin. vel
Cataplaſm 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 elſe bliſters and diſcutients, as,

℞ G. Ammon. colat. ℔ſſ.
Hydras. purificat. ℥ſ. ſſ.
Ol. Sulphurat. ℥i.
Mel q. ſ. m. ft. emplaſt.

℞ G. Ammon. ℥iii.
Succ. cicut. ſpiſſat ℥ii.
Aq. Lithargyr. acetat ℥i. m. ft. emplaſt.

℞ Saponis ℔ſſ.
Emplaſt Lithargyr. ℔ii. m. ft. emplaſt.

℞ Galban.
Ammon. *a* ℥ſſ.
Opii ℥i.
Acet Scillæ ℥iii.
Saponis ℥ſſ.
Emplaſt. Lithargyr. ℥iii. m. ſ. a. et ft. emplaſt.

℞ Camphor. gr. x.
Acid Vitriol. ℥ſſ.
Adipis ſuillæ 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.

Capſular Swelling.

In the 1ſt ſtage yields to the ſame treatment of bliſters, friction, cold bathing, and compreſſion.

In the 2d 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 Capſular 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. ſ. ut ft. emplaſt.

To be renewed every day.

The 2*d* ſtage, when effuſion has take 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 Biſida.

Is treated by preſſure, with compreſs and bandage.

Bonny Swellings.

Local exſtoſis to be removed by an operation as in the general treatment deſcribed p. 161.

Spina ventoſa and molites 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 perſcriptions 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.

℞ Ipecacuhan.
Opii purificat. *a* ʒi.
Kali Vitriolat. ℥i. 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. Cataplaſm.

℞ Coagul. Alumin. (*vide* vol. I. p. 280.)

2. Collyria or Waſhes. (*Vide* vol. I. p. 280.) Alſo,

℞ Opii purificat. ℥ii.
Cinn.
Caryophyll. *a* ℥i.
Vin. alb. ℔i. macera per dies octo.

Two or three drops to be inſetted betwixt the lids morning and evening.

Remedies in the Chronic State.

1. Collyria or Waſhes.

℞ Ceruſſæ ℥i.
Aq. Roſar. ℥iv. m. ft. collyr.

℞ Œrugin. 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. xiv. ℥ß.
Hydrargyr. muriat. ℈i
Aq. diſtillat. ℔i. 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.

℞ Tutiæ preparat. ℥i.
Adipis ſuillæ prep. q. ſ.

The ſame.

℞ Hydrargyr. nitrat. rubr.
Lapid Calamin. *a* ℥i. ſſ.
Lithargyr. levigat. ℥i.
Tutiæ preparat. ℥ſſ.
Hydrargyr. ſulphurat. rub. ℈i.
Balſam Peruvian gutt. xv.
Adipis Suillæ preparat. ℥ii. m. ft. ungt.

For Specks of Cornea.

℞ Cal. Hydrargyr alb.
Tutiæ preparat.
Lap. Calemin. *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. Linimentum. *For ulcers and ſpeckt.*

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. ʒiii.
Balſam. Peruvian. ʒi. m. *A little to be occaſionally dropped into the ear.*

Dryneſs.

℞ Ol. Amygdal. ʒſſ.
Ol. Terebinth. gutt. xl. m. *A little to be dropped into the ear, or applied on cotton.*

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. ʒiv.
Mellis Roſæ ʒi. m. ft. gargariſm.

Hemorrhage.

To be reſtrained after the operation by the ſame means, or

℞ Vitriol alb. ad rubedinem calcinat ℈i.
Aq. diſtillat. ʒiv. m. ft. ſolut. ſtyptic

℞ Pulv. Alumin. uſt ʒiii.
Colcothar. Vitriol. ʒi. m. ft. pulv. ſtyptic
Charcoal powder may be alſo tried.

Ulcer.

Waſhes.

℞ Lotion. Alumin. (ʒi. to ℔i.)

℞ Decoct. P. C. P. cum Alumin.

℞ Quercus Contus. ʒi.
Aq. diſtillat ℔ii. coque ad ℔i.

Ointments.

The ſame as in Chronic Ophthalmia page 438. alſo

℞ ☿ precipitat. rubr. ʒiſſ.
Ungt. Simpl. ℥ii. m. ft. Ungt.

℞ Oerugin. oeris gr. xii.
Ungt. Simpl. ʒi. 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 ſore, mucilages, as

℞ G. Arabic ʒiv.
Aq. fervent. ℥viii. m.

Excoriation of lips cured by

℞ Ungt. Ceræ ʒi.
Styracis Colat ʒi. 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 ʒi.
Mellis Deſpumat. ʒi. m.

Mild Diarhœa 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* ʒi.
Spt. Salin. Aromat. gutt. xv.
Syr. Roſar. ʒvi.

Two ſmall ſpoonfuls twice, or oftener, a-day.

℞ Syr. de rhamno.
Cois *a* ʒii. m. *A tea ſpoonful or two a doſe.*

℞ Infus. Rhæi ℥iii.
Sacchar. alb. ʒii.
Sal Tartar gr. iii. m.

Diarrhœa reſtrained, where exceſſive and much pain, by

℞ Cret. alb. preparat ʒii.
Sacchar. alb. ʒi.
Confect. jabon. ℈ii.
Aq. Menth. pip.
font. *a* ℥ii. m. *Two tea ſpoonfuls after every ſtool.*

℞ Mucilag Gum Arabic ℥iii.
Pulv. Ocul. Cancror. ʒi.
Sacch. alb. ʒii.
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 ʒiii.
Mucilag. G. Arabic ʒi. 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 addo
Aq. Menth. ʒiii. m. pro doſe.

Pain.

By opiates, as in other caſes, proportioning the doſe, (*vide* vol. I. page 310.) alſo

℞ Syrup. Diacod. ʒi. *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* ʒi.
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. ʒii. 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. ʒvi. 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. ʒvi.
Rad. Irid. Florent. ʒss. m. ft. pulv subtil.

Inſects in antrum maxilare removed by injections of tobacco, oil, and aſa fœtida, as

℞ Nicotianæ ʒſſ.
Aq. Bullient. ℔ſſ. infunde per quartam horæ partem.

℞ Ol. Oliv.
Spt. Salin. aromat gutt. aliquot.

℞ Solut. aſæ fœtid. (ʒi. ad aq bullient ℥i.)

Ulceration from tranſplanted teeth treated by mercury, as in vol. I. page 318. alſo by bark and elixir of vitriol, as in ditto page 267.

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 ℥viii. m. *This ſolution to be frequently applied.*

℞ Solut Zinci
Vitriolat ut in page 413.

℞ Solut. Ceruſſ.
Acetat ut in page 412.

℞ Emplaſt Lithargyr. ℥iv.
Ol. Olivæ ℥iii.
Acet. ℥i. 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. ℥i. *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 ſocked 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. ſt. Liniment.

℞ Tinct. Cantharid.

℞ Vin. Gallic.
Acet. cois *a* ℥iv. m. ft.

In radical cure by cauſtic, the following preparations are employed,

℞ Calcis cum Kali pur. ℥iii.
Opii Pulveriſat. ℥ſſ.
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.*

Hematocele.

Vaginal hematocele 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. Ibi. *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 *ennema terebinthæ.*

℞ Terebinth. vulgar ʒss.
Ovi unius Vitell.
Decoct. Avenæ ℔ss. m. ft. inject.

Piles.

Local treatment consists in the use of ointments and injections, as

℞ Pulv. Gallar.
Axung. *a* ʒss. m. ft. Ungt.

℞ Pulv. Gallar. ʒii.
Camphor. ʒss.
Adipis Suillæ ʒi. m. ft. Ungt.

℞ Gallar. Contus. ʒss.
Aq. fervent. ℔ii. m. ft. foment.

℞ Solut. Saturnin. tepid. valde dilut. page 412.

Obstruction of Urine.

From stricture, palliated by

℞ Ferri Rubiginis ℔ss.
Acid Muriatic (pondere) ℔iii.
Spt. Vinos. rectificat ℔iii. *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 *plaistered linen*, of *catgut*, and *elastic resin*. For the composition of the *first*, the receipts are various, as

℞ Ol. Oliv. ℔iii.
Ceræ Flav. ℔i.
Minii ℔iss. coque mass. per horas sex.

℞ Ceræ Flavæ ℔i.
Spermaceti ʒiii.
Cerus. Acetat. ʒss. coque ut antea.

℞ Emplast. Litharg. ʒiv.
Ceræ Flav. ʒiss.
Ol. Oliv. ʒiii. coque emplast. separat. 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 ſpincter, 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 *paſta piperis.*

℞ Piperis Nigri
Rad. enul Campan. *a* ℔i.
Sem. Fænicul. 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.

1*ſt* Step, in the eure 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. ℔ii.
Saponis ℥iv.
Ol. Oliv.
Ceræ Flav. *a* ℔ſſ. m. f. a.

Callus, if two luxuriant, in the progreſs of the cure, checked by aſtringents as above, or more completely by preſſure.

4*th* 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.

1*ſt* Step, reſtraint of hemorrhage; removal of obſtacles to replacement; and the replacement of the bones.

2*d* 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.

3*d* 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.

4*th* Step, if diſcharge continuing too great, to be checked by aſtringent dreſſings in a watery form, as

℞ 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.

5*th* 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.

6*th*, Where a cure takes place, morbid conſequences to be removed as in ſimple fracture.

CLASS V.

Luxations.

1*ſt* Step, replacement of the part, by relaxation of the muſcles affecting the motion of the member, and its extenſion.

2*d* Step, its retention in this ſtate, by continuing the ſame relaxation, and the application of a bandage.

3*d*, Obviating effects of inflammation by the uſual means of veneſection, and ſedative and aſtringent remedies, as in page 412.

4*th*, 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.

Diſtortions.

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 Diſtortion attempted to be removed by preſſure made by machines, fitted to the particular ſpecies of it.

Morbid Diſtortion, 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 1*ſt* 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 1*ſt* 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 a 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 ſlauntiug direction; when finiſhed, they are fixed with pins.

FINIS

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Some tight gutters.